



# 2025

TURKISH DEFENCE INDUSTRY PRODUCT CATALOGUE







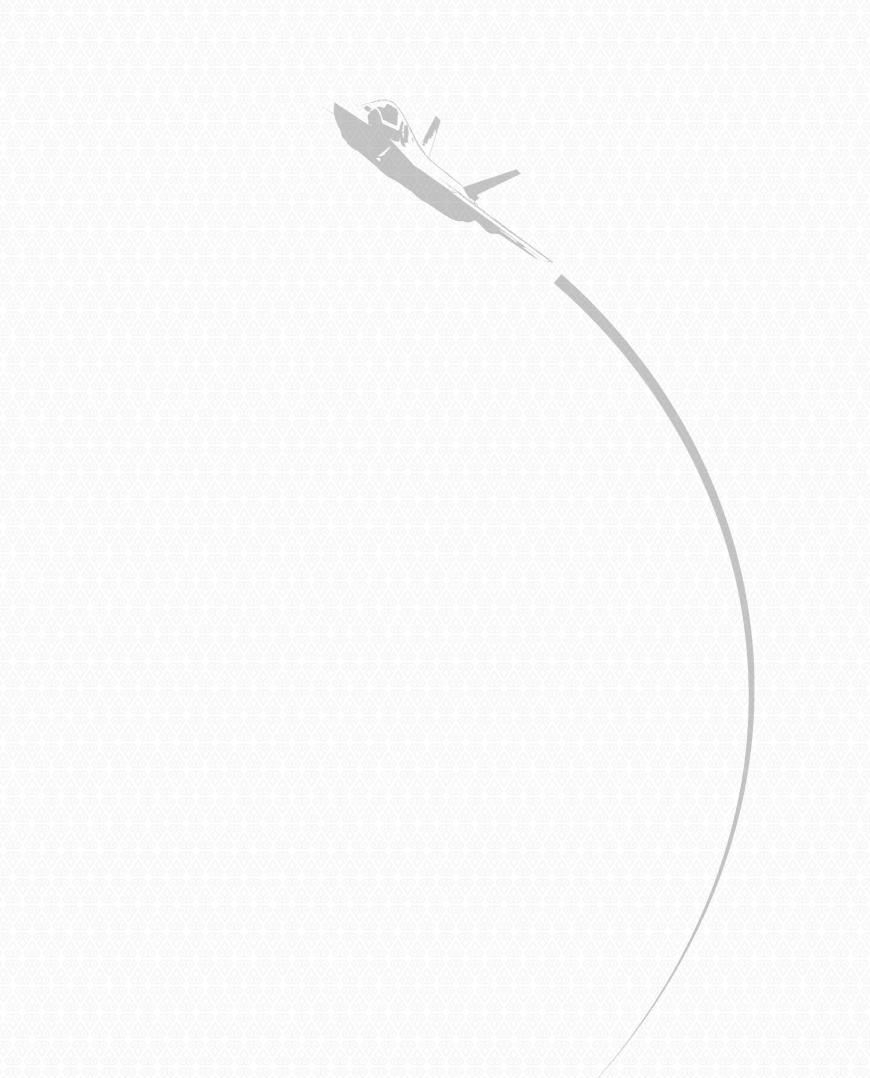










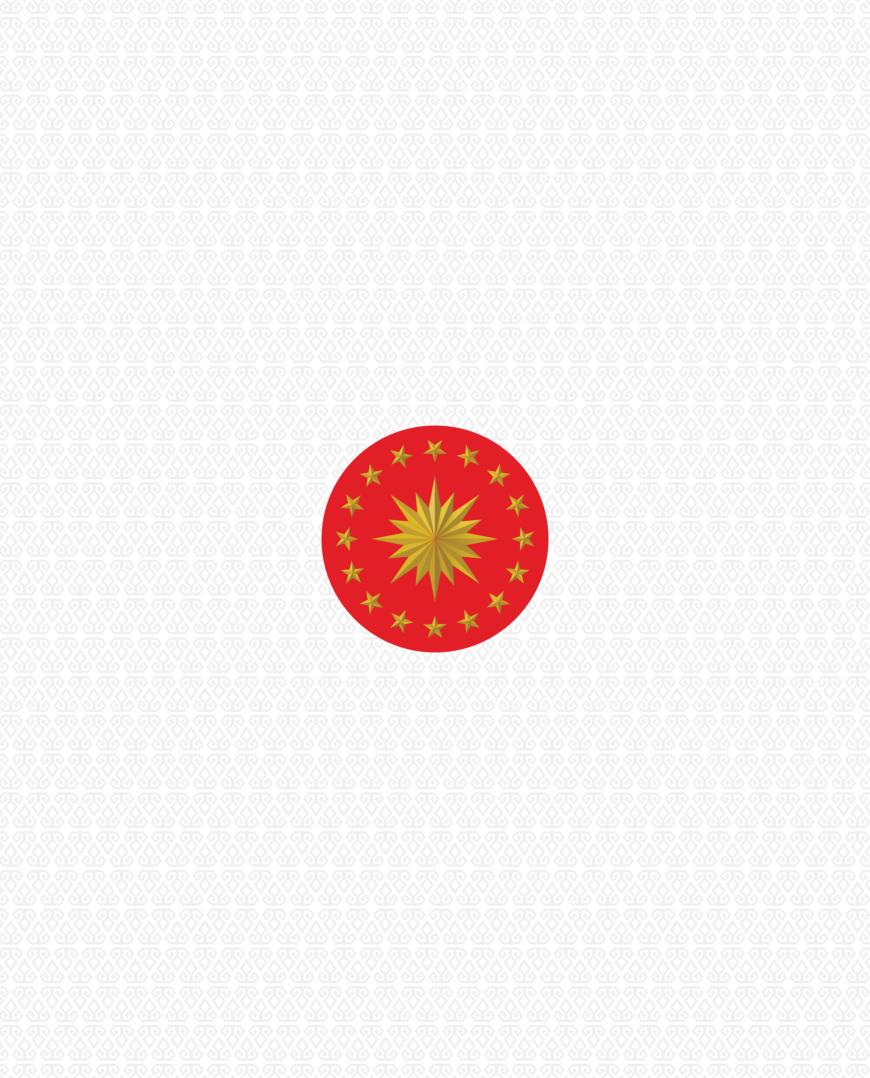






"...measures that have been taken to further develop and expand our war industry must continue and special consideration needs to be given to military needs in our industrialization efforts..."

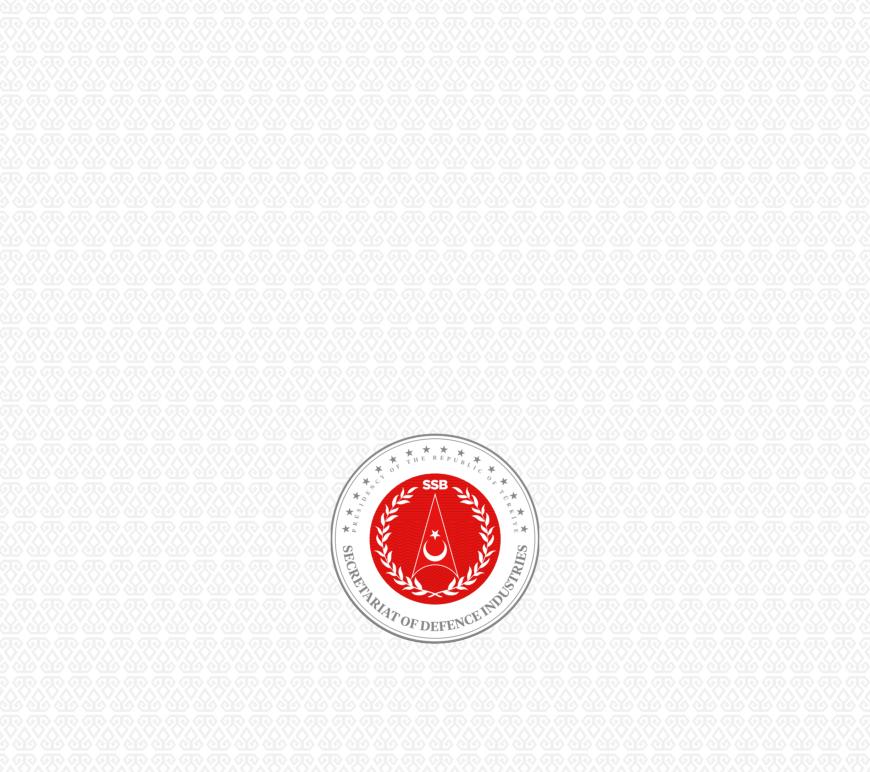
Mustafa Kemal ATATÜRK





"...The more we develop our national defence industry, the more we will contribute to the regional and global peace..."  $\phantom{a}$ 

Recep TAYYİP ERDOĞAN President of the Republic of Türkiye





The Turkish defence industry today has a large and qualified ecosystem that encompasses a wide range of structures, from prime contractors and subcontractors to SMEs, universities and research centres, on a path that was set out many years ago with the aim of developing a modern and national defence industry and ensuring the modernisation of the Turkish Armed Forces.

Today, with more than 3.500 companies and over 90.000 employees, the Turkish defence industry is one of the sectors making the highest contribution to our country's economy. Our domestic and national products developed in the defence industry are successfully used in all operations of our security forces both at home and abroad.

With the reference of the Turkish Armed Forces, one of the most important preference criteria for global users, we successfully deliver our platforms and systems to the armed forces of friendly and allied countries with which we have strategic cooperation in different geographies.

The total volume of projects carried out under the coordination of our Secretariat exceeds 96 billion dollars as of today. As a result of more than 1.100 on going projects and activities, our defence industry continues to develop rapidly among global giants, with a sector turnover exceeding USD 15 billion, an annual export figure of USD 7.1 billion and USD 2.6 billion in R&D expenditures.

The recent developments in the Turkish defence industry have enabled the platforms, systems and capabilities of our companies in many fields to become competitive brands in foreign markets. Today, the number of countries to which we export our defence industry products has increased to 185, and the categories of export products, particularly UAVs and UCAVs, land vehicles and naval platforms, have increased to 250, and Turkish defence industry products are at the forefront of the global league.

In this document, you will be able to examine in detail the phases our defence industry has gone through, the transformations it has undergone and the phase it has reached today.

We are pleased to introduce and share with you the indigenous products of our defence industry and its combat-proven systems that require the most advanced engineering capabilities.

Prof. Haluk GÖRGÜN Secretary of Defence Industries Presidency of The Republic of Türkiye

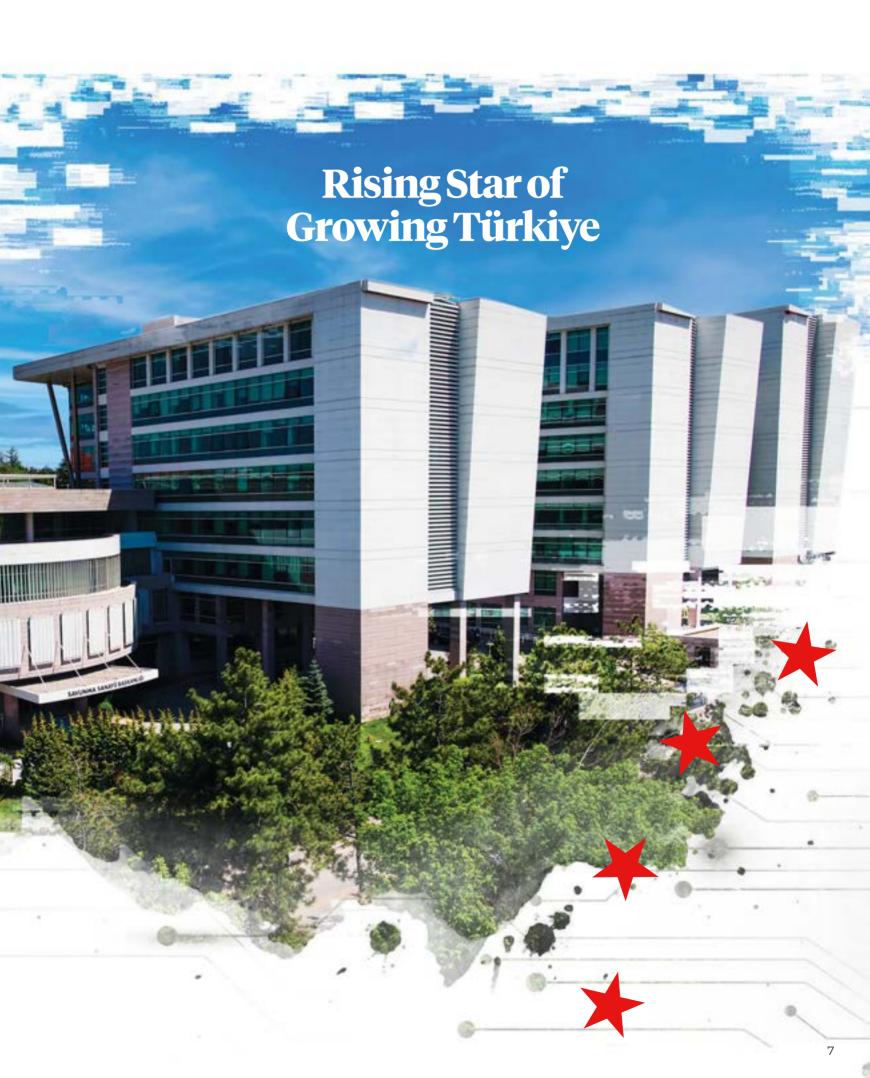
## History of Secretariat of Defence Industries

At the beginning of the 1980s, the establishment of a national defence industry based on modern technology was set as a priority target in order to meet the needs of our armed forces by using domestic resources to the maximum extent and to ensure their modernisation.

Within the framework of this objective, Defence Industry Development and Support Administration Office (SAGEB) was established in 1985 by Law No. 3238, and the SAGEB was restructured as the Undersecretariat for Defence Industries (SSM) in 1989. The Undersecretariat was affiliated to the Presidency of the Republic of Türkiye with the regulation made in

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2017, and in 2018 it was restructured as the Presidency of Defence Industries of the Presidency of the Republic of Türkiye with the "Decree Law on Amendments to Gertain Laws and Decree Laws in order to Ensure Compliance with the Amendments to the Constitution" numbered 703.









The defence industry supply chain has been designed as a pyramid structure comprising prime contractors, subcontractors, small and medium enterprises (SMEs), universities/institutes/research institutions in order to keep foreign dependency at the lowest possible level, to ensure its sustainability and to increase the technological depth and localization rate of our defence industry, which has reached a certain level of system-based competency.

Within the pyramid structure, the integration activities of system/platform level projects are undertaken by the main contractors. Subcontractors, which are located at the bottom of the pyramid, consist of companies that produce, develop, test and integrate subsystems.

Subcontractors are expected to be organisations that can manage their own supply chain ecosystem and have design, development and production competencies.
The small enterprises
under the subcontractors
are expected to consist of
companies that provide parts
and components, develop
software and provide services.
At the bottom of the pyramid,
universities/institutes/research
organisations are expected
to work in close contact with
the sector in R&D, P&D and
project development activities
in all areas and at all levels
required by the ecosystem.



#### **EXPORT APPROACH**

Defence industry exports are of great importance for the sustainability of our country's defence and aerospace industry, foreign trade balances, the competitiveness of our companies and products, the timely and cost-effective supply of our defence and security needs, the employment of qualified human resources in the sector. In this respect, in order to increase the competence of our defence industry and ensure sustainability, it is aimed to implement ambitious and innovative strategies to strengthen our international cooperation by improving the export capacity of our sector, to take more place in global supply chains, and to produce solutions for civilian areas involving high technology.

#### R&D and TECHNOLOGY MANAGEMENT STRATEGY

R&D and Technology
Management activities aim
to achieve full technological
independence in line with
the localization of foreign
components/critical
technologies in our defence
in the service of our country's
security forces, and the
acquisition of advanced
technologies for systems to
acquire superiority in the future.

## LIFE-CYCLE MANAGEMENT and LOGISTICS SUPPORT APPROACH

Considering the total life cycle costs of defence systems/ platforms, the costs incurred during the use and support phase vary in different systems/ platforms, but can be up to 2-4 times of the procurement cost. It is not possible to reduce the high costs incurred in the utilisation and support phases at the desired rate only with the activities to be carried out in

these phases. Studies show that 95 per cent of the life cycle cost is determined by the decisions taken during the procurement period consisting of pre-concept (requirement determination), concept, development and production phases. Likewise, the decisions taken during the procurement period have a significant impact on the





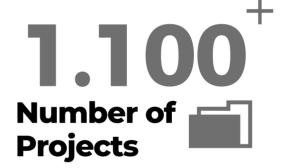
## TURKISH DEFENCE INDUSTRY WITH DATA 2024

Number of Companies

3.500



90.000



**Project Volume** 



R&D Expenditure \$2.6
Billion

Number of Export Countries

185











In 2002, only 62 defence projects had been carried out, whereas in 2024 more than 1,100 projects (seventeen fold increase) are being executed.

The Value of defence projects in 2002 was USD 5.5 billion, whereas in 2024 the value of projects including the ones in tender process has reached to over USD 96 billion.

Defence and Aerospace turnover, \$1 billion in 2002, has grown by more than 15 times, reaching more than \$15 billion.





#### PRESIDENCY OF THE REPUBLIC OF TÜRKİYE SECRETARIAT OF DEFENCE INDUSTRIES

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### LIST OF FIELDS OF ACTIVITY







**Ground Based Radars** 



Maritime Radars



Airborne Radars



Optic and Electro-Optic Sensors and Lasers



Detectors



Radars and Sensors Subsystems



#### **ELECTRONIC WARFARE SYSTEMS**



Electronic Protection and Attack Systems



Electronic Support Preemption Systems



Self Defence Systems



Spoofing Jamming Systems



Electronic Warfare Subsystems



#### SIMULATORS and TRAINING SYSTEMS



Simulators



Training and Simulation Equipments and Software



Training Consultancy Services



Simulator Subsystems



#### PROPULSION and POWER SYSTEMS



Propulsion and Power Systems For Land



Propulsion and Power Systems For Naval Platforms



Propulsion and Power Systems For Air Platforms



**Electrical Engines** 



Propulsion and Power Subsystems



#### **GENERATORS and BATTERIES**



Generator and Electrical Power Transmission



Batteries and Accumulators



Subsystems



#### SECURITY and CRITICAL SERVICES



Security Systems



Critical Services



Explosive Prevention Systems



#### LOGISTIC SUPPORT SYSTEMS



Logistics Vehicles



Military Textile and Footwear





Field Maintenance Solutions





Medical





Test, Measurement and Calibration Equipment



Maintenance, Repairing and Materials



#### OTHER DEFENCE INDUSTRY SUBSYSTEMS

## **ABRAMAK**

Company Short Name

ABRAMAK Bilgi Teknolojileri

Company Trade Name

Abramak Bilgi Teknolojileri San. Ve Tic. A.Ş.

Marketing email Address

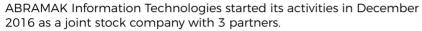
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Company Website

www.abramakbilisim.com



Vision: To make national technology capabilities sufficient in all kinds of wire / radio data communication between all elements in the tactical (Battlefield) and strategic (war headquarters) field, and to have a say in the studies and arrangements made in this field worldwide.

Research Areas: Tactical (Battlefield) and strategic (battle headquarters) all types of data communication between all elements in the field; It is the development of all kinds of devices, protocols, systems, integrations and technologies using national technology in order to provide Uninterrupted Security and Lossless.

ABRAMAK Information Technologies, in order to protect the rights and interests of our country and to meet the mission and operational needs of the Turkish Armed Forces; He developed the concept of SHIP INTEGRATED COMMUNICATION SYSTEM - ACCMS. With its integrated communication capability based on IP-based, modular open architectural design, it can provide technical and operational support to naval platforms of all classes.

ACCMS (Software Based Advanced Communication Control and Management System),

UTS (Software Based Multitasking IP User Terminal - Voice Terminal),

S-AMPS (Message Operating System),

ABR-PAS (Software Based Ship IP Alarm Announcement System),

ABR-TSB (Software Based Ship IP Telephone System).

ABR-GBS (Ship Information Operating System)











## **AC TASARIM**

Company Short Name

AC Tasarım

Company Trade Name

AC Proje Tasarım Sanayi ve Ticaret A.Ş.

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sales@actasarim.com.tr

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(+90) 312 468 9313-23

Company Website

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#### **AA59569 SERIES PRODUCTS**

These products can be used for cable shielding and busbar purposes and are produced in American DLA standards. Flexible Wire Mesh products are manufactured in accordance with AA59569 (former QQB575) specifications. These products are capable of absorbing elongation and shortening due to heat effect. They are preferred in low and high voltage environments where vibration and impact effects are likely. Thanks to its flexible structure, it provides formal application advantage. They have high expansion and contraction capability with super flexibility feature.





#### **AC-4100 POLYESTER BRAIDED TUBING**



These products can be used for cable shielding and busbar purposes and are produced in American DLA standards. Flexible Wire Mesh products are manufactured in accordance with AA59569 (former QQB575) specifications. These products are capable of absorbing elongation and shortening due to heat effect. They are preferred in low and high voltage environments where vibration and impact effects are likely. Thanks to its flexible structure, it provides formal application advantage. They have high expansion and contraction capability with super flexibility feature.



Meta-Aramid Braided Sleeving are produced for applications where protection against high temperatures and fire is expected, especially in the defense industry, civil and military aviation rail systems and shipbuilding industry. It is made of non-flammable meta-aramid (NOMEX®) material. Working temperature is between -60°C and +240°C. When exposed to high humidity or extreme temperatures, it can maintain its integrity at temperatures above 245°C. It is flexible and can be expanded for easy installation over large lengths. Providing mechanical protection for cable groups and superior protection against abrasion, flames and high temperature even in the harshest environments, it is also highly resistant to radiation and liquids.





**AC-4200 META-ARAMID BRAIDED TUBING** 



#### **AC-4400 METAL BODY EMI CABLE SHIELDING**





It is a shielding product known as Conduit. Stainless steel spiral hose used as steel body is a general purpose high quality connection hose. It is made of AISI 304L Stainless Steel material. Tin plated copper wire braided on steel body. It is produced in 10 different diameters from 10.7 mm to 62.4 mm.



This flexible cable shielding product is produced with tinplated copper material. It is a VG96936-10 certified product. The guide hose in the center protects the form of the EMI cable shielding braid as well as facilitating installation. It is produced in 11 different diameters from 3mm to 40mm. It is suitable for cable shielding in military standards.

**AC-4500 FLEXIBLE EMI CABLE SHIELDING** 





### **AC-4600 FLEXIBLE EMI CABLE SHIELDING**



This flexible cable shielding product is produced with nickel-plated copper material. It is a VG96936-10 certified product. The guide hose in the center protects the form of the EMI cable shielding braid as well as facilitating installation. It is produced in 11 different diameters from 3mm to 40mm. It is suitable for cable shielding in military standards.





Flexible braided copper bus bar are absorbent for elongation and shortening due to heat effect. They are preferred in environments where low and high voltage vibration and impact effects are likely. Tin plated copper wire knitted products can be used as bars. It provides formal application advantage thanks to its flexible structure. They have high expansion and contraction ability with their super elasticity. Copper wire products are used in places with high voltage such as transformer buildings, electrical panels, dams, generators, factories, high voltage units, ships and BUS BAR systems.



**AC-4800 FLAT BRAIDED COPPER BUSBAR** 

# ADA TERSANESI

Company Short Name

Ada Shipyard

Company Trade Name

Ada Denizcilik ve Tersane İşletmeciliği A.Ş.

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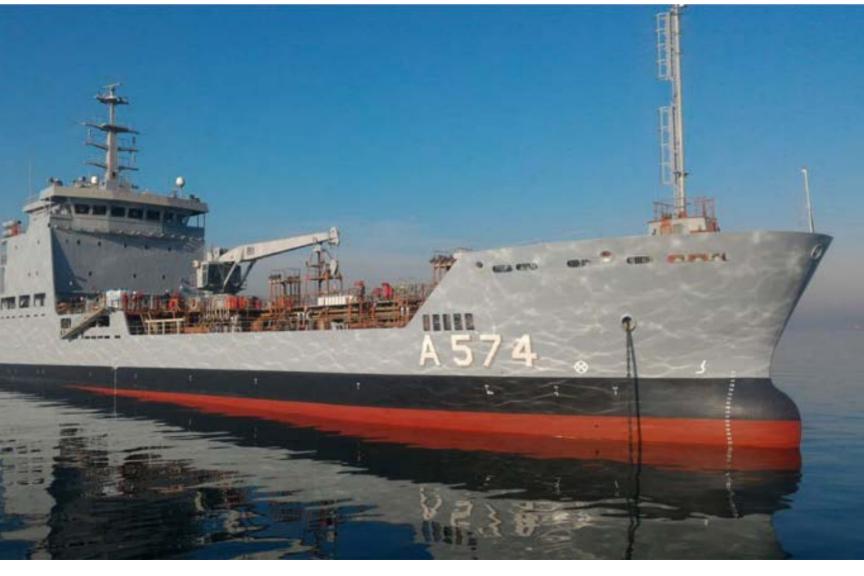
Telephone

(+90) 216 447 49 01

Company Website

www.ada-shipyard.com







### **ANCHOR HANDLING TUG SUPPLY VESSEL**



An "Anchor Handling Tug Supply Vessel" (AHTS) is a specialized type of vessel that plays a significant role in the maritime industry. These ships are commonly used for tasks such as positioning or transporting offshore oil and gas platforms, laying deepsea cables, and towing underwater structures. They also possess powerful towing and anchoring capabilities, allowing them to handle the anchors of large vessels. AHTS vessels are designed to enhance safety and efficiency in maritime operations. With their ample cargo capacity, towing equipment, and crew accommodations, these vessels are an integral part of the maritime industry, contributing to the safe and orderly functioning of significant offshore structures.





An Asphalt Tanker is a specialized marine vessel used for the transportation of liquid asphalt. These ships are equipped with heated tanks where the asphalt is stored and carried at high temperatures. Asphalt is a critical material in road construction and maintenance, and these tanks ensure its stable transportation. Asphalt Tankers facilitate the supply of asphalt to ports and construction sites via maritime routes, playing a crucial role in the construction industry. They are also designed to comply with environmental standards, ensuring the safe and eco-friendly transportation of asphalt.

### **ASPHALT TANKER**





### **FISH FEED VESSEL**



A Fish Feed Vessel is a specialized marine vessel that plays a crucial role in the aquaculture industry. These ships are designed for the purpose of transporting fish feed and other nutrients to aquaculture farms. They are of vital importance in fish farming as they ensure the timely delivery of high-quality feeds for the healthy growth and productivity of fish. Fish Feed Vessels have high capacities, allowing them to transport large quantities of feed, thus enhancing the efficiency of aquaculture operations. Additionally, they contribute to environmental sustainability practices by preventing the discharge of feed waste into the marine environment.



Cement Carriers are specialized vessels designed for the transportation of cement and other construction materials, typically used for the maritime transport of bulk cement. These ships safely store and convey dusty cargoes like cement in dedicated tanks. Once they reach their destination port, these materials are used for construction projects. Cement Carriers provide a vital service to the construction industry and play a critical role in the supply of materials for significant construction projects.



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**CEMENT CARRIER** 

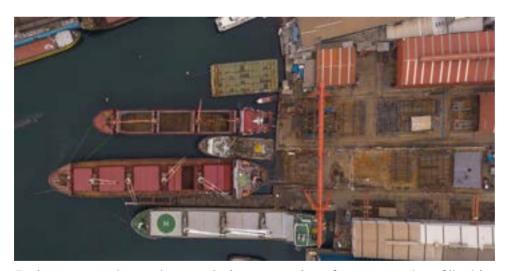


### **HOPPER DREDGER**



A Hopper Dredger is a specialized vessel used for cleaning and deepening waterways. Hopper Dredgers suction sand, mud, and other materials from the seabed and store them in a hopper compartment. When the hopper compartment is filled, the materials are transported to a harbor or an appropriate offshore location for discharge. These ships play a critical role in maintaining the sustainability of ports, ensuring safe navigation in waterways, and protecting coastal areas. Hopper Dredgers are an integral part of the maritime industry, contributing to the efficient operation of water routes.





Tankers are massive marine vessels that ensure the safe transportation of liquid cargoes. They are commonly used for transporting commodities such as oil, chemicals, liquid natural gas, and other petrochemical products. These ships are equipped with specially designed large tanks, allowing them to carry millions of barrels of cargo. Tankers are a fundamental part of the global energy and chemical industries, facilitating the secure and efficient transportation of these critical liquid substances. They are also designed in compliance with environmental standards, contributing to the sustainability of the maritime sector.

### **CHEMICAL/OIL PRODUCTS TANKER**









Container ships are the backbone of global trade. These massive vessels feature standard-sized cargo containers and are used to transport various goods. They typically shuttle between container terminals and ports, with the capacity to carry hundreds of thousands of containers. Container shipping offers a fast, efficient, and cost-effective means of transportation. These ships facilitate trade worldwide and enable products to reach global markets. Container ships, a prominent part of the modern economy, serve as the lifeblood of global commerce.

A Logistic Support Vessel is a specialized maritime vessel designed to provide essential material, equipment, and logistical support to enhance naval operations and military forces. These ships are primarily used to transport fuel, ammunition, and other necessities to military vessels such as submarines, warships, and aircraft carriers. Additionally, they perform critical tasks like personnel transport and providing medical support for emergencies. Logistic Support Vessels boost the effectiveness of military operations and ensure that military forces are ready for combat.



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**LOGISTIC SUPPORT VESSEL** 



### **MOTOR YATCH**



Motor Yachts are the epitome of luxury and comfort on the water. Often designed for private owners or chartering, these elegant vessels perfectly blend speed, beauty, and functionality. Motor yachts are known for their spacious interiors, stylish decor, comfortable cabins, and state-of-the-art equipment. They also come with a dedicated crew to ensure that guests enjoy every moment of their sea journey. Motor yachts are an excellent choice for those seeking a luxurious lifestyle at sea and provide unforgettable marine adventures on magnificent routes worldwide.





A Platform Supply Vessel (PSV) is a specialized marine transportation vessel that plays a crucial role in the oil and gas industries. PSVs are responsible for transporting materials, equipment, and personnel to offshore platforms. Typically operating in open seas, these vessels safely deliver fuel, water, drilling materials, and other supplies to platforms. PSVs also provide support for emergency rescue operations and carry environmental protection equipment. These ships provide valuable services to the energy industry and contribute to the sustainability of offshore operations.

**PLATFORM SUPPLY VESSEL** 





### **RO-RO PASSENGER SHIP**



RO-RO Passenger Ships are a type of vessel that enables easy loading and unloading of vehicles, making them an ideal solution for both passenger and cargo transportation. With their high speeds and modern comforts, they enhance the pleasure of sea travel. RO-RO ships can feature spacious interiors, restaurants, and even shopping areas, ensuring comfort and entertainment during the journey. These ships are commonly chosen for reaching tourist destinations and islands, making short-distance sea journeys more accessible.





Passenger ferries are essential vessels in maritime transportation, offering safe and comfortable journeys on waterways. These ships facilitate intercity and inter-island travel across seas. Designed to carry passengers and vehicles, passenger ferries are commonly chosen for daily commutes and vacations. With comfortable interiors, dining areas, and panoramic views, they provide passengers with an enjoyable experience. Additionally, they are equipped with safe evacuation systems for emergencies. Passenger ferries are an integral part of maritime transportation, holding a significant place among public transit options.



**PASSENGER FERRY** 

# AKDAŞ SİLAH



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Telephone (+90) 332 516 14 29

Company
Website www.akdassilah.com





### **AK-12UBS**



AK-12UBS is a smoothbore rifle with a pump-action system, designed to be used as an assist weapon in infantry rifles with a 12 caliber pump under the rifle and Picatinny rail under the barrel. The rifle can also be used individually and can be used with the adjustable stock set supplied. The AK-12UBS can use lethal (steel or lead pellet) or non-lethal (plastic) bullets, and is highly effective in social incidents and close-quarters combat due to the dispersion of the ammunition it uses and its mass accuracy.





AK-37FGL



### **AK-37RGL**







The AK-37RGL is a 37/38mm non-lethal gas-type ammunition launcher. It has a lightweight and ergonomic design for ease of use and transport, and has a medium carbon alloy hard wear resistant, hard chrome plated barrel for long barrel life. The launcher has an double action trigger and a shooter-protective barrel design. The launcher can also be equipped with various accessories thanks to the detachable telescopic stock and Picatinny rail.

### **AK-37UBFL**



The AK-37UBFL is a 37/38mm and 40mm non-lethal gas-type ammunition launcher with a 7.5" barrel length. It is suitable for right and left handed use. It can be mounted on an infantry rifle or used as a gas rifle with a telescopic stock. The gas rifle has a double-sided indicator that shows whether the gas rifle is loaded or unloaded, a mechanical sight system that allows night shooting and can be mounted on both sides, a medium carbon alloy, high abrasion resistant hard chrome plated barrel that provides long barrel life, and the ability to mount additional equipment on the top and sides thanks to the Picatinny rail system.



AK-40GL is an under barrel grenade launcher suitable for low velocity ammunition type with 40x46mm calibre and 10" barrel length. It is suitable for right and left handed use. In addition to being mounted on an infantry rifle, it can also be used as a grenade launcher with a telescopic stock as a laucnher. It has a double-sided indicator showing whether the grenade launcher rifle is loaded or unloaded, a mechanical sight system that allows night shooting and can be mounted on both sides, a medium carbon alloy, high wear-resistant hard chrome-plated barrel that provides long barrel life, and the ability to mount additional equipment on the top and sides thanks to the Picatinny rail system.



AK-40GL





AK-40GLJ is an under barrel grenade launcher suitable for low velocity ammunition type with 40x46mm calibre and 7.5" barrel length. It is suitable for right and left handed use. In addition to being mounted on an infantry rifle, it can also be used as a grenade launcher with a telescopic stock as a laucnher. It has a direction loke system, a double-sided indicator showing whether the grenade launcher rifle is loaded or unloaded, a mechanical sight system that allows night shooting and can be mounted on both sides, a medium carbon alloy, high wear-resistant hard chrome-plated barrel that provides long barrel life, and the ability to mount additional equipment on the top and sides thanks to the Picatinny rail system.

**AK-40GLJ** 



### **AK-40GLX**



### **AK-40MGL**



AK-40GLX is an under barrel grenade launcher suitable for low velocity ammunition type with 40x46mm calibre and 10" barrel length. It is suitable for right and left handed use. In addition to being mounted on an infantry rifle, it can also be used as a grenade launcher with a telescopic stock as a laucnher. It has a direction loke system, a double-sided indicator showing whether the grenade launcher rifle is loaded or unloaded, a mechanical sight system that allows night shooting and can be mounted on both sides, a medium carbon alloy, high wear-resistant hard chrome-plated barrel that provides long barrel life, and the ability to mount additional equipment on the top and sides thanks to the Picatinny rail system.

The AK-40MGL is a semi-automatic gas-operated multi grenade launcher with 6 ammunition chambers, with an double action trigger, which is loaded by breaking through the back of the drum and cocked by turning the drum manually. The drum grenade launcher is designed for 40x46mm and 40x51mm, low and medium velocity ammunition types. The adjustable stock design provides ease of firing. The AK-40MGL has features such as mechanical sights for night vision, self-cleaning, medium carbon alloy, high abrasion resistant hard chrome plated barrel for long barrel life.





The AK-40RFL is a 37/38mm and 40mm non-lethal gas-type ammunition launcher. Thanks to its rifled barrel design, it provides more range and can be used with ammunition suitable for both calibers. It has a lightweight and ergonomic design for ease of use and transport, and has a medium carbon alloy hard wear resistant, hard chrome plated barrel for long barrel life. The launcher has an double action trigger and a shooter-protective barrel design. The launcher can also be equipped with various accessories thanks to the detachable telescopic stock and Picatinny rail.



The AK-40RGL is a 37/38mm and 40mm non-lethal gas-type ammunition launcher. Thanks to the barrel design, suitable ammunition for both calibers can be used. It has a lightweight and ergonomic design for ease of use and transport, and has a medium carbon alloy hard wear resistant, hard chrome plated barrel for long barrel life. The launcher has an double action trigger and a shooter-protective barrel design. The launcher can also be equipped with various accessories thanks to the detachable telescopic stock and Picatinny rail.

**AK-40RFL** 



**AK-40RGL** 



### **AK-SIGHT**



AK-SIGHT is a digital sighting system. It has 3 different ammunition settings, automatic calibration feature, warning system indicating the barrel rotation slope that may cause the ammunition to go off target, and high accuracy rate in every shot. It provides fast and accurate shooting at multiple targets at different distances without the need for mechanical sight settings. Capable of operating in harsh climatic and weather conditions (-40 to +65).





Alcor 223 is a semi-automatic rifle designed by Akdaş Silah. It is light, ergonomic and practical. Alcor 223 has different barrel lengths suitable far different stock systems according to the area of use and need. Picatinny rails on the receiver allow the use of compatible accessories. This .223 caliber semi-automatic rifle provides more stable and accurate shooting.

P-James

**ALCOR-223** 



### **SA-9**







**SEM-55** 











# **AKSA RUNFLAT**

Company Short Name

Aksa Runflat Systems

Company Trade Name Aksa Motorlu Araçlar Plastik Kimya Makine Metal San. ve Dış Tic. A.Ş.

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### **ALUMINIUM WHEELS**





Today, armored vehicles push their design weight limits in terms of their new technologies and functions. Also the platform weight level is to be reduced to the minimum in order to increase their mobility capability. Therefore, it is aimed by all vehicle manufacturers to transfer the torque generated by the engine to the ground and to reduce the weight of the platform without reducing the strength values of the wheels that carry the vehicle. In this scope, the use of aluminum wheels has become widespread due to its mechanical. properties. In order to meet this need, Aksa RunFlat has started to produce aluminum wheel models. which are our own design and can be revised according to the CTIS model. During the design of the wheel, the most suitable model from the aspect of assembly is used. In addition to this, our models can be revised according to the customer needs.

In order to increase the mobility of a wheeled vehicle used on soft ground such as sand, mud or snow, it is necessary to reduce the pressure of the tires and increase their compression area. The air inside a tire applies pressure to the walls of the tire, giving it a hard structure. The pressure applies equal pressure everywhere on the inner surface. Therefore, it applies pressure to the rubber heels on the inner surface from the inside to the outside and pushes the heel outwards in proportion to the heel surface. Thus, with this driving force, the heel between the rim ears is compressed. The force holding the tire in place when its pressure is reduced on soft terrain will therefore be lower. The reduced force may not be enough to prevent the tire from sliding on the rim or coming off. In addition to this; in off-road conditions, because of the rough ground the wheel is exposed to momentary loads, so the shape of the tire sidewall deteriorates. Therefore air may leak and even come off the rim. To eliminate this risk, the Beadlock System, which applies pressure to the tire heels, is used. Our product is designed and manufactured to be used with different brands of tires.



**BEADLOCK** 











There are three different product groups in total: two (2) piece, three (3) piece and hybrid. RunFlat type is selected in accordance with customer design inputs (diameter, weight, speed, tire type, etc.) and supply is provided as soon as possible after the necessary adaptation studies (model, load test, etc.). Rim type, form, CTIS system, etc. The appropriate RunFlat System is recommended considering the requirements. RunFlat System is supplied up to 28" (inch) rim size. For rims larger than this size, RunFlat System design work can be performed upon customer request. According to customer requests, a RunFlat System (7.62x51mm NATO) with BR 7 level ballistic resistance can be provided. In addition, the products meet Finabel A.20.A.5 standards, and verification studies have been completed with the tests carried out by IABG (Germany) and reporting has been made.

Since late 2020, Aksa has been working on track systems for main battle tanks, armored personnel carriers and self-propelled howitzers. All engineering works from design criteria to verification phase are performed in our facilities. Aksa started and continues to deliver new products based on emerging, forward-looking and market-leading technologies (high quality, durable and lightweight). Today, there are many kinds of different main battle tanks and armored vehicles produced by different countries. In other words, there are lots of different track systems with different designs. Aksa has a capability to design track system according to design constrains determined by platform producers. Also, Aksa can supply track system spare parts for any kind of vehicle.





**TANK TRACK** 



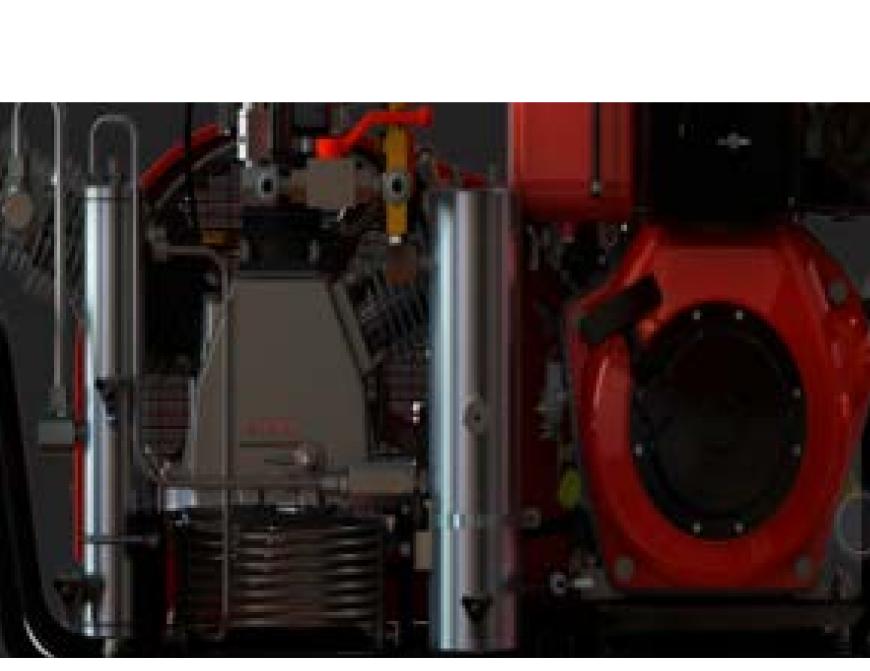
Company Short Name

ALKIN

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### **530 BOOSTER**





Booster series compressors are used to compress air in the 7-10 bar pressure range, for laser and plasma cutting in the metal industry, pet blowing in the plastics industry, and gas injection to high pressures, as well as in the field of mine evacuation (inert gases such as nitrogen are used) for high medium and high pressure gas needs. Thanks to its designs that allow hours of high efficiency to work, it provides excellent performances.

Compressors in the medium pressure series deliver compressed air up to 80 bar safely and effectively. These compressors have two-stages, reciprocating, air-cooled, splash lubricated design that combines technology and high quality.



**700 CHASSIS** 





Compressors in the medium pressure series deliver compressed air up to 80 bar safely and effectively. These compressors have two-staged, reciprocating, air-cooled, splash lubricated design that combines technology and high quality.





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**702 CHASSIS** 

## HW 1500-AC - WATER COOLED

2

## HW 1500-DC - WATER COOLED



HW 1500 series water-cooled high-pressure air compressors are ideal for industrial applications and for satisfying compressed air requirements in the harshest environments where air cooling is not possible or sufficient. We will be pleased to assist you with our seawater-freshwater cooled high pressure air compressors.





HW 1500 series water-cooled high-pressure air compressors are ideal for industrial applications and for satisfying compressed air requirements in the harshest environments where air cooling is not possible or sufficient. We will be pleased to assist you with our seawater-freshwater cooled high pressure air compressors.



Even in the most extreme situations, our safety filling stations are designed to provide a safe and efficient filling environment for SCBA and SCUBA cylinders. Alkin Compressor's containment fill stations meet the NFPA 1901 standard and provide the highest level of safety and convenience. Our loading heights were created with operator ergonomics in mind.



PANELED SAFETY FILLING STATION



W3 series compressors are three-stage, air-cooled and splash lubricated reciprocating compressors. These compressors, which are designed to minimize noise, have a compressed air capacity of more than 1000 liters at a maximum working pressure of 150 bar, depending on the cooling system and valves and covers installed.

**W3 CANOPY** 



### W3 HIGH PRESSURE GAS BOOSTER



### **W31 MARINER VERTICAL**



The three-stage, reciprocating, splash lubrication system, and portable design of the W31 series compressors provide exceptional performance to our clients. Compressed air capacity ranges from 110 to 145 liters per minute at a maximum working pressure of 350 bar. They are ideal for use in operations requiring breathing air in accordance with EN 12021 standard and high pressure air





Booster series compressors are used to compress air in the 7-10 bar pressure range, for laser and plasma cutting in the metal industry, gas injection to high pressures, as well as in the field of mine evacuation (inert gases such as nitrogen are used) for high medium and high pressure gas needs. Thanks to its designs that allow hours of high efficiency to work, it provides excellent performances.





The three-stage, reciprocating, splash lubrication system, and portable design of the W31 series compressors provide exceptional performance to our clients. Compressed air capacity ranges from 100 to 140 liters per minute at a maximum working pressure of 350 bar. They are ideal for use in operations requiring breathing air in accordance with EN 12021 standard and high pressure air, and are available with electric, petrol, and diesel engine drive options.



The three-stage, reciprocating, splash lubrication system, and portable design of the W31 series compressors provide exceptional performance to their consumers. Compressed air capacity ranges from 110 to 145 liters per minute at a maximum working pressure of 350 bar. They are ideal for use in operations requiring breathing air in accordance with EN 12021 standard and high pressure air, and are available with electric, petrol, and diesel engine drive options.



**W31 MARINER HORIZONTAL** 



### **W32 MILITARY**



### **W32 PETROL ENGINE**



W32 model compressors are ideal for compressed air needs in the commercial sector industry, especially in diving and fire services with its 3-stage design and high-quality components. Its main advantages are high dependability, ease of operation, robustness, and the ability to tailor equipment components to meet customer needs. Compressed air capacity ranges from 180 l/min to 330 l/min at a maximum operating pressure of 350 bar with our W32 model compressors, which are available with petrol and diesel engine drive options.

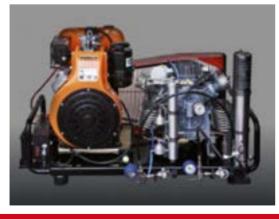
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**W32 DIESEL** 





### W32 CANOPY HIGH PRESSURE BOOSTER 🏂





Booster series compressors are used to compress air in the 7-10 bar pressure range, for laser and plasma cutting in the metal industry, pet blowing in the plastics industry, and gas injection to high pressures, as well as in the field of mine evacuation (inert gases such as nitrogen are used) for high medium and high pressure gas needs. Thanks to its designs that allow hours of high efficiency to work, it provides excellent performances.



### **W32 MARINER**





W32 model compressors are ideal for compressed air needs in the commercial sector industry, especially in diving and fire services with its 3-stage design and high-quality components..lts main advantages are high dependability, ease of operation, robustness, and the ability to tailor equipment components to meet customer needs. Compressed air capacity ranges from 180 l/min to 330 l/min at a maximum operating pressure of 350 bar with our W32 model compressors, which are available with petrol and diesel engine drive options

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**W32 MARINER HIGH PRESSURE BOOSTER** 





W4 series compressors have proven themselves in industries compressed air and breathing air are required for many years, thanks to their strong and powerful design. The userfriendly PLC-based control panel efficiently meets your compressor management, data tracking, help, and communication needs. It is a 4-stage reciprocating compressor with splash lubrication in its soundproof cabin. Compressed air capacity ranges from 500 to 1000 liters per minute at a maximum working pressure of 415 bar.





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**W4 CANOPY** 

# **ALP HAVACILIK**

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# TEI-TS1400 TURBOSHAFT ENGINE ACCESSORY GEARBOX

The Accessory Gearbox Assembly is a mechanical critical component that drives various accessory systems of the TS1400 turboshaft engine, such as the oil-pump, alternator, FMU (Fuel Metering Unit), and generator. Within the scope of this project; design, production, assembly and test activities were conducted for the high-speed gearbox. These activities include to design, manufacture and validate the accessory gearbox for the Gökbey platform's engine. The design of the high-speed gear system and its lubrication solutions under different conditions (high altitude, low altitude, maneuvers, etc.) posed unique challenges. As part of this system, the capability to design and commission a gearbox testing system, capable of handling speeds up to 40,000 RPM and power outputs of up to 80 kW, was also acquired.



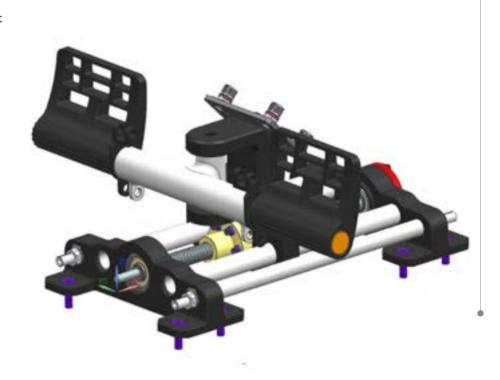




Slewing Bearing designed for a wide range of applications, from ground and naval weaponary and radar systems, heavy machinery to renewable energy systems. All related IP is belong to Alp Aviation & funded by Alp Aviation. Special function added to this product is patented. Operating under diverse conditions, these equipment leverage aluminum material to achieve lightweight characteristics. Bearing gears capable of carrying high bearing forces while benefit from their unique bonding technology offering reduced weight and high durability. Empowering a high-precision manufacturing methodology results low backlash values and high reliability.



The Rudder Pedal Mechanism Project involves the design, development. and implementation of a precise and ergonomic rudder pedal mechanism specifically designed for the Turkish Fighter (KAAN). This mechanism, equipped with functions for adjustment, braking, and rudder control, encompasses ergonomic design, human-machine integration, early integration tests, and optimization of the design based on these tests are main milestone of the project. The project includes ergonomic testing and improvements lifecycle, aiming to achieve the desired durability and safety compliance. The success of the product will emerge from the electromechanical integration with the existing mechanical and control systems of the aircraft.





THE RUDDER PEDAL MECHANISM



### SIKORSKY S70I-UH60-T70 MLG TLG TGB







Landing Gear is one of the flight critical systems that enable the helicopter to land safely and comfortably after performing its mission. Taxi, take-off and landing of the aircraft on the ground are performed by landing gear. Landing Gear is designed to carry the entire load of the aircraft, as well as to land safely in rough terrain, difficult conditions and emergency situations. For this reason, its production is equally difficult. All detailed manufacturing, heat treatment, mechanical & chemical special processes, assembly and leakage test of the Landing Gear are produced by Alp Aviation in its own facilities.

QCA (Quick Change Assy) consists of two main subsystems such as MGB (Main GearBox) and major dynamic rotor components. The gearbox is a very critical subsystem that operates at the desired speed and torque values, powered by the engine and rotates the helicopter blades and thus the helicopter to fly. In addition, some of the torque & rotation in the main gearbox is transferred to the tail blade thru IGB (Intermediate GearBox) & TGB (Tail GearBox) enabling the helicopter to ascend, descend and turn safely. Alp Aviation conducting all machining, heat treatment and coating processes, assembly and testing of all gears, housings and dynamic rotor components (hub, main shaft, cuff, spindle, etc.) under one roof shop floor.







SIKORSKY S70I-UH60-T70 QCA IGB TGB





### SIKORSKY S70I-UH60-T70 THE SPINDLE ASSEMBLY



The Spindle Assembly is a Critical Safety Item assembly consisting of several highly specialized subcomponents including bearings, anti-flap and pitch horn assemblies, and several other items all mounted together on a spindle. The entire spindle assembly attaches the main rotor blade to the main rotor head, keeping the blade in place on the main rotor head during aircraft operation and giving the blade controlled freedom of movement to enable flight.



Rack Assy is the mechanism equipment of the throttle controlled by the pilot's throttle lever for the fuel mechanism of the engine of the Turkish Fighter KAAN, which aims to meet the customer requirements for the aircraft's first flight. The project aims to complete the following steps of design, development, production, assembly, testing, and design verification. The project encompasses mechanical design, structural analysis, safety analyses such as FMECA and FHA, as well as material and process selection, manufacturing, assembly, and qualification tests for the Safety of Flight.



# **ALTAY YAZILIM**

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### ELECTRO OPTICAL IMAGING SYSTEM

Altay offers customer-specific products to users in the field of Electro-Optical systems. In today's modern conditions, our solutions are designed and produced for all kinds of electro-optical systems required by infantry class forces, weapon platforms and tracked/wheeled armored vehicles in the tactical field, and integration activities of these systems to platforms are carried out. The electro-optical systems integrated into these vehicles are used effectively and with great satisfaction by end-user units on the battlefield.





### **HUMANITARIAN OPERATIONS**



ALTAY firm has a major impactat at home and abroad, by the history track of Mine and ERW Clearence Projects. Trained and well equipment teams are ready to remove mines and all other hazardous items. Certificationis awarded by national and international authorities.





Customer-specific military and civilian computer software, webbased software. user interface software, inter-system data transfer software, data collection and analysis software, geographic information system based software, localization and adaptation software, industry 4. 0 applications, mobile applications, air traffic control system automation, 3D interactive simulators, integrated logistics support maintenance and training aids, communication software, communication planning tool software, simulation software, embedded software, software test automation, link software, avionics hardware driver software, msi -multi sensor integration software, control interface software, radar software have been produced.



**SOFTWARE SYSTEMS** 

# **ALTINAY SAVUNMA**

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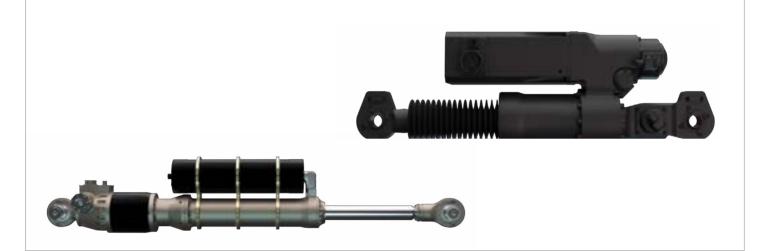


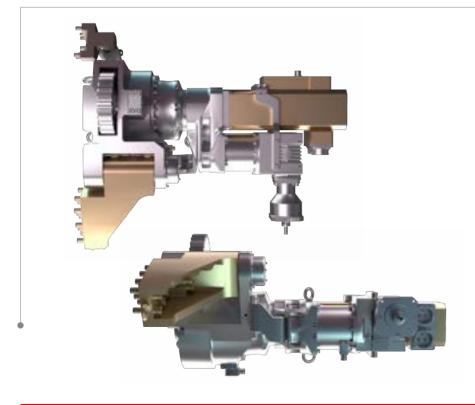
### **AST-L SERIES ACTUATORS**





Altınay Defense Technologies offers linear actuator systems that provide powerful performance, precise control, and superior reliability, delivering solutions of critical importance. Our linear actuator systems ensure precise and excellent motion control. With their high-tech designs, they fulfill your needs for lifting, pushing, pulling, and linear motion requirements. Our systems provide precise and smooth linear motion, enabling you to quickly and reliably achieve the desired positions. Linear actuator systems are one of the leading products of Altınay Defense Technologies, known for their strong performance, precise control, and reliability.





Altınay Defense Technologies offers lateral axis actuator systems that provide powerful performance, precise control, and superior reliability, delivering solutions of critical importance. Our lateral axis actuator systems ensure precise motion control, enabling you to achieve the desired positions accurately. Designed with high technology, our systems perform lateral axis motion quickly and accurately. Precision and accuracy are built into these systems to meet your expectations even in the most critical applications. Lateral axis actuator systems are one of the leading products of Altınay Defense Technologies, known for their reliability, precise control, and flexibility.

#### **AST-R SERIES ACTUATORS**









The Bird Trap (Helicopter Capture and Transfer System) is a system designed to enable Sikorsky Sea Hawk SH-70 TN model helicopters to safely land on the deck area of military ships (frigates, patrol boats, supply ships, etc.) in adverse sea conditions, both during the day and at night, without requiring an operator. It ensures the secure landing of the helicopter, immediate securing after landing, transfer to the hangar, and facilitates the reverse process until the helicopter takes off from the deck.





### **BOMB DISPOSAL ROBOT ARMS**





Altınav Defense conducts original and innovative work in the field of Bomb Disposal Robot Arms. The Bomb Disposal Robot Arm is a highly mobile product designed to safely neutralize improvised explosive devices under challenging conditions. The Altınay Bomb Disposal Robot Arm, operating in 5 axes, is actively used in the ERTUĞRUL Bomb Disposal Robot. Altınay Defense Technologies offers security forces a safe and effective solution for bomb disposal operations with the Bomb Disposal Robot Arm. With our innovative approach and engineering capabilities, we deliver superior performance and reliability to our customers.





The 2-axis stabilized weapon pedestal, developed for medium and heavy-class UAV systems, is capable of carrying NATO-standard 5.56 caliber infantry rifles in the AR-15 class. With a capacity of 200 rounds of ammunition, it can perform suppression/surveillance/ pursuit fire missions. Thanks to the uniquely developed shock absorption technology, it can perform rapid/single shots without losing the aircraft's position during firing. It incorporates a 30X zoom daytime camera, an LWIR thermal camera, and a laser rangefinder with a range of 1 km.

**WEAPON PEDESTAL** 







### TELESCOPIC MAST SYSTEMS









### **STABILIZED PEDESTALS**





Altınay Defense conducts original and innovative work in the field of Stabilized Pedestals. Stabilized Pedestals are designed to ensure the safe and stable transportation and use of sensitive devices. Altınay Defense has undertaken numerous projects to meet the stabilization system requirements for land, sea, and air platforms. Thanks to its innovative approach and engineering capabilities, Altınay Defense has become a leading company in the industry. Leveraging its gained experiences, it provides motion control system solutions in various sectors, including defense industry and automotive, addressing the needs of the industry as a whole.



**STEWART** 







VENUS-4 is a 3-axis stabilized gimbal specifically developed for mini and medium-class UAV systems. It effectively performs reconnaissance and surveillance missions day and night with its daytime camera and LWIR thermal camera. VENUS-4 is built with durability in mind and can operate under military-standard temperature and cold conditions. Its flexible design allows for easy integration into various platforms. With its user-friendly interface and superior performance, VENUS-4 enhances the operational capabilities of security forces.



# ANADOLU ROBOTIK

Company Short Name

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Developed with eight thrusters and an aluminum chassis to withstand the toughest working conditions, the vehicle is submersible with its corrosion and impact resistant structure and its ability to descend to a depth of 300 meters. will increase your effectiveness in the world. It incoporates many sensors, apparatus for various underwater applications in all conditions with a modular design and interface that allows integration and upgrade integration. Innovative motor stabilization ensures stable movements and a user-friendly underwater interface.







This unmanned underwater vehicles has been developed due to the cost, time and lifeendangering factors encountered in underwater activities. With these vehicles, users can perform autonomous or manual operations in various sectors such as search, rescue, fish farm cleaning and controls, underwater pipe and cable laving and controls. underwater construction and maintenance/repair, underwater sample collection, environmental research, hydroelectric and nuclear power plants, dam gates and water dam inspections, underwater mapping and verification, documentary shooting.



The vehicle, developed with 2 hightorque electric motors and composite or aluminum body options, is ready to respond to your operations even under the most difficult conditions. With its durable structure, it provides protection against obstacles in shallow areas and on the shores, and you can move safely thanks to its design that prevents it from capsizing in wavy waters. You can perform all your activities in a 40-kilometer area with two different communication systems. and with its structure that allows the connection of various equipment and sensors, you can make customizations according to your needs. With the user interface that provides high control over the vehicle and the operation area, you can find answers to all your requests within second.





**ARIDA** 



ARMAS offers automatic cable alignment and cable storage features. Thanks to automatic cable alignment, the cables are wound neatly and without damage, reducing operator workload and increasing efficiency. It makes it easier to carry and protect the cables, while providing protection against external factors and long service life. It provides portability, the cables can be carried quickly and easily. Manual and automatic options are available for cable opening and collection processes. While the operator manages with hand power in the manual system, the automatic system performs cable opening and collection processes quickly and precisely with motors. When the cable winding is completed or not used, the cable winding stops with the automatic braking system, providing safe and orderly cable management.







The control station body provides resistance to impact, water, dust and sudden shock type damages and vibration (IP67 Protection Class) during transportation and storage. A bright and clear screen in difficult lighting conditions allows operators to easily manage underwater tasks. All control units, including the interface, control and station buttons, have been brought together to aim for the effective and successful performance of underwater tasks. Thanks to the ability to add and customize these controls specific to the task, operators can perform sensitive operations more easily and complete tasks more effectively and efficiently.



## **ANADOLU SAVUNMA**

Company Short Name

Anadolu Savunma

Company Trade Name Anadolu Isuzu Otomotiv Sanayii ve Ticaret Anonim

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### HIDDEN ARMOURED BUS (GIZKO)



### HIDDEN ARMOURED BUS (GİZKO-2)





NovoUltra is produced with the serial armoring capability of Anadolu Defence. It is indistinguishable from civilian use looking from the outside. NovoUltra can be produced with OEM warranty and has BR6 level armor. NovoUltra is included in the Turkish Armed Forces and Security Forces inventory.



Grand Toro is new generation GiZKO product. Grand Toro is produced with the serial armoring capability of Anadolu Defence. It is indistinguishable from civilian use looking from the outside. Grand Toro can be produced with OEM warranty and has BR6 level armor. Grand Toro is dedicated to the Turkish Armed Forces and Security Forces.





SEYİT 4x4 Tactical Wheeled Vehicle is designed and optimized for high performance under extreme operational conditions. SEYİT 4x4 can climb slopes of up to 60% and move on 30% side-sloped terrain while providing a maximum level of personnel safety with the High Ballistic and Mine protection level. SEYİT 4x4 provides sensitive load-carrying opportunity by preventing damage to the systems it carries with independent suspension option. SEYİT 4x4 has 10 tons payload capacity and high payload carrying area. SEYİT 4x4 can carry the heaviest systems without compromising vehicle performance.



SEYİT 6x6 Tactical Wheeled Vehicle can climb up to 60% slopes and move on 30% side-sloped terrain while providing a maximum level of personnel safety with the high ballistic and mine protection level. SEYİT 6x6 has 16 tons payload capacity and high payload carrying area. SEYİT 6x6 can carry the heaviest systems without compromising vehicle performance.

**SEYIT 4X4** 





**SEYIT 6X6** 











SEYİT 8x8 Tactical Wheeled Vehicle can climb slopes of up to 60% and move on 30% side slopes with the combination of half-axle technology and independent suspension. SEYİT's 8x8 axle systems can carry the critical and sensitive loads with minimum shock and vibration effect. SEYİT 8x8 provides safe transportation for the end user with the armored cab option having a maximum payload capacity up to 27 tons.



## **ANADOLU SHIPYARD**

Company Short Name

Anadolu Shipyard

Company Website

www.adik.com.tr





ANADOLU SHIPYARD





CTS have been indigenously designed and constructed for Qatar Emiri Navy by ANADOLU Shipyard to provide Naval training for navy cadets. For this purpose ship has 2 Bridges. They have been operational since 2021. Its secondary purpose is escort and patrol missions.





### **LANDING CRAFT MECHANIZED (LCM40)**





Built to conduct amphibious operations, transfer cargo & troops and humanitarian aid to disaster areas, two Fast Amphibious Ship have been designed and constructed for Qatar Emiri Navy by ANADOLU Shipyard. They have been operational since 2022.



Built to conduct fast short range cargo& troops transfer between ship-shore, eight Landing Craft Vehicle and Personnel have been designed and constructed for Turkish Navy by ANADOLU Shipyard. They have been operational since 2017.



**LANDING CRAFT VEHICLE & PERSONNEL (LCVP)** 





### **LANDING CRAFT TANK (LCT)**

In order to conduct amphibious operations, transfer cargo & troops and humanitarian aid to disaster areas, eight Fast Amphibious Ship, with following specifications, have been designed and constructed for Turkish Navy by ANADOLU Shipyard. They have been operational since 2012.



### **LANDING SHIP TANK (LST)**





The new generation LST, offers major role of power projection with transporting huge quantities of fire support elements and marines in order to conduct amphibious ops and humanitarian aid operations up to Sea State-5. Ship CIC and Joint Amphibious Force Command Center (JAFCC) are operating by modern Combat Management System with its indigenous software and hardware assets. The ship can carry 350 Marines, 13-18 Main Battle tanks on covered vehicle deck and 24 Armored Personnel Carriers on open deck at the same time. It has 7550 Tons displacement, 138.0 m length and 19.6 m beam, 18.0+ kts speed and range up to 5000 nm.



## **ANDAR**



ANDAR



**Company Trade Name** 

ANDAR ELEKTROMEKANİK SİSTEMLER SANAYİ VE TİCARET ANONİM ŞİRKETİ

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We are a technology pioneer in electromechanical actuation space and we are working hard to realize our mission to "Actuate the World" by becoming an indispensable partner of the projects that shape the world. Our team is adhocracy oriented; dynamic and entrepreneurial, with a focus on risk-taking, innovation, and "doing things first". Our customers are our partners in defining the newly uncovered needs of aerospace, as well as solving new generation actuation problems.





**ELECTROMECHANICAL MOVEMENT (ACTUATOR) SYSTEMS** 



Company Short Name

Company Trade Name

Anova Ar-Ge Teknolojileri San. Tic. A.Ş.

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Company Website







### **AC-DC, DC-DC CONVERTER FAMILY**



In aviation sector, hardest stage of power electronics is the cooling of heated integrations of the elements. Heat emerges due to loss during the energy transformation. It is important to maintain fault-free function under hard conditions by carrying out temperature analysis and simulation tests in order to prevent this heat to damage other systems and keep working temperature range of modules within required parameters.



Military electric fans are used to supply the required airflow rates to achieve high cooling rates in low volume and weights. They are designed to meet the functional requirements even in the most difficult environments.



**MILITARY ELECTRIC FANS** 



### DIGITAL MILITARY MAGNETIC COMPASS



### **BOOSTER MECHANISM**



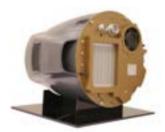


Small size and light weight digital magnetic compass, which is calibrated with advanced systems in accordance with military standards, has been developed for high precision and accuracy in harsh environmental conditions.



Booster Mechanism allows the gun to load 12.7x99mm NATO ammunition from bullet belt from a 3 meter distance. Booster Mechanism allows the gun to load bullets when chain wheels in the mechanism is triggered by motor, since the power of the gun is not enough to load all kinds of bullets from a 3 meter distance.





Environmental Conditioning Unit is designed in order to respond cooling and heating requirement of laser targetting pod, the new generation, multisensor targeting pod designed for combat aircrafts. The purpose of the system is to maintain required climate conditions of laser targetting pod when it ramped and during different flight conditions. Electric heaters are used for demanded heating force while gas flow cooling circuit is used in order to provide cooling power and the thermal power is obtained from air. The system designed to be at LRU level. The system is also available for demounting from mechanical and electrical interface in case of a failure.



100% locally designed and produced Ammunition Flex Chute is a product that has only a few producers in the world and is imported by defense industry companies in Türkiye. Ammunition Flex Chute is a mechanism that loads bullet into chamber from ammunition belt in unmanned aerial systems and used especially for bullet feed in remote operated weapon systems.

ENVIRONMENTAL CONDITIONING UNIT (ECU)



**AMMUNITION FLEX CHUTE** 



### **GEROTOR HYDRAULIC PUMP**



### AIR CYCLE MACHINE





Gerotor Hydraulic Pump is a compact and highly productive positive displacement pump developed for military aviation practices. The pump has a compact structure as it shares the same body with the self-propelled electric motor. Its' export to South Korea began after successful completion of production, analysis and tests.



Air Cycle Machine (ACM) is used in electronic POD's that are assembled to aircrafts to provide cooling for electronic equipment. When in flight, RAM air that has relatively high pressure and temperature is cooled in turbine by expansion. Cooled



air is used in air & air heat exchanger or liquid & air heat exchanger to cool down the electronics. Mechanical power that is extracted from the turbine is used to operate the compressor that evacuate air from pod to outside. Because of the high speed of turbine and compressor, optimization is done about cricital speed and bedding. Thus, reliable and longlife cooling is provided at different altitudes and different flight velocities.





Heating Cooling Unit (HCU) is an environmental conditioning unit that is designed in accordance with relative standards, using vapour compression cycle to condition temperature of marine laser systems. ISB, having different modes that are heating, cooling and circulation; has its own microcontroller to switch on modes according to ambient and circulation liquid temperature. Thus, laser system temperature will be optimum in any ambient conditions. ISB that is designed for marine conditions, is qualified by MIL-STD-810G and MIL-STD-461F.



Scope of the project is the renewal and development of Solenoid Valves that control the leveling system of Oerlikon howitzers. Working voltage replaced in order to maintain compatibility of existing solenoid valves with other electronic elements are designed by considering interfaces that are connected to solenoids. Solenoid valves in the project are developed and verified according to the military standards. Project was successfully completed and delivered following the serial production.

**HEATING COOLING UNIT** 





**SOLENOID VALVE** 



# **FUEL TRANSFER PUMP**





Initiated under the auspices of the Undersecretariat for Defense Industries as a Technology Development Liability Project, the Fuel Transfer Pump is a centrifugal pump that allows transfer of fuel to earlier elected part or directly to the motor fuel inlet port which can be compatible with JP-10 in high flow and low pressures. Following its mechanical design, computational fluid dynamics and structural analysis were completed and the production of pump began after the successful completion of environmental tests.



# **ARES SHIPYARD**

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# **ARES 14 WT**



Designed and engineered by BMT, ARES 14 WT has been developed for safe and comfortable commuting operations in coastal waters with its advanced seakeeping characteristics.





ARES 17 CF is a proven design developed for safe and comfortable commuting operations with its advanced seakeeping characteristics and up to 84 pax seating capacity. ARES 17 CF have been designed and built for the Qatar Private Engineering Office.

# **ARES 17 CF**





ARES 24 HARPOON has been designed for interception & interdiction operations, as well as anti-smuggling, SOF insertion and extraction, surveillance and patrolling missions with its high speed capability of 45+ knots. In addition, ARES 24 HARPOON Interceptor Boat is located on the aft deck of ARES BOLD Series Boats for special operations forces, boarding and SAR missions. ARES 24 HARPOON have been designed and built for Qatar Ministry of Interior-Coast Guard.



ARES 25 CAT FiFi is a proven design by BMT developed for maritime fire-fighting, search and rescue operations. As for construction material and classification rules the craft is very durable in terms of self fire resistance. The vessel has 2 fire monitors for incident response with a total capacity of 2400m<sup>3</sup>/h.





**ARES 25 CAT FIFI** 



# **ARES 25 FIFI**





ARES 25 FiFi, the world's fastest fire-fighting vessel, is a well-proven design which is capable of fast intervention to fire incidents at sea such as oil & gas platforms, passenger cruise ships and inside & outside harbor incidents. As for construction material and classification rules the craft is very durable in terms of self fire resistance. The vessel has 2 fire monitors for incident response with a total capacity of 2400m<sup>3</sup>/h.



ARES 26 CF is a proven design developed for safe and comfortable commuting operations with its advanced seakeeping characteristics and up to 111 pax seating capacity.

**ARES 26 CF** 









27-meters in length ARES 27 CTV of BMT design has been developed with a brand new and separate production line for windfarm support operations. With windfarms being built further offshore in more exposed locations, increased seakeeping ability of this support vessel is of paramount distinction. Its hull form gives excellent high-speed performance during transit, yet optimized zero-speed seakeeping performance, reducing the unwanted vertical buoyancy forces that may otherwise be experienced during push-up operations in head seas. The vessel can accommodate three crew and twenty four turbine technicians or passengers. Having a steady vessel during technician transfer is vital therefore, in order to achieve the best performance during these transfer operations, the vessel utilizes the Active Fender System, exclusive to BMT, which also provides increased fender life and enhanced structural protection.

ARES 27 NOTC has been designed for naval troop transition, fast personnel deployment duties, as well as rescue and evacuation operations. The vessel has outstanding seakeeping capabilities with its unique hull form from BMT and high maneuverability with its efficient water jet propulsion and stabilization systems.





**ARES 27 NOTC** 



## **ARES 30 CF**



ARES 30 CF has been developed for safe and comfortable commuting operations within inshore waters and rivers with its low profile and large passenger deck characteristics and up to 300 pax seating capacity.



ARES 32 DAGGER provides very high speed capabilities with outstanding seakeeping characteristics conformant to tough environmental conditions, contrary to the conventional vessels in the market. Along with its LMM Launching System, the craft is highly capable of naval warfare especially "hit and run" missions with its very low RCS and infrared signature. The craft is equipped with an autostabilized remote-controlled naval weapon system to provide versatile firepower that can be adapted to a wide variety of potential scenarios. The vessel has a suite of naval communications equipment, combat management system, electro-optic (E/O) sensors and X-Band Naval Radars. The vessel can launch and recover a RHIB for boarding and SAR missions.



**ARES 32 DAGGER** 

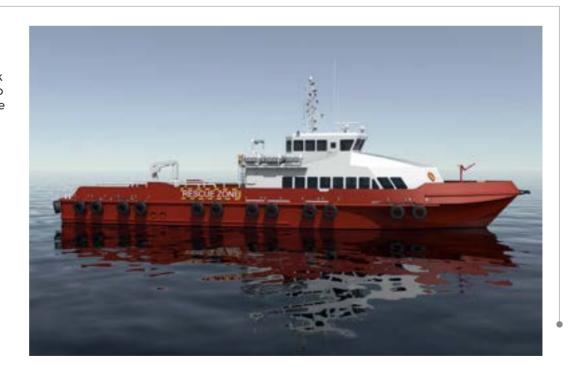




ARES 32 PREDATOR provides very high speed capabilities with outstanding seakeeping characteristics conformant to tough environmental conditions, contrary to the conventional vessels in the market. Along with its Active Homing Missile System, the craft is highly capable of naval warfare especially "hit and run" missions with its very low RCS and infrared signature. The craft is equipped with an auto-stabilized remote-controlled naval weapon system to provide versatile firepower that can be adapted to a wide variety of potential scenarios. The vessel has a suite of naval communications equipment, combat management system, electro-optic (E/O) sensors, X-Band and 2D Naval Radars. The vessel can launch and recover a RHIB for boarding and SAR missions.



ARES 34 CB is a proven design developed for transport of offshore support personnel, deck cargo, below deck cargo such as fuel and potable water to and from offshore installations. It is designed with advanced seakeeping characteristics. ARES 34 CB has been designed and built for a Private Oil Company.







**ARES 34 CB** 



# **ARES 35 FIFI**



ARES 35 FiFi, the world's fastest fire-fighting vessel, is a well-proven design which is capable of fast intervention to fire incidents at sea such as oil & gas platforms, passenger cruise ships and inside & outside harbor incidents. As for construction material and classification rules the craft is very durable in terms of self fire resistance. The vessel has 6 fire monitors for incident response with a total capacity of 4800m<sup>3</sup>/h.



ARES 35 FPB is a well-proven platform with outstanding speed capability above 35 knots and seakeeping characteristics conformant to tough environmental conditions. It has been designed and built for combatting irregular migration, search and rescue, anti-human trafficking, and maritime security and safety missions.



**ARES 35 FPB** 



# ARES 35 HARPOON



ARES 35 HARPOON has been designed for interception & interdiction operations, as well as anti-smuggling, SOF insertion and extraction, surveillance and patrolling missions with its high speed capability of 55+ knots. The vessel has a suite of naval communications equipment and sensors.



ARES 35 LIMO is a luxurious, comfortable and functional water taxi designed and built for short distance VIP passenger transportation and protocol missions in coastal waters.





**ARES 35 LIMO** 



## **ARES 42 BLAZE**



ARES 42 BLAZE has been developed with outstanding speed and seakeeping characteristics conformant to tough environmental conditions. It has been designed and built for coast guard, customs and port security missions, coastal waters law enforcement duties, anti-smuggling operations, anti-terrorist protection of coastal installations and critical infrastructure, surveillance, interception, border patrol and anti-human trafficking.





ARES 42 BLAZE AMBULANCE is inspired from an innovative hull design of BLAZE series patrol craft. Iterative elaboration has been applied to the underwater body, resulting in low resistance and good seakeeping hull form, combined with excellent navigation capabilities. ARES 42 BLAZE AMBULANCE has been designed for rapid ambulance response, patient and casualty transfer operations, incident response and SAR operations.

#### **ARES 42 BLAZE AMBULANCE**







ARES 42 FPB has been developed with outstanding speed capability up to 45 knots and seakeeping characteristics conformant to tough environmental conditions. It has been designed for customs and port security missions, coastal waters law enforcement duties, anti-smuggling operations, anti-terrorist protection of coastal installations and critical infrastructure, surveillance, interception, border patrol and anti-human trafficking.



ARES 42 LC Fast Landing Craft is designed for various logistics purposes for carrying out a wide range of coastal and inland water transportation, fast personnel deployment duties, rescue and evacuation operations. Particularly designed and developed as a logistics support and landing vessel for naval and lawenforcement authorities in coastal and inland waters.





**ARES 42 LC** 



# **ARES 42 WT**



ARES 42 WT is a luxurious, comfortable and functional water taxi/cruiser designed and developed for short distance passenger transportation in inshore waters. Deep-Vee monohull and large flat deck area provide ample passenger saloon with its extraordinary speed performance capabilities and perfect stability at all sea conditions.





ARES 44 AMBULANCE is inspired from an innovative hull design of special OP's support craft. Iterative elaboration has been applied to the underwater body, resulting in low resistance and good seakeeping hull form, combined with excellent navigation capabilities. ARES 44 AMBULANCE has been designed for rapid ambulance response, patient and casualty transfer operations, incident response and SAR operations.

**ARES 44 AMBULANCE** 











ARES 44 FPB is a well proven platform with outstanding speed and seakeeping characteristics conformant to tough environmental conditions. It has been designed and built for patrolling and escort, search and rescue, anti-smuggling operations, anti-terrorist protection of offshore and coastal installations and critical infrastructure, surveillance, interception, border patrol, customs duties, anti-human trafficking. ARES 44 FPB have been designed and built for the Tanzania Private Security Company. ARES 44 FPB has been designed and built for the Turkmenistan Frontier Service. ARES 44 FPB have been designed and built for the Georgian Navy and Coast Guard Commands.



ARES 53 OPV is a hybrid Offshore Patrol Vessel designed by ARES. With its triple-main propulsion system solution, the vessel provides full redundancy, durable and reliable offshore patrolling operations with diesel, electrical or booster (all diesel and electrical) modes. The vessel is equipped with two fast interceptor boats and one tender boat for multi mission capability such as boarding, interception and survival rescue operations or ULAQ Unmanned Surface Vehicle missions. Moreover, ARES 53 OPV is capable of day/ night surveillance with long range electro-optic system and optional remote operated drones. ARES 53 OPV is capable of conducting search and rescue missions with over 100 survivor capacity onboard.



**ARES 53 OPV** 



## **ARES 55 AMBULANCE**





ARES 55 AMBULANCE is inspired from an innovative hull design of special OP's support craft. Iterative elaboration has been applied to the underwater body, resulting in low resistance and good seakeeping hull form, combined with excellent navigation capabilities. ARES 55 AMBULANCE has been designed for rapid ambulance response, patient and casualty transfer operations, incident response and SAR operations, with 4-paramedic and 4-patient capacity.





ARES 55 BLAZE has been developed with outstanding speed and seakeeping characteristics conformant to tough environmental conditions, contrary to the conventional vessels in the market. It has been designed for customs and port security missions, coastal waters law enforcement duties, antismuggling operations, anti-terrorist protection of coastal installations and critical infrastructure, surveillance, interception, border patrol and anti-human trafficking.

**ARES 55 BLAZE** 



# ARES 55 FAC



ARES 55 FAC, along with its Guided-Missile and Air Defense Systems is highly capable of naval warfare. The craft is equipped with auto-stabilized remote-controlled naval weapon systems to provide versatile firepower that can be adapted to a wide variety of potential scenarios. The vessel has a suite of naval communications equipment, combat management system, electro-optic (E/O) sensors, X-Band and 3D Naval Radars. The vessel can launch and recover a military type RHIB for boarding and SAR missions.





ARES 55 HARPOON has been designed for interception & interdiction operations, as well as antismuggling, SOF insertion and extraction, surveillance and patrolling missions. The craft is equipped with an auto-stabilized remote-controlled naval weapon system to provide versatile firepower that can be adapted to a wide variety of potential scenarios. The vessel has a suite of naval communications equipment, electro-optic (E/O) sensors and X-Band Naval Radar.



**ARES 55 HARPOON** 



## **ARES 55 SAT**



ARES 55 SAT Special Operations Support and Fast Attack Craft is designed and engineered for Special Forces insertion and extraction, as well as fast attack, surveillance and patrolling missions. The craft is equipped with an auto-stabilized remote-controlled naval weapon system to provide versatile firepower that can be adapted to a wide variety of potential scenarios. The vessel has a suite of naval communications equipment, electro-optic (E/O) sensors and X-Band Naval Radar. It is equipped with a RHIB boat for multi mission capability such as boarding and interception.



ARES 56 YSV has been designed and developed by ARES Shipyard and Unique Yacht Design to present the best companion to mega yachts providing accommodation, supply support and utility tools with yacht quality lines and equipment. The vessel has a fully customizable interior configuration with yacht finish accommodation for up to 14 guests in 5 cabins. It has a free outside deck space of 270 sqm with helipad, extensive storage area and space for toys. ARES 56 YSV has onboard dive support system equipment inclusive of compressors and decompression chamber. Its



yacht quality air conditioning system has 360.000 BTU capacity to offer the best climate for owners, guests and crew. The vessel has extensive cold rooms, freezers, garbage and dry storage areas, laundry and linen compartments, and a workshop for fittings, spares, tools and maintenance works.

**ARES 56 YSV** 







## **ARES 58 AMBULANCE**



ARES 58 AMBULANCE is inspired from an innovative hull design of fast patrol craft. Iterative elaboration has been applied to the underwater body, resulting in low resistance and good seakeeping hull form, combined with excellent navigation capabilities. ARES 58 AMBULANCE has been designed for rapid ambulance response, patient and casualty transfer operations, incident response and SAR operations, with 4-paramedic and 4-patient capacity.





ARES 58 FPB is a well proven platform with outstanding speed and seakeeping characteristics conformant to tough environmental conditions, contrary to the conventional vessels in the market. It has been designed and built for coast guard duties, offshore patrolling and escort, search and rescue, anti-smuggling operations, anti-terrorist protection of offshore & coastal installations. critical infrastructure, surveillance, interception, border patrol, customs duties and anti-human trafficking. ARES 58 FPB have been designed and built for the Bahrain Ministry of Interior-Coast Guard.



**ARES 58 FPB** 



# **ARES 60 VIP**



ARES 60 VIP is a luxurious, comfortable and functional VIP cruiser designed and built for short distance VIP passenger transportation and protocol missions in coastal waters. Deep-Vee monohull and large flat deck area provide ample passenger saloon with its extraordinary performance capabilities and stability. ARES 60 VIP has been designed and built for the Qatar Ministry of Transport.





ARES 65 FCTV has been developed for transport of offshore support personnel, deck cargo, below deck cargo such as offshore platform support equipment and various supplies to and from offshore installations.

**ARES 65 FCTV** 









ARES 65 FPB has been developed with outstanding speed capability over 55 knots and seakeeping characteristics conformant to tough environmental conditions. It has been designed for customs and port security missions, coastal waters law enforcement duties, anti-smuggling operations, anti-terrorist protection of coastal installations and critical infrastructure, surveillance, interception, border patrol and anti-human trafficking.





ARES 65 HARPOON has been designed for interception & interdiction operations, as well as anti-smuggling, SOF insertion and extraction, surveillance and patrolling missions. The craft is equipped with an auto-stabilized remote-controlled naval weapon system to provide versatile firepower that can be adapted to a wide variety of potential scenarios. The vessel has a suite of naval communications equipment, electro-optic (E/O) sensors and X-Band Naval Radar. ARES 65 HARPOON has been developed for the Qatar Internal Security Forces.



**ARES 65 HARPOON** 



# **ARES 65 SAT**



ARES 65 SAT Special Operations Support and Fast Attack Craft is designed and engineered for Special Forces insertion and extraction, fast patrol, surveillance, protection of critical infrastructure and asymmetric warfare missions. The craft is equipped with an auto-stabilized remote-controlled naval weapon system to provide versatile firepower that can be adapted to a wide variety of potential scenarios. The vessel has a suite of naval communications equipment, electro-optic (E/O) sensor and X-band radar. With its active stabilization systems and water jet propulsion, it is fast, robust and highly maneuverable. Thanks to its proven and unique hull form, seakeeping capability of ARES 65 SAT pioneers its class in durability and seaworthiness. With its reliable high speed capability over 45 knots ARES 65 SAT can be utilized for fast interception missions as well.



ARES 66 OPV has been designed for EEZ (Exclusive Economic Zone) patrol, search & rescue, customs & excise, smuggling, anti-piracy, special forces operations and naval patrol missions. The hull form is designed for high efficiency at cruise and patrolling speeds, optimum fuel economy and sustainable missions. Extensive fuel storage provides for a range of over 3,000 Nm at economic speed. The vessel is designed for unrestricted operations in conditions up to Sea State 7. The design includes a flight deck for day/night helicopter operations. There are also manned fast interceptor



RHIBs or ULAQ series Unmanned Surface Vehicles onboard to be configured as per end user requests.









ARES 70 FREYJA Fast Attack Craft, designed and engineered by Rolls-Royce is a capable platform providing very high speed above 50 knots with outstanding seakeeping characteristics conformant to tough environmental conditions, contrary to the conventional vessels in the market. Along with its Guided-Missile and Air Defense Systems, the craft is highly capable of naval warfare with its low RCS and infrared signature. The craft is equipped with a naval cannon and auto-stabilized remote-



controlled naval weapon systems to provide versatile firepower that can be adapted to a wide variety of potential scenarios. The vessel has a suite of naval communications equipment, combat management system, electro-optic (E/O) sensors and 3D Naval Radar.



ARES 70 HARPOON has been designed for interception & interdiction operations, as well as anti-smuggling, SOF insertion and extraction, surveillance and patrolling missions. It provides significant advantage on speed and maneuverability to the law enforcement agencies in order to respond to criminals in a timely and effectively manner. The craft is equipped with an auto-stabilized remote-controlled naval weapon system to provide versatile firepower that can be adapted to a wide variety of potential scenarios. The vessel has a suite of naval communications equipment, electro-optic (E/O) sensors and X-Band Radar.



**ARES 70 HARPOON** 



#### **ARES 72 OPV**



72 OPV is a 72m in length Offshore Patrol Vessel, designed by ARES Shipyard for EEZ (Exclusive Economic Zone) patrol, search & rescue, customs & excise, smuggling, antipiracy, special forces operations and naval patrol missions. The hull form is designed for high efficiency at cruise and high speeds, for optimum fuel economy and sustainable missions. Extensive fuel storage provides for a range of over 3,000 Nm at economic speed. The vessel is designed for unrestricted operations in conditions up to Sea State 7. The design includes a flight deck for day/night helicopter operations. There are also manned fast interceptor RHIBs or ULAQ series Unmanned Surface Vehicles onboard to be configured as per end user requests.



The smallest member of the BOLD series. ARES 75 BOLD is also the fastest, with its current water jet propulsion system giving it a 38+ knot speed capability. With a small revision to the main propulsion system configuration the boat is capable of achieving 50+ knots. The boat has exceptional agility and its seakeeping characteristics allow it to undertake open sea operations on a variety of military, security and rescue duties. A single 12.7mm machine gun is mounted on the foredeck, controlled remotely from the wheelhouse. The vessel is equipped with an electro-optic system that provides day & night surveillance capability. ARES 75 BOLD have been designed and built for the Qatar Ministry of Interior-Coast Guard.



**ARES 75 BOLD** 







ARES 80 FAMB Fast Attack Craft provides very high speed capabilities above 50 knots with outstanding seakeeping characteristics conformant to tough environmental conditions, contrary to the conventional vessels in the market. Along with its Guided-Missile System, the craft is highly capable of naval warfare especially "hit and run" missions with its very low RCS and infrared signature. The craft is equipped with an auto-stabilized remote-controlled naval weapon system to provide versatile firepower that can be adapted to a wide variety of potential scenarios. The vessel has a suite of naval communications equipment, combat management system, electro-optic (E/O) sensors and X-Band Naval Radars. The vessel can launch and recover

a military type RHIB for boarding and SAR missions.





ARES 80 SAT Special Operations Support and Fast Attack Craft is designed and engineered for Special Forces insertion and extraction, as well as fast attack, surveillance and patrolling missions. The craft is equipped with an auto-stabilized remote-controlled naval weapon system to provide versatile firepower that can be adapted to a wide variety of potential scenarios. The vessel has a suite of naval communications equipment, electro-optic (E/O) sensors and X-Band Naval Radar. It is equipped with a RHIB boat for multi mission capability such as boarding and interception.



**ARES 80 SAT** 



## **ARES 85 BLAZE**



ARES 85 BLAZE has been developed with outstanding speed and seakeeping characteristics conformant to tough environmental conditions, contrary to the conventional vessels in the market. It has been designed for customs and port security missions, coastal waters law enforcement duties, anti-smuggling operations, anti-terrorist protection of coastal installations and critical infrastructure, surveillance, interception, border patrol



and anti-human trafficking. The craft is equipped with an auto-stabilized remote-controlled naval weapon system to provide versatile firepower that can be adapted to a wide variety of potential scenarios. The vessel has a suite of naval communications equipment, electro-optic (E/O) sensors and X-Band Naval Radar.

Winner of Work Boat World's 'Best Patrol Boat Builder' award, ARES proceeds with the new 26-meters in-length ARES 85 BOLD. Its current water jet propulsion system gives it a high speed capability above 50 knots with outstanding seakeeping characteristics conformant to tough environmental conditions. Along with its 12.7mm auto-stabilized remotecontrolled naval gun to provide versatile firepower that can be adapted to a wide variety of potential scenarios; the vessel has a suite of maritime communications equipment, electro-optic (E/O) sensors and X-band Naval Radars. The vessel can launch and recover a military type RHIB for boarding and SAR missions. ARES 85 BOLD are designed and built for the Royal Oman Police Coast Guard.



**ARES 85 BOLD** 







# **ARES 85 FCSV**



ARES 85 FCSV has been developed for transport of offshore support personnel, deck cargo, below deck cargo such as offshore platform support equipment and various supplies to and from offshore installations.





ARES 95 FAMB Fast Attack Craft provides very high speed capabilities above 50 knots with outstanding seakeeping characteristics conformant to tough environmental conditions, contrary to the conventional vessels in the market. Along with its Guided-Missile System, the craft is highly capable of naval warfare especially "hit and run" missions with its very low RCS and infrared signature. The craft is equipped with an auto-stabilized remote-controlled naval weapon system to provide versatile firepower that can be adapted to a wide variety of potential scenarios. The vessel has a suite of naval communications equipment, combat management system,

electro-optic (E/O) sensors and X-Band Naval Radars. The vessel can launch and recover a military type RHIB for boarding and SAR missions.



**ARES 95 FAMB** 



## **ARES 100 SAT**



ARES 100 SAT Special Operations Support and Fast Attack Craft has been designed for Special Forces insertion and extraction, as well as fast attack, surveillance and patrolling missions. The craft is equipped with light guided missiles and an auto-stabilized remote-controlled naval weapon system to provide versatile firepower that can be adapted to a wide variety of potential scenarios. The vessel has a suite of naval communications equipment, electro-optic (E/O) sensors and X-Band Naval Radar. It is equipped with a RHIB boat for multi mission capability such as boarding and interception.





ARES 108 BLAZE has been developed with outstanding speed and seakeeping characteristics conformant to tough environmental conditions, contrary to the conventional vessels in the market. It has been designed for coast guard duties, offshore patrolling and escort, search and rescue, anti-smuggling operations, protection of offshore and coastal installations and critical infrastructure, surveillance and interception. The craft is equipped with an auto-stabilized remote-controlled naval weapon system to provide versatile firepower that can be adapted to a wide variety of potential scenarios. The vessel has a suite of naval communications equipment, electro-optic (E/O) sensors and X-Band Naval Radar.

#### **ARES 108 BLAZE**





ARES 110 BOLD is the award-winner of The World's Best Patrol Boat title in 2016. Its current water jet propulsion system gives it a 35-knot speed capability but with a minor revision to its main propulsion system configuration the boat is capable of achieving 45+ knots. Along with its 12.7mm and 30mm remote operated weapon systems, the vessel has electro-optic sensors, and extensive navigation equipment. In addition, an ARES 24 HARPOON Fast Interceptor Boat is located on the aft deck of ARES 110 BOLD for special operations forces, boarding and SAR missions. \*10 off - ARES 110 BOLD have been designed and built for the Qatar Ministry of Interior-Coast Guard.





ARES 110 FAMB provides very high speed capabilities up to 40 knots with outstanding seakeeping characteristics conformant to tough environmental conditions, contrary to the conventional vessels in the market. Along with its Guided-Missile and Air Defense Systems, the craft is highly capable of naval warfare especially "hit and run" missions with its very low RCS and infrared signature. The craft is equipped with auto-stabilized remote-controlled naval weapon systems to provide versatile firepower that can be adapted to a wide variety of potential scenarios. The vessel has a suite of naval communications equipment, combat management system, electro-optic (E/O) sensors and 2D Naval Radar. The vessel can launch and recover a military type RHIB for boarding and SAR missions.



**ARES 110 FAMB** 



## **ARES 115 BOLD**



ARES 115 BOLD has been designed for coast guard duties, surveillance and patrolling missions with its high speed capability up to 40 knots. The craft is equipped with 12.7mm and 30mm remote operated weapon systems, electro-optic sensors, and extensive navigation equipment. In addition, a fast interceptor boat is located on the aft deck of ARES 115 BOLD for special operations forces, boarding and SAR missions.





ARES 115 SAT Special Operations Support and Fast Attack Craft has been designed for Special Forces insertion and extraction, as well as fast attack, surveillance and patrolling missions. The craft is equipped with light guided missiles and 3 auto-stabilized remote-controlled naval weapon systems to provide versatile firepower that can be adapted to a wide variety of potential scenarios. The vessel has a suite of naval communications equipment, electro-optic (E/O) sensors and X-Band Naval Radar. It is equipped with a RHIB boat for multi mission capability such as boarding and interception.

## **ARES 115 SAT**





ARES 125 FAMB provides very high speed capabilities above 40 knots with outstanding seakeeping characteristics conformant to tough environmental conditions, contrary to the conventional vessels in the market. Along with its Guided-Missile and Air Defense Systems, the craft is highly capable of naval warfare especially "hit and run" missions with its very low RCS



and infrared signature. The craft is equipped with auto-stabilized remote-controlled naval weapon systems to provide versatile firepower that can be adapted to a wide variety of potential scenarios. The vessel has a suite of naval communications equipment, combat management system, electro-optic (E/O) sensors and 2D Naval Radar. The vessel can launch and recover a military type RHIB for boarding and SAR missions.

ARES 138 FPB is a well proven platform with outstanding speed and seakeeping characteristics conformant to tough environmental conditions. It has been designed for coast guard duties, offshore patrolling and escort, search and rescue, anti-smuggling operations, anti-terrorist protection of offshore, coastal installations and critical infrastructure. surveillance and covert surveillance. border patrol, anti-human trafficking, customs duties.





**ARES 138 FPB** 



#### **ARES 140 BLAZE**



ARES 140 BLAZE has been developed with outstanding speed and seakeeping characteristics conformant to tough environmental conditions, contrary to the conventional vessels in the market. It has been designed for coast guard duties, offshore patrolling and escort, search and rescue, antismuggling operations, protection of offshore and coastal installations and critical infrastructure, surveillance and interception. The craft is equipped with an auto-stabilized remote-controlled naval weapon system to provide versatile firepower that can be adapted to a wide variety of potential scenarios. The vessel has a suite of naval communications equipment, electro-optic (E/O) sensors and X-Band Naval Radar.





ARES 150 BOLD OPV with its 48 m overall length, 35 knots maximum speed and 1,600 Nm extensive range is the fastest OPV in the World and has been awarded the "World's Best Offshore Patrol Vessel of 2018" by an independent maritime institution. The OPV is the largest composite vessel ever built in military patrol craft segment. The craft is equipped with 12.7mm and 30mm remote operated weapon systems. Besides its armament, electro-optic sensors, and extensive navigation equipment; ARES 24 HARPOON Fast Interceptor Boats are located on the aft deck of ARES 150 BOLD OPV for special operations forces, boarding and SAR missions. ARES 150 BOLD have been designed and built for the Qatar Ministry of Interior-Coast Guard.

**ARES 150 BOLD** 





ARES 150 SAT Tactical Patrol and Guided-Missile Fast Attack Craft, along with its Guided-Missile System is highly capable of naval warfare with helicopter supported operations. The craft is equipped with an auto-stabilized remote-controlled naval weapon system to provide versatile firepower that can be adapted to a wide variety of potential scenarios. The vessel has a suite of naval communications equipment, combat management system, electro- optic (E/O) sensors and X-Band Naval Radar. It is equipped with a certified onboard helicopter landing platform and



RHIB boats for multi mission capability such as boarding and interception.



ARES 160 SAR has been developed for search & rescue operations, survival evacuation and fire-fighting missions in offshore and inshore waters. The vessel has a fully equipped hospital onboard as well as emergency medical intervention capabilities. Its high speed and advanced seakeeping characteristics provide excellent fast response for SAR missions.



**ARES 160 SAR** 



# **ARES 200 CF**



ARES 200 CF is a luxurious, comfortable and functional VIP catamaran ferry designed and developed for VIP events to take place in coastal areas for dinner organizations, special events, weddings and special meetings. Catamaran hull and large flat deck area provide ample passenger saloon in safe and comfortable sailing operations.





ARES 200 NT Naval Auxiliary Vessel has been designed for training of cadets in navigation and seamanship, offshore patrolling and escort, search and rescue operations and surveillance.

**ARES 200 NT** 





# **ARES CAIMEN 80 FLC**



ARES CAIMEN 80 FLC Fast Landing Craft has an innovative and proven design for a fast, high capacity, highly flexible landing craft which is currently under production for the United States Army. Almost twice as fast as traditional landing craft, ARES CAIMEN 80 FLC marks a stepchange in landing craft design, technology, performance and capability. The craft is required for a major amphibious assault in difficult conditions, humanitarian aid or disaster relief. It has been



designed to provide a low-cost and low-risk way of achieving a higher rate of logistics flow with the same number of platforms.

Designed and engineered by BMT ARES CAIMEN 90 FLC Fast Landing Craft has an innovative and proven design for a fast, high capacity, highly flexible landing craft which is currently under production for the United States Army. Almost twice as fast as traditional landing craft, ARES CAIMEN 90 FLC marks a step-change in landing craft design, technology, performance and capability. The craft is required for a major amphibious assault in difficult conditions, humanitarian aid or disaster relief. It has been designed to provide a low-cost and low-risk way of achieving a higher rate of logistics flow with the same number of platforms.





**ARES CAIMEN 90 FLC** 



## **ARES CAIMEN 200 FLC**





ARES CAIMEN 200 FLC Fast Landing Craft has an innovative and proven design for a fast, high capacity, highly flexible landing craft which is currently under production for the United States Army. Almost twice as fast as traditional landing craft, ARES CAIMEN 200 FLC marks a step-change in landing craft design, technology, performance and capability. The craft is required for a major amphibious assault in difficult conditions, humanitarian aid or disaster relief. It has been designed to provide a low-cost and low-risk way of achieving a higher rate of logistics flow with the same number of platforms.

ARES KND 30 FPB is a well proven platform with outstanding speed capability of 30+ knots and seakeeping characteristics conformant to tough environmental conditions. It has been designed and built for coast guard duties, littoral patrolling and escort, search and rescue, antismuggling operations, protection of offshore & coastal installations. critical infrastructure. surveillance, border patrol, customs duties. ARES KND 30 FPB have been designed and built for the Nigeria Customs Service.



**ARES KND 30 FPB** 





### **NJORD OFFSHORE 32 CTV**





32-meters in length, Incat Crowther design CTV has been developed with a brand new and separate production line for windfarm support operations. With windfarms being built further offshore in more exposed locations, increased seakeeping ability of this support vessel is of paramount distinction. Its hull form gives excellent performance during transit, yet optimized zero-speed seakeeping performance, reducing the unwanted vertical buoyancy forces that may otherwise be experienced during push-up operations in head seas. The vessel can accommodate six crew and thirty one passengers. NJORD OFFSHORE 32 CTV have been designed and built for Njord Offshore Company.

ULAQ 35 ASuW is the sharpest and the most indomitable member of ULAQ family with the longest range and most destructive striking power designed against surface targets of any kind either conventional or asymmetric such as frigates, corvettes, fast attack craft or any other hostile naval asset. ULAQ 35 ASuW patrols and keeps the long range mission zone under surveillance round the clock with its day and night vision capability. In case of a hostile action, ASuW is ready to engage in asymmetric and conventional targets with various guided missile systems such as long or medium range active seeker missiles and remote operated gyro stabilized weapon systems of multiple calibers. Thanks to ULAQ's indigenous autonomy software and encrypted communication infrastructure.



the ULAQ 35 ASuW is protected against jamming attacks and capable of conducting autonomous missions as per COLREGs (International Regulations for Preventing Collisions at Sea) and contingency maneuvers. ULAQ 35 ASuW physical characteristics such as length, displacement, speed, range and weapon system configurations are completely customizable as per end user operational requirements and threat expectations. Primary Roles and Particulars

- -Anti Surface Warfare against Conventional and Asymmetric Targets
- -Establishment of Front Line Defense Zones
- -Long Range Defense and Attack Missions with Active Seeker Guided Missiles
- -Armed Escort for Critical Assets such as Logistic Support Vessels, Aircraft Carriers and Mother Ships
- -Joint Operation Capability with UAVs, other USVs and Manned Naval Vessels
- -High Range and Endurance Mission Periods
- -Seakeeping Capability of Sea State 6+
- -Deployment and Control Functions from Naval Vessels, Mobile Coastal Control Stations and Land Based Headquarters and Stations



## **ARMELSAN SAVUNMA**

Company Short Name

ARMELSAN

<u>ormelson</u>

Company Trade Name

Armelsan Savunma Teknolojileri San. Ve Dış Tic. A.Ş.

Marketing email Address

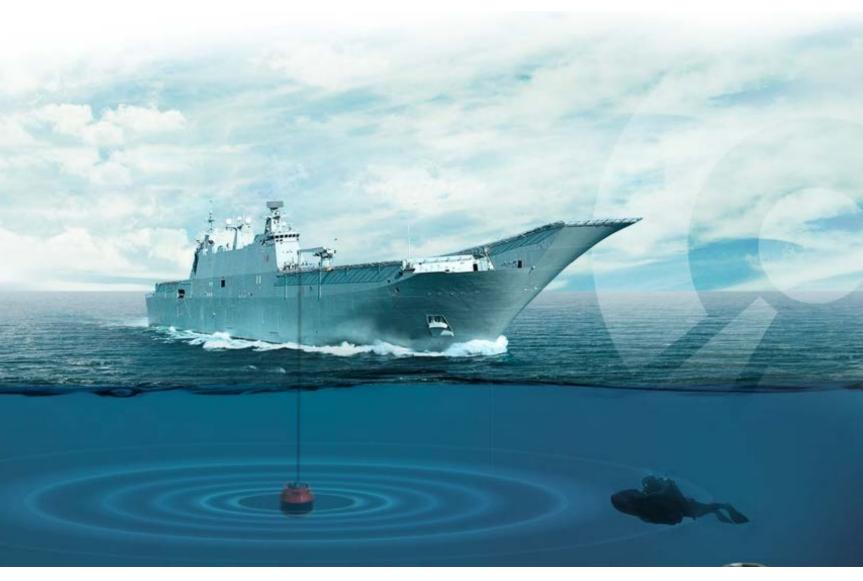
erdem.tumdag@armelsan.com

**Telephone** 

(+90) 216 527 62 22

Company Website

www.armelsan.com



#### <u>armelsan</u>



ARAS-2023 is aproven Active Sonar system that automatically detects and tracks the divers using Open and Close Circuit Respiratory Systems as well as Diver Delivery Vehicles. ARAS 2023 Diver Detection Sonar has been designed, developed, and manufactured by ARMELSAN engineers in-house for the protection of critical facilities and platforms. Being the first portable Diver Detection Sonar produced in Türkiye, ARAS 2023 has been awarded contracts by national and international authorities within the scope of new shipbuilding and modernization programs.









KASIF is a hybrid and one-of-a-kind Work Class Underwater Remotely Operated Vehicle (ROV) which can be operated in drilling operations at depths up to 3000m. KASIF ROV can send over real time video footage to the drillship via its cameras and sensors. Thanks to its robotic arms and special tooling equipment, KASIF can engage with cutting, gasket removal/installation, valve opening/closing and wellhead cleaning operations at deep sea conditions. KASIF ROVS are currently being used for the gas and oil exploration activities as well as repair and maintenance in the Black Sea and Eastern Mediterranean Sea and completed more than 20.000 hours of operation. ARMELSAN does not only provide the product but is also responsible for the side operation and system maintenance. In that manner, our personnel including engineers, technicians and system operators work onboard the drilling ship on a 7/24 basis.

MELIS-2071 is a next generation mid-frequency antisubmarine warfare sonar. Having advanced electronics and signal processing algorithms, the system can detect, classify, and track hostile submarines and torpedoes.



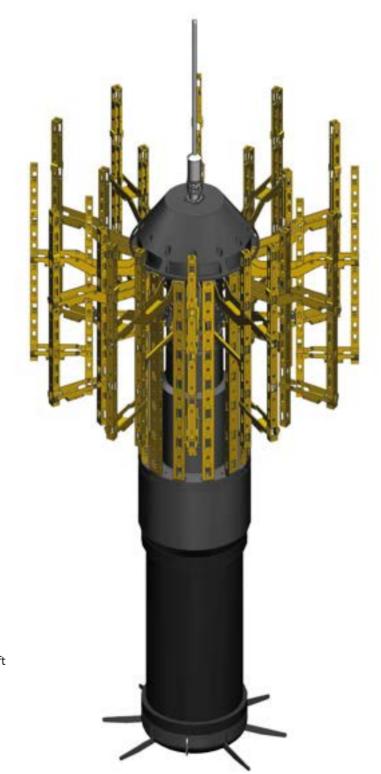




..... MELİS-2071

NUSRAT-1915 is an active sonar with the ability to detect and classify moored and bottom mines. The system detects mines and or mine-like objects through detection frequency. After the successful detection of the threat, the system supports the Operator to classify the objects thanks to higher frequency classification mode.





ORKUN-2053 is a mid-frequency active and passive sonar specifically developed for anti-submarine warfare purposes. It detects and tracks submarines which allows fast transit between quick dipping, data collection timing and hunting areas. The System can be deployed via helicopters which can take off from aircraft carriers or unmanned surface vehicles to detect underwater targets.

# **ASELSAN**

Company Short Name

ASELSAN

Company Trade Name ASELSAN ELEKTRONİK SANAYİ VE TİCARET ANONİM ŞİRKETİ

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#### aselsan

### **ATOM 35 MM AIRBURST AMMUNITION**





ATOM is a new generation, rotationally stabilized, time programmed, base fuzed smart ammunition developed and qualified by ASELSAN. When used in conjunction with Airburst Ammunition, the effectiveness of barreled weapons increases significantly, and these weapons can become effective against traditional air targets such as fighters and helicopters. It is also effective against modern air threats such as air-to-ground missiles, cruise missiles and unmanned aerial vehicles. ATOM 35 mm Airburst Ammunition is capable of achieving high hit accuracy thanks to its precise time counting, time programming with correction according to the measured ammunition muzzle velocity and homogeneous subprojectile distribution in terminal phase capabilities.

ATOM 40 mm High Velocity Airburst Grenade is a smart ammunition which is capable of being programmed to the exact time of detonation while leaving the barrel. Once fired, the timeprogrammable fuze starts to count down for detonation at the intended target point. Using a pre-fragmented shell which is optimized for the target set, high hit probability is ensured. ATOM 40 mm High Velocity Airburst Grenade is effective against threats behind cover, wall, inside a bunker or in a room with the fragment damage caused by the air burst effect. Together with the ŞAHİN Weapon System ATOM 40 mm High Velocity Airburst Grenade offers an effective kinetic attack capability against mini/micro UAVs.





**ATOM 40 MM HIGH VELOCITY AIRBURST GRENADE** 



### 2034 LINK ENCRYPTION DEVICE

**EXTEN** 

60MM/81MM/120MM MORTAR MODERNIZATION SOLUTIONS



2034 Link Encryption Device is an Ethernet encryption equipment which encrypts and decrypts data from end to end. 2034 LED operates in full duplex mode at transmission rates 900 Mbps independent of the networking protocols. 2034 LED is a very flexible encryption unit that supports both direct key loading via a Fillgun device and remote key loading by the Security Management System. 2034 LED has the capability to encrypt and decrypt two independent links.

Taking the role of mortar in to a new era with its digital fire control system and alignment sensor, the modernization offers the user to decrease mortar alignment time, eliminate errors such as wrong leveling or directing, decrease the number of personnel needed to set up and operate the mortar, decrease time between fires and calculate the fire command on the mortar. The system is ready to be integrated to command and control structure such as ASELSAN's Fire Support and Automation System, interoperable with other NATO command and control systems.







### aselsan



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Autopilot Control Panel (ACP) is an avionic control panel designed by ASELSAN to perform autopilot and flight control functions. The ACP consists of 24 pushbuttons with 25 annunicators and two knobs with push capability. With its rugged and user-friendly design, ACP operates in severe environmental conditions on air platforms.

ADCP is an avionic control panel designed to provide Man Machine Interface (MMI) for the following functions:

- · Barometric Setting
- Course Selection
- · Radar Altitude High Setting
- · Radar Altitude Low Setting
- Zeroize
- · Emergency Transponder Activation
- · Communication Emergency
- Emergency Reset

AUTOPILOT CONTROL PANEL (ACP)



ADCP (AVIONIC ACTIVATION AND INDICATION CONTROL PANEL)



#### aselsan

### **ADOP-2000 FIRE SUPPORT C4I SYSTEM**



ASELSAN Fire Support System (AFSAS) is a system of systems which provides the automation of planning and execution of fire support. It has the capability of performing all command and control functions for an effective fire support, including the tactical and technical fire direction.

AFSAS integrates all fire support units within the sensor-shooter chain through digital communication channels provided by secure tactical radios and or field wires. Digital communication between units is realized by using military standard communication protocols and message formats. AFSAS provides highly mobile, survivable, flexible, adaptable and reconfigurable architecture for different tactical requirements of the armies. AFSAS is a combination of subsystems for tactical and technical fire direction that covers the entire fire support functionality, ranging from the uppermost command centers at the corps level to the lowermost individual unit, at gun and forward observer levels.





ADU-400 (Air Data Unit) is a configurable air data unit designed and developed by ASELSAN. It can be used as primary air data source for various aircraft systems. ADU-400 calculates air data parameters from integrated pressure sensors and an external OAT probe. ADU-400 can also interface with an accelerometer for instantaneous vertical speed calculation and with an AOA sensor for AOA calculation. ADU-400 provides calculated air data mainly through ARINC 429 interfaces and also through discrete signal interfaces. ADU-400 has encoded altimeter output interface to provide altitude information for transponders. With its reliable and rugged design, the ADU-400 meets harsh environmental requirements of various Rotary and Fixed Wing Aircrafts.

**ADU-400 (AIR DATA UNIT)** 



### NETWORK ENABLED CAPABILITY (ADY) SYSTEM



### **AHTAPOT TERMAL**



Network Enabled Capability (ADY) System provides digital integration of the command post and its combat elements starting from corps level down to single weapon/vehicleand single soldier level equipping combat elements with communication systems, vehicles, military computers and command and control systems. ADY System is a command control and information system fully integrated with the army and joint headquarters, that provides common tactical picture, decision support and functionalities for planning, execution and post mission phases of operation, multiplying the effectiveness of maneuver units. By means of its command and control capabilities, the system provides seamless battle command from corps to platform/single soldier level. ADY is a system of systems comprising of three main layers which are KOCATEPE Tactical Command Control and Information System, TAKKS Maneuver Management System and CENKER Soldier System.

AHTAPOT TERMAL is a high performance Middle Wavelength Infrared (MWIR) camera which can be used in naval platforms for surveillance and reconnaissance, detection and identification. Image optimization, polarization and freezing can be made with the camera.



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ASELSAN Interference Blanker Unit (AIBU) is used on military platforms to prevent interference between the numerous onboard RF systems. AIBU can be programmed easily to meet any application requirements. With its reliable and rugged design, the AIBU can operate in severe environmental conditions of fixed-wing and rotary-wing platforms.

INTERFERENCE BLANKER UNIT (AIBU)





AKREP EO is an electrroptic system which consists of high performance Thermal Camera, Daytime Vision Unit and an eye-safe Laser Range Finder. Sub-units of the system can be replaced on platform during mission and boresight of the units can be performed after replacement. The system is designed to be used in Fire Control Radars for long range target detection and tracking. Image optimization, polarization and freezing options are available for AKREP EO System.

**AKREP EO** 



### **ALAZ-100**



ALAZ-200



ALAZ-100 is a high power laser source of 3kW output power designed for laser weapons technologies. The product has 1.2 M2 beam quality and CW operation mode which enables perfectly matched for mobile operations





ALAZ-200 is a high power laser source of 6kW output power designed for laser weapons technologies. The product has maximum 2 M2 beam quality and CW operation mode which enables perfectly matched for armored vehicles.

### aselsan

ALAZ-300 is a high power laser source of 7,5kW output power designed for laser weapons technologies. The product has maximum3 M2 beam quality and CW operation mode which enables perfectly matched for armored vehicles.



**ALAZ-300** 



ALBATROS-S is an unmanned surface vessel swarm system with a high level of autonomy, capable of navigating and performing tasks in swarm formation independent of a central control. ALBATROS-S is capable of performing different swarm formations, and has the ability to continue its mission against the decrease in the swarm by avoiding swarm elements and moving or stationary obstacles. Autonomous sharing of the given task among the swarm elements is made. The mission can be terminated autonomously with different maneuvers.

**ALBATROS-S** 





### **ALKAR MORTAR WEAPON SYSTEM**

Uniquely designed by ASELSAN to increase the effectiveness of 81/120 mm mortar weapons, is a modern weapon system integrated on the turret equipped with Automatic Barrel Laying System, Automatic Ammunition Loading System, Recoil Mechanism and Fire Control Systems. Both on-vehicle and stationary applications are possible.





Mission Data Recorder (AMIR-100) is an avionic system designed by ASELSAN to compress and record video. audio and mission data. Analog video interfaces such as RS-170, PAL, NTSC and digital video interfaces such as HD-SDI, Display Port are supported in AMIR-100. Videos are efficiently recorded in the memory unit using the H.264 compression algorithm. Audio inputs are synchronously embedded into video stream. Thanks to its high capacity Removable Memory Module (RMM), multiple video and audio data can be stored. Easy and fast data transfer is possible through a standard PC via USB 3.0 interface of the RMM. By means of its secure erase capability, it is possible to irreversibly destroy recorded critical data in a short time. The AMIR-100 can operate in the harsh environmental conditions of fixed and rotary wing platforms with its reliable, durable design, advanced conduction and natural convection cooling techniques. With its compact and rugged design and multiple interface support, the AMIR-100 can be integrated into different aerial platforms.





**MISSION DATA RECORDER (AMIR-100)** 

#### aselsan

### CRASH SURVIVABLE MISSION DATA RECORDER (AMIR-100C)



Crash Survivable Mission Data Recorder (AMIR-100C) is an electronic unit designed by ASELSAN to store and protect flight, audio and video data within its protected structure against extreme conditions of an accident. By keeping the recorded data in the Crash Survivable Memory Unit (CSMU), it is ensured that the data is preserved in severe external conditions such as crash impact, severe temperature and deep sea pressure that may occur during an accident. ULB (Underwater Locator Beacon) enables the location to be determined with its signal transmitter, in case the AMIR-100C falls into the water after an accident. AMIR-100C can transfer the recorded data to the user after each flight via its ethernet interface. Post-flight data can be analyzed by ground station software developed with the equipment. The AMIR-100C can operate in the harsh environmental conditions of fixed and rotary wing platforms thanks to its reliable, durable design, advanced conduction and natural convection cooling techniques. Thanks to its compact and rugged design and multiple interface support, the AMIR-100C can be integrated into different aerial platforms.





Avionic Central Control Computer is the key for mission success. With the modular hardware and software design, large memory capacity, high processing capability and multiple interface support, AMKB enables the pilot to manage effectively all electronic and weapon systems of air platforms.

With its reliable and rugged design, the AMKB operates in severe environmental conditions on fixed-wing and rotary-wing platforms with the advanced cooling and thermal management techniques.

Having flexible and scalable industry standard open architecture design, AMKB meets customer and platform requirements.

**AVIONIC CENTRAL CONTROL COMPUTER (AMKB)** 



# ANS-310K (TACTICAL LEVEL LAND INERTIAL NAVIGATION SYSTEM)

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# ANS-313 (TACTICAL LEVEL AIR INERTIAL NAVIGATION SYSTEM)



ANS-310K is an integrated position and attitude determination system for land vehicles. ANS-310K provides linear acceleration, linear and angular velocity, position, attitude to the host vehicle systems continuously. ANS-310K consists of strapdown inertial measurement unit, system processor unit, power supply unit, Embedded GPS (SPS)/GNSS Receiver (EGR) and chassis. ANS-310K is capable of using GPS (SPS)/GNSS receiver as embedded receiver. ANS-310K is also capable of using external GPS (SPS) receiver.

ANS-313 is an integrated position and orientation determination system developed for aircraft. ANS-313 continuously provides linear acceleration, linear and angular velocity, position and orientation information to the system. ANS-313 consists of inertial measurement unit, system processor unit, power supply, embedded GPS (SPS)/GNSS receiver and chassis. ANS-313's ability to use integrated ANS/GPS (SPS) or GNSS and barometer data provides sufficient performance for airborne platforms.





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ANS-420 is an integrated position and attitude determination system with ASELSAN genuine design inertial measurement unit (Kılavuz-20) for air vehicles. ANS-420 provides linear acceleration, linear and angular velocity, position, attitude to the host vehicle systems continuously. ANS420 consists of strapdown inertial measurement unit, system processor unit, power supply unit, Embedded GPS (SAASM)/GNSS Receiver (EGR) and chassis.

ANS-420 (TACTICAL LEVEL AIR INERTIAL NAVIGATION SYSTEM)





ANS-420K is an integrated position and attitude determination system with ASELSAN genuine design inertial measurement unit (Kılavuz-20) for land vehicles. ANS-420K provides linear acceleration, linear and angular velocity, position, attitude to the host vehicle systems continuously. ANS420K consists of strapdown inertial measurement unit, system processor unit, power supply unit, Embedded GPS (SAASM)/GNSS Receiver (EGR) and chassis. ANS-420K is capable of using GPS (SAASM) or GNSS as embedded receiver. ANS-420K is also capable of using an external receiver.

ANS-420K (TACTICAL LEVEL LAND INERTIAL NAVIGATION SYSTEM)



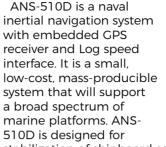
# ANS-510 (NAVIGATION LEVEL AIR INERTIAL NAVIGATION SYSTEM)



ANS-510D (NAVIGATION LEVEL MARINE INERTIAL NAVIGATION SYSTEM)

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ANS-510 is a navigation grade airborne inertial navigation system with embedded GPS/GNSS receiver which is intended for application to air vehicles. ANS-510 consists of strapdown inertial measurement unit, system processor unit, power supply unit, Embedded GPS/GNSS Receiver (EGR) and chassis. EGR is capable of tracking space vehicles simultaneously and transmitting the line-ofsight (LOS), position and velocity information to the system processor. The system processor combines the GPS/GNSS data with the inertial data from IMU using Kalman filter. ANS-510 is capable of using either SAASM compliant GPS receiver or commercial SPS GPS receiver or Multi Constellation GNSS receiver as embedded receiver.





stabilization of shipboard sensors, such as radars, EO/IR trackers and to serve as a main/back up ship's gyrocompass. ANS-510D consists of strapdown inertial measurement unit, system processor unit, power supply unit, Embedded GPS (SAASM/SPS) Receiver (EGR) and chassis. EGR is capable of tracking space vehicles simultaneously and transmitting the lineof-sight (LOS), position and velocity information to the system processor. The system processor combines the GPS data with the inertial data from IMU in a tightly coupled mechanization using Kalman filter. ANS-510D is capable of using either SAASM compliant GPS receiver or commercial SPS GPS receiver as embedded GPS receiver.



### aselsan



ANS-510K is an integrated position and attitude determination system for land vehicles. ANS-510K supplies linear acceleration, linear and angular velocity, position, attitude to the host vehicle

systems continuously. ANS-510K consists of strapdown inertial measurement unit, system processor unit, power supply unit, Embedded GPS Receiver (EGR) and chassis. ANS-510K is capable of using 12 channel P(Y) coded SAASM GPS receiver or commercial SPS GPS receiver as embedded GPS receiver. ANS-510K is also capable of using external GPS receiver.

ANS-511 is DO-178B and DO-254 certifiable airborne inertial navigation system with embedded GPS (SAASM) or GNSS receiver which is intended for application to air vehicles. ANS-511 provides



linear acceleration, linear and angular velocity, position, attitude and heading to the host vehicle systems continuously. ANS-511 provides hybrid (inertial + EGR) navigation solution, inertial only navigation solution and EGR only navigation solution simultaneously. ANS-511 is also capable of using external pressure altitude data to complement hybrid and inertial only navigation solutions.

ANS-510K (NAVIGATION LEVEL LAND INERTIAL NAVIGATION SYSTEM)



ANS-511 (NAVIGATION LEVEL AIR INERTIAL NAVIGATION SYSTEM)



### ANS-530K (HIGH SHOCK RESISTANT NAVIGATION LEVEL LAND INERTIAL NAVIGATION SYSTEM)



# ANS-600 (NAVIGATION LEVEL AIR INERTIAL NAVIGATION SYSTEM)





ANS-530K is an integrated position and attitude determination system for land vehicles specifically for high-shock artillery gunsystems. ANS-530K supplies linear acceleration, linear and angular velocity, position, attitude to the

host vehicle systems continuously. ANS-530K consists of strap down inertial measurement unit, system processor unit, power supply unit, Embedded GPS (SAASM) or GNSS Receiver and chassis. It is capable of using SAASM compliant receiver as embedded GPS (SAASM) or GNSS receiver. ANS-530K is also capable of using external GPS receiver. The tightly coupled, embedded INS/GPS (SAASM) or GNSS and integrated odometer capability of ANS-530K provides improved performance for land platforms.

ANS-600 is a fiber optic gyroscope-based, airborne inertial navigation system intended for air vehicles with ASELSAN's genuine design inertial measurement unit (Kılavuz-100) and embedded GNSS receiver (EGR). ANS-600 provides linear acceleration, linear and angular velocity, position, attitude and heading to the host vehicle systems continuously. ANS-600 provides INS Only, EGR Only and Hybrid (inertial + EGR) navigation solutions simultaneously.



ANS-600 is also capable of using external pressure altitude data complement to hybrid and inertial only navigation solutions.

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ANS-600K is a fiber optic gyroscope based land inertial navigation system with ASELSAN's genuine design inertial measurement unit (Kılavuz-100) and embedded receiver which is intended for application



to military land vehicles. ANS-600K provides linear acceleration, linear and angular velocity, position, attitude and heading to the host vehicle systems continuously. ANS-600K provides hybrid (Inertial + Receiver) navigation solution, inertial only navigation solution and GPS (SAASM)/GNSS only navigation solution simultaneously. ANS-600K is also capable of using odometer data to complement hybrid and inertial only navigation solutions.

ANS-600K (NAVIGATION LEVEL LAND INERTIAL NAVIGATION SYSTEM)





Vehicle recognition systems are designed for vehicles on the road. The system can operate in all light conditions with a single camera. It can recognize the silhouette of the driver and vehicle in night-time conditions. It can detect red light violations and identify vehicles travelling at 200 km/h.

**VEHICLE RECOGNITION SYSTEMS** 



### **ARAL THE RADAR ALTIMETER**



ARAL is a Line Replaceable Unit (LRU) which provides the aircraft clearance over the overflown terrain referred as height in real time.

The Radar Altimeter provides reliable and accurate reference information of terrain clearance in severe environmental conditions on fixed-wing and rotary wing platforms.

The Radar Altimeter has external interfaces with the the following equipments:

- · Airborne Navigation Computer
- · Airborne Power Supply
- · Two antennas



### ARIN X-RAY BAGGAGE **INSPECTION DEVICE**







ASELSAN ARIN X-Ray Baggage Inspection Systems deliver security functions to many critical facilities such as airports, ports, border gates, customs, and government buildings. The product family has four models with single and dual view screening options and tunnel sizes of 60 cm x 40 cm and 100 cm x 100 cm.

### aselsan



ASELBUOY is a NATO A-size passive directional sonobuov, deployed from aircrafts and surface ships alike. ASELBUOY can operate in two different depths. providing directional acoustic information in the 5 - 2400 Hz frequency band on horizontal plane. The buoy can send this



acoustic information to aircrafts and surface ships via one of its 96 VHF communication channels. Operating depth, VHF communication channel and operating time are programmable from the user interface on the buoy itself before deployment. As an expendable system, sonobuoy scuttles at the end of its programmed operating time. VHF communication channel and operating time can also be changed after launch by remote commands.





**ASELFLIR-300T** 



ASELFLIR-300T Electro-optical system is a reconnaissance, surveillance and targeting system which is designed for rotary wing platforms. The system contains 8-12 micrometer High Resolution Infrared Camera, DavTv. Laser Target Designator and Laser Range Finder.

ASELFLIR-300T has been used by Armed forces since 2014.





ASELFLIR-400 is a high performance 15 inch electrooptical reconnaissance, surveillance and targeting system designed by ASELSAN for rotary wing and land vehicle platforms. ASELFLIR-400 is a turret only unit and there are 2 types of ASELFLIR-400.

ASELFLIR-400 E/O system includes 3-5 micrometer High Resolution Infrared Camera, Full HD DayTv and a SWIR camera. While Option-1 contains Eye-safe Laser Range Finder, SWIR İlluminator and Laser Pointer, Option-2 ASELFLIR-400 includes Laser Target Designator, Laser Range Finder and Laser Spot Tracker.

ASELFLIR-400 Option-1 will be available in the third quarter of 2023, while ASELFFLIR-400 will be available in the first quarter of 2024.



ASELFLIR-500 is a high performance electro-optical Technical Specifications reconnaissance, surveillance and targeting system developed for fixed-wing and rotary-wing aerial platforms including Unmanned Aerial Vehicles (UAV), Helicopters and Airplanes. ASELFLIR-500 system includes 3-5 micrometer High Resolution Infrared Camera, High Resolution Day TV Camera, High Resolution SWIR Camera, Laser Target Designator, Laser Range Finder, Laser Spot Tracker and Laser Pointing units.



**ASELFLIR-500** 

### **ASELFLIR-600**



**ASELPIR** 



ASELFLIR-600 is a new generation 25-inch electrooptical reconnaissance, surveillance and targeting system designed for HALE Class fixed and rotary wing airborne platforms.ASELFLIR-600 system includes 3-5 micrometer High Resolution Infrared Camera, High Resolution Day TV Camera, High Resolution SWIR Camera, Laser Target Designator, Laser Range Finder, Laser Spot Tracker and Laser Pointing units. ASELFLIR-600 will be added to ASELSAN's aerospace electro-optic systems product portfolio in the first quarter of 2025.







ASELPIR Early Warning System, aims to create an alarm with the help of a motion-sensitive PIR (Passive Infrared) sensor and wirelessly transmit the captured image to the user with the specified communication methods (LoRa).

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### aselsan



ASELPOD is a targeting pod specifically designed for the use of fighter aircrafts. The system consists of high performance IR and DayTV Cameras, laser designator, laser rangefinder, laser illuminator and laser spot tracker units. With its new generation sensors and high performance stabilisation targets can be detected and tracked from standoff ranges, fighter aircrafts with ASELPOD system







ASELSAN DİKONS™ FAMILY is designed for increasing the maneuvering capability and performing the dynamic positioning of the monohull or catamaran platforms by controlling the maneuver and propulsion systems in spite of the environmental conditions such as wind, wave and current. DİKONS™ family consists of Automatic Control System, Semi Automatic Control System and Manual Control System.

**ASELPOD** 



ASELSAN DIKONS™



### ASELSAN WEARABLE CAMERA



# ASELSAN RECORDING INFRASTRUCTURES PRODUCT FAMILY



Recording, replaying, exporting the videos and evaluating the stored data are as important as watching the live videos of the cameras used in the military and civilian fields. In this context, the Recording Infrastructures product family was created. Thanks to the original architectural design of the recorders, a high number of alarm videos and data can be exported and archived in a short period of time. High number of 4K resolution images can be decoded synchronously and displayed on the screen. Recording infrastructures product family is classified as Enterprise, Mid-Segment, Cloud-Based and mobile. The genuine software of the ASELSAN Recording Infrastructures product family is DEFNE Video Management software.



ASELSAN portable cameras are cameras designed to be worn by the user.



### aselsan

ASELSAN KULAÇ Surface Ship Echosounder is an active sonar that measures the distance between ship to sea bottom by measuring the time difference between transmitting and receiving acoustic signals that is transmitted to sea bottom.



ASELSAN KULAÇ SURFACE SHIP ECHOSOUNDER





ASELSAN MAS enables users to add additional deep learning-based capabilities, such as automatic detection, recognition and tracking, to video surveillance. These systems can be either centrally processed, peripherally processed or hybrid in approach. Video analysis can be performed in real time or post-processing.

ASELSAN MAS CENTRAL VIDEO ANALYSIS SYSTEM



### **ASELSAN MITOS WECDIS**



ASELSAN MITOS WECDIS is designed to support the operational requirements for naval platforms. Based on MITOS ECDIS features, MITOS WECDIS provides tactical and situational awareness regarding military functions. System is integrated with navigation and navigational support system such as Navigation Radar, D/GPS, MagneticCompass, Speed Log, EchoSounder, INS, Gyro Compass, (W)AIS and Meteorologic Systems.



### ASELSAN MOBILE FACE DETECTION CAMERA





Cameras which are specifically designed for face detection and recognition.

### aselsan



ODAKAN IP Camera product family has high performance in all kinds of light and weather conditions, 7 days 24 hours 365 days. Superior image quality, advanced video compression algorithms, low bandwidth and storage space usage and ONVIF compliance are among the prominent features. The product family is grouped under the headings of fixed, mobile (PTZ), medium/long range day TV, civilian uncooled thermal and panoramic. A wide range of products customized according to user needs such as indoor/outdoor environment, wide vision, very low light, long range, ballistic protection, explosion resistance (Ex-Proof) are offered. Smart cameras, thanks to built-in video analysis capabilities and artificial intelligence/deep learning algorithms; provide situational awareness, effective alarm management, efficient resource use and rapid response.

### ODAKAN IP CAMERA PRODUCT FAMILY





ASLAN is an Unmanned Ground Vehicle with high mobility that can be controlled autonomously or remotely, which can be used for reconnaissance, surveillance and on which the Laser Guided Mini Missile System, SARP-L weapon system, Tethered Drone System and Long-Range Acoustic System or other required systems can be mounted.

ASLAN can be controlled remotely with the vehicle control console, as well as moving over environmental obstacles without the need for an operator and can autonomously perform border patrol on defined route thanks to its autonomy features.

ASLAN



### **ATAY-100**



### **ATAY-200**





ATAY-100 Thermal Sight is an infrared imager system that can detect the sniper's jet, helicopter and UAV targets in limited vision and night vision conditions. The thermal sight provides a tactical advantage by giving the user the ability to use it in all kinds of environmental conditions such as day, night, fog, haze where visibility is limited



ATAY-200 is a STINGER MANPADS sight. Device has an infrared imaging technology with 640x480, 17µ resolution micro bolometer detector operating in the 8-12 µm band.

### aselsan



ATAY-300, Fire Control Unit Electro Optical System has many support scenarios such as; Anti Tank Weapon System, Armored Vehicle System, Fire Support and Target Detection. The main features that provide support in these areas are as follows;

- Motorized focus, FOV and continous zoom adjustment
- · Automatic image enhancement
- $\boldsymbol{\cdot}$  Coordinates of target are calculated in real time
- · Easy battery change
- $\cdot \, \text{Shuttered eyecups} \\$
- · High resolution OLED display



FCS is designed for effective low altitude air defense of military bases and critical assets against modern threats of today's battlefield. KORKUT FCS shall control the 35 mm towed air defense guns - which are also modernized by ASELSAN- and the Low Altitude Air Defense Missile Launching System being developed by ASELSAN in HİSAR Program.

### **FIRE CONTROL SYSTEM (FCS)**

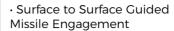


### ATLAS (ASELSAN DIGITAL MAP / HTAWS SIYSTEM)



### ATMACA FIRE CONTROL SYSTEM





- · Power and Fire Control and Management
- · Automatic and Manuel Mission Planning for Guided Missile
- · User Friendly Interface
- · Interface with Combat Management System
- · 3D Mission Planning
- Target Update Capable with Data Link
- · Re-attack Capability
- · Mission Abort Capability
- · Interface with Platform Data Distribution System
- · Compatibility with Different Platforms Due to Distributed Architecture



ATLAS is a Digital Moving Map developed by ASELSAN, for T-70 Black Hawk and T-625 Gökbey utility helicopters. ATLAS has DO-257A complaint, flexible and compact design that can be easily adapted to different platforms and hardware. ATLAS aims to increase situational awareness of the pilots with more than 100+ layer and capability support. It can perform these capabilities in both 2D and 3D views. ATLAS has an optionally integrated DO-309 compliant HTAWS system which has the highest update period supported with highest resolution data compared to other HTAWS products.

### aselsan





ASELSAN ATNIS-100 is an uncooled sight that operates with an high resolution 8-12 µm detector. It has a rugged design that enables it to operate within military environment standards. Due to its latest detector technology the system provides high DRI performance and imaging capability. Altough the systems has been designed specially for MK-19 40 mm Grenade Launchers, it can be used on wide range of firing platforms such as antiaircraft and high caliber weapons (specially 12.7 mm antiaircraft and 14.5 mm KPWT) with its high durability, detection and targeting capabilities. The system also offers laser distance measuring, inclonometer, weather station integration, real time balistic calculation and automatic reticle correction. The system can also work fully integrated with ASELSAN Smart Ammunition Systems such as ATOM 40 mm.

ATNIS-100





ATS-62 Electro-Optical Sensor System uses the advanced technologies and offers different sensors into one compact and modern design. It is based on upmost technological level and primarily designed for remote controlled weapon systems mounted on armored vehicles and main battle tanks. ATS-62 comprises high-performance cooled thermal camera and color day camera, which offer extensive ranges for target detection by using high sensitivity sensors and distinguishing image enhancement algorithms. It provides effective surveillance, reconnaissance and firing capability under severe weather and harsh battlefield conditions. ATS-62 provides target acquisition capability in long ranges. Highly accurate laser range finder offers quick and complete target range measurement. ATS-62 has compact structure and flexible mechanical mounting interfaces that allow easy integration on several weapon systems.

**ATS-62** 



#### ATS-62D



### **ATS-65**





ATS-62D Electro-Optical Sensor System comprises high-performance cooled thermal camera and color day camera, which offer extensive ranges for target detection thanks to high sensitivity sensors and image enhancement algorithms. It also includes highly accurate laser ranger finder which offers quick and complete target range measurement. ATS62D is primarily designed for remote controlled weapon systems mounted on Naval Systems. ATS-62D has a compact structure and can be integrated on several weapon systems

ATS-65 Electro-Optical Sensor System uses the advanced technologies and offers different sensors into one compact and modern design. It is based on upmost technological level and primarily designed for remote controlled weapon systems mounted on armored vehicles and main battle tanks.

ATS-65 comprises high-performance cooled thermal camera and color day camera, which offer extensive ranges for target detection thanks to high sensitivity sensors and

distinguishing image enhancement algorithms. It provides effective surveillance, reconnaissance and firing capability under severe weather and harsh battlefield. ATS-65 provides target acquisition capability in long ranges. Highly accurate laser ranger finder offers quick and complete target range measurement. ATS-65 can be integrated on several weapon systems thanks to its compact structure and flexible mechanical mounting interfaces.

### aselsan

ATS-65D Electro-Optical Sensor System comprises high-performance cooled thermal camera and color day camera, which offer extensive ranges for target detection thanks to high sensitivity sensors and image enhancement algorithms. It also includes highly accurate laser ranger finder whicch offers quick and complete target range measurement. ATS65D is primarily designed for remote controlled weapon systems mounted on Naval Systems. ATS-65D has a compact structure and can be integrated on several weapon systems.





ATS-72 is a state of the art, high performance electro optic sensor system, primarily designed for remote controlled weapon systems mounted on Armored Vehicles and Main Battle Tanks. ATS-72 composed of Thermal Camera, Day TV Camera and Laser Range Finder and it provides effective firing capability under severe weather and harsh battlefield conditions. ATS-72 has a Laser Pointer as an optional property. ATS-72 can be integrated on several weapon systems thanks to its compact structure and flexible mechanical mounting interfaces.

ATS-65D

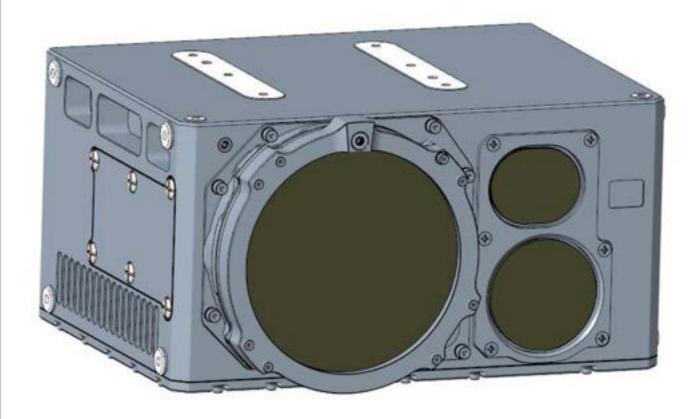


**ATS-72** 





ATS-72D is a high performance electro optic sensor system, primarily designed for remote controlled weapon systems mounted on Naval Systems. It is composed of Thermal Camera, Day TV Camera and Laser Range Finder and it provides effective firing capability under severe weather conditions. ATS-72D has a compact structure and can be integrated on several weapon systems.



### **AVCI (HELMET INTEGRATED CUEING SYSTEM-HICS)**





AVCI Helmet Integrated Cueing System (HICS) is a visor- projected system. It is designed for helicopter platforms to improve the pilot's situational awareness and increase the capabilities of the pilot and aerial vehicle with its night vision, video, symbology, accurate head tracking.

- · Night vision, IR video, navigation and weapon symbology
- · Generation of head tracking information for accurate line of sight cueing and targeting
- · Personalized inner liner for pilot
- · Protection of Pilot's head and face against impact and sharp objects Subassemblies
- Headgear Unit (assembly of Basic Helmet, Display Module, Head Tracking Module, Connection and Battery Module)
- · Electronics Unit (Symbology generation, video processing and head tracking algorithms)
- · Cockpit Camera Modules (for head tracking)
- · Control Panel (user interface on the platform for adjustments and selections)



#### aselsan



Aselsan AYA TS100 is an uncooled thermal observation and weapon sight system that operates with an high resolution 8-12 µm detector. It has a highly rugged and user-friendly design that enables it to operate within military environment standards without the need of any extensive training. While Aselsan AYA TS100 can be used either helmet-mounted or weapon-mounted, it can be also used as a hand-held thermal observation device. Thanks to the its internal laser taget designator, AYA TS100 is can be used with Night Vision Devices. Futher AYA TS100 is featuring ballistic calculation cabality for different weapons. Aselsan AYA TS100 is powered by a li-on battery that can be also easily acquired from the comercial market.



# BATTERY COMMAND AND CONTROL OPERATION CENTRE (BKKHM)

Battery Command and Control Operation Centre (BKKHM) is comprised of integrated command and control units, air defense weapons, communications equipment and air defense system software. These integrated systems are interoperable and can be combined to form a system within the command-control chain. BKKHM controls at least 4 Fire Control Units (FCUs) and at least 4 Pedestal Mounted Air Defense Systems (PMADS) ZIPKIN. BKKHM is also suitable for autonomous operation to manage the air defense activities on tactical level to engage and destroy targets at the maximum possible





Battery Command and Control Centre (BKKM), is a mobile truck mounted military shelter system that comprises Fire Control Units (FCUs) and Air Defense Radars which are integrated. BKKM operates in coordination with Air Defense Early Warning and Command and Control Systems (HERIKKS) or operates autonomously. Battery Command and Control Centre (BKKM) comprises integrated command and control units, air defense weapons, air defense radars, communications equipment and air defense system software.



### aselsan

BTS is an integrated situational awareness system for land based and naval combat vehicles. The track information gathered from the Integrated positioning terminals on combat vehicles are transmitted to BTS server by means of communication systems. The friendly force positions on BTS server are shared with the C4ISR systems.



**BTS TROOP TRACKING SYSTEM** 





CATS is a high-performance electro-optical, reconnaissance, surveillance and targeting system developed for Unmanned Aerial Vehicles (UAV). Multispectral (MWIR, HD Day TV, LL-NIR) optical aperture combines multiple optical channels in a single channel so that the system has high range and imaging performance even in adverse weather conditions without increasing size and weight.

CATS



### **CCD-68 CENTRAL COCKPIT DISPLAY**





CCD-68 Central Cockpit Display is designed as color flat panel display using Active Matrix Liquid Crystal Display (AMLCD) technology, with an active display area of 6 by 8 inches. It is specially designed for mission computer applications with digital video input displaying and digital input/output processing capabilities. CCD-68 can display Display Port 1.1A video inputs for resolution 1024 by 768. CCD-68 also provides Display Port 1.1A video output of the displayed video for video recording applications. CCD-68 outputs pressed bezel key information via RS-485 and provides detailed maintenance information via RS-232 interface. Sophisticated RS-485 interface protocol provides flexible communication interface to Mission Computers or other airborne computers. The CCD-68 has extended configuration options to support customer specific configurations.



CENKER is developed to increase the soldier's command and control, survivability, coordination, information sharing, situational awareness and overall combat effectiveness in the battlefield.

CENKER SINGLE SOLDIER INFORMATION SYSTEM



### **CETVEL-100**



### **CETVEL-300**





CETVEL-100 is an eye-safe and hand held laser range finder to measure short range target distances. Lightweight and compact design enables the product perfectly matched with operation need of infantry units.

CETVEL-300 is an eye-safe and hand held laser range finder to measure mid range target distances. Lightweight and compact design enables the product perfectly matched with operation need of infantry units.

### aselsan

CETVEL-400 is an eye-safe and hand held laser range finder to measure long range target distances. Lightweight and compact design enables the product perfectly matched with operation need of infantry units.



**CETVEL-400** 



CETVEL-500 is an eye-safe laser range finder to measure air threats distances for air defence systems and target tracking systems. Diode pumped laser source design and high repitition rate enable the product perfectly matched with operation need of land platforms.



**CETVEL-500** 



### **CETVEL-600D**



### **CETVEL-M01**



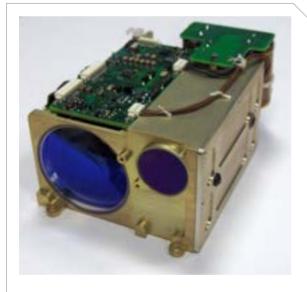
CETVEL-600D is an eye-safe laser range finder to measure air threats distances for air defence systems and target tracking systems. Diode pumped laser source design and high repitition rate enable the product perfectly matched with operation need of naval platforms.





CETVEL-M01 is an eye-safe laser range finder to measure target distences for land and naval platforms. The product design is perfectly matced with operational concepts of reconnaissance systems, targeting systems and electro-optical weapon systems.

### aselsan



CETVEL-M02 is an eye-safe laser range finder module to measure target distences for electro-optical sensor systems. The product design is perfectly matched with operational concepts of reconnaissance systems, targeting systems and electro-optical weapon systems.



CETVEL-M04 is an eye-safe laser range finder to measure target distences for electro-optical sensor systems. The product design is perfectly matched with operational concepts of reconnaissance systems, targeting systems and electro-optical weapon systems.

### **CETVEL-M02**



**CETVEL-M04** 



### **CETVEL-M10**



### **CETVEL-M11**



CETVEL-M11 is an eye-safe laser range finder to measure target distences for electro-optical sensor systems. Diode pumped laser source design enables the product perfectly matched with operational concepts of reconnaissance systems, targeting systems and electro-optical weapon systems.



CETVEL-M10 is an eye-safe laser range finder to measure target distences for electro-optical sensor systems. Diode pumped laser source design enables the product perfectly matched with operational concepts of reconnaissance systems, targeting systems and electro-optical weapon systems.



### aselsan



CMFD-55 Color Multifunciton Display is designed as color flat panel display using Active Matrix Liquid Crystal Display (AMLCD) technology, with an active display

area of 5 by 5 inches. It is specially designed for mission computer applications with digital video input displaying and digital input/output processing capabilities. CMFD-55 can display Display Port 1.1A video inputs for resolution 600 by 600. CMFD-55 also provides Display Port 1.1A video output of the displayed video for video recording applications. CMFD-55 outputs pressed bezel key information via RS-485 and provides detailed maintenance information via RS-232 interface. Sophisticated RS-485 interface protocol provides flexible communication interface to Mission Computers or other airborne computers. The CMFD-55 has extended configuration options to support customer specific configurations..

CMFD-55 COLOR
MULTIFUNCITON DISPLAY





DCU collects analog, discrete and digital data from various avionic and aircraft systems. DCU accomplishes necessary measurements, computations and any logical operations then presents concentrated information to use of avionics and aircraft systems with analog, discrete and digital communication. With its reliable and rugged design, the DCU meets harsh environmental requirements of various Rotary and Fixed Wing Aircrafts.

**DCU DATA COLLECTION UNIT** 



#### **INTERCEPT SONAR SYSTEM**



Intercept Sonar System (ASIST) has capability to detect, track and analyze active acoustic source in frequency range from 1 kHz to 100 kHz. It also provides characteristics of detected active acoustic pulses.



### ANTI-SUBMARINE ROCKET LAUNCHING SYSTEM (ASRLS)



ASELSAN Anti-Submarine Rocket Launching System (ASRLS) is a stabilized, remotely controlled, fully automated and modular firing platform that is designed to control penetrations to territory waters and main bases to deny enemy submarines. With its compact and lightweight structure, it can be integrated to various kinds of naval platforms as well as to a ground facility for valuable asset protection.



### aselsan



ASELSAN Submarine Sonar Wet-End Solutions consist of 6 sonar arrays which are used for transmission/reception (T/R) of the acoustical signals to/from the environment, namely Cylindrical Hydrophone Array (CHA), Flank Array (FA), Passive Ranging Array (PRA), Cylindrical Intercept Array (CIA), Active Operating Sonar (AOS) and Own-Noise Analysis (ONA).

SUBMARINE SONAR WET-END SOLUTIONS





DENİZGÖZÜ-AHTAPOT Electro-Optical Reconnaissance, Surveillance and Targeting System is an Electro-Optical Director System with high reaction speed used as a fire control system between existing weapons and combat management system to support detection and tracking functions for air and surface targets of marine platforms. DENİZGÖZÜ-AHTAPOT consists of

- · High Quality Thermal Camera
- · Laser Range Finder
- · FULL HD TV Camera
- · SWIR Camera
- · Laser Illuminator
- · Laser Designator (Optional)

### **DENİZGÖZÜ AHTAPOT**



## **DENİZGÖZÜ KIRLANGIÇ**



### **DENİZGÖZÜ MARTI**



DENİZGÖZÜ-MARTI is an electro-optical reconnaissance and surveillance system which operates in day and night and under all environmental conditions. DENİZGÖZÜ-MARTI has Uncooled Long-Wave Thermal Camera, Day TV Camera, Laser Range Finder (Optional) and LED Spot Illuminator (Optional) and covers 360° in azimuth. DENİZGÖZÜ-MARTI can be integrated to Boats, Unmanned Surface Vehicles according to platform requirements.





DENİZGÖZÜ Kırlangıç is a system designed for all naval platforms and has sensors such as a high-performance thermal camera, HD day TV camera, eye-safe laser rangefinder and laser target pointer. It is a durable and compact reconnaissance/ surveillance system with features such as sensitive stabilization, target tracking and autofocus, offering long-range detection / recognition / identification capability under sea conditions.

## aselsan



The system, which has been specially developed for boarder/coastal surveillance and facility/base security and has been designed to be suitable for the marine environment, is equipped with an MWIR Thermal Camera and a long-range/high-resolution day vision camera. The system, which is optimized for sea conditions and placed on a motorized platform with a fast reaction time, can perform long-distance boarder/coastal surveillance missions with the image processing technologies in the cameras, automatic target tracking and electronic stabilization features.







DENİZGÖZÜ-PİRANA is an electro-optical reconnaissance, surveillance and targeting system which operates in day and night and under all environmental conditions. DENİZGÖZÜ-PİRANA has MWIR Thermal Camera, SWIR Thermal Camera, Day TV Camera, Laser Target Designator, Laser Range Finder and covers 360° in azimuth. DENİZGÖZÜ-PİRANA can be integrated to Unmanned Surface Vehicles, Armed Unmanned Surface Vehicles, Boats, Corvettes according to platform requirements.

#### **DENİZGÖZÜ PİRANA**



#### **DENİZGÖZÜ-MERCAN**



DENİZGÖZÜ MERCAN is a submarine optronic mast system used for reconnaissance and surveillance.
General features are listed below:

- · Electro-Optic Reconnaissance and Surveillance System
- · Adaptable for All Submarine Platforms
- · High Performance HD MWIR Camera
- · High Performance FULL HD DAYTV Camera
- · High Performance HD SWIR Camera
- · Eye-Safe Laser Range Finder
- · Optical Range Finding
- · QLR (Quick Look Round) Mode
- · Sectoral Scanning Mode
- · Image Fusion
- · GPS/ES (Electronic Support) System Antenna (Optional)
- · Integration Option with CMS
- $\cdot$  Stand-Alone Operation (Optional)

#### **DEPETEK**



DEPETEK is a high-performance thermal camera which is integrated into submarine periscopes. By means of its quite non-vibrating cooler structure and precise manufacturing tolerances, it can be classified as unique design for submarine platforms. Advanced image processing provides the user midwave infrared image for surveillance.



## aselsan



DHS-101 is an analog Intercommunication System (ICS). The System provides communication between pilot and co-pilot, communication equipment management and integrating audio and intercom facilities together with all audio caution and warning messages. DHS-101 provides reliable and intelligible high quality audio communication for noisy military environments. DHS-101 can be easily configured to meet the complicated communication system needs for multi-users. Subassemblies

- · Communication Systems Control Unit (HSKB) (User interface for adjustments and selections)
- · Audio Distribution Unit (SDB) (Audio distribution for control panels)

DHS-101 ANALOG INTERCOMMUNICATION SYSTEM (ICS)





DHS-121 is an analog Intercommunication System (ICS). The System provides communication between pilot and co-pilot, communication equipment management and integrating audio and intercom facilities together with all audio caution and warning messages. DHS-121 provides reliable and intelligible high quality audio communication for noisy military environments. DHS-121 can be easily configured to meet the complicated communication system needs for multi-users. Subassemblies

- · Communication Systems Control Unit (HSKB) (User interface for adjustments and selections)
- · Audio Distribution Unit (SDB) (Audio distribution for control panels)

DHS-121 ANALOG INTERCOMMUNICATION SYSTEM (ICS)



# DHS-201 DIGITAL INTERCOMMUNICATION SYSTEMS (ICS)



## DHS-300 (DIGITAL INTERCOM SYSTEM)



DHS-300 manages airborne radios, receivers and units with voice alerts and also provides communication interface for pilot and copilot. DHS-300, which has digital audio processing capability, meets reliable and high quality audio communication needs for noisy military environments. With its reliable and rugged design, DHS-300 operates in severe environmental conditions on fixed-wing and rotary-wing platforms. DHS-300 can be configured for communication with multiple users.



DHS-201 is a Digital Intercommunication Systems (ICS). The System provides communication between aircraft crewmembers, managing communication equipments, and integrating audio and intercom facilities together with all audio caution and warning messages. DHS-201 provides reliable and high intelligible high quality audio communication for noisy military environments. Architecture of DHS-201 provides redundancy of all critical functions. DHS-201 is capable of supporting different pre-programmed ICS configurations.



## aselsan



DHS-311 is a Digital Intercommunication Systems (ICS). The System provides communication between aircraft crewmembers, managing communication equipments, and integrating audio and intercom facilities together with all audio caution and warning messages. DHS-311 provides reliable and high intelligible high quality audio communication for noisy military environments. Architecture of DHS-301 provides redundancy of all critical functions. DHS-311 is capable of supporting different pre-programmed ICS configurations.

DHS-311 DIGITAL INTERCOMMUNICATION SYSTEMS (ICS)





DOLUNAY-100 is compact, high performance short wave thermal vision system, primarily designed for sighting systems that are insalled on Coasts/Borders and Bases. The System enables to detect, recognize and identify targets by providing high performance thermal image to the operator from long ranges under day, night, severe weather and harsh battlefield conditions. DOLUNAY-100 system with the Laser Illuminator and image processing algorithms provides finer image details and longer range target engagement.

**DOLUNAY-100** 



#### **DORUK**



#### **DORUK-2**



DORUK is a Hand-Held Electro-Optic Sensor System with high resolution mid-wave infrared sensor. Device has continuous zoom capability in cooled thermal and daytime cameras, laser range finder, digital magnetic compass and GPS modules. Doruk also has an image and video recording capability, data transmission over radio. DORUK-2 comprises high-performance thermal camera and color day camera, which offer extensive ranges for target detection thanks to high sensitivity sensors and distinguishing image enhancement algorithms. DORUK-2 acquires target location in long ranges. Highly accurate GPS, digital magnetic compass and laser ranger finder provide quick and complete target acquisition capability which is supported with infrared laser pointer.





## aselsan





DRAGONEYE Electro-Optical Sensor System uses the advanced technologies and offers different sensors into one compact and modern design. It is based on upmost technological level for surveillance and reconnaissance under poor visibility during day and night conditions. System comprises high-performance thermal camera and color day camera, which offer extensive ranges for target detection thanks to high sensitivity sensors and distinguishing image enhancement algorithms. DRAGONEYE acquires target location in long ranges. Highly accurate GPS, digital magnetic compass and laser ranger finder provide quick and complete target acquisition capability which is supported with infrared laser pointer. Remote control unit with touchscreen and motorized pan and tilt unit enables motion detection and target tracking.

#### **DRAGONEYE**





DÜFAS is the state-of-the-art variable depth Low Frequency Towed Active Sonar System which is designed to be used by surface combatants for long range anti-submarine warfare and surveillance. System detects submarines and torpedoes from long range using active and passive capabilities.

DÜFAS LOW FREQUENCY TOWED ACTIVE SONAR SYSTEM

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## ENGINE INSTRUMENT DISPLAY (EID)



#### **ENGEREK**



With its compact, platform-configurable and user-friendly design; Engine Instrument Display (EID) meets the customer needs and platform requirements by displaying platform critical engine data. Its redundant, reliable and rugged design helps pilots to feel in safe on severe environmental conditions during the mission.

ENGEREK is a compact, lightweight, advanced ground laser target designator and target locator. ENGEREK can operate at all Band I and Band II PRF codes defined in NATO STANAG 3733, hence is compatible with all NATO laser guided munitions with semi-active laser seekers, such as LGB's, Hellfire and Copperhead. Besides designation, ENGEREK can also measure the distance of the target, automatically calculate target location, and capture digital photographs.





## aselsan

ENCEREK-2 Hand-held Laser Designator and Target Coordinate Finding System is a compact system used by land forces and infantry, combining distance measuring, coordinate calculation and laser designating features in one device. It is the upgraded version of ENCEREK System, designed in a more ergonomic, quieter and lighter structure using new technology, and includes additional functional features such as longer range, hot swap battery and wireless communication.





ENCEREK-M01 is a laser target designation unit designed for fire control units of land platforms. ENCEREK-M01 can operate at all Band I and Band II PRF codes defined in NATO STANAG 3733, hence is compatible with all NATO laser guided munitions with semi-active laser seekers, such as LGB's, Hellfire and Copperhead. The Unit can be controlled via serial interface and contains BIT function with high probability of error detection.

**ENGEREK 2** 



**ENGEREK-M01** 



#### **ENGEREK-M02**



**ERTUNGA** 



ENCEREK-M02 is a laser target designation and range finding unit designed for naval platforms. ENCEREK-M02 can operate at all Band I and Band II PRF codes defined in NATO STANAC 3733, hence is compatible with all NATO laser guided munitions with semi-active laser seekers. The Unit can be controlled via serial interface and contains BIT function with high probability of error detection.



ERTUNGA is an Unmanned Ground Vehicle with high mobility and an enduring platform that can be controlled autonomously or remotely. Mission-specific payloads, such as SARP DUAL, Laser Guided Tactical Missile System (Optional) can be mounted on ERTUNGA, and the missions, such as surveillance, reconnaissance, target designation, protection and assault can be successfully performed under harsh environmental conditions. ERTUNGA can be controlled remotely with the control console, as well as moving over environmental obstacles without the need for an operator thanks to its autonomy features. The vehicle can autonomously perform border patrol on defined route.



## aselsan



Main Responsibility of FCC which is designed for use on GÖKBEY and ATAK-II helicopters, is to provide autopilot functionality to the air vehicle it is mounted. FCC has all the interfaces which are required to control a rotary wing air vehicle and two powerful CPUs to control these interfaces. FCC consists of RTCA-DO-254 Level A certifiable hardware and RTCA DO-178B Level A certifiable BSP and driver software for Green Hills Integrity 178TUMP and Wind River WxWorks 653 realtime operating systems. FCC has two lanes which has identical IO functionality and dissimilar CPU and Operating Systems. Both lanes are functional during flight. Lanes either manage the autopilot functionality or monitor the other lane. Dissimilar CPU and RTOS architecture reduces to possibility of common mode failure based on CPU or RTOS. Power isolated interfaces groups, Builtin-Test capabilities, dual redundant architecture, dissimilar CPUs and rugged hardware provides reliable and safe operation for FCC during the flight.

## FCC (FLIGHT CONTROL COMPUTER)





High performance MWIR detector developed for use in high-performance Electro-Optical Reconnaissance and Surveillance Systems designed by ASELSAN. FELIS-640/15-MW, integrated detector cooler assembly contains HgCdTe (Mercury Callium) active material, has 640x480 resolution and 15 µm pixel pitch, high operability, high responsivity, low read-out noise and programmable frame rate.

FELIS-640/15-MW



## FERSAH HULL MOUNTED ASW SONAR

••••

FUEL HYDRAULIC DISPLAY (FHD)



ASELSAN FERSAH Hull Mounted ASW Sonar is a mid-frequency anti-submarine sonar with high source level and array directivity. The system has active and passive ASW modes, in addition to its Mine Like Object Avoidance (MAS) mode. FERSAH has detection, tracking and analysis capabilities both in active and passive modes with state of the art signal processing techniques.

With its compact, platform-configurable and user-friendly design: Fuel Hydraulic Display (FHD) meets the customer needs and platform requirements by critical fuel quantities, hydraulic pressure data and fuel balance/imbalance status. Its redundant, reliable and rugged design helps pilots to feel safe on severe environmental conditions during the mission.





## aselsan



GB establishes data and communication interfaces with MXF-484 and 9681 V/UHF Airborne Radio, MILSEC-3 Secure Voice Device, EO/IR Sensor Suite, SAR Radar, Airborne Data Terminal Communication Unit along with the mission software of the ANKA UAV. GB is easily scalable with respect to different platform/application requirements thanks to its modular and expandable architecture, large dynamic memory, user friendly interface, high performance processor and variety of electrical interfaces. GB does not raise the power demand of the system due to its low power consumption which is below 100W. GB can easily be fit into tight volume and weight requirements with its compact and light weight design.

AVIONICS MISSION COMPUTER (GB)





G-Box is a Global Navigation Satellite System developed for various platforms. Provides, position, velocity and time data to the system/platform that is integrated onto. Provides effective solution for all platforms that require position, time and velocity data.

G-BOX (MULTIPLE GLOBAL SATELLITE NAVIGATION SYSTEM)



#### **GEZGIN**



#### **GIU (GUN INTERFACE UNIT)**





GEZGIN is a hand-held electro-optic sensor system used for surveillance, detection and diagnosis. Device has an uncooled thermal camera, laser range finder, digital magnetic compass and GPS modules.

GIU (Gun Interface Unit) is the interface unit to manage and fire the gun of T-129 ATAK. It provides discrete and power signals required. GIU provides the power and discrete signals in a redundant manner to increase total system reliability.



## aselsan



GMFD-68 smart multifunctional display is designed by ASELSAN to generate graphical operator interface and to be used in digital map applications by processing data provided by external avionics. GMFD-68 central cockpit multifunctional display is using Active Matrix Liquid Crystal Display (AMLCD) technology, with an active display area of 6 by 8 inches. GMFD-68 collects necessary data from other devices on the aircraft and generate and display operational concept graphics using internal processor and graphics processor. GMFD-68 has the capability to display analog/digital video inputs. GMFD-68 provides to display just external video input, just graphics or external video with graphics overlay. GMFD-68 can also split screen to display external video and graphics or to display two different graphics.

GMFD-68 SMART
MULTIFUNCTIONAL DISPLAY





GÖKDENIZ EO is an electro-optic system which consists of high performance Thermal Camera, Daytime Vision Unit and an eye-safe Laser Range Finder. Subunits of the system can be replaced on platform during mission and boresight of the units can be performed after replacement. The system is designed to be used in CIWS for long range target detection and tracking. Image optimization, polarization and freezing options are available for the System.

**GÖKDENİZ EO** 



## GÖKDENİZ CLOSE-IN WEAPON SYSTEM 📽



aselsan

GÖKDENİZ CIWS along with 35 mm Airburst Ammunition (ATOM) developed by ASELSAN is a close-in weapon system (CIWS) highly effective against anti-ship missiles. The Automatic Linkless Ammunition Feed Mechanism allows loading both HEI and Airburst Ammunition at the same time and switching between ammunition types as needed. In addition to anti-ship missiles, GÖKDENİZ is also effective against helicopters, fighters, UAVs and asymmetric surface naval threats.







#### GÖREN-100



#### GÖREN-200



GÖREN-100 system has compact, high performance thermal and day vision systems, primarily designed for driver vision systems that are mounted on Armoured Vehicles and Main Battle Tanks. The System enables to detect, recognize and identify targets by providing high performance thermal image to the driver from long ranges under day, night, severe weather and harsh battlefield conditions.

GÖREN-100 system reflects the newest technology in thermal imaging applications. Thanks to the most efficient and novel image processing algorithms, it provides finer image details, situational awareness and superior image quality in the battlefield.



GÖREN-200 system is developed for tanks and armored vehicles, providing ease of day/night driving and situational awareness with the help of forward and reverse thermal/low light imaging units. It consists of thermal and low light camera subunits.





## aselsan

GÖZDE, designed by Tübitak SAGE is a guidance kit that converts 500 lb. class general purpose bombs to all-weather smart guided munitions. Guidance control system contains Inertial Navigational System, Global Positioning System and Laser Seeker in order to hit high priority fixed and moving targets.



GÖZDE





The GÜNGÖR-100 Daylight Vision Unit, which is included in the GÜNGÖR Camera Family, consists of a high-resolution sensor that detects at visible wavelength. Designed in a structure capable of performing short-range reconnaissance and surveillance missions, the GÜNGÖR-100 also has the ability to be integrated into many higher-end systems with an Ethernet interface. At the same time, it also has the capacity to produce better scenes in foggy weather with the "de-fog" feature.

**GÜNGÖR-100** 



## **GÜNGÖR-100D**



## **GÜNGÖR-200**



GÜNGÖR-100D is a Day TV Camera which is used within long distance reconnaissance and surveillance activities. It has a defog feature, vision freezing, automatic and manual focus.



GÜNGÖR-200 system is compact, high performance dayvision systems, primarily designed for sighting systems that are mounted on Armoured Vehicles and Air Defense Systems. The System enables to detect, recognize and identify targets by providing high performance day image to the gunner from long ranges.

GÜNGÖR-200 system reflects the newest technology in visible imaging applications. Thanks to the low latency HD-SDI video interface, global shutter feature and the efficient image processing algorithms, it provides finer image details, longer range target engagement and superior image quality in the battlefield.



## aselsan

GÜNGÖR-200D is a Day TV Camera which is used within long distance reconnaissance and surveillance activities. It has a crystal-clear image, global shutter, automatic display optimization and it can work with the modular systems.



**GÜNGÖR-200D** 



The high-resolution and long-range GÜNGÖR-300 Daylight Vision Unit is specially designed for the maritime platforms and border security. With the GÜNGÖR-300, which has the narrowest and widest perspective in the ASELSAN camera family, the safety of the coastal coasts is ensured and the ability to detect from long distances in sea conditions has been provided to our country. GÜNGÖR-300, which provides 60X optical magnification continuously, can also offer 120X optical magnification with a 2X extender lens.

GÜNGÖR-300



#### **GÜNGÖR-300D**



The day vision camera, which is suitable for sea conditions, is designed for long-range reconnaissance and surveillance, and is used for maritime defense applications and military security. It is an electro-optical system suitable for integrated system architecture, which provides surveillance in the visible band with its automatic focus adjustment, optical and electronic de-fog filter, optical extender integrated into the system and 4x electronic zoom capability, and can operate in military conditions.



## THE HAKIM AIR COMMAND AND CONTROL SYSTEM





HAKİM is a command and control system that integrates all Decision Support Elements of the Air Force, including Command, Control, Surveillance,

Communications, Computers, Intelligence, and Reconnaissance (C4ISR) processes. It enables the seamless and cost-effective operation of all elements through original, domestic, and national algorithms. By processing data from various types of sensors using advanced fusion algorithms, it provides operators with diagnostic suggestions and creates a defined air picture. To counter threat elements within the defined Air Picture, it provides the necessary decision support elements for the effective execution of airspace control missions using advanced threat assessment and weapon allocation algorithms, including interceptor aircraft, unmanned aerial vehicles, surface-to-air missile systems, and artillery systems.

## aselsan



With the Mod 5 (IFF) Interrogator Integration Project to Air Radars, it is aimed to provide an integration solution for the different radar types in the Air Force Command inventory of the long-range interrogator unit developed within the scope of the "Identification of Friend or Foe System Mode 5 (IFF) Procurement and Reverse IFF Development Projects".

MOD 5 (IFF) INTERROGATOR INTEGRATION PROJECT TO AIR RADARS

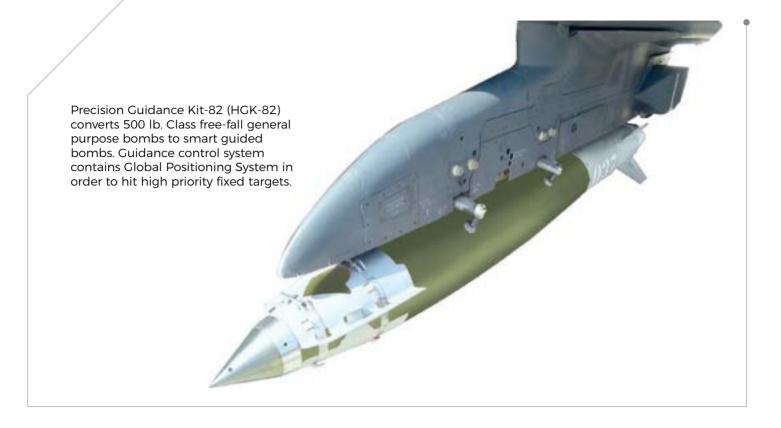




HERİKKS is an Air Defence Early Warning and C4I System that manages the air defence activities on Tactical Level. HERİKKS receives air threat information from a variety of radars, produces a recognized air picture in real time and assigns the available air defense weapons to selected targets. HERİKKS comprises command and control units, air defence weapons, air defence radars, communications equipment and air defence system software, which are integrated to meet specific customer requirements. These integrated systems are interoperable and can be combined to form a system within the command-control chain.

HERIKKS AIR DEFENCE EARLY WARNING AND COMMAND CONTROL SYSTEM









HIZIR, ASELSAN's Torpedo Countermeasure System for surface combatants, localizes threat torpedo and advises the appropriate countermeasure tactics utilising its State-of-the-Art torpedo detection array. In addition to full automatic mode, system detects and chooses the optimum countermeasure tactic from its database and waits for user approval to initiate the operation.





HİSAR Missile Launching System are dedicated to air defense of Stationary/Moving Forces and critical assets against:

- $\cdot$  Fighters
- Helicopters
- UAVs
- · Cruise Missiles
- · Air to Surface Missiles

HİSAR Missile Launching System is a multi purpose missile launcher which deploys and launches short and medium range HISAR Air Defense Missiles. HİSAR-A Missile Launching System, configured as a short range air defense missile launcher, operates under the control of KORKUT-Fire Control System which provides coordinated operation of 35 mm towed guns and Missile Launching System.HİSAR-O Missile Launching System. configured as a medium range air defense missile launcher, is controlled by HİSAR-O Fire Control Center which supervises three launchers within an air defense battalion.HİSAR Missile Launching System is a state of the art technology and has open HW&SW architecture for utilizing future technology.



HİSAR Air Defence Missile Imaging Infrared Seeker, having high resolution infrared technology provides accurate target detection and tracking capability under high speed, acceleration and vibration levels in long range.





#### aselsan

#### **HISAR O+ BATTERY**





HİSAR O+ Medium Range Air Defense Missile System is dedicated to air defense of Stationary Forces and Critical Assets against:

- Fighters
- Helicopters
- UAVs
- · Cruise Missiles
- · Air to Surface Missiles

HİSAR O+ performs target detection, classification, identification, tracking, command & control and fire control functions in a distributed and flexible architecture. One HİSAR O+ Battery consists of battery level FCC, battery level Radar, Electro-Optical System, TDLCS and Missile Launching Systems. HİSAR O+ Battery has the capability of target detection, tracking, identification and performing command & control and fire control functions autonomously.



HİSAR-A Systems are dedicated to air defense of Maneuver and Stationary Forces against:

- Fighters
- · Helicopters
- UAVs
- · Cruise Missiles
- · Air to Surface Missiles
  HİSAR-A System has a modular
  design comprising Search Radar &
  IFF, Infrared Sensors & Laser Range
  Finder, Data Link, Vertically Launcher
  & Bi-Pulsed Air Defense Missile
  with IIR seeker.HİSAR-A System is
  a state of the art technology and
  has open HW&SW architecturefor
  utilizing future technology.

**HISAR-A KMOAIHSFS** 



## HUMS (STRUCTURAL INTEGRITY AND UTILISATION TRACKING SYSTEM)



HUMS is a sensor-based monitoring system that enables Condition-Based Maintenance by measuring the health and performance of mission-critical components in rotary wing aircraft. By continuously monitoring vibration at numerous points throughout the drivetrain, and pinpointing mechanical faults before they become catastrophic failures, HUMS provides actionable information that allows informed maintenance decisions. HUMS reduces maintenance costs of aircraft systems while increasing availability. With its reliable and rugged design, HUMS meets harsh environmental requirements of various Rotary Wing Aircrafts.

Integrated Modular Display (IMD-820) is a large area multifunction display and VPX compatible mission computer. IMD-820 has 8"x20" display area with IR touch-screen capability. IMD-820 controls the avionics systems and generates flight/mission graphics and performs video overlays onto a dual redundant, separately addressable, two left and right 1280x1024 resolution half displays via one 2560x1024 resolution AMLCD.





**INTEGRATED MODULAR DISPLAY (IMD-820)** 

#### **İHTAR ANTI-DRONE SYSTEM**



#### **iris-100**



ASELSAN's Anti-Drone System, aims to neutralize mini and micro UAV threats in urban and rural environments. It is used to protect critical facilities, prevent illegal border infiltration and secure highly populated events. Multiple İHTAR systems can work jointly to provide air defense. It displays the information received from the various sensors (Radar, electro-optic systems, RF spoofing etc.) on the Command and Control screen map After the location and direction of the threads are determined by the sensors, the thread is eliminated with soft and hard kill (jamming, laser etc.) solutions. There are 3 different configurations: mobile, integrated and trailer for the needs of the customer.





IRIS-100 system which can be integrated to helicopters and widebody aircraft is designed to detect and track missiles which are threatening/approaching the platform and give warning. The sensors operate in "solar blind" ultraviolet spectral band and detects radiation emitted from the exhaust plume of the approaching threat. The system reports audible and visual threat warning to pilot to apply the required countermeasure There are configurations with 4-6 MWS sensors and the configuration with 6 sensors provides spherical coverage to the platform.

## aselsan

KARAKURT Electro-Optic Sensor System is designed to be used on Land Platforms for very long-range Surveillance Reconnaissance and Targeting purposes.

KARAKURT Electro-Optic Sensor System has state of the art architecture and consists of High Definition Infrared Camera operates in Midwave IR Band,

High Definition Color Daylight Camera, Laser Range Finder and Laser Target Designator.





KARAOK IIR seeker is the main sub-system of KARAOK man portable anti-tank missile system. Man Portable Fire and Forget Anti Tank Missile KARAOK is effective at both day and night to its Imaging Infrared Seeker. The missile used for air attack, airborne and amphibious operations to stop and destroy threats at short range.

**KARAKURT** 



KARAOK KÖAB



#### **KARAT-100**



#### **KARAT-200**



KARAT-100 is the integrated Infrared Search and Track system designed and developed for Manned Unmanned Fighter Aircraft, Fixed and Rotary Wing Aircraft and Unmanned Aerial Vehicles.





KARAT-200 is the integrated Infrared Search and Track system designed and developed for Manned Unmanned Fighter Aircraft, Fixed and Rotary Wing Aircraft and Unmanned Aerial Vehicles.

## aselsan



The Eagleeye-100 Periscope, which was developed as the basic Electro-Optical reconnaissance surveillance and targeting system of Light and Medium Class Battle Tanks such as M60, T72 and Leopard2A4, is assembled with the integrated Periscope Electronic Unit, which allows viewing the sighting line at day and night and measuring distance when the tank is stable or moving. Device consists of Stabilized Mirror Head, Thermal Vision Unit, Day Camera, Laser Range Finder and electronic card sets that offers the user a compact solution.







Tank sight system which consists of gunner and commander periscopes includes high quality thermal and day light camera, eye-safe laser range finder. Firing capability of tank is increased with high performance in low volume and high stabilization sensitivity.

KARTALGÖZÜ-200



#### **SLIP RING PRODUCT FAMILY**



## KDU-44 KEYBOARD DISPLAY UNIT



-00000

Slip rings developed by ASELSAN could transmit power, analog and digital signals, fiber optic signal, RF, Ethernet, video, fluids etc. according to customer demands. ASELSAN has experience on unique design and manufacturing of slip rings which conform to military standards. ASELSAN has performed mass production of 6000 slip rings placed on different systems. ASELSAN has provided solutions that can be used at the land, naval, air systems and radar systems.

A color display using Active Matrix Liquid Crystal Display (AMLCD) technology, with an active display area of 4 by 4 inches. KDU-44 is designed to fully comply "ARINC-739 Multi-purpose Control and Display Unit" standard. It can transmit, receive and display data and status information from subsystems that are compatible with ARINC-429 and ARINC-739 standards. KDU-44 provides Man Machine Interface (MMI) for operator data entry, avionics subsystem mode selections and subsystem status displays (flight, navigation, communication, weapon management) in accordance with ARINC-739 protocol.



## aselsan



Has a color display based on Active Matrix Liquid Crystal Display (AMLCD) technology with an active display area of 4 by 5 inches. The KDU-45 Keyboard Display Unit is part of the modern avionic digital cockpit management system. The KDU-45 Keyboard Display Unit

acts as the primary Man Machine Interface (MMI) in the cockpit for control, display and management. It provides control and status awareness of the platform to the pilot and co-pilot. The KDU-45 has Data Knob, Alphanumerical Keys and Line Select Keys for data entry to the connected avionic systems. The KDU-45 Keyboard Display Unit provides avionics subsystem mode selection and status indication functionalities by displaying flight, navigation, communication, weapon and various other management screens on the display. The KDU-45 Keyboard Display Unit with its reliable and durable design can withstand harsh environmental conditions of fixed and rotary wing platforms.

Wing Assisted Guidance Kit-84 (KGK-84) converts 2000 lb. class free-fall general purpose bombs (MK-84, MK-84-T, NEB ve NEB-T) to smart guided bombs. Guidance control system contains Inertial Navigational System and Global Positioning System.

## THE KDU-45 KEYBOARD DISPLAY UNIT



**KGK-84** 



# KILAVUZ-11 (TACTICAL LEVEL INERTIAL MEASUREMENT UNIT)



### KILAVUZ-20 (TACTICAL LEVEL INERTIAL MEASUREMENT UNIT)



Kilavuz-11 is a tactical inertial measurement unit, which is designed and developed by ASELSAN, to be used in systems like tactical inertial navigation system, guided munition kit, EO/FLIR stabilization and in many other applications. Kilavuz-11 uses fiber optic gyroscopes and MEMS accelerometers for measurement of angular rate and acceleration of the platform. It has a small size, high reliability, low weight and low power consumption by using the advantages of the MEMS and fiber optic technology.

Kılavuz-20 is a tactical inertial measurement unit, which is designed and developed by ASELSAN, to be used in systems like tactical inertial navigation system, guided munition kit, EO/FLIR stabilization and in many other applications. Kılavuz-20 uses fiber optic gyroscopes and quartz accelerometers for measurement of angular rate and acceleration of the platform. It has a small size, high reliability, low weight and low power consumption by using the advantages of the fiber optic technology.





#### aselsan



Kılavuz-30 is a tactical grade inertial measurement unit, which is designed and developed by ASELSAN, to be used in systems like tactical inertial navigation system, guided munition kit, EO/FLIR stabilization and in many other applications. Kılavuz-30 uses fiber optic gyroscopes and MEMS accelerometers for measurement of angular rate and acceleration of the platform. It has a small size, high reliability, low weight and low power consumption by using the advantages of the MEMS and fiber optic technology.

KILAVUZ-30 (TACTICAL LEVEL INERTIAL MEASUREMENT UNIT)





KIRLANGIÇ-KARA System is a reconnaissance and surveillance system developed for use on land platforms, consisting of electro-optical units integrated into a two-axis stabilized gimbal structure. It performs target detection, diagnosis, and identification functions. It includes a thermal camera, a daytime camera, a laser rangefinder, and a laser target designator.

**KIRLANGIÇ-KARA** 



#### KIZILGÖZ-100



#### **KIZILGÖZ-200**





Kızılgöz-100, which is included in the ASELSAN Thermal Camera Family, is a high-resolution and cooled thermal camera device designed to work in all weather conditions day/night for the purpose of long-distance detection, identification and diagnosis of threats with its flexible structure that can be integrated into different platforms. KIZILGÖZ-100 Thermal Cameras also provide End Users with a long-lasting 7x24 usage opportunity with RM2 Cooler.

Kızılgöz-200, which is included in the ASELSAN Thermal Camera Family, is a cooled thermal camera device designed to work in all weather conditions day/night for the purpose of long-distance detection, identification and diagnosis of threats with its flexible structure that can be integrated into different platforms. There are 4 different versions of KIZILGÖZ-200 Thermal Cameras, short, medium, long and very long range, in order to take part in many different applications.



## aselsan

KIZILGÖZ-200D is a thermal camera with a cooled cooled thermal sensor. It is used within border monitoring, tactical reconnaissance, coastal security, long distance surveillance activities.



**KIZILGÖZ-200D** 





KIZILGÖZ-300, thermal imaging camera, is designed for detection, recognition and identification of threats at longer ranges during day-night and adverse weather conditions KIZILGÖZ-300, has capability to detect the 1,06µm Laser Spot during day-night and adverse weather conditions. It provides target information to tactical field needs of modern army with transferring the information over communication devices for guidance of fire support units. KIZILGÖZ-300 camera settings can be controlled by using ENGEREK's menu and thermal video can be seen on the micro display inside ENGEREK's ocular. This special feature provides ability to find and designate targets easily at night conditions.

**KIZILGÖZ-300** 



KIZILGÖZ-400 system is compact, high performance thermal vision systems, primarily designed for sighting systems that are mounted on Armoured Vehicles and Main Battle Tanks. The System enables to detect, recognize and identify targets by providing high performance thermal image to the gunner/commander from long ranges under day, night, severe weather and harsh battlefield conditions. KIZILGÖZ-400 system reflects the newest technology in thermal imaging applications. Thanks to the most efficient and novel image processing algorithms, it provides finer image details, longer range target engagement and superior image quality in the battlefield.











Kızılgöz-500, which has been developed to be easily integrated into all kinds of vehicles, is a high-resolution and cooled thermal imaging camera device designed to work in all weather conditions day/night for the purpose of detecting, identifying and diagnosing threats from a long distance. According to different vehicle models, various optional accessories such as MAST (Telescopic Camera Pole), Operator control unit, LCD Monitor and UPS (Uninterruptible Power Supply), etc. can be offered to end users.





**KIZILGÖZ-500** 

#### aselsan



KORKUT Air Defense Gun System is developed for the effective air defense of mechanized troops and mobile units. System has firing on the move capability with the stabilized and unmanned gun turret. KORKUT Gun System has capability of firing 35 mm Airburst Ammunition - which is also a product of ASELSAN - in addition to conventional type 35 mm ammunitions. KORKUT Gun System-together with 35 mm Airburst Ammunition improves the effectiveness of ground based air defense against modern air threats including air-to-ground missiles, cruise missiles and UAVs.





#### **LASER SEEKER HEAD (LAB)**



#### **LASER GUIDANCE KIT (LGK)**



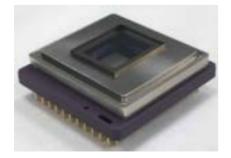


LAB is the semi active laser seeker designed and developed for Laser Guidance Systems. LGK is a laser guidance kit which converts 250 lb. MK-81, 500 lb. MK-82, 1000 lb. MK-83 and 2000 lb. MK-84 dumb bombs into cost effective and highly reliable smart weapons. It provides increased accuracy, increased delivery range, reduced collateral damage and after release re-targeting capability against both stationary and moving targets. LGK consists of a semi-active laser (SAL) seeker, guidance section, thermal battery, canard control system and rear wing. The weapon homes on reflected laser energy directed on the target: the seeker detects the reflected light of the designating laser, and actuates the canards to guide the bomb toward the designated point.



## aselsan

Short Wave Infrared - SWIR Detectors work on the principle of displaying the reflection of the light source. Therefore, high contrast images can be obtained compared to thermal imaging systems. Since it works at a higher wavelenght than Day TV, it gives a clearer image and a longer range can be obtained in misty, foggy and smoky weather conditions. Containing InGaAs (Indium Gallium Arsenide) active material, LEOPAR-640/15-SW has 640x480 resolution and 15 µm pixel pitch, high operability, high responsivity, low read-out noise and programmable frame rate.



**LEOPAR-640/15-SW** 



It is a system that provides the ability to detect and recognize and laser threats directed to helicopter platforms with high sensitivity in a short response time, and to activate countermeasure systems. LIAS-100, which has the capability of detecting Laser Range Finder (LRF), Laser Designator (LD) and Laser Beam Rider (LBR) type of threats, performs threat notification through the command control system. With its threat classification capability, LIAS-100 allows the operator to perform the most appropriate maneuver and instantaneously implement the most appropriate countermeasure, thanks to its short response time, by informing the operator of the arrival angle, type and identity information of laser threats detected by its sensors.

**LIAS-100** 



#### LIAS-100D



#### LIAS-200D



It is a system that provides the ability to detect and recognize and laser threats directed to naval platforms with high sensitivity in a short response time, and to activate countermeasure systems. LIAS-100D, which has the capability of detecting Laser Range Finder (LRF), Laser Designator (LD) and Laser Beam Rider (LBR) type of threats, performs threat notification through the command control system. With its threat classification capability, LIAS-100D allows the operator to perform the most appropriate maneuver and instantaneously implement the most appropriate countermeasure, thanks to its short response time, by informing the operator of the arrival angle, type and identity information of laser threats detected by its sensors.

Laser Warning Receiver System-200D (LIAS-200D) is a system that provides the ability to detect and recognize directed laser threats with high sensitivity in both horizontal and vertical axes in a short response time, and to activate countermeasure systems, in line with the current needs of naval platforms. . LIAS-200D system is used in BARBAROS-YÖM and MİLGEM-5 projects.



## aselsan



It is a system that provides the ability to detect and recognize and laser threats directed to tank platforms with high sensitivity in a short response time, and to activate countermeasure systems. LIAS-400, which has the capability of detecting Laser Range Finder (LRF), Laser Designator (LD) and Laser Beam Rider (LBR) type of threats, performs threat notification through the command control system. With its threat classification capability, LIAS-400 allows the operator to perform the most appropriate maneuver and instantaneously implement the most appropriate countermeasure, thanks to its short response time, by informing the operator of the arrival angle, type and identity information of laser threats detected by its sensors.

**LİAS-400** 



Turkish National Fire Control System developed under the Project of FIRAT M60T Project with the the capabilities of Turkish Defense System Industry. To improve the Survivability of M60 Tank, below system features are validated:

- · Simplified System Architecture,
- · High Resolution Thermal/Day Image,
- · High First Shot Hit Probability
- · Effective Fire Control functions in toughest environments



M60 VOLKAN-M TANK FIRE CONTROL SYSTEM



MARLİN-ASV is an unmanned surface vehicle with advanced autonomous capabilities. It has been developed for surface and electronic warfare, reconnaissance and surveillance, base/port/critical ship-facility security and amphibious operations by its' modular design that allows to integrate different payload configurations.



#### **MARTI-KARA**



MARTI-KARA System is a stabilized and useful payload developed to meet the close-range night and day imaging needs of small-sized and mobile land platforms. The system consists of essential components such as an uncooled thermal camera, a daytime camera, and optional laser range finder and LED illuminator, all mounted on a two-axis stabilized gimbal that allows for continuous 360° rotation in the azimuth.



#### **MERKÜR FTS100**



MERKÜR FTS-100 is a fusion weapon sight that combines thermal and night vision technologies in the same devices. This technology enables effective reconnaissance and surveillance by using the advantages of both technologies.



## aselsan



A Multifunctional Display, which features video input displaying. MFD-2820T, which incorporates resistive touch screen and 8"x20" inches AMLCD display, is designed by Aselsan in order to operate compatible with flight and mission computers. MFD-2820T has capability to perform video overlays onto a dual redundant, separately addressable, two left and right 1280x1024 resolution half displays via one 2560x1024 resolution AMLCD. In addition, MFD-2820T has capability to display video that has 2560x1024 resolution. Dual redundant, separately addressable, two left and right 1280x1024 resolution half displays prevent loss of both displays due to the single point failures. MFD-2820T provides ease of use to operator in all conditions with high brightness, high contrast ratio, low reflection, NVIS compatibility and touch screen that are prominent features.

MFD-2820T LARGE AREA **DISPLAY** 





MFSC is a control unit designed by ASELSAN to control cursor movement on displays. MFSC is ergonomically designed to control cursor movement on the displays for the Pilot and Copilot. Each MFSC unit has one hand unit and one electronic board box. The hand control part shape and configuration are designed for the left hand of the pilot and the right hand of the copilot with guidance of MIL-HDBK-1472F Human Factor Engineering standard. MFSC consists of a 2-axis force transducer, three (3) single pole double throw pushbutton switches, and a scroll wheel switch with built in detent switch. The 2-axis force transducer supplies slewing capability for cursor movement on the displays. With its rugged, ergonomic and user-friendly design, MFSC operates in severe environmental conditions on air platforms.

**MULTIFUNCTIONAL CONTROL UNIT (MFSC)** 



## MGB ADVANCED MODULAR COMPUTER



The processing center of the Integrated Fighter Avionics System. Two MGB units can be equipped to form a dual redundant tactical mission management structure. MGB is based on multiple, high performance quadcore PowerPC family processors. AMD Radeon based graphical processing units can support up to seven digital display generation.

MCB has modular system architecture and it's expandable hardware and software design allows adapting its performance and interfaces according to the platform or application needs.



## MGRIP HAND CONTROL UNIT



Main responsibility of MGRIP is to provide user interface for weapon systems, targeting system, digital moving map and multi functional displays. MGRIP consists of co-pilot Left Hand Grip, co-pilot Right hand Grip, pilot Grip and two Electronic Control Units. The Electronic Unit is a low power embedded LRU which monitors the switch positions and reports this information to the mission computers through dedicated serial buses.



The Handles of MCRIP are ergonomically designed to maximize the performance of pilot control on mission equipment.

## aselsan

MIDAS uses Distributed Acoustic Sensing (DAS) technology to collect acoustic data and analyze it in order to detect intrusions by standard fiber optic cable.



**DETECTION SYSTEM** 

The MIR unmanned surface vehicle was developed for anti-submarine warfare. Thanks to its modular design, it can perform different tasks such as surface warfare, reconnaissance and surveillance, electronic warfare, base/port/critical ship-facility security and amphibious operations. Different payload configurations; such as Dipping Sonar, Diver Detection Sonar, Ligthweight Torpedo, ASW Rocket, Sonobouy System, EO/IR Camera and Stabilized Weapon System can be integrated on it.

MİR



# MIRSAD PHYSICAL SECURITY INFORMATION MANAGEMENT SOFTWARE







Is the key for mission success. MKB is the mission computer which manages avionics, supports pilot with its advance processing capability, and provides relevant data to the pilot collected from aircraft systems. Modular hardware and software design, large memory capacity, high processing capability and multiple interface support of MKB provides the capability to be integrated into various air platforms and applications. With its reliable and rugged design, MKB operates in severe environmental conditions on fixed-wing and rotary-wing platforms with the advanced cooling and thermal management techniques. Having flexible and scalable industry standard open architecture design, MKB meets customer and platform requirements.



MİRSAD is a software product that has the ability to meet the physical security management software needs with its special solutions in a single interface for all sectors. MİRSAD can manage security camera management, access control, fire and alarm, vehicle license plate recognition, violation detection, personnel tracking and many other sensors needed in residential areas such as buildings, facilities and regions with different security needs by combining them in a single interface. Due to the MIRSAD's flexible structure, any brand security product, ASELSAN or another else, can be integrated into the MIRSAD interface. Thus, operators do not need to switch different software for incident tracking and analysis which in turn improves operations and saves time.



## aselsan



Modernization program upgrades the 35 mm guns in the inventory to be effective against modern air threats with use of 35 mm Airburst Ammunition. Modernized Towed Guns are used under command and control of Fire Control System.





With the Modernized ACV, ACV's will be equipped with NEFER Unmanned Turret and high tech ASELSAN mission equipment like ORUMCEK 360° Close Situational Awareness System, Driver Vision System, Inertial Navigation System, Laser Warning System. Also Armor and Mine Protections are increased so that Modernized ACV's will have increased survivability and striking power on the battlefield.

**MODERNIZED ACV** 



## MULTI-FUNCTIONAL SYSTEM CONTROLLER (MSC)



#### **MUHAFIZ/SMASH**



An avionic control panel designed by ASELSAN to control cursor movement on displays. The operator interface of MSC is designed with guidance of MILHDBK-1472F Human Factor Engineering standard for the usage of Pilot and Copilot. MSC performs to control touch displays, fast access settings, data management capability via USB 2.0 interface. MSC consists of a joystick for cursor control with push to pan capability, four knobs for critical PFD data settings, four functional pushbuttons and 12 shortcut buttons for touchscreen concepts. With its rugged and compact design, MSC operates in severe environmental conditions on air platforms.

30mm ASELSAN Gun - MUHAFIZ/SMASH is a stabilized and remotely operated naval gun system that provides increased hit probability and maximum gunner survivability. 30mm ASELSAN Gun - MUHAFIZ/SMASH is designed for purposes of coastal defense, border defense and defense of naval platforms against asymmetric threats. 30mm ASELSAN Gun-MUHAFIZ/SMASH is profiled for minimizing radar cross-section and operates in both day and night conditions under various weather and sea states. By its stabilized structure, remote operability feature, automated target detection and tracking function, automatic ballistic calculation with high firing accuracy, 30mm ASELSAN Gun - MUHAFIZ/SMASH can be recommended for all combat purposes.



## aselsan

Consists of two independent indicators for the annunciation to the pilot and copilot. Master Caution Rectangular Illuminated Indicator is responsible of indicating/resetting caution situations to pilot and copilot via illuminated buttons. Master Warning Rectangular Illuminated Indicator is responsible of indicating/resetting warning situations to pilot and copilot via illuminated buttons.

#### Interfaces

- · MIL-STD-704F 28 VDC Electrical Power Interface
- · Discrete Interfaces



MASTER WARNING / CAUTION PANEL



NOVA A100 is designed of situational awareness, night time surveillance and reconnaissance, night patrol, search and rescue operations and night time navigation. A100 has a unity magnification and a 3x&5x extender objective offered as an optional accessory. Besides, the device can be used as a binocular with an adapter. A100 MNVG is can be used hand-held, with face mask or helmet mount and mounted on weapons by using Picatinny compatible mounting adapter.

**NOVA A100** 



#### **NOVA A210**



#### **NOVA A230**



NOVA A210 Biocular Night Vision Goggle is as working on image intensifier technology. Image intensifiers multiply the amount of ambient light. Therefore, in the environments that we cannot see with naked eyes, these devices provide us a clear image of the scene and the targets. A210 is designed of situational awareness, night time surveillance and reconnaissance, night patrol, search and rescue operations and night time navigation. A210 has a unity magnification and a 3x&5x extender objective offered as an optional accessory.

NOVA A230 Biocular Night Vision Goggle is as working on image intensifier technology. Image intensifiers multiply the amount of ambient light. Therefore, in the environments that we cannot see with naked eyes, these devices provide us a clear image of the scene and the targets. A230 is designed of situational awareness, night time surveillance and reconnaissance, night patrol, search and rescue operations and night time navigation. A230 Biocular Night Vision Goggle has 3X magnification.





## aselsan

NOVA A341 / A361 are night vision weapon sights (NVWS) working on image intensifier technology. Image intensifiers multiply the amount of ambient light. Therefore, in the environments that we cannot see with naked eyes, these devices provide us a clear image of the scene and the targets. A341/A361 are optimized according to the needs of dismounted soldiers, resulting light and ergonomic devices. A341 4X NVWS is recommended mainly for assault rifles and light machine guns.





NOVA A341 / A361 are night vision weapon sights (NVWS) working on image intensifier technology. Image intensifiers multiply the amount of ambient light. Therefore, in the environments that we cannot see with naked eye, these devices provide a clear image of the scene and the targets. A341/A361 are optimized according to the needs of dismounted soldiers, resulting light and ergonomic devices. A361 6X NVWS is recommended mainly for heavy machine guns and sniper rifles.

**NOVA A341** 



**NOVA A361** 



#### **NOVA A500**



#### **NOVA A510**



NOVA A500 Aviator's Night Vision Goggles are night vision systems working on image intensifier technology. The googles provide superior image even at low light conditions such as starlight illumination. With A500, aviators obtain image with low halo effect and high resolution. The auto-gating feature of the tubes gives users the ability to aviate even on bright light sources such as city lights.





NOVA A510 Night Vision Binoculars are night vision systems working on image intensifier technology. The googles provide superior image even at low light conditions such as starlight illumination. With A510, users obtain image with low halo effect and high resolution. The auto-gating feature of the tubes gives users the ability to operate even on bright light sources such as city lights.

## aselsan

Using different scopes for daytime and nighttime is usually a problem for users. Conventionally, users have to carry two scopes with them, besides they have to check zeroing of the weapon when they change their scopes. A600 Clip-On Night Vision is design to overcome this problem. Users simply attach this device in front of their day sight and carry on their mission. No rezeroing is required. NOVA A600 Clip-on Night Vision is working on image intensifier technology. Image intensifiers multiply the amount of ambient light. Therefore, in the environments that we cannot see with naked eyes, these devices provide us a clear image of the scene and the targets. NOVA A600 is optimized according to the needs of dismounted soldiers, resulting light and ergonomic devices.



**NOVA A600** 





ORUMCEK has 360° new generation thermal imager and high quality day tv camera. ORUMCEK has thermal and day tv fusion surveilance, motion detection and real-tme surveillance features. ORUMCEK has interoperability with other subsytems such as Laser Warning Receiver System, Active protection System, Fire Control System and Remote Controlled Weapon Station System.

ORUMCEK 360° SITUATIONAL AWARENESS SYSTEM



#### **PANTER-UV-100**



#### **PANTER-UV-200**



Image Intensifier Tube with CMOS Sensor is used in missile warning systems. It operates in solar blind ultraviolet spectral band and with low photon saturation. It can detect the threat exhaust radiation with CMOS Sensor.





Image Intensifier Tube is used in missile warning systems. It operates in solar blind ultraviolet spectral band and with low photon saturation.

## aselsan



PİRİ-100 Infrared Search and Track System is capable of detection and tracking of targets that have the capacity to be a threat to ships, such as vessels, planes, helicopters, unmanned aerial vehicles (UAV), and guided missiles. The system is passive one and gives user the ability to have high situational awareness and 360° panoramic view. PİRİ-100 with it's Distributed/ static sensor architecture, will give IR video data with high resolution and accuracy in a highly reliable way. PİRİ-100 operates in two bands (3-5μm & 8-12μm) to increase it's detection performance and to decrease the false alarm rate. PİRİ-100 composed of three subunits; Sensor Unit, Electronics Unit, Stabilization Unit. As an option a Video/Data Recorder Unit will also be addeed to the system configuration.

**PIRI-100** 





An indigenously developed navigation unit that is designed to operate both in civil and military aerial platforms. RNE-400 is composed of VHF Omni-Directional Range (VOR), Instrument Landing System (ILS), Glideslope (GS), Marker Beacon (MB), Automatic Direction Finder (ADF), Distance Measuring Equipment (DME) and Tactical Air Navigation (TACAN) Radio Transceivers. RNE's functional capabilities and its modular architecture provide integration to various fixed-wing and rotary-wing platforms easily.

RADIO NAVIGATION EQUIPMENT (RNE-400)





An indigenously developed navigation unit that is designed to operate both in civil and military aerial platforms. RNE-410 is composed of VHF Omni-Directional Range (VOR). Instrument Landing System (ILS), Glideslope (GS), Marker Beacon (MB) and Automatic Direction Finder (ADF) Radio Transceivers. RNE's functional capabilities and its modular architecture provide integration to various fixed-wing and rotary-wing platforms easily.



An indigenously developed navigation unit that is designed to operate military aerial platforms. RNE-420 is composed of Distance Measuring Equipment (DME) and Tactical Air Navigation (TACAN) Radio Transceivers. RNE's functional capabilities and its modular architecture provide integration to various fixed-wing and rotary-wingplatforms easily.





**RADIO NAVIGATION EQUIPMENT (RNE-420)** 

#### aselsan

#### SADAK-2MK



SADAK-2MK carriage system is the first domestic smart twin carriage rack system in Türkiye. The system could carry and eject two 500 lb. and 1000 lb. class smart guided air to surface bombs (HGK, KGK, LGK, TEBER). The system is compatible with combat aircrafts and unmanned aerial vehicles and increasing the platform's weapons carriage capability in per sortie as well.



SADAK-2T carriage system is the smart twin store rack. The system could carry and eject two 250 lb. class TOLUN or TOLUN-IIR which are GPS/INS/IIR small guided bomb. The system is compatible with combat aircrafts and unmanned aerial vehicles and increasing the platform's weapons carriage capability in per sortie as well.



**SADAK-2T** 





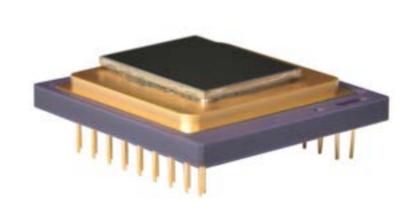
SADAK-4T carriage system is the first domestic multi-stores carriage system in Türkiye. The system could carry and eject four 250 lb. TOLUN or TOLUN-IIR which are GPS/INS/IIR small guided munitions. The system is compatible with combat aircrafts and unmanned aerial vehicles and increasing the platform's weapons carriage capability in per sortie.



Microbolometer type uncooled detectors are used to create a thermal image by transferring infrared energy to visible pattern. Since they do not require cooling, this type of detectors preferred in applications where size, weight and power consumption are important.

ASELSAN has developed MEMS based uncooled the SAFIR-640-17-LW detectors with 640 x 480 format at 17 µm.

Containing VOx (Vanadium Oxide) active material, SAFIR-640/17-LW has 640x480 resolution and 17  $\mu$ m pixel pitch, high operability, high responsivity, low power consumption and programmable frame rate.





**SAFIR-640/17-LW** 

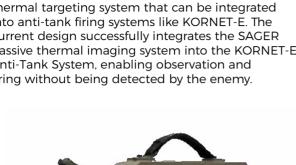
#### SAGER-100



SAGER-200



SAGER-100 Targeting System fulfills thermal imaging in all weather and field conditions for the firing and control functions of KORNET-E missiles. SAGER-100 is a compact, lightweight, and cost-effective thermal targeting system that can be integrated into anti-tank firing systems like KORNET-E. The current design successfully integrates the SAGER passive thermal imaging system into the KORNET-E Anti-Tank System, enabling observation and firing without being detected by the enemy.



SAGER-200 is designed by ASELSAN as a Thermal Sight for KORNET-E/EM anti-tank guided missile. SAGER-200 is a modern, compact and light E/O system. It is a field proven system that is portable and easy to integrate. SAGER-200 provides effective surveillance capability during day and night for detection, recognision and identification of target under severe weather and harsh battlefield conditions. SAGER-200 is composed of Thermal Camera, Day TV Camera and Laser Range Finder. Thermal Camera includes cooled thermal imager in order to satisfy long range requirements.



### aselsan

SAGER-300 device is a sighting system designed to be used for Gun and Howitzer Weapon Systems. It offers effective shooting in all weather conditions, day and night with its thermal camera and laser range finder. Thanks to the body resistant to gun shocks and setting mechanism, it can be integrated into various platforms.



SAGER-400 System is a reconnaissance and surveillance system developed for use on land platforms, specifically for air defense weapon systems, fire support, and target detection purposes. It consists of a high-resolution long-wave thermal sensor unit.

SAGER-300



SAGER-400



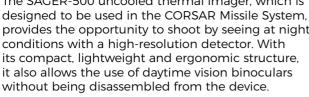
#### SAGER-500



**SAGER-600** 



The SAGER-500 uncooled thermal imager, which is designed to be used in the CORSAR Missile System, provides the opportunity to shoot by seeing at night conditions with a high-resolution detector. With its compact, lightweight and ergonomic structure, it also allows the use of daytime vision binoculars



The SAGER-600 cooled thermal imager, which is designed to be used in the SKIF Missile System, provides the opportunity to shoot by seeing at night conditions with a high-resolution detector. With continuous optical zoom and auto-focus features, it contributes to the end user to perform better against threats.







### aselsan



SARP, ASELSAN's remotely operated stabilized weapon platform, combines high-precision reconnaissance capabilities with firepower to serve tactical needs of the battlefield and protect critical infrastructures. The compact design of the system proves SARP a perfect match for integration onto tactical vehicles, fixed surveillance posts and towers. Depending on the operational requirements, SARP can be equipped with 12.7 mm machine gun, 40 mm automatic grenade launcher or 7.62 mm machine gun. Through its extensive surveillance and remote control capabilities, SARP enhances situational awareness of the gunner in his proximity while the vulnerability to attacks is decreased significantly.



SARP-KPVT, ASELSAN's remotely operated stabilized weapon platform, combines high-precision reconnaissance capabilities with firepower to serve tactical needs of the battlefield and protect critical infrastructures. The compact design of the system proves SARP-KPVT a perfect match for integration onto tactical vehicles, fixed surveillance posts and stations. Through its extensive surveillance and remote control capabilities, SARP-KPVT enhances situational awareness of the gunner in his proximity while the vulnerability to attacks is decreased drastically.

SARP



**SARP KPVT** 



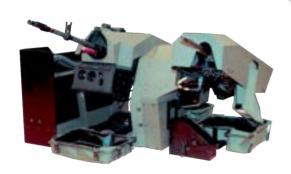


SARP-L, ASELSAN's remotely operated stabilized weapon platform, combines high-precision reconnaissance capabilities with firepower to serve tactical needs of the battlefield and protect critical infrastructures. The compact design of the system proves SARP-L a perfect match for integration onto tactical vehicles, fixed surveillance posts and stations. Depending on the operational requirements, SARP-L can be equipped with 7.62 mm machine gun or 5.56 mm machine gun. Through its extensive surveillance and remote control capabilities, SARP-L enhances situational awareness of the gunner in his proximity while the vulnerability to attacks is decreased significantly.

SARP NSV, ASELSAN's remotely operated stabilized weapon platform, combines high-precision reconnaissance capabilities with firepower to serve tactical needs of the battlefield and protect critical infrastructures. The compact design of the system proves SARP NSV a perfect match for integration onto tactical vehicles, fixed surveillance posts and stations. SARP NSV can be equipped with 12.7mm NSV machine gun. Through its extensive surveillance and remote control capabilities, SARP NSV enhances situational awareness of the gunner in his proximity while the vulnerability to attacks is decreased drastically.



### aselsan



SARP NSV DUAL, ASELSAN's remotely operated stabilized weapon platform, combines high-precision reconnaissance capabilities with firepower to serve tactical needs of the battlefield and protect critical infrastructures. The compact design of the system proves SARP NSV DUAL a perfect match for integration onto tactical vehicles, fixed surveillance posts and stations. SARP NSV DUAL can be equipped with 12.7mm NSV machine gun as the primary gun, and with 7.62mm PKT / PKM machine gun as the secondary gun. Through its extensive surveillance and remote control capabilities, SARP NSV DUAL enhances situational awareness of the gunner in his proximity while the vulnerability to attacks is decreased drastically.

SARP NSV DUAL





SARP-ZAFER, ASELSAN's remotely operated stabilized weapon platform, combines high-precision reconnaissance capabilities with firepower to serve tactical needs of the battlefield and protect critical infrastructures. The compact design of the system proves SARP-ZAFER a perfect match for integration onto tactical vehicles, fixed surveillance posts and stations. Depending on the operational requirements, SARP can be equipped with 12.7 mm machine gun or 7.62 mm machine gun. Through its extensive surveillance and remote control capabilities, SARP-ZAFER enhances situational awareness of the gunner in his proximity while the vulnerability to attacks is decreased significantly.

**SARP ZAFER** 

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SARP-ZAFER NSV, ASELSAN's remotely operated stabilized weapon platform, combines high-precision reconnaissance capabilities with excellent firepower to serve tactical needs of the battlefield and protect critical infrastructures. The compact design of the system proves SARP-ZAFER NSV a perfect match for integration onto tactical vehicles, fixed surveillance posts and stations. Depending on the operational requirements, SARP-ZAFER NSV can be equipped with 12.7 mm NSV machine gun or 7.62 mm PKM machine gun. Through its extensive surveillance and remote control capabilities, SARPZAFER NSV enhances situational awareness of the gunner in his proximity while the vulnerability to attacks is decreased drastically.



SARP-DUAL is an extension of the existing SARP system. 7.62mm machine gun, 12.7mm machine gun or 40mm automatic grenade launcher can be integrated to it as a main gun, whereas 7.62mm machine gun can also be integrated to it as a secondary gun. Through its extensive surveillance and remote control capabilities, SARP enhances situational awareness of the gunner in his proximity while the vulnerability to attacks is decreased significantly. The compact design of the system proves SARP a perfect match for integration onto tactical vehicles, fixed surveillance posts and towers.



### aselsan

Collects various analog platform parameters, translates them to digital and presents to use of pilots. It generates analog driving signals that are commanded by mission equipment. With its reliable and rugged design, SIU meets fighter aircraft harsh environmental requirements.



**SIU SYSTEM INTERFACE UNIT** 



A multifunctional display which operates as a mission computer and display system packaged into one Line Replaceable Unit (LRU). SMFD-810 incorporates a 8" x 10" inches AMLCD display.

multiple Single Board Computers, internal graphics generation, video and I/O processing capabilities and bezel mounted controls including a bezel mounted slip-skid indicator. SMFD-810 has the capability of generation of display formats, using data obtained from system interfaces to the SMFD-810. SMFD-810 has capability to display video, graphics, video with graphics overlay, split screen video/graphics and split screen graphics/graphics. SMFD-810 provides primary display of flight and cockpit management information and digital map capabilities for the operator with the capability of selection of various display page formats via bezel mounted function keys.

SUPER MULTIFUNCTION DISPLAY (SMFD-810)







Remote Controlled Weapon System (STAMP-2) is a remotely operated stabilized weapon station for small caliber guns. STAMP-2 is based on a state-of-the-art design, which incorporates advanced features as follows: Fully automatic, capable of firing from a remote location, built-in electro-optic sensor system for remote operation, day and night operation under adverse weather conditions, target detection and automatic target tracking, automatic ballistic computation and correction, on-the-move detection, tracking and firing through the stabilized turret and gun, target distance measurement, integration with ship's on-board sensor and systems (radar, electro-optic, meteorological sensors and combat management system etc.).

25mm STOP System is a stabilized and remotely operated naval gun system. It is designed for purposes of coastal defense, border defense and defense of naval platforms against asymmetric threats which is profiled for minimizing radar cross-section and operates in both day and night conditions under various weather and sea states by its' stabilized structure, remote operability feature, automated target detection and tracking function, automatic ballistic calculation with high firing accuracy.



**STOP** 



### SAHIN 40MM HARD KILL SYSTEM



SAHIN Anti-Drone 40mm Hard Kill System is a turret system on towed trailer, that uses 40 mm airburst ammunition in order to perform the destruction of the drones. This system has its own electrooptic suite and operates seamlessly integrated with IHTAR AntiDrone System. Once the target is acquired by IHTAR System, the relevant information is passed on to Hard Kill System which initiates target tracking using its own optics with the information provided. Target distance is measured using the laser range finder and once the target is within the range, gunner fires singular or multiple airburst ammunitions to the target. Each ammunition is programmed before leaving the barrel to ensure an optimal detonation. This system is effective within 700 meters and complies with MilStd 810.



### TOUCHSCREEN COCKPIT CONTROL UNIT (TCCU-810)



A primary cockpit control interface between the pilot and the aircraft. TCCU-810 is a Line Replaceable Unit (LRU) which provides display and control of subsystems and interfaces of aircraft for pilot. TCCU-810 incorporates an 8" x 10" AMLCD display, multiple Single Board Computers, internal graphics generation, video and I/O processing capabilities and touchscreen controls. TCCU-810 has the



capability of generation of display formats, using data obtained from system interfaces to the TCCU-810. TCCU-810 provides primary control of flight and cockpit management information capabilities for the operator with the capability of selection of various display page formats via touchscreen interface. TCCU-810 supports the analog and digital input/output interfaces,

USB 2.0, Ethernet and MIL-STD-1553 interface.

### aselsan

TEMREN-M01 is an IR laser pointer unit designed for air platforms. Continuous or pulsed operation mode and high output power enables the product perfectly matched with operational concepts of reconnaissance and targeting systems

**TEMREN-M01** 





TEMREN-M02 is an IR laser pointer and illuminator unit designed for air platforms. Continuous or pulsed operation mode and high output power enables the product perfectly matched with operational concepts of reconnaissance and targeting systems.

TEMREN-M02





#### **TEMREN-M03**

TEMREN-M03 is an IR laser pointer and illuminator unit designed for air platforms. Continuous or pulsed operation mode and high output power enables the product perfectly matched with operational concepts of reconnaissance and targeting systems





### TIMSAH T3100C

Timsah T3100C is a clip-on thermal weapon sight with 100mm objective diametre. Device could be used as a clip-on with day sights. Device has an infrared imaging technology with 640x480, 17µ resolution micro bolometer dedector operating in the 8-12 µm band.





### **TIMSAH T350D**

Timsah T350D is a dual use thermal weapon sight with 50mm objective diametre. Device could be used both as a clip-on with day sights and as a stand alone sight. Device has an infrared imaging technology with 640x480, 17µ resolution micro bolometer dedector operating in the 8-12 µm band.





### **TIMSAH T360D**

Timsah T360D is a dual use thermal weapon sight with 60mm objective diametre. Device could be used both as a clip-on with day sights and as a stand alone sight. Device has an



infrared imaging technology with 640x480, 17µ resolution micro bolometer dedector operating in the 8-12 µm band.



### **TIMSAH T360S**

Timsah T360S is a thermal weapon sight with 60mm objective diametre. Device has an infrared imaging technology with 640x480, 17µ resolution micro bolometer dedector operating in the 8-12 um band.





### **TIMSAH T375S**

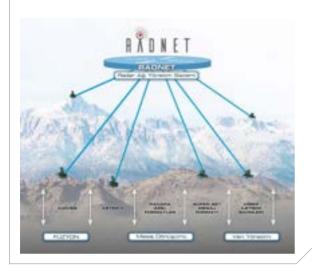
Timsah T375S is a thermal weapon sight with 75mm objective diametre. Device has an infrared imaging technology with 640x480, 17µ resolution micro bolometer dedector operating in the 8-12 um band.



### TKRS RADNET CAPABILITY ACQUISITION PROJECT



TKRS RadNet Capability Acquisition project, aims to modernize the radar network in the Air Force Command inventory as software and hardware, to acquire new capabilities, including data fusion, that can respond to updated and increasing needs within the framework of operational and tactical needs. At the end of the project, a Radar Network Management System with modernized and new capabilities, capable of controlling radars that have just entered the inventory, will emerge.



### INTEGRATED CENTRAL CONTROL COMPUTER (TMKB)



The central control computer of the aircraft that manages avionics and reduces the workload of pilot with its advance processing capability. TMKB interfaces are easily scalable according to the platform and application needs with the help of modular hardware/software design. Large memory capacity, high processing capability, multiple interface support, compact and rugged architecture enables the pilot to perform the mission accurately and efficiently. In addition to the mission, graphics and weapon management software/hardware in TMKB; Digital Moving Map (DMAP) and AVCI Helmet Integrated Cueing System (HICS) functionalities are also available internally.



### aselsan

TOLUN is GPS/INS guided munition carried on Smart Pneumatic Quad Rack (SADAK-4T).



**TOLUN** 





The TOLUN-IIR infrared seeker-guided munition features an integrated KKS/ANS/IIR guidance system for use against soft, moving ground targets. It can be dropped from the air platform via a multi-transport raft (SADAK-4T), and features a two-way communication mode and a man-in-the-loop firing mode.

**TOLUN-IIR** 



### THE NAVAL GUN FIRE **CONTROL SYSTEM** (GFCS) (40 / 76 / 127 MM)



**ASELSAN Torpedo Launching** 

**ASELSAN TORPEDO** 

**LAUNCHING SYSTEM** 





System is a fixed-mount, lightweight torpedo launcher for surface vessels.

The Naval Gun Fire Control System (GFCS) has been developed to provide effective fre control and to deliver gun orders for the naval guns with different calibers including 40mm, 76mm, 127 mm. The GFCS receives target data and performs ballistic calculations to produce accurate gun orders for both surface and air targets. The GFCS provides open architecture interfaces to communicate with combat and navigation systems via combat/navigation network of the platform. In the case of an imergency, the GFCS provides capability to control the Gun by Combat Management System Operator Consoles or by Target Designator System by means of Gun Emergency Control Unit. The GFCS can be easily integrated with the Combat Management System as well as with the sensors of the platform.



### aselsan



TOYGUN-100 is an electro optical sensor and targeting system designed for 5th gen fighter aircrafts where radar cross section (RCS) and aerodynamic drag coefficient are critical. TOYGUN-100 system will be integrated to aircraft fuselage behind a faceted window in order to minimize RCS. TOYGUN-100 is under development phase currently, but it will be on sky for test flights on the first quarter of 2025 first integrated to TUSAŞ KAAN. TOYGUN-100 will be added to ASELSAN's aerospace electro-optic systems product portfolio in the second quarter of 2025.

TOYGUN-200 is an electro optical sensor and targeting system designed for unmanned jet aircrafts where radar cross section (RCS) and aerodynamic drag coefficient are critical. TOYGUN-200 system will be integrated to aircraft fuselage behind a faceted window in order to minimize RCS. TOYGUN-200 is under development phase currently, but it will be on sky for test flights on the third quarter of 2024 first integrated to BAYRAKTAR KIZILELMA. TOYGUN-200 will be added to ASELSAN's aerospace electrooptic systems product portfolio in near future.





**TOYGUN-100** 

# TRUST (TRAFFIC AND TERRAIN COLLISION AVOIDANCE SYSTEM)



### TULGAR HELMET MOUNTED DISPLAY (HMD)



TRUST is an indigenously developed navigation unit that is designed to operate both in civil and military aerial platforms. TRUST is composed of "Traffic Alert and Collision Avoidance System" (TCAS) and Terrain Avoidance and Warning System (TAWS). TRUST functional capabilities and its modular architecture provide integration to various fixed-wing and rotary-wing platforms easily.

TULGAR Helmet Mounted Display (HMD) is a head mounted visor projected display system for fixed wing platforms. This system is designed by ASELSAN to enhance situational awareness and increase the capabilities of the pilot and the aircraft with its digital night vision, color display, and accurate head tracking.

The system is composed of three core units:

- · Headgear Assembly
- · Electronic Unit
- · Head Tracking Modules



### aselsan



TUNGA is an Unmanned Ground Vehicle with high mobility that can be controlled autonomously or remotely. Mission-specific payloads, such as Laser Guided Tactical Missile System (ops) and SARP DUAL, can be mounted on TUNGA, and the missions, such as reconnaissance, surveillance, protection and assault can be successfully performed under harsh environmental conditions. TUNGA can be controlled remotely with the vehicle control console, as well as moving over environmental obstacles without the need for an operator thanks to its autonomy features. The vehicle can autonomously perform border patrol on defined route.







UFCP is specially designed to enable the pilots to control the A/C systems using pushbuttons, rotary knobs, rocker switch and joystick. UFCP includes potentiometers which provides additional controls related with the HUD operation. UFCP includes a yellow-green dot matrix LED display to provide annunciation and warning functions to the pilots. UFCP provides RS-485 serial communication for display generation, keyboard and status communication. UFCP has also Built-In Test capability for maintenance purposes. UFCP has a separate Power Supply unit to convert the A/C 28VDC to the necessary 12VDC input voltage for UFCP to operate.

UFCP (UP-FRONT CONTROL UNIT)



#### **UFUK**



### UKB FLIGHT CONTROL COMPUTER





UFUK, hand-held thermal camera uses the advanced technologies and offers one compact and ergonomic design. It comprises a high resolution thermal imaging sensor. It is a state-of-the art product fulfilling the requirements for target acquisition in extensive ranges. User has the advantage of using a high performance thermal imaging camera for day and night observation.

UKB Flight Control Computer is designed in order to provide multiple reliable interface options, high processing and performance capability for flight sensors, control surfaces, equipments and other avionics sub-systems. UKB consists of RTCA DO-178B Level B



certifiable BSP and driver software for Green Hills
Integrity 178B real-time operating system and RTCADO-254 Level B certifiable hardware. Isolated interface
groups, fully redundant power circuits and Built-InTest capabilities of Flight Control Computer Hardware
provide reliable and safe operation during the mission.
Rugged, lightweight and conduction-cooled Flight
Control Computer hardware is designed to operate
in tough airborne environment. UKB was initially
designed for ANKA-S platform however it is now
widely used on other platforms like AKSUNGUR.

### aselsan



OMTAS IIR SEEKER is imaging infrared seeker for OMTAS Anti-Tank missile system which is Mid-Range anti tank missile. The system can be used as tripod-mounted or missile vehicle-mounted by infantry to stop and destroy armoured vehicles. UMTAS IIR SEEKER is imaging infrared seeker for UMTAS Anti-Tank missile system which is Long-Range anti tank missile. The system can be fired from attack helicopters to stop and destroy armoured vehicles.

**UMTAS - OMTAS KÖAB** 





VEGA A931 tactical sight have exceptional resolution and outstanding imaging performance. They are designed for harsh tactical environments. VEGA A931 provides 3X optical zoom with ergonomic, compact and light design. The sight can be used with assault rifles and machine guns with providing easy target engagement with rapid and accurate firing. Adjustable brightness control (with five levels) enables user to adjust different ambient illumination scenarios perfectly with night vision devices. VEGA A931 are easy to zero in and can be used with a variety of guns thanks to weapon adapter choices we offer.

**VEGA A931** 



#### **VEGA A940**



#### **VEGA A941**





VEGA A940 tactical sight has exceptional resolution and outstanding imaging performance. It is designed for harsh tactical environments. With the ability to provide dual FOV to their user they serve as dual purpose sights with providing situational awareness via 1x and marksmanship via 4x. The sight can be used with assault rifles and machine guns with providing easy target engagement with user friendly FOV mechanism. Adjustable brightness control (with five levels) enables user to adjust different ambient illumination scenarios perfectly. VEGA A940 is easy to zero and back up with easy zeroing locks to prevent unintended movement of the reticle.

VEGA A941 tactical sight have exceptional resolution and outstanding imaging performance. They are designed for harsh tactical environments. VEGA A941 provides 4X optical zoom with ergonomic, compact and light design. The sight can be used with assault rifles and machine guns with providing easy target engagement with rapid and accurate firing. Adjustable brightness control (with five levels) enables user to adjust different ambient illumination scenarios perfectly with night vision devices. VEGA A941 are easy to zero in and can be used with a variety of guns thanks to weapon adapter choices we offer.



### aselsan

VEGA A960 tactical sight has exceptional resolution and outstanding imaging performance. It is designed for harsh tactical environments. With the ability to provide dual FOV to their user they serve as dual purpose sights with providing situational awareness via 1,5x and marksmanship via 6x. The sight can be used with assault rifles and machine guns with providing easy target engagement with user friendly FOV mechanism. Adjustable brightness control (with five levels) enables user to adjust different ambient illumination scenarios perfectly. VEGA A960 is easy to zero and back up with easy zeroing locks to prevent unintended movement of the reticle.



**VEGA A960** 

VEGA ARN12 Reflex Sight is designed for rapid and accurate aiming, especially in close quarter combat operations. It can be used stand alone or on another optical system with a picatinny adapter. The dot brightness level of the reflex sight can be adjusted for maximum comfort. VEGA ARN12 Reflex Sight has 2 brightness levels for night vision compatible



#### **VEGA ARN12**



#### **VEGA ARN12K**



#### **VEGA KND312**



VEGA KND312 Sniper Rifle Scope designed and produced for high accuracy shooting. It meets the requirement of marksmen and long range shooters. VEGA KND312 Sniper Rifle Scope provides continious magnification from 3x to 12x. Rifle Scope has gradual illuminated (11 Levels) mildot reticle on the First Focal Plane (FFP). VEGA KND312 Sniper Rifle Scope is compatible with Image Intensifiers and Thermal Clip-On devices.



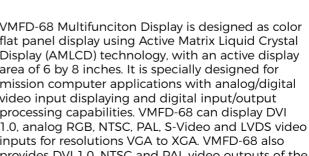


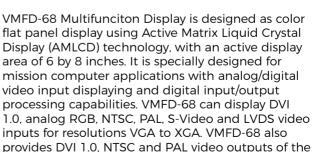
VEGA ARN12-K Reflex Sight is designed for rapid and accurate aiming, especially in close quarter combat operations. The dot brightness level of the system can be adjusted for maximum comfort. ARN12-K has 2 night vision compatible brightness levels.

### aselsan

VEGA KND525 Sniper Rifle Scope designed and produced for high accuracy shooting. It meets the requirement of marksmen and long range shooters. VEGA KND525 Sniper Rifle Scope provides continious magnification from 5x to 25x. ifle Scope has gradual illuminated (11 Levels) mildot reticle on the First Focal Plane (FFP). VEGA KND525 Sniper Rifle Scope is compatible with Image Intensifiers and Thermal Clip-On devices.







**VEGA KND525** 



VMFD-68 MULTIFUNCITON **DISPLAY** 

displayed video for video recording applications.



### VMFD-810 MULTIFUNCTION DISPLAY



### VOLKAN-II FIRE CONTROL SYSTEM





VMFD-810 Multifunction Display is designed as color flat panel display using Active Matrix Liquid Crystal Display (AMLCD) technology, with an active display area of 8 by 10 inches. It is specially designed for mission computer applications with digital video input displaying and digital input/output processing capabilities. VMFD-810 can display "Display Port 1.1A" digital video inputs for the high resolution 1360 x 1024. VMFD-810 outputs pressed bezel key information via RS-422 and provides detailed maintenance information via RS-232 interface. Sophisticated RS-422 interface protocol provides flexible communication interface to Mission Computers or other airborne computers. VMFD-810 has extended configuration options to support customer specific configurations.

A modern main battle tank fire control system, VOLKAN-II, is a national state-of-the-art technology that facilitates various essential functions required to engage and neutralize targets effectively. This advanced system encompasses target identification, control, aiming, and shooting capabilities. It also has features such as weapon and ammunition selection, weapon control and adjustment for precise targeting, firing the weapon, assessing the impact of the shot, and managing the loading process whether stationary, in motion, or operating in silent mode. VOLKAN-II Fire Control System empowers the integrated tanks with the ability to accurately aim and engage stationary or moving targets, even in the harshest combat conditions regardless of the tank's state, stationary or in motion, during all day or night operations, ensuring a high

probability of hitting the target with the first shot.



### aselsan



VYB-4CF is an intelligent microprocessor-based data loading unit. VYB-4CF manages access to mission data or file systems for data storage and retrieval from storage media through Ethernet by using industry standards such as SMB (SAMBA), FTP (File Transfer Protocol) and TFTP (Trivial File Transfer Protocol) file transfer protocols. VYB-4CF is designed for avionics applications. VYB-4CF has CompactFLASH™ media technology as a mass storage. The CompactFLASH™ technology brings flexibility to VYB-4CF to increase mass storage as needed without any hardware modification. For safety of mission critical data, VYB-4CF's data purge capability can erase critical data in very short time. VYB-4CF is designed to meet specific military standard requirements for airborne platforms. Therefore, it can be used on both rotary and fixed wing platforms.

VYB-4CF (DATA LOADING UNIT)





WIU (Weapon Interface Unit) is a 2 channel MIL-STD-1760D interface unit. It provides discrete and power signals required to manage and fire two weapon systems simultaneously. WIU increases system safety by monitoring and checking the validity of power and discrete signals. This feature decreases the possibility of inadvertent weapon firing. WIU provides the power and discrete signals in a redundant manner to increase total system reliability.

WIU (WEAPON INTERFACE UNIT)



#### YAMGÖZ-100



### YAMGÖZ-200



YAMGÖZ-100 is a close range surveillance system which provide thermal and daylight image, in order to increase the situational awareness of personnel about the platform environment. It provides 360° images at close distances with its compact and lightweight structure, fusion technology combining thermal and daylight images, automatic image processing/improvement algorithm.



YAMGÖZ-200 is a close range surveillance system which provide thermal and daylight image, in order to increase the situational awareness of personnel about the platform environment. It provides 360° images at close distances with its compact and lightweight structure, fusion technology combining thermal and daylight images, automatic image processing/improvement algorithm.



### aselsan



YAMGÖZ-200D is the naval version of YAMGOZ-200. It is a close range surveillance system which provide thermal and daylight image, in order to increase the situational awareness of personnel about the platform environment. It provides 360° images at close distances with its compact and lightweight structure, fusion technology combining thermal and daylight images, automatic image processing/improvement algorithm.

YERGÖZ detects the intrusion and mobility in the region with the help of its seismic sensors. The seismic sensors are warning systems that detect and classify the intrusions on the field. The System is based on artificial intelligence algorithms, and transfer detections to the System Operator via secure wireless communication methods.

YAMGÖZ-200D







YILDIRIM-100 DIRCM System provides all aspect protection against InfraRed Guided Man Portable Air Defence Systems (MANPADS) missiles. YILDIRIM-100 has twin-turret unit including fast and accurate tracking unit and high-power laser production unit, provides synchronised, multiband, high-power directed laser against MANPADS. The system also has an electronic control box managing the DIRCM system and providing communication with missile warning system.



#### aselsan



ZARGANA Submarine Torpedo Countermeasure System ensures submarine survivability against torpedo attacks by autonomous operation and quick reaction capabilities. The system is designed to work as integrated with submarine systems collecting real time data as well as operator provided data. ZARGANA system basically collects platform and threat related data from submarine systems and performs detection, clasification and localization to provide torpedo counter measure tactics with highest escape probability. Tactics include evasive maneuvering advices for submarine, deployment pattern and timing for acoustic jammers/decoys launching.



### ZOKA ACOUSTIC TORPEDO COUNTERMEASURE JAMMERS AND DECOYS



aselsan

These products have the properties of:

- -Various types of Jammers and Decoys for any kind of platform
- -Effective defense capability against acoustic homing torpedoes for both surface ships and submarines
- -Customizable and "state of art" design
- -High fidelity on target emulation
- -Long operation time



## **ASELSAN KONYA**

Company Short Name

Aselsan Konya

Company Trade Name

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#### **AKONS**



**AKONS-H** 



AKONS is a new-generation sighting system that aims to achieve a high success rate with minimum training, even at long range, by minimising human error. Soldiers' operations during the operation



combine binoculars, ballistic computers, weather sensors and laser rangefinders into a single system.

- \* The system consists of electro-optical systems, image processing, sights, ballistic calculations, fire controls and mechanical actuators; it will enable the infantry to carry out high-precision firing in residential areas.
- \* The other main function of the system will be corner shooting, thanks to the transfer of images to external image and storage units.
- \* Thanks to the laser rangefinder, the distance and location of the target will be calculated more accurately.
- \* It will be supported by target-oriented diagnostic and tracking processes, both fixed and mobile.
- \* Redundant mobile battery solutions will be developed for use with the system.



AKONS-H is a new generation sighting system that aims to provide high hit rate with minimum training even from long distances by minimizing human error. It collects the binoculars, ballistic computer, meteorological sensor and laser rangefinder equipment used by snipers during the operation in a single system.

#### aselsankonya



AKONS-L is a new generation weapon intelligence system that aims to increase interaction within the military unit with minimum training even from long distances by minimizing human error. By playing an active role in the training of infantry soldiers, it will transmit the necessary information to the commander wirelessly.

- · Detecting discarded ammunition and replaced magazine
- · Having various modes available according to operating conditions
- · In-device testing capability
- Integration into various command and control networks with wireless communication capability
- · Aiming with the built-in reflex sight in case of system failure or malfunction.

Mortar firing platform, which supports the infantry's urgent firing needs and is used to shoot effectively behind the suture. It is the shooting platform that enables the movement of the 81 MM Mortar on the side and on the rise. Provides shooting safety through the suspension system. It can be easily transported in difficult terrain conditions during combat.



**AKONS-L** 





ÇATALAYAK







40mm grenade launchers in the inventory of the Turkish Armed Forces, which will provide advantages in terms of weight, accuracy and portability, and can shoot 40mmx53 NATO type standard, striped ammunition in the first shot with the crown drive on it, can be reloaded with the blowback principle after the shot, and can drive the ammunition into the barrel. It is a weapon that can fire and evacuate the empty cartridge case of the fired ammunition.



The NEFER unmanned weapons stabilised tower system has been developed to counter armoured ground targets on armoured fighting vehicles and other tactical ground platforms, helping to increase the defence capabilities of modern armies. Featuring advanced remote command and control capabilities. NEFER enhances the environmental awareness of gunnery personnel and takes their safety to the highest level. Thanks to its monitor and controls, it can be used to fire different types of weapon from inside the military vehicle, from the safety zone, with a high degree of accuracy. NEFER, which can be

installed on 6x6 and 8x8 tracked and wheeled land vehicles, is distinguished by its design, which allows the use of weapons of different calibres, including both 25-30 mm NATO and Russian calibres. What's more, in addition to the options of different-calibre barrels used in the main weapon, it offers an advantage to personnel by allowing them to use different weapons, as well as options of different-calibre machine guns used as auxiliary weapons.

**NEFER REMOTE-CONTROLLED WEAPONS STATION** 

aselsankonya

### NEFER-L REMOTE-CONTROLLED WEAPON STATION



The NEFER-L remote-controlled weapon system has been developed to counter armoured ground targets on armoured fighting vehicles and other tactical ground platforms, to help increase the defence capabilities of modern armies with increased technological requirements. Thanks to its monitor and controls, it can fire different types of weapon from inside a military vehicle or from a fixed security zone with a high degree of accuracy. NEFER-L, which can be

installed on 6x6 and 8x8 tracked or wheeled land vehicles, is available in a range of NATO and Russian calibres. It is distinguished by its design, which allows weapons to be used. In addition to the different calibres of cannon used in the main weapon, the machine gun used as an auxiliary weapon offers personnel an advantage by enabling them to use different weapons at the same time as the deck machine gun.





The SARP-DUAL system is a weapon system that can be equipped with a 7.62 mm machine gun, a 12.7 mm anti-aircraft gun or a 40 mm grenade launcher as the main weapon, and a 7.62 mm machine gun can be installed next to these weapons as an auxiliary weapon. Thanks to its monitor and controls, it allows shooting with conventional weapons from inside a military vehicle or from a fixed safe zone with a high accuracy rate. It allows the use of weapons and ammunition of different calibers for different targets. The SARP system, which provides advanced remote command and surveillance, increases the environmental awareness of the shooting personnel and brings their safety to the highest level. It is an effective and versatile system that can be integrated into wheeled/tracked armored vehicles and stationary platforms, ensuring personnel safety due to its remote command.

SARP DUAL REMOTE CONTROLLED WEAPON STATION



ase|sankonya

### 115

### SARP KPVT REMOTE CONTROLLED WEAPON STATION

The SARP KPVT system is a system that can be used against air and ground threats in tactical ground vehicles, which contributes to increasing the defense capabilities of modern armies. A 14.5mm KPVT machine gun can be installed in the system to create a demand-specific solution for the needs. Thanks to its monitor and controls, it allows shooting with KPVT guns from inside a military vehicle or from a fixed safe zone with a high accuracy rate. The SARP KPVT system, which stands out with its advanced remote command and surveillance capabilities, also provides a secure solution to increase the environmental awareness of personnel shooting, so that it can be used against asymmetric threats in stationary facilities. Due to the ability to load ammunition from under the platform, especially for on-board use for operational needs, it maximizes its safety.



The SARP-L system combines precision reconnaissance capability with effective firing power to meet battlefield needs and protect critical facilities. Thanks to its monitor and controls, it allows shooting with conventional weapons from inside a military vehicle or from a fixed safe zone with a high accuracy rate. Sarp L, which can also be integrated into unmanned land vehicles, is a special-purpose lightened type of remotely commanded weapon systems. The SARP-L system can be used against air and ground threats in tactical ground vehicles, as well as against asymmetric threats in stationary facilities. In accordance with the requirements for use,



a 7.62 mm machine gun or a 5.56 mm machine gun can be installed in the system. The SARP-L System, which provides advanced remote command and surveillance, increases the environmental awareness of the shooting personnel and brings their safety to the highest level.



SARP L REMOTE CONTROLLED WEAPON STATION

aselsankonya

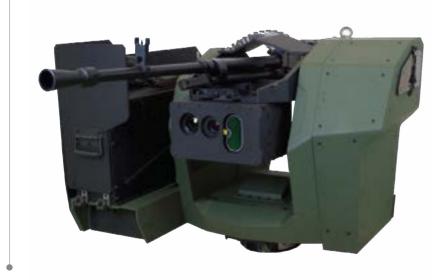
### SARP NSV DUAL REMOTE CONTROLLED WEAPON STATION



The SARP NSV DUAL system is a system that can be used against air and ground threats in tactical ground vehicles, which contributes to increasing the defense capabilities of modern armies. It allows you to use the 7.62 mm and 12.7 mm machine guns in one system to create a special solution according to your needs. The SARP NSV DUAL system, which stands out with its advanced remote command and surveillance capabilities, also provides a secure solution to increase the environmental awareness of shooting personnel by using it against asymmetric threats in stationary facilities. Thanks to its monitors and controls, NSV allows shooting with

weapons from inside a military vehicle or from a fixed safe zone with a high accuracy rate. It allows the use of weapons and ammunition of different calibers for different targets. The system is designed to be integrated on various tactical wheeled, tracked land vehicles, fixed platforms or wireless platforms thanks to its wireless use feature. It provides stabilization, automatic target tracking and advanced ballistic calculation features, as well as the ability to shoot against standing and moving targets while moving.





The SARP NSV system contributes to increasing the defense capabilities of modern armies, combining precision reconnaissance capability with effective firing power to meet battlefield needs and protect critical facilities. Thanks to its monitor and controls, it allows shooting with NSV weapons from inside a military vehicle or from a fixed safe zone with a high accuracy rate. The SARP NSV System can be used against air and ground threats in tactical ground vehicles, as well as against asymmetric threats in stationary facilities. A 12.7 mm NSV machine gun can be installed in the system. The SARP NSV System, which provides advanced remote command and surveillance, increases the environmental awareness of the shooting personnel and brings the safety to the highest level.

SARP NSV REMOTE CONTROLLED WEAPON STATION

11V

### SARP REMOTE CONTROLLED WEAPON STATION



The SARP system is a system that can be used against air and ground threats in tactical ground vehicles, which contributes to increasing the defense capabilities of modern armies. Thanks to its monitor and controls, it allows shooting with conventional weapons from inside a military vehicle or from a fixed safe zone with a high accuracy rate. It can work fully integrated with command and control systems A 12.7 mm or 7.62 mm machine gun or a 40 mm automatic grenade launcher can be installed in the system to create a demand-specific solution for customer needs. The SARP Remote-Controlled Stabilized Weapon System, which provides day and night surveillance, target detection and tracking, maximizes the safety of user personnel thanks to its advanced remote command capabilities.

The SARP ZAFER NSV system combines precision reconnaissance capability with effective firing power to meet battlefield needs and protect critical facilities. The SARP-ZAFER NSV System can be used against air and ground threats in tactical ground vehicles, as well as against asymmetric threats in stationary facilities. Thanks to its monitors and controls, NSV allows shooting with weapons from inside a military vehicle or from a fixed safe

zone with a high accuracy rate. It has a bottom, from inside of vehicle, ammunition loading system.In accordance with the requirements for use, a 12.7 mm NSV machine gun or a 7.62 mm PKM machine gun can be installed in the system. SARP-ZAFER NSV system, which provides advanced remote command and surveillance, increases the environmental awareness of the firing personnel and increases their safety to the highest level thanks to the ability to load ammunition from under the platform.





SARP ZAFER NSV REMOTE CONTROLLED WEAPON STATION

aselsankonya

### SARP ZAFER REMOTE CONTROLLED WEAPON STATION



The SARP ZAFER system contributes to increasing the defense capabilities of modern armies, combining precision reconnaissance with effective shooting power to meet the needs of the battlefield and protect critical facilities. The SARP ZAFER System can be used against air and ground threats in tactical ground

vehicles, as well as against asymmetric threats in stationary facilities. Thanks to its monitor and controls, it allows shooting with conventional weapons from inside a military vehicle or from a fixed safe zone with a high accuracy rate. It has an ammunition loading system from inside the vehicle. In accordance with the requirements for use, a 12.7 mm machine gun or a 7.62 mm machine gun can be installed in the system. SARP-ZAFER System, which provides advanced remote command and surveillance. increases the environmental awareness of the firing personnel and increases their safety to the highest level thanks to the ability to load ammunition under the platform.



The SERDAR system is a system designed for use on various tactical wheeled, tracked land vehicles, fixed platforms in order to contribute to increasing the defense capabilities of modern armies with increased technological needs. The platform allows the shooter to be located in a safe area inside or away from the armored vehicle, while combining high-precision reconnaissance and aiming capabilities with effective firepower thanks to the Anti-Tank Missiles installed, as well as the machine gun. Thanks to its monitor and controls, it allows shooting with different types of weapons from inside a military vehicle or from a fixed safe zone with a high accuracy rate. It is an ergonomic system that provides automatic



recognition and tracking of targets invisible to the naked eye at night and in adverse visibility conditions, advanced ballistic calculation features, and the ability to shoot accurately against standing and moving targets while the system is moving.

### SERDAR ANTITANK REMOTE CONTROLLED WEAPON STATION



aselsankonya





### STAMP-2 REMOTE CONTROLLED WEAPON STATION

The STAMP-2 System is a system developed to be used against close and asymmetric threats on warships, coast guard boats, landing ships and other ships in order to contribute to increasing the defense capabilities of modern armies. It is an ergonomic system that provides automatic recognition and tracking of invisible targets at night and in adverse visibility conditions,



advanced ballistic calculation features. and the ability to shoot accurately against standing and moving targets while the system is mobile. It can be integrated with radar, meteorological sensor and similar sensors in marine vehicles to produce a demand-specific solution for customer needs. The system can be controlled remotely via the system control unit, thanks to the sniper and fire the weapon without being exposed to adverse weather conditions. In addition to 7.62 or 12.7 caliber machine guns options, which can be fitted as needed, 40 mm grenade launchers option provide a great advantage in defense.



The STOP System is a system developed to be used against close and asymmetric threats on warships, coast guard boats, landing ships and other ships in order to contribute to increasing the defense capabilities of modern armies. It performs automatic recognition and tracking of targets that are invisible to the eye at night and in adverse visibility conditions. It is an ergonomic system that provides the ability to shoot accurately against standing and moving targets on the move using a 25mm KBA gun with advanced ballistic calculation features. The system has the ability to be remotely controlled via the control unit, thanks to the gun, effectively and safely without being exposed to adverse weather conditions. The system can also be equipped with different sensors to produce a demandspecific solution for customer needs.





STOP REMOTE CONTROLLED WEAPON STATION

# ASELSAN SIVAS

Company Short Name

ASELSAN SİVAS

Company Trade Name

Aselsan Sivas Hassas Optik A.Ş.

Marketing email Address

gtoker@aho.com.tr

**Telephone** 

(+90) 346 218 20 20

Company Website

www.aho.com.tr







### **3-12X50 SNIPER SCOPE**

- Superior Performance Optics
- Illuminated Network
- Parallax Adjustment
- Continuous Magnification (3X-12X)
- Available with Night Vision and Thermal Extensions
- Diopter Adjustment





### **3X MAGNIFICATION OPTICS**

- -Designed for use in Holographic sights and Red-dot products
- -Adjustable flip mount
- -3X magnification
- -Compact structure





### 5-25X56 SNIPER SCOPE

- Superior Performance Optics
- Illuminated Network
- Parallax Adjustment
- Continuous Magnification (5X-25X)
- Available with Night Vision and Thermal Extensions
- Diopter Adjustment





### **A100 NIGHT VISION GOGGLES**

- 1X Magnification
- Integrated IR illuminator
- Diopter adjustment
- Compatible with helmet and NBC mask





### **A200 NIGHT VISION GOGGLES**

- 1X Magnification
- Integrated IR illuminator
- Diopter adjustment
- Compatible with helmet and NBC mask





### **A341 NIGHT VISION SIGHT**

- 4x Magnification
- High Performance in Low Light
- Network and Ballistic Adjustment **Options**
- ii+/iii. Generation Image Intensifier Tube
- Wide Viewing Angle





### **A361 NIGHT VISION SIGHT**



- 6x Magnification
- High Performance in Low Light
- Network and Ballistic Adjustment Options
- ii+/iii. Generation Image Intensifier Tube
- Wide Viewing Angle







**A510 NIGHT VISION GOGGLES** 

### A600 NIGHT VISION ATTACHMENT

### **A931 DAY VISION SIGHT**



- 1x magnification
- Does not affect day scope zeroing
- Can be used with binoculars up to 12x magnification





- Fixed 3X Zoom
- Fast and easy aiming with large exit pupil
- Anti-glare honeycomb filter
- Picatinny mount adapter
- Mains brightness adjustment





- Anti-glare honeycomb filter
- Locked side/elevation adjustment
- Picatinny mount adapter
- Mains brightness adjustment



- Fixed 4X Zoom
- Fast and easy aiming with large exit pupil
- Anti-glare honeycomb filter
- Picatinny mount adapter
- Mains brightness adjustment

**AP40 DAY VISION SIGHT** 



**A941 DAY VISION SIGHT** 





### **A960 DAY VISION SIGHT**

- Double magnification option (1.5X-6X)
- Anti-glare honeycomb filter
- Locked side/elevation adjustment
- Picatinny mount adapter
- Mains brightness adjustment





#### **ARN12K CLOSED REFLEX SIGHT**

- Stepped Spot Lighting
- Power Protection
   Mode with
   Motion Sensor
- Use with Night Vision Devices
- MIL-STD-1913 Compatible Weapon Adapter





### **ARN12 OPEN REFLEX SIGHT**

- Stepped Spot Lighting
- Use with Night Vision Devices
- MIL-STD-1913 Adapter





# ATS-70 UNCOOLED CONTINUOUS FOCUS OBJECTIVE

- Continuous Zoom Capability
- Durable Structure
- Fire Control Capability
- Suitable for use in Armored Vehicles
- Integrated into Remote Controlled Weapon Systems





### BOROSCOPE OPTICAL ALIGNMENT

- 6X Magnification
- It is used in armored vehicle barrel zeroing.





### **F4 CONTINUOUS FOCUS LENS**

- Continuous Zoom Capability
- Durable Structure
- Fire Control Capability
- Suitable for use in Armored Vehicles
- Integrated into Remote Controlled Weapon Systems





#### **F5.5 CONTINUOUS FOCUS LENS**

- Continuous Zoom Capability
- Durable Structure
- Fire Control Capability
- Suitable for use in **Armored Vehicles**
- Integrated into Remote Controlled Weapon Systems





### **HOLOBRIGHT HOLOGRAPHIC REFLEX SIGHT**

- -Zero parallax
- -Ergonomic design
- -Integration with the
- -Use with both eyes open
- -Compatibility with night vision devices
- -Enabling fast target acquisition.





### **MINI TSD E-35 PLUGIN**

- Battery Indicator on Display
- Update Software Externally
- High Resolution
- Automatic Image Optimization
- Polarity Change (White Hot/Black Hot)
- Brightness and Contrast Adjustment
- Construction Suitable for Handheld and On-weapon Use
- Image Freeze





#### **MINI TSD E-60 PLUGIN**

- Battery Indicator on Display
- Update Software Externally
- High Resolution
- Automatic Image Optimization
- Polarity Change (White Hot/Black Hot)
- Brightness and Contrast Adjustment
- Construction Suitable for Handheld and On-weapon Use
- Image Freeze





### **FIXED FOCUS THERMAL OBJECTIVES**

- High Resolution
- Objective of Day Vision and Thermal Weapon Scopes





### T350-D THERMAL **WEAPON SCOPE**

- New Generation Uncooled Thermal Weapon Scope
- Dual Purpose Use: Weapon Scope & Attachment
- Superior Image in Unfavorable Weather Conditions
- Color Screen
- Pirate Wireless Eye Visor



## T360-S THERMAL WEAPON SCOPE

- T375-S THERMAL WEAPON SCOPE

- New Generation Uncooled Thermal Sight
- 8-12 µm Working Band
- Automatic Image Optimization
- Image Recording and Playback Capability
- Polarity Options
- Wireless Image Transfer to Eye Viewfinder (Optional)
- Ballistic Network Options

- New Generation Uncooled Thermal Nisangah
- 8-12 µm Working Band
- Automatic Image Optimization
- Image Recording and Playback Capability
- Polarity Options
- Wireless Image Transfer to Eye Viewfinder (Optional)
- Ballistic Network Options







Pistol Reflex Sight is a product that enables faster aiming and shooting by aligning the red dot on the reflex sight optics to the target.

**PISTOL REFLEX SIGHT** 





The Armored Vehicle Periscope is an optical device that allows personnel inside the vehicle to observe from inside the vehicle.

ARMOURED VEHICLE PERISCOPE



# **ASFAT**

Company Short Name

ASFAT

Company **Trade Name** 

Marketing email Address

ferhat.bakir@asfat.com.tr

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Company Website

www.asfat.com.tr









## ASFAT A400M MAINTENANCE CAPABILITY

The 2nd Air Maintenance Factory Directorate is the only maintenance center, other than Airbus facilities, that can perform all the maintenance needed for the A400M aircraft facilities, where A400M "Retrofit" operations can be carried out. The Retrofit Process of 9 A400M aircraft in the inventory of Turkish Air Force Command are carried out at the facilities of the 2nd Air Maintenance Factory Directorate/Kayseri under the main contractorship of ASFAT, with the contract signed with the Airbus Company.





#### **OFFSHORE PATROL VESSEL**



ASFAT is the main contractor of the new generation indigenous and national offshore patrol vessel which is being constructed for the Turkish Navy at the Istanbul Naval Shipyard has high reliability and deterrence, high survivability with a low radar cross-section and low acoustic signature. It is cost effective, and is equipped with superior sensors and weapon systems for the defence of Türkiye's maritime rights, interests and concerns.







**ARPAN-155** 



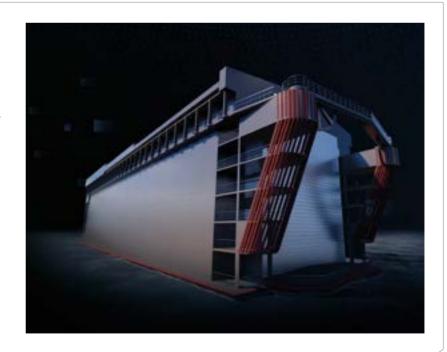
#### **ASBOT**





ASBOT, which is designed and produced to contribute to safety and security activities; thanks to its new generation design, it is an auxiliary patrol boat that has high maritime capability and shows high success in difficult missions with its superior maneuvering abilities. In addition to its high success, ASBOT stands out compared to its counterparts by being a cost-effective project.

Specially designed and built for the needs of the submarines and Turkish Navy, which can be completely covered with roof and door systems and it is the first and only Floating Dock in the world in its size. It was built under the main contractor of ASFAT and delivered to the Gölcük Naval Shipyard.



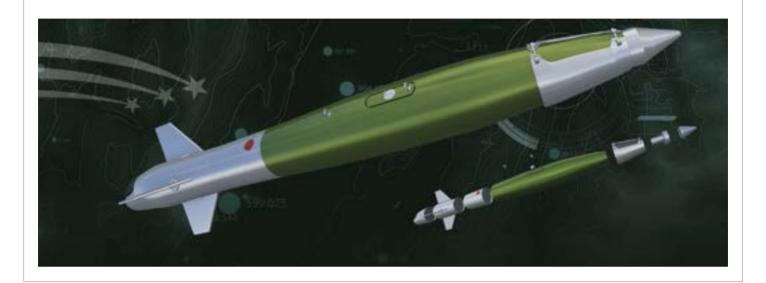
**FLOATING DOCK** 

**₽**L

### — HGK-82



HGK-82 is a GPS/INS (GPS: Global Positioning System, INS: Inertial Navigation System) guidance kit that turns existing 500 lb Mk-82 general purpose bombs into air to ground smart weapons which can be released multiple by using BRU 57 ejector rack. The ammunition has a retargeting feature even when it is in the air. HGK-82, which has a range of 25 km, is resistant to electronic jamming and bad weather conditions.





HGK-84 is a GPS/INS (GPS: Global Positioning System, INS: Inertial Navigation System) guidance kit that turns existing 2000 lb Mk-84 general purpose bombs and penetrator bombs into air to ground smart bombs.



**HGK-84** 



KORBAS-III Ballistic Helmet. produced with the latest technology in the field of ballistic protective materials and composites; While providing a high level of protection for armed forces and law-enforcement personnel. it meets tactical requirements with its lightweight design and accessory possibilities.KORBAS-III, produced from UHMWPE material, has light weight and high durability. It is subjected to rigorous test according to STANAG 2920 and other standards. In addition to the Turkish Armed Forces, it is used by armed forces personnel in many countries.





MEMATT is a multi-purpose mechanical system on a variety of terrain conditions to clear land contaminated with mines and explosive remnants of war and open the land for economic usage for agricultural production and/or settlement. With its powerful engine and high torque level, it can work on dense vegetation and rocky terrain. It is designed to minimize the risk on human life while maximizing speed and effectiveness of demining operations. It is a remote-controlled mechanical mine clearance device with remote-control capability for up to 5 km distance.

**MEMATT** 





In order to design and built submarines with domestic facilities and capabilities, National Submarine (MİLDEN) Design Project Office was established in Gölcük Naval Shipyard Command. The construction of the test block of the National Submarine Project (MİLDEN) is planned to be commenced in 2025



The design of MİLGEM is secured and patented by Ministry of National Defence of the Republic of Türkiye. The first ship (TCG HÉYBELİADA) was commissioned in 2011, the second ship (TCG BÜYÜKADA) in 2013, the third ship (TCG BURGAZADA) in 2018 and the fourth ship (TCG KINALIADA) is in 2019. Took part in National/ International/NATO exercises and successfully fullfilled all assigned tasks





MILGEM



#### **MİLGEM-3 BURGAZADA (F 513)**



The BURGAZADA corvette, which was built in Istanbul Naval Shipyard Command and launched on 18 June 2016, 3 months prior to the estimated date on the contract, was delivered to Turkish Naval Forces Command on November 4, 2018.





TCG KINALIADA (F-514), which was built in İstanbul Naval Shipyard Command, was delivered to the Naval Forces Command on 29 September 2019, about 9 months before the contract schedule.

**MİLGEM-4 KINALIADA (F 514)** 



#### MİLGEM-5 İSTANBUL (F 515)





İstanbul Frigate was built by utilizing the design of MİLGEM Class Corvettes and the experience of national defence industry infrastructure as a continuation of Milgem Project. 'I' Class Frigate (İSTANBUL F-515)'s first welding was carried out by President Recep Tayyip Erdoğan on 3rd of July 2017. The Launch Ceremony of ISTANBUL, the first ship of the 'i' Class Frigate project, was held on 23 January 2021 at the Istanbul Naval Shipyard Command with the presence of our President. TCG Istanbul Frigate's first sea trial was carried out on 20 June 2023 and Sea Acceptence Test Activities were started after the Flag Hoisting Ceremony.





#### **ONUR-1 MOD-3 FUZE**





Onur-1 Mod-3 Fuze is an electro-mechanical impact/short-long post impact delay fuze system developed for use with general purpose MK-series bombs.

Onur-1 Mod-4 is an electro-mechanical fuze developed for use with Penetrator Bomb as Augmenting Charge Fuze.



**ONUR-1 MOD-4 FUZE** 



#### PN MİLGEM





PN MILGEM ships built simultaneously in Türkiye and Pakistan for the Pakistan Navy with the state-to-state agreement model under ASFAT main contractor; they are new generation corvettes equipped with long-range effective sensors and weapon systems, difficult to track thanks to their low radar cross section and low acoustic signature, with high reliability and deterrence.





#### **RAHVAN**



It is designed to serve a wide range of aircraft from T-41 to C-130, with a towing capacity of 60,000 kg (133,000 lbs.), and incorporates the latest innovations brought by today's technology such as a reversing camera and air conditioning.





Rigid hull inflatable boats are especially vital in search and rescue activities and can be produced in different types and sizes. Product Capabilities: Different Types and Sizes: Special productions can be provided in different types and sizes for needs.

- High Manoeuvrability,
- High Speed Configuration,
- Transportable by road.

RHIB BOATS
(INFLATABLE BOATS WITH HARD HULLS)







It is capable of loading and unloading ammunition such as missiles, bombs and similar external loads on board of all fighters in TurAF inventory.In addition, thanks to the additional capability of the remote control system on the bomb loading vehicle Seyit Onbaşı, which its equivalent bomb loaders have no such a feature, Seyit Onbaşı submits safe, accurate and easy loading/unloading operations for its operators.





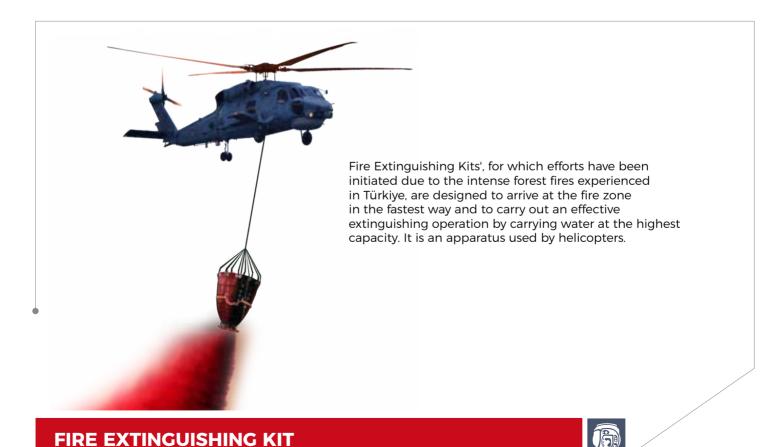
#### **SURFACE SPECIAL OPERATIONS BOAT**





The Surface Special Operations Boat, specially produced for Special Operations activities, provides functional solutions with its foldable feature and usability in shallow waters. Product Capabilities:

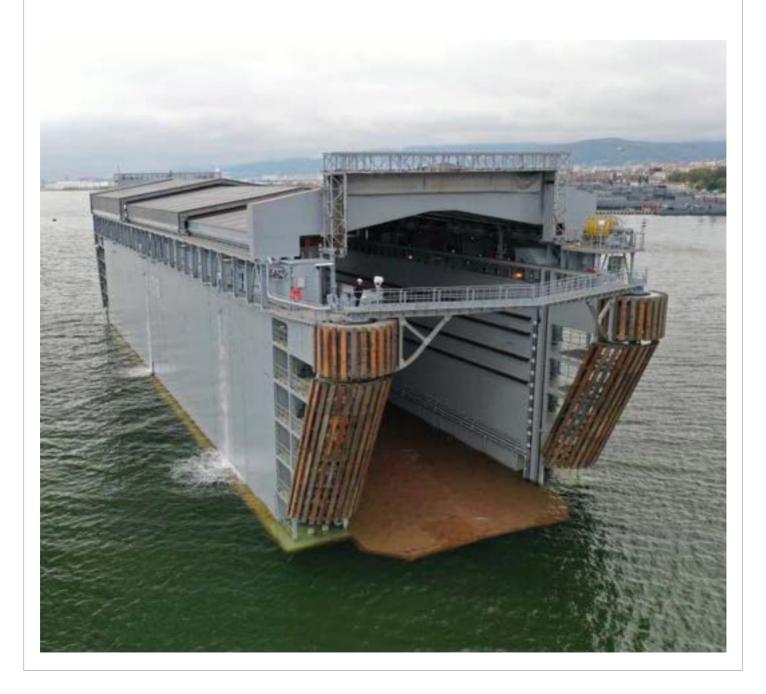
-Availability in Shallow Waters: it can be used in special infiltration operations
-Pliableness: Easy portability and mobility during activities







The 10,000-tonne Floating Dock Project serves the platforms of Turkish Navy that are currently in the inventory. It was built under the main contractor of ASFAT and delivered to the Izmir Naval Shipyard.



## **ASISGUARD**

Company Short Name

ASISGUARD

Company Trade Name

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Company Website

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#### 360° SITUATIONAL AWARENESS VISION SYSTEMS



#### **MARITIME AGGÖZ GIMBAL**



- Reconnaissance and surveillance
- Davtime and thermal camera
- Customizable images with optional different viewing angles
- Multiple image transferring capability
- Panoramic image generation capability
- Real time image processing capability
- Artificial Intelligence
- Compatible to modular systems

MARITIME AGGÖZ
GIMBAL is a proven
solution for maritime
applications. It integrates
a MWIR thermal camera
with a 14X continuous
zoom lens, day camera
with 30X continuous
zoom capability, a precise
eyesafe laser rangefinder,
a high-accuracy gyro
stabilization platform,
and high-quality target
tracking systems.







**ASISGUARD** 



It integrates a non-cooled thermal camera with a continuous zoom lens, a daylight camera with 30x continuous zoom capability, a precise laser rangefinder, a high-accuracy gyro stabilization platform, and high-quality target tracking systems. It is designed to operate seamlessly in all weather conditions, day and night, making it a reliable solution for security, surveillance, and search and rescue operations. It is widely used in aerial systems and has been proven effective.

AGGÖZ GIMBAL FOR AIR SYSTEMS





The system is compatible with both manned and unmanned vehicles. It can be utilized in both armed and unarmed systems. It offers target tracking capabilities. It enables long-range surveillance. It is suitable for deployment by law enforcement agencies. AGGÖZ GİMBAL solution is designed to illuminate the targets with integrated laser target designator for laser guided ammunitions.

AGGÖZ LASER
TARGET DESIGNATOR
INTEGRATED GIMBAL





#### **LIGHT WEIGHT AGGÖZ GIMBAL**

- A light-weight and compact design
- Maximum clarity provided by a precise long-wave infrared camera unit (LWIR) with continuous zoom optical system.
- A high-performance daytime
- Laser range finder that provides coordinate and distance information of the target to the user,
- Real-time target identification and tracking capabilities,
- Enriched imagery and situational awareness through image enhancement





#### **VEHICLE INTERCOM SYSTEM**

- Voice communication with in-vehicle personnel
- Voice communication with external operation units
- Effectively working in extreme weather conditions
- With its reinforced structure, it provides high sound quality intercom and radio access to vehicle models
- Possibility to listen to internal conversation and radio at the same time
- Possibility to provide clean sound with low noise level
- PC based management software for management and software update



## MILITARY ARTIFICIAL INTELLIGENCE COMPUTER

- Small size GPU powered computer
- Autonomous driving capability for heavy and medium class unmanned land vehicles
- Artificial intelligence, deep learning, video signal processing solutions in surveillance, reconnaissance, targeting and electronic warfare systems
- Power inputs compatible with land and air platforms
- Ability to work in extreme weather conditions, situational awareness in the battle environment



#### **EO HAND-PORTABLE SYSTEM**

- Uncooled, continuous zoom,
- LWIR thermal camera
- Eye-safe laser range finder
- High resolution micro OLED display
- Global

Navigation Satellite System (GNSS)

- Digital Magnetic Compass (DMC)
- Rechargeable lithium-ion battery
- Rugged design compliant with military standards





## POWER DISTRIBUTION SYSTEM UNIT

- FPGA based power controller
- Ability to keep event logs
- High tolerance to high vibration and shock loads
- Isolated inputs and outputs
- Ability to drive resistive, capacitive, inductive loads
- Software current protection feature with I2T algorithm for each channel
- Overload protection, current limiting, short circuit protection, over temperature protection, over voltage protection, negative voltage prevention for each output
- MIL-STD-461 compliance
- MIL-STD-810 compliance



## SIREN ANNOUNCEMENT SYSTEM

- For land and sea platforms
- Announcements from inside the vehicle
- Optional second outer microphone-
- Sensitive volume adjustment
- Alarm, horn, panic buttons



#### **SONGAR 2 GRENADE LAUNCHER**







- Asisguard indigenous design
- Close air support (CAS) in critical military bases
- Instant response to known threats
- Firing up to 2 grenades
- 400-450 meters of effective range
- Gun rotation between +5° and -90° on elevation axis
- Multi-layered fire safety
- Optional drum grenade launcher system

- Asisguard indigenous design
- Close air support (CAS) in critical military bases
- Instant response to known threats
- Firing up to 6 grenades
- 400-450 meters of effective range
- Gun rotation between +5° and -90° on elevation axis
- Multi-layered fire safety
- Optional drum grenade launcher system



**SONGAR 6 GRENADE LAUNCHER** 











**SONGAR GIMBAL CAMERA** 

#### **SONGAR TEAR GAS**

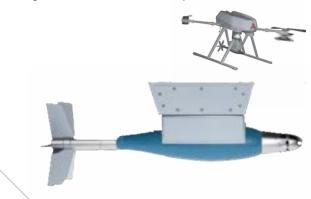


## SONGAR MORTAR AMMUNITION





- Effective control mechanism
- Effective radius of operation
- Local security and close air support
- Dynamic fire algorithm
- Easy ammunition load for mission continuity and ease of operation
- Multi-layered fire safety
- Single ammunition hold-drop mechanism





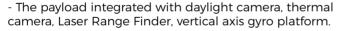
- Asisguard indigenous design
- Firing up to 8 teargas ammunition
- Multi-layered fire safety
- Easy-to-remove ammunition tray











- Can track targets with high precision in 3 axes.
- The payload is used in light rain (belly) environment for a period of time
- Thermal Camera: 12°x10° field of view (FOV), 2x-4x digital zoom
- Day Tv Camera: 30x optical zoom feature, (FOV)h of from 63.7° to 2.3°, it provides a high level of visibility in the operation area
- Laser Range Finder: 905 nm wavelength laser (the laser used is harmless to the human eye), it can measure the distance between the UAV and any target within a maximum distance of 1 kilometer with ~2 meters accuracy







- Asisguard indigenous design
- 400-450 meters of effective range
- Gun rotation between +5° and -90° on elevation axis
- Multi-layered fire safety
- NATO class 5.56 weapon is integrated.
- 100's magazine and LRF integrated.

SONGAR WEAPON STABILIZATION SYSTEM



## SONGAR STANDARD VERSION PILOT CAMERA





- Wide-angle day vision camera
- Dimensions: 100 x 120 x 62 mm
- The EO Camera System is used for reconnaissance and surveillance to assist the Pilot's UAV control
- Horizontal Resolution: 800TVL
- Lens: FOV 170 2.1mm @ 16:9 FOV 140 2.5mm @ 4:3
- Output signal: NTSC/PAL

## SONGAR GROUND CONTROL STATION



- Indigenous Asisguard design
- Mission Planning
- Autonomous flight over the plan
- Real-time image transmission
- Map loading
- Ignition
- Dimensions: 350 x 450 x 90 mm



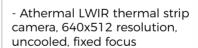
**ASISGUARD** 



- Cooled MWIR thermal camera
- Full HD daytime camera
- Eyesafe laser range finder
- High thermal sensitivity
- Long range detection and recognition
- Continuous zoom optics
- Object recognition and classification
- Multiple object detection and moving target tracking
- SWIR camera (optional)
- Embedded image processing algorithms
- Motor controlled autofocus
- Automatic image optimization
- Thermal camera polarity adjustment
- Military environmental standard compliance

## COOLED LONG RANGE VISION UNIT





- Daylight
- camera with 30X continuous zoom
- Daylight camera with 1920x1080 resolution
- Laser Range Finder: Safe for eyes, 1.5µm
- Flexible sensor configuration
- High performance gyro platform
- Target tracking
- Determines target location
- Adaptable system configuration <2 kg weight

STANDARD GIMBAL /
PAYLOAD SOLUTION FOR
MULTI-SENSOR SURVEILLANCE



#### **DRIVER INFORMATION SYSTEM**





- Easy installation and integration
- Changeable button functions
- More data display using I/O module
- Information such as vehicle engine, seat belt status and status of mine lock on single screen
- Design for safe driving and long lasting vehicle use

- Detection of obstacles in day and night conditions
- Safe driving support to the driver
- Front & back camera units (Thermal/ daytime-TV)
- Driver control and display unit (10,1" Display)



**DRIVER VISION SYSTEM** 



#### THERMAL WEAPONSCOPE

- **15**
- **LONG DISTANCE GIMBAL**



- $640 \times 512$  thermal resolution, high-sensitivity detector, NETD< 35 mK (25°C, F# = 1.0)
- Different optics available with various EFL values (35mm, 50mm, 75mm, etc.)
- Image processing technology: Adaptive AGC, DDE, 3D DNR 0.39-inch OLED display with a resolution of 1024 × 768
- Supports video recording and instant photo capture, internal EMMC (16 GB)
- Digital zoom and reticle function, adjustable color palettes
- Long-lasting usage without changing the battery
- Use with rechargeable lithium-ion battery
- Distance measurement with an integrated laser rangefinder
- Clip-on option



- High-performance thermal imaging camera operating in the MWIR band, with 640x512 resolution, cooled and continuous zoom optics
- .- Day Camera: 1920x1080, 30X magnification, continuous zoom optic
- Laser Range Finder: Safe for the eyes, 1.5µm
- Flexible sensor configuration
- High performance gyro stabilized platform (2 axes mechanical stabilization, 1 axis image stabilization)
- Accurate target tracking
- Precise target location
- Adaptable system configuration
- <3.1 kg weight







- Uncooled thermal camera
- Full HD daytime camera
- Eyesafe laser range finder
- High thermal sensitivity
- Long range detection and recognition
- Multiple object detection and moving target tracking
- SWIR Camera (optional)
- Embedded image processing algorithms
- Continuous zoom optics
- Motor controlled autofocus
- Image transfer and communication via ethernet
- Automatic image optimization
- Thermal camera polarity adjustment
- Military environmental standard compliance



- Opportunity to monitor all environment to military armed land vehicles
- Multi-functional surveillance system
- Real-time(with 10-30 milliseconds delay) monitoring
- High resolution digital LCD screens
- Monitoring recorded images including their GPS coordinates

LONG DISTANCE VISION UNIT



**VIDEO MANAGEMENT SYSTEM** 



# ASPILSAN ENERJI

Company Short Name

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Company Trade Name

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#### **4400-4411 BATTERIES**



## **AQS 18 DOM BATTERY RENOVATION**





The batteries are used in Aselsan 4411-4711 series handheld radios and have a nominal voltage of 7.2V. It is available in nominal capacities of 3250 mAh, 2300 mAh and 2000 mAh.



The battery is used in an AQS 18A medium frequency helicopter immersion sonar system. It has a nominal voltage of 144 V and a nominal capacity of 2.5 Ah.

#### **3** aspilsan



The chemistry and composition of ASPİLSAN INR18650A28 is nickel-rich lithium-nickel-manganese-cobalt oxide. Its dimension is 18650; its capacity is 2900 mAh and its voltage is 3.68V







There are two different versions. The first one has a nominal voltage of 24 volts and a nominal capacity of 40Ah. It contains 20 cells in the FP40H1C-D cell type. The second has a nominal voltage of 6 volts and a nominal capacity of 145 Ah. It contains 5 cells in the KRX 145p cell type.

#### **BARBAROS FRIGATE**



#### BB ELT BATTERY A0673-1 LARGE

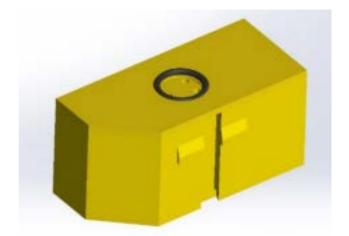


#### BB ELT BATTERY A0701 MIA31:A35NI





The battery is used in Emergency Locator Transmitter (ELT). It has a nominal voltage of 12 Volts and a nominal capacity of 300mAh. The maximum discharge current is 2.5 A. The operating temperature range is -60°C to +70°C.



The battery is used in Emergency Locator Transmitter (ELT). It has a nominal voltage of 6 Volts and a nominal capacity of 300mAh. It is 29.6 mm wide, 65.7 mm long, and 33.4 mm high. The maximum discharge current is 300 mA.

#### **S** aspilsan



The rated capacity of the lithium-ion battery with a nominal voltage of 28.8V, which meets civil and military standards, is  $2 \times 10.3$  Ah. The charge temperature range of the battery is  $0^{\circ}\text{C}$  - +45°C; The storage temperature is  $20^{\circ}\text{C}$  (1 year) / -5 to  $25^{\circ}\text{C}$  (1 and 3 months).



The rechargeable lithium-ion battery with a nominal voltage of 2 x 14.4V in accordance with civil and military standards, which can be easily integrated into the systems thanks to its compact and lightweight structure, is available in 3 different versions with nominal capacities of 2 x 10.3 Ah 2 x 148.32Wh-2 x 6.4Ah 2 x 92.16Wh-2 x 8.25Ah 2 x 118.8Wh.

**BB-1919 LI-ION (2B) BATTERY** 



**BB-2590 LI-ION BATTERY** 



#### **BB-2847 BATTERY**



#### **CENKER BATTERY**





The lithium-ion battery with a nominal voltage of 7.2V is expected to have a temperature of 10.3Ah, 9 Ah (0.2C with discharge at 23°C). There are 3 different versions with rated capacities of 7.5Ah. The battery is protected against overcharge, discharge, high current, temperature and short circuit..



It has a nominal voltage of 14.4 V and a nominal capacity of 6.8 mAh.

#### **aspilsan**



The rated capacity of the lithium-ion battery with a nominal voltage of 28.8V, which meets civil and military standards, is 2 x 10.3 Ah. The charge temperature range of the battery is  $0^{\circ}\text{C}$  - +45°C; The storage temperature is  $20^{\circ}\text{C}$  (1 year) / -5 to  $25^{\circ}\text{C}$  (1 and 3 months).

**BB-1919 LI-ION (2B) BATTERY** 





The 7.4V 3250mAh lithium ion battery contains 1 x 7.4V nominal voltage lithium ion battery block.

MINI THERMAL HANDHELD BINOCULARS BATTERY



## F 19/40H1C AIRCRAFT BATTERY



## F20/7H1CT4 AIRCRAFT BATTERY





The battery used in C130 and HERCULES. It has a nominal voltage of 22.5 Volts, a nominal capacity of 40 Ah. It weighs 35 kg. The operating temperature range is  $-40^{\circ}$ C to  $+71^{\circ}$ C.

# se aspilsan

The battery is used in the F-16. It has a nominal voltage of 24 Volts and a nominal capacity of 12 Ah. It weighs 13 kg. The operating temperature range is -40°C to +71°C.

#### **3** aspilsan



Battery is used in F-4, T-38,AB-206, NF-5, RF-5, CESSNA 210/310. It has a nominal voltage of 24 Volts, a nominal capacity of 15 Ah. It weighs 16.3 kg. The operating temperature range is -40 $^{\circ}$ C to +71 $^{\circ}$ C.

## F20/15H1C AIRCRAFT BATTERY





Battery is used in AB-206. It has a nominal voltage of 24 Volts, a nominal capacity of 17 Ah. It weighs 16.7 kg. The operating temperature range is  $-40^{\circ}$ C to  $+70^{\circ}$ C.

## F 20/17H1C-2 AIRCRAFT BATTERY



## F20/17HICT AIRCRAFT BATTERY



## F 20/22HIC AIRCRAFT BATTERY





The battery is used in the F-16(BLOCK 40-50). It has a nominal voltage of 24 Volts, a nominal capacity of 17 Ah. It weighs 19 kg. The operating temperature range is  $-40^{\circ}$ C to  $+70^{\circ}$ C.



The battery is used in ANKA/AKSUNGUR IHA. It has a nominal voltage of 24 Volts and a nominal capacity of 22 Ah. It weighs 21 kg. The operating temperature range is -40°C to +71°C.

#### **aspilsan**



Battery is used in SF-260D, CASA C-212. It has a nominal voltage of 24 Volts, a nominal capacity of 25 Ah. It weighs 24.6 kg. The operating temperature range is  $-40^{\circ}$ C to  $+71^{\circ}$ C.

F 20/25H1CTF AIRCRAFT BATTERY



Battery is used in MI-17 and MI-18. It has a nominal voltage of 24 Volts, a nominal capacity of 27 Ah. It weighs 29 kg. The operating temperature range is -40°C to +71°C.

F 20/27H1CM AIRCRAFT BATTERY



## F 20/27H1CT AIRCRAFT BATTERY



## F 20/40HIC AIRCRAFT BATTERY





The battery is used in the C-130. It has a nominal voltage of 24 Volts, a nominal capacity of 27 Ah. It weighs 29 kg. The operating temperature range is -40°C to +71°C.



The battery is used in KT-1T,C-160,GIV-4,B-212,T-37,CIT-7,UH-1H,MA-31A,CESSNA,CHALLANGER. It has a nominal voltage of 24 Volts, a nominal capacity of 40 Ah. It weighs 36.5 kg. The operating temperature range is -40°C to +71°C.

#### **3** aspilsan



The battery is used in COUGAR AS-532 and SUPER PUMA. It has a nominal voltage of 24 Volts, a nominal capacity of 40 Ah. It weighs 38 kg. The operating temperature range is -40 $^{\circ}$ C to +71 $^{\circ}$ C.

## F 20/40HICEIWT AIRCRAFT BATTERY





The battery is used in CASA CN-235. It has a nominal voltage of 24 Volts, a nominal capacity of 40 Ah. It weighs 36.5 kg. The operating temperature range is -40 $^{\circ}$ C to +71 $^{\circ}$ C.

#### F 20/40H1CT-2 KT-1T AIRCRAFT BATTERY





## F 20/40HICTF AIRCRAFT BATTERY



#### F20/7HICT4 AIRCRAFT BATTERY



The battery is used in CASA CN-235. It has a nominal voltage of 24 Volts, a nominal capacity of 40 Ah. It weighs 36.5 kg. The operating temperature range is -40°C to +71°C.



It is used in SIKORSKY UH-60. It has a nominal voltage of 24 Volts, a nominal capacity of 7 Ah. It weighs 10.5 kg. The operating temperature range is -40  $^{\circ}$ C to +71  $^{\circ}$ C.



#### **F20/40 H1C-D MILGEM-5**



It has a nominal voltage of 24 Volts and a nominal capacity of 40Ah. It contains 20 cells in cell type FP40H1C-D.



FP 3.3H1C, FP7H1C,FP12H1C, FP15H1C, FP17H1C, FP22H1C, FP25H1C, FP27H1C, FP40H1C PLANE BATTERY CELLS



There are more than 30 different usage areas such as SIKORSKY, BLACKHAWK, ANKA, F-16, F-4. The nominal capacities of the cells with nominal voltages of 1.2 Volts vary between 3.3 Ah - 40Ah. Their weights are between 305 grams and 1550 grams. The operating temperature range is -40°C to +71°C.



#### GERGEDAN



It has a nominal voltage of 7.2 V and a nominal capacity of 2.9 Ah.



## HELRAS DOM BATTERY RENOVATION

The battery is used in Helicopter Long Range Active Sonar DOM systems; it has a nominal voltage of 192 V and a nominal capacity of 2.5 Ah. The battery should be stored in a dry and clean environment at 0°C to +30°C temperature and 45 - 70% relative humidity conditions for long-term storage.



### **MIRKET**



### **OMTAS**





The battery which is used in jammer systems; has a nominal voltage of 7.2 V and a nominal capacity of 3 Ah.

The battery used in medium-range antitank weapon systems has a nominal voltage of 2 x 14.4 V and a nominal capacity of 2 x 16.5 Ah.

#### **3** aspilsan



The ni-mh battery block, which is used in low-altitude air defense systems, has a nominal capacity of 1.7 Ah.



The battery is used in anti-tank missile systems has a capacity of 1.2 Ah. It weighs 9.5 kg.

### **STINGER**



### **TOW**



## **ASSAN GROUP**

Company Short Name

ASSAN GROUP

Company Trade Name

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### **120 MM RIFLED-SET MORTAR**

120 mm Mortar is used as a fire support weapon of Infantry units with its high firepower, high precision and manoeuvrability. The 120 mm Rifled-Set Mortar produced by ASSAN has a range of 8,200 m. with conventional ammunition and a rate of fire of 8 rounds/min.







MRL rockets are the main artillery rocket system used in the Turkish Armed Forces as well as in the armies of many other countries. ASSAN Group manufactures all components of 122 mm Artillery Rockets with ranges of 20 and 40 km and offers them to the service of users.





57 mm Recoilless Cannon produced by ASSAN offers a cost-effective, powerful and successful solution for land forces units. The gun, which can be fired from the shoulder or fork, has an effective range of 600 m and a maximum range of 4,000 m.



-

**57 MM RECOILLESS CANNON** 

### **60 MM COMMANDO MORTAR**





60 mm Mortar is the main fire support weapon that facilitates the operational environment in difficult terrain conditions, especially for commando and infantry units. The 60 mm Commando Mortar produced by ASSAN stands out with its easy and fast use, ergonomic and lightweight design. It also provides the user with the opportunity of prepared firing with its two forked legs.

ASSAN manufactures replacement and spare parts for the Speed Group, Rotation Group, Torque Converter, Brake System, Fan Drive and Retarder parts of the Transmission Group of the M-60T and Leopard-2A4 Tanks in the inventory of the Turkish Armed Forces.



M60T AND LEOPARD-2A4 TANK TRANSMISSION GROUP







Balled General Purpose Aircraft Bomb is an air-to-ground bomb that creates additional fragmentation and penetration effect on the target, can be used with free-fall or guidance kit, and is designed to be effective against enemy troops, vehicles and buildings. The steel balls placed in the bomb body, which is designed as a composite winding, increase the fragmentation effect of the bomb on the target, thus increasing its effectiveness.



General Purpose Aircraft Bombs are air-to-ground bombs that create fragmentation, pressure and penetration effects on the target, can be used with free-fall or guidance kits, and are designed to be effective against enemy troops, vehicles and buildings. General Purpose Aircraft Bombs are produced by ASSAN in accordance with NATO standards and are an effective and low-cost weapon system that can be actively used by all combat aircraft in service today. In addition, the qualification process of PBXN-109 filled aircraft bombs, which are also filled by ASSAN, continues within the Turkish Air Force.





**MARK-80 SERIES STEEL-BODED AIRCRAFT BOMBS** 

# ATA ARMS

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ATA ARMS

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It is a Bolt Action Sniper Rifle that can be produced in 3 different calibers: .243, 6.5 CREEDMOR and .308 WIN. The stock can be folded left and right. It weighs an average of 4.8 kg, depending on caliber options.



It is an Infantry Rifle that can fire  $5.56 \, \text{mm} \times 45$  NATO Ammunition and operate with a fully and semi-automatic Short Stroke Gas Piston system. The rifle with a 14.5" barrel length weighs approximately 3400 grams.



**APT 556** 







Türkiye's First Multi Caliber Bolt Action Sniper Rifle. It can fire 6.5 CREEDMOR, .308 WIN, .300 MAG. .338 LAPUA Cartridges. The stock, which has many functions, can be folded to the left. It weighs 6100g depending on barrel option.



The shotgun can fire 12 Caliber cartridges. The stock can be folded to the left or upside.





ATA PUMP ACTION SHOTGUN



### ATA9





It is suitable for use with or without stock. It can be easily mounted on AR10 or AR15 Infantry Rifles having MIL-STD 1913 rails. It can be loaded from both sides. It has a barrel length of 240mm and the weight without stock is 1460g.



BA37/38





It is suitable for use with or without stock. It can be easily mounted on AR10 or AR15 Infantry Rifles having MIL-STD 1913 rails. It can be loaded from both sides. It has a barrel length of 240mm and the weight without stock is 1460g.





It is suitable for use with or without stock. It can be easily mounted on AR10 or AR15 Infantry Rifles having MIL-STD 1913 rails. It can be loaded from both sides. It has a barrel length of 240mm and the weight without stock is 1460g.



BA40S



Company Short Name

Atel

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### **ANTI-DRONE JAMMER SYSTEMS**

Anti Drone Jammer Systems were designed and produced by ATEL engineers to provide effective protection against threats generated by remote controlled drone systems. In today's world, remote controlled drone systems are used for attack and illegal monitoring/recording attempts. Remote controlled unmanned air vehicles that are called drones are widely used for these purposes due to their low costs and high availability. Navigation, telemetry and communication channels are used together in drones. In order to prevent data communication of these systems (by impairing the transmitter and receiver), usage of jammer systems has become a necessity. Within this framework; A-Dragon Anti-Drone Jammer System, as a part of A-Dragon Anti-Drone Protection System, was uniquely designed. With the help of RF electronic warfare measures, drones are inactivated by this System. Ergonomic and modular design enables one operator to control the System easily. Although the system was designed for manpack configuration, it can also be installed onto vehicles or facilities.





### ANTI-DRONE FACILITY TYPE JAMMER SYSTEMS





Anti-Drone Facility
Type Jammer Systems
were designed to jam
the signals of remote
controlled mini/micro
unmanned aerial
vehicles (drones) that
are effective on 4325875 MHz and GNSS
frequency bands.



Desk - Suitcase Jammer Systems are designed and produced by ATEL engineers to prevent GSM I. GSM II. 3G. 4G (LTE)i Wi-Fi or Bluetooth communication, to secure VIP offices, conference halls, meeting rooms or theaters. Desk - Suitcase Jammer Systems are designed and produced by ATEL engineers to prevent any GSM, Wi-Fi or Bluetooth communication signal to secure VIP offices, conference halls, meeting rooms or theaters. The system can easily be operated and managed by the user friendly keypad or its infrared remote control unit and can be programmed in case of need. The system is flexible to be used as a vehicular, stationary or portable jammer with relevant accessories. With the help of adjustable output power, jamming coverage length can be modified.





**DESK-SUITCASE JAMMER SYSTEMS** 



### JAMMER SYSTEMS FOR THE DISPOSAL OF EXPLOSIVE MATERIALS







Portable jammer systems are designed and produced by ATEL engineers to provide effective protection against threats generated by RC-IEDs, targeting EOD units or VIPs. The system provides reliability and programmability through its DDS (Direct Digital Synthesis) technology, enabling the jammer operator to utilize secure communication channel(s) for security personnel. The user friendly LCD touchscreen control unit allows the operator to test, restart or re-program the system easily .The system is flexible to be used as a vehicular, stationary or portable jammer with relevant accessories.ATEL has the capability to customize jammer solutions to comply with customer demands based on threat analysis. The system was specially designed for bomb disposal experts and outdoor meetings. With the help of optional directional antennas. jamming coverage length can be increased.



Manpack/Multi-purpose jammer systems are designed and produced by ATEL engineers to provide effective protection against threats generated by RC-IEDs, targeting EOD units, patrol units, convoys and VIPs. The system provides reliability and programmability through its DDS(Direct Digital Synthesis) technology, enabling the jammer operator to utilize dynamic communication channel(s) for security personnel. The user friendly LCD touchscreen control unit or tactical hand control unit allows the operator to test, restart or re-program the system easily. The system is flexible to be used as a vehicular, stationary or portable jammer with relevant accessories, without permanent modification to the vehicle or the system. ATEL has the capability to customize jammer solutions to comply with customer demands based on threat analysis.

**ANTI-DRONE JAMMER SYSTEMS** 





### **VIP VEHICLE TYPE JAMMER SYSTEMS**

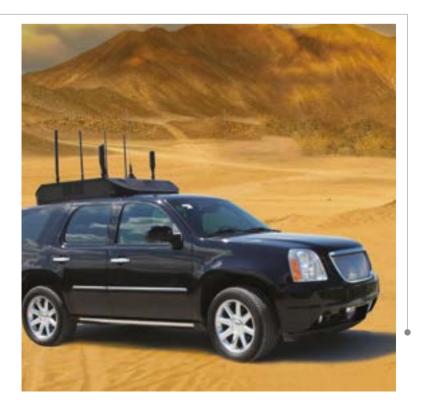


VIP Vehicle Type Jammer Systems were designed to protect VIP people such as the presidents of the countries that are effective on 20-6000 MHz frequency bands.





Vehicular Jammer Systems are designed and produced by ATEL engineers to provide effective protection against threats generated by RC-IEDs targeting VIPs and convoys. The system is field proven to be the best operating vehicular jamming system in desert and harsh climatic environments thanks to its high technology and genuine design. The system provides reliability and programmability through its DDS(Direct Digital Synthesis) technology. The system enables Commanders to sustain the command and control capability which is essential for the success of the mission via communication channels to be notched. The user friendly LCD touchscreen control unit allows the operator to test, restart or re-program the system on-the-go. The system is installed onto the vehicle and effective protection is provided for all usage concepts (both on-the-go and in park). The vehicle is completely shielded to protect the personnel from the harmful effects of the electro magnetic radiation.







**JAMMER SYSTEMS FOR ARMORED VEHICLES** 



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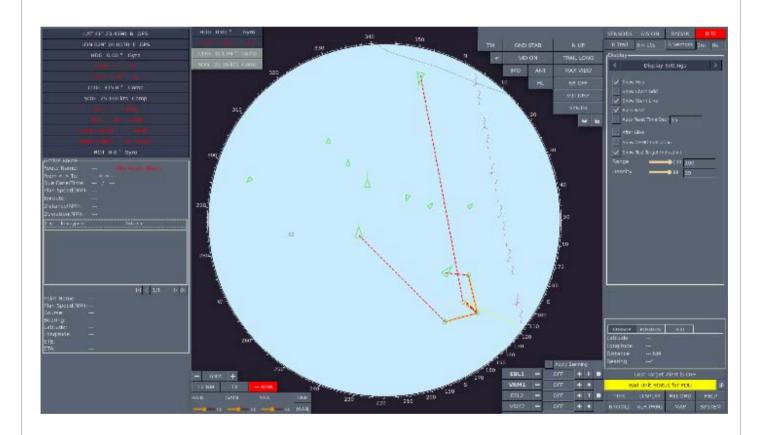
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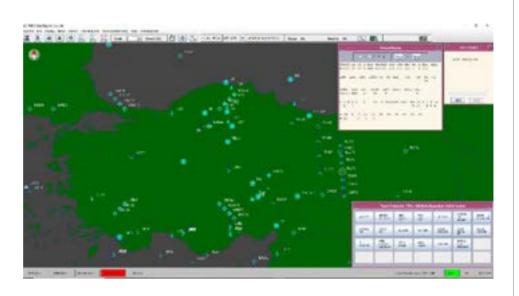




AYESAŞ Radar Operator Console (ROPKON) provides means to control radar status, radar video management and display of built-in-test results. ROPKON offers safe navigation with the help of essential navigation tools and support functions required for navigation.



Real Time Surveillance and Radar Control by using 5 different sensors (TRS-22XX, RAT-31DL, RAT-31SL, HR-3000, GE-117) (Any kind of radar extendable) Command, Control and Identification Capability Multilink Software Architecture Tactical Digital Links (Link-11, Link-11B, ATDL-1, Link-1) (JRE / Link-16 Extendable) Increased Situational Awareness and Interoperability Mobile Units (Standalone System)



It can operate on surface and underwater military and civilian platforms, military shelters and land vehicles. The common qualities of these consoles are that they can meet current expectations in foreign and domestic markets; They can be easily adapted to user requirements; They are competitive in terms of performance and cost and have a modern design. Especially with the use of industrial design approach, our New Generation Operator Consoles stand out in terms of ergonomics, modularity and functionality.





**NEW GENERATION OPERATOR CONSOLE** 



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Baykar

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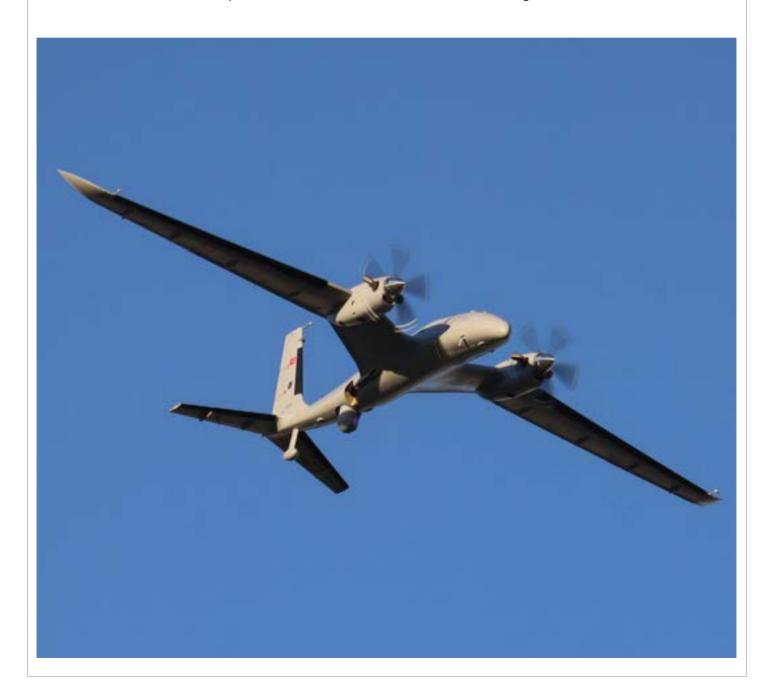
Company Website

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Bayraktar AKINCI Unmanned Combat Aerial Vehicle (UAV) has a unique swept-wing structure with a wing span of 20 meters and a payload capacity of 1500 kilograms, allowing it to carry numerous national smart munitions for mission execution. With a 24-hour endurance and a takeoff weight of 6 tons, Bayraktar AKINCI provides advanced flight, reconnaissance, and attack capabilities to its users, thanks to its advanced artificial intelligence system that is more aware of environmental conditions. Equipped with electronic support pods, satellite communication systems, air-to-air radars, obstacle detection radar, synthetic aperture radar, and other advanced payloads, Bayraktar AKINCI performs missions that reduce the burden on fighter aircraft. The National UAV, which will be equipped with domestically developed air-to-air missiles, can also be used for air-to-air missions. Export contracts with six more countries has been signed for AKINCI.



### **BAYRAKTAR DİHA**





The Bayraktar Vertical Take-Off and Landing Unmanned Aerial Vehicle (VTOL UAV) is an aircraft in the tactical UAV class capable of conducting reconnaissance and intelligence missions. With features such as automatic cruise flight, autonomous takeoff, autonomous landing, semi-autonomous cruise flight, rapid maneuverability, quick mission initiation in confined areas, and the ability to operate without a runway, it can be successfully employed on floating platforms and rugged highland areas. The upcoming Bayraktar VTOL UAV is planned to enter service in the near future. It will utilize electric motors for vertical takeoff and then transition to a cruise flight mode, functioning like a fixed-wing platform with a fuel engine. Equipped with Al-supported functions such as automatic route tracking, target tracking and detection, circling, and return-to-home modes, it will effectively demonstrate its capabilities in the field.







Developed by Baykar with indigenous and national resources, Bayraktar KIZILELMA is Turkiye's first unmanned combat aircraft capable of operating from short runway vessels such as TCG ANADOLU. It will have low radar visibility, thanks to its special design and national AESA radar, allowing it to evade enemy radar systems. With a maximum takeoff weight of 8.5 tons, Bayraktar KIZILELMA will serve as a significant force multiplier, capable of carrying a payload capacity of 1500 kilograms and utilizing all domestically developed munitions. It will also be capable of engaging in air-to-air combat due to its aggressive maneuverability and the use of indigenous air-to-air munitions. Being unmanned, it will be able to execute the most risky missions. Bayraktar KIZILELMA will be a strategic technological achievement for Turkiye. Furthermore, it will be capable of operating alongside manned fighter aircrafts and UAVs, contributing to intelligent fleet autonomy.



### BAYRAKTAR MINI UNMANNED AERIAL VEHICLE SYSTEM



Bayraktar Mini Unmanned Aerial Vehicle System has proven itself in short-range reconnaissance and surveillance operations. As the first national UAV to be included in the Turkish Armed Forces' inventory, it has been actively utilized since 2007. Since then, it has been deployed by the Turkish Land Forces Command, Special Forces Command, Ministry of Interior of the Republic of Turkiye, Gendarmerie General Command, General Directorate of Security, and the Qatari Armed Forces. As the initial domestically produced and exported aircraft, the Bayraktar Mini UAV can effectively carry out its missions even in challenging geographical and meteorological conditions, thanks to its enhanced version.







### **BAYRAKTAR TB2 UCAV**

Bayraktar TB2 UCAV (Unmanned Combat Aerial Vehicle) is a tactically armed unmanned aerial vehicle that has been globally recognized for its success. It features a three-redundant avionics system and sensor fusion architecture, enabling fully autonomous taxiing, takeoff, normal cruising, and landing capabilities. As the first domestically produced tactical unmanned aerial vehicle system to enter the inventory of the Turkish Armed Forces (TSK), Bayraktar TB2 has been actively used since 2014. The National UCAV, which has signed export contracts with 30 countries, is capable of precise targeting and can engage targets with up to four smart munitions as its payload. With over 600,000 successful flight hours, Bayraktar TB2 has played a crucial role in critical missions conducted both within and beyond the borders. It has demonstrated its effectiveness in conflicts in Libya, Azerbaijan, and Ukraine, thereby reshaping the paradigm in defense and aviation.

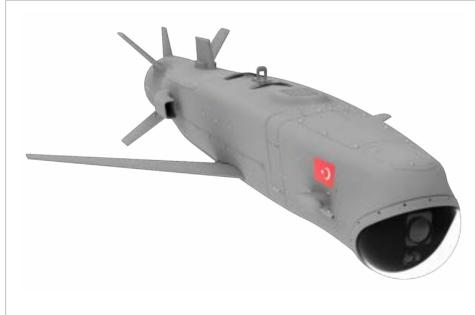






Bayraktar TB3 UCAV, developed by Baykar as a national and indigenous system, will be the world's first armed unmanned aerial vehicle capable of taking off and landing from short runway vessels like TCG Anadolu, thanks to its foldable wing structure. The capabilities of Bayraktar TB3, which will begin flight tests in 2023, are significant innovations in the field of unmanned aerial vehicles. Additionally, Bayraktar TB3 will have beyond-line-of-sight communication capability, allowing it to be controlled from very long distances. This will enable it to perform reconnaissance, surveillance, intelligence gathering, and attack missions against overseas targets, contributing to Türkiye's deterrence capability with its smart munitions.





KEMANKEŞ Mini Smart Cruise Missile, developed as a national and indigenous product by Baykar, can be integrated into Bayraktar AKINCI UCAV, Bayraktar TB2 UCAV, and Bayraktar TB3 UCAV to perform missions. With a flight endurance of approximately 1 hour, the mini smart cruise missile can rapidly traverse the battlefield using its jet engine. effectively engaging high-value targets behind enemy lines. With a mission range of over 200 kilometers, KEMANKEŞ employs an Al-supported optical guidance system, enabling it to identify targets and achieve precise destruction even under challenging weather conditions. With its Al-supported autopilot system, it can conduct autonomous flights and neutralize strategic targets with high precision, thus altering the dynamics on the battlefield.



**KEMANKEŞ** 

# **BIRIKIM PILLERI**

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Birikim Pilleri

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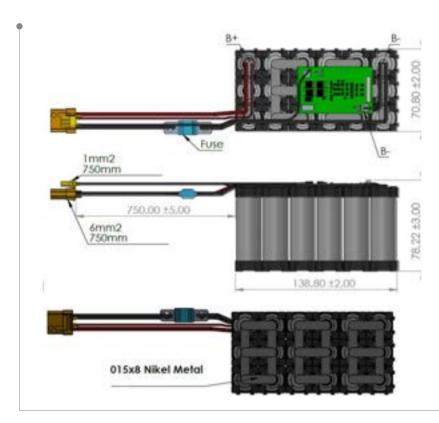






### **BPM UMV BATTERY**





It is a modular battery system designed and manufactured by Birikim Pilleri engineers for unmanned marine vehicles. The energy storage system, which has emerged as a result of many years of R&D studies, can be revised according to demands. We have special production capability for all unmanned marine vehicles.

It is a modular battery system designed and manufactured by Birikim Pilleri engineers for unmanned ground vehicles. The energy storage system, which has emerged as a result of many years of R&D studies, can be revised according to demands. We have special production capability for all unmanned ground vehicles.



### **BPM UGV BATTERY**



#### **BPM SIHA BATTERY**



### **KEEPER PT2150**





It is a modular battery system designed and manufactured by Birikim Pilleri engineers for unmanned aerial vehicles. The energy storage system, which has emerged as a result of many years of R&D studies, can be revised according to demands. We have special production capabilities for all unmanned aerial vehicles.



The EaglePicher PT
Series of KEEPER®
cells was developed as
an economical, highpower option for design
experts who prefer the
cylindrical design. With
sizes and capacities
ranging from the 1200
mAh (PT-2150) to the
19,000 mAh (PT-2300H),
this cylindrical design
will provide the long
life power needed for
commercial applications.



It has long-term operating performance and is suitable for Power supplies that demand long-term reliability.



SAFT LSH 14 \*\*\* 3.6V

Saft LSH14 cylindrical primary lithium batteries are developed using Lithium-Thionyl chloride (Li-SOCl2) chemistry and large surface area is obtained by using spiral electrodes to collect maximum current. The LSH14 is specifically designed for applications requiring continuous current in the range of 0.1-1.8 A and high combined shots up to 4A. High operating voltage ensures stability throughout the entire life of the application

**PANASONIC BR2/3** 



**SAFT LSH14** 



# **BITES**

Company Short Name

BİTES

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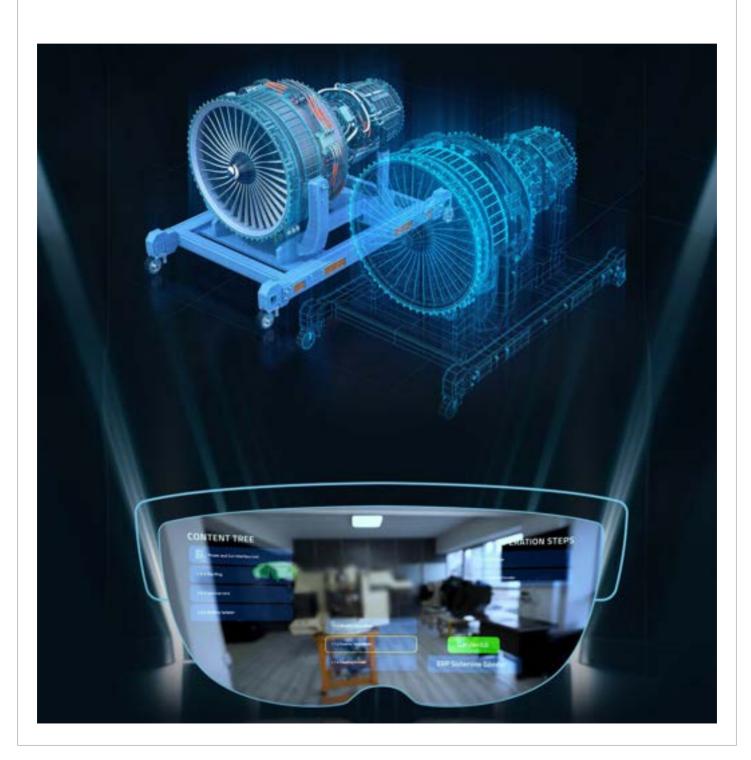
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#### THE AUGMENTED REALITY-BASED MAINTENANCE SYSTEM

The Augmented Reality-Based Maintenance System provides effective support to users and maintenance personnel by demonstrating procedural steps on the actual system through holograms and animations as specified in user and maintenance guides. It guides maintenance and user training for critical systems and platforms, minimizing human errors and reducing human-induced faults. Augmented Reality glasses enable guidance and remote support with holograms placed on the actual system. Experts can send instructive signals to the user's 3D real-world environment, providing on-site users with video, documents, and image support.



## THE MILITARY TACTICAL OPERATION KIT (ATOK)







The Military Tactical Operation Kit (ATOK) is a team-based command and control system with real-time intelligence capabilities developed with national resources for special forces. It aims to enhance the tactical field dominance of armed forces and security personnel. It improves collaboration through team-based mobile messaging, providing seamless voice communication, effortless file transfers, and high-definition video conferencing. ATOK enables accessing soldiers' locations even in the absence of GPS signals. Through SATCOM, it facilitates easy access to UAV images and real-time aerial intelligence.

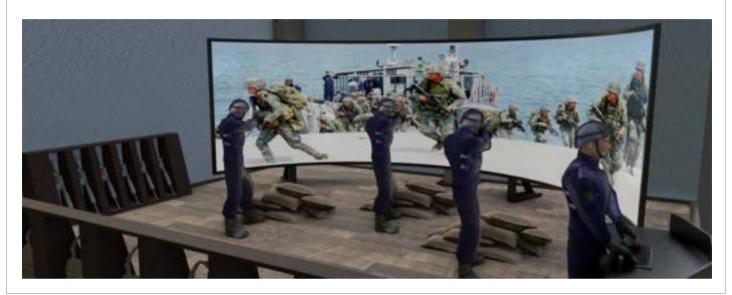


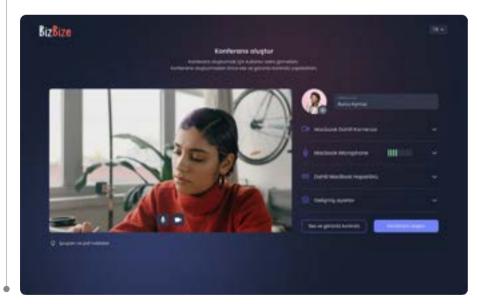
#### BITES

#### FIREARMS TRAINING SIMULATORS



Al-powered Firearms Training Simulators, featuring realistic scenarios, offer a solution that is closest to reality, cost-effective, and safe. These simulators eliminate the need for real ammunition while ensuring maximum efficiency in the training process. The system can run realistic and high-resolution target scenarios, enabling cost-effective and safe shooting practice without using real bullets. It establishes a customizable instructor module that allows trainers to guide the training process. The feedback system, which thoroughly analyzes users' performance, enables a comprehensive assessment of training performance.

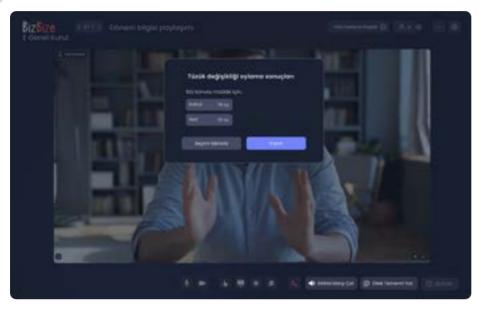




With our BizBize video conferencing product, conducting high-quality and secure video meetings is possible through the cloud or local servers. The advanced control panel allows easy organization of meetings, facilitating seamless communication with stakeholders on a single platform. LDAP integration enables automatic creation of BizBize accounts for all employees in large companies and organizations. Meetings ensure complete privacy with end-to-end encryption and scalable physical security layers.

**BIZBIZE** 





E-General Assembly enables General Assembly meetings in compliance with Association Legislation without time and location constraints. It allows for instant extraordinary meetings with participation from anywhere in Türkiye and the world. General Assembly meetings can be conducted without venue and travel expenses. Automatic reports can be generated after each meeting; secretariat and board elections, motion presentations, block and open voting, rapid vote counting, amendment votes, and minutes and general assembly reports can be conducted and created effortlessly.

BizBize Board of Directors, is a video conferencing platform that enables board meetings without members physically gathering. It eliminates venue and travel restrictions, facilitating the digital recording of decisions during meetings through E-Minutes Book and E-Signature integration. Authorized board members can electronically sign the minutes book during the meeting. With servers located domestically and top-tier cybersecurity measures, all meetings and data are safeguarded with high security domestically.





**BIZBIZE YK** 



A digital twin creates a virtual copy of real-world entities, continuously monitoring their status to detect potential issues and enable proactive intervention. This technology also supports resource optimization. By collecting data, the digital twin helps businesses optimize energy, labor, and material usage, leading to more efficient and sustainable processes. This allows businesses to reduce costs, enhance product quality, and minimize environmental impact.





LMS (Learning Management System) is software used to manage, track, and report online learning activities. With LMS, educators and learners can access training content anytime, anywhere, facilitating an interactive and flexible learning experience. LMS offers various features, including training management, file sharing, exam creation, certification issuance, gamification, video conferencing, and more, making it a comprehensive tool for remote education administration over the internet.

**LEARNING MANAGEMENT SYSTEM (XPERLMS)** 







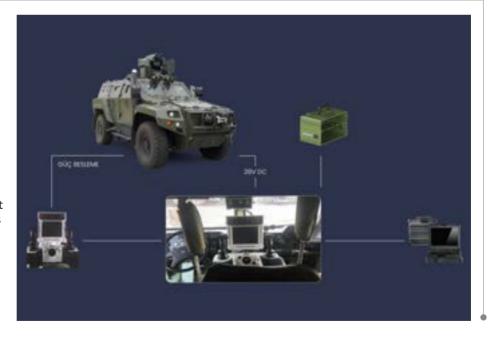


## THE INTERACTIVE DIGITAL EDUCATION SYSTEM



The Interactive Digital Education System is a platform that enables users to access 2D and 3D animations, videos, sound effects, and narrated explanations through AR/VR/MR, PC, and mobile platforms. It provides interactive, fast, understandable, and effective individual or teacher-supervised education. The system contributes to enhancing the quality and effectiveness of education by overcoming time constraints in organizing activities such as research and teaching and by increasing access opportunities through the presentation of content in various formats.

BITES Embedded Training Systems enhance soldiers' preparedness for combat by creating realistic field experiences on actual vehicle systems. They elevate the level of combat readiness through realistic scenarios prepared for various environmental conditions, bringing the complexity of the battlefield to training. The ability to collaborate seamlessly with other simulator units allows for cooperative training. Serving as a true-to-life digital cockpit with meticulously crafted simulations of crew stations, it accurately reflects the precision of real platforms. From budget-friendly desktop trainers to high-fidelity team simulators, a range of solutions makes training more effective and efficient.







**EMBEDDED TRAINING SYSTEMS** 

#### **IMAGE MANAGEMENT SYSTEM**





The Image Management System developed by BITES is configurable for all types of vehicles and cameras. It takes thermal and electro-optical camera data and presents it to the user in near real-time in the desired format (combined, regional, or single). The presented images include "Image Fusion," "Moving Object Detection," and "Picture in Picture" capabilities. When the vehicle's cameras provide a 360° view of the surrounding environment, the images can be transferred to augmented reality glasses, providing Beyond Armor Vision capability.

With BITES Unmanned Aerial Vehicle (UAV) Simulators, a realistic training experience is achieved by combining a synthetic environment and 3D models with environment design. Elements generated by AI-supported computers come together to create a realistic training experience.

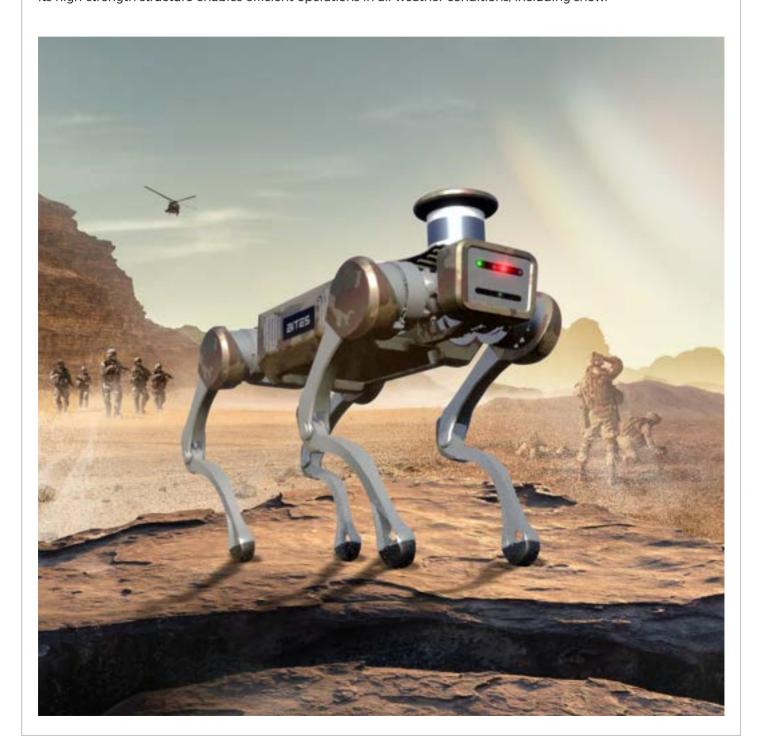


**UNMANNED AERIAL VEHICLE UAV SIMULATORS** 





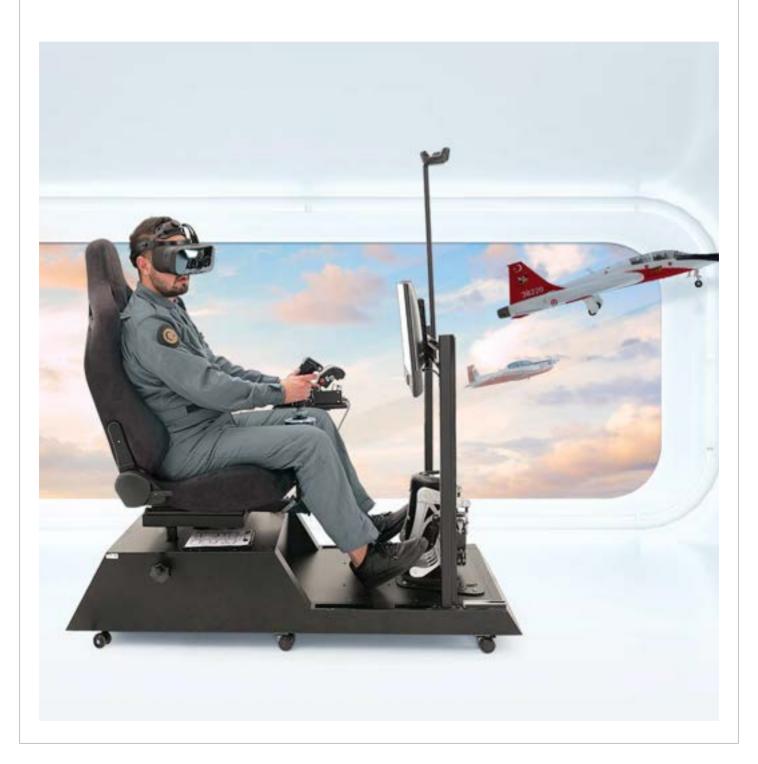
The Autonomous Robot Dog System "K.E.Ç.İ" is designed to meet operational requirements in areas such as reconnaisance, patrol, attack, search and rescue, facility security, and disaster management, providing support to field personnel. It fulfills movement requirements, including jumping, climbing on surfaces with a 45-degree incline, ascending stairs, and recovering from falls. With its compact and lightweight design, it can be used with robotic arm, weapons, radar, electro-optical, laser, and other subsystem modifications, boasting a useful load capacity of 20 kg. Its high-strength structure enables efficient operations in all weather conditions, including snow.







Mixed Reality Supported Training Simulators utilize tangible real or simulated systems for cockpit features and functions, generating the external world view as virtual reality. Developed by BITES Defense, the simulation infrastructure combines realistic external visuals with cockpit interior images through mixed reality glasses. Designed for military and civilian use, these glasses provide a high refresh rate and a 360° view, merging the realistic external world image with the cockpit interior, enhancing training environments for immersive virtual flight experiences.







The Mixed Tactical Map merges strategy development with cutting-edge technology. In a dynamic world where 3D models meet layered terrain data, it offers a unique capacity for tactical development. Providing security forces with an intuitive 3D map, it establishes a common environment for joint operations, allowing for managerial commands. With advanced synthetic data integration, it enhances command and control efficiency. The system's portability transcends boundaries, seamlessly integrating with any command center or training environment.



Virtual Maintenance Simulators enhance the familiarization to the maintenance scenarios of complex systems during the training process, using true-to-life dimensions. This system utilizes computer, mobile, and headset technologies to provide training on a detailed 3D model instead of the actual complex and costly system. The goal is to ensure that operators adapt visually and in muscle memory to maintenance procedures before initiating them on the real system, enhancing the adaptation to maintenance processes.



**VIRTUAL MAINTENANCE SIMULATORS** 

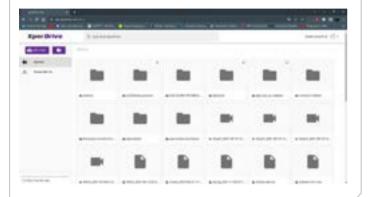
#### **XPER DRIVE**

**WAS** 

**XPER PASSKEY** 



XperDrive is an encrypted cloud storage space that allows the storage and sharing of files in encrypted or unencrypted form. XperDrive enables files to be stored and shared on corporate servers in both fully open and closed configurations according to preferences. It facilitates file transfer with end-to-end encryption at military encryption standards, and its seamless structure, along with email and LDAP integration, allows for easy usage without installation.



XperPass is an integrated digital identity verification software enabling access to systems through biometric data or personnel cards. XperPass allows the use of unique information acquisition methods such as fingerprint scanning, iris scanning, and

facial recognition as a verification factor in accessing personal or corporate systems. This ensures that the device remains secure against any kind of cyber attack, intrusion, or threat to operating and software systems. It can operate in fully closed or open configurations on corporate and company servers.



**XperPass** 

### BITES

Passwerks, a secure password wallet application, encrypts and stores your login credentials on your mobile device's local storage while browsing websites. It sends a notification to your mobile phone when you generate a login request, and upon approval, it automatically fills in the username and password fields when you click on the Passwerks logo in the input fields of the websites you are logging into. To connect your devices, you are required to download the Chrome extension and mobile app. This way, you not only eliminate the need to remember usernames and passwords but also add an additional layer of security with two-factor authentication.



XPER PASSWERKS



Augmented Reality-Supported Remote Maintenance System, XperRemote, enables field users to easily perform complex maintenance/repair tasks beyond their expertise with live instructions. Built on a visual communication infrastructure, XperRemote is a modular augmented reality platform. Teams are guided through 3D digital models, mastering critical details in workflows. Using XperRemote, teams can draw on real-time images, mark objects by touching them, add shaped and written instructions, and enrich content with images of different colors and shapes. With the BizBize video conferencing system, teams can remotely connect to experts for support. All these features contribute to an efficient and cost-effective maintenance procedure.

**XPER REMOTE** 









#### **XPER SHARE**



XperShare is a web application that allows you to quickly and securely send files via email in a few steps through your browser. The product, which includes an onpremise installation option, features a custom domain name for the organization, a customizable interface, and organization message fields.



Brightsight provides the crew inside armored vehicles with a 360° situational awareness in tactical fields. Capable of exchanging data with all systems in armored vehicles, this system enriches 360° electro-optical and thermal camera images from the close-range surveillance system with operational information from Command and Control Systems and georeferenced data. Images from surveillance systems are combined by the system and transferred to the smart goggles used by the crew. By calculating the crew's field of view inside the vehicle, images in their field of view, along with tactical information and symbology from the command control information system, are displayed in real coordinates on the smart goggles in real-time.





**BRIGHTSIGHT** 



Company **Short Name** 

ВМС

Company **Trade Name** 

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# BMC 4×4 RIOT CONTROL VEHICLE I

4×4 Riot Control Vehicle's function is to suppress any act of civil violence.

Carrying a 5,000-liter tanker, it is capable of spraying water, tear gas, paint and foam while being resistant against Molotov cocktail attacks thanks to its fire resistance paint and self-fire suppression system. Its ram bumper can sweep away the obstacles on its way.



# 5 TON 4×4 TWV & 10 TON 6×6 TWV TACTICAL WHEELED VEHICLE







The 5 TON 4×4 TWV can carry up to 8 tons of cargo or 20 personnel. Meanwhile, the 10 TON 6×6 TWV, with a larger engine, can carry up to 13 tons of load. Moreover, they can be armored with ballistic protection as an additional option. Roles & Variants: Personnel Carrier – Water/Fuel Tanker – C&C Center – CBRN Protection Bunker – Recovery Vehicle – Mobile Hospital/Kitchen/Maintenance Atelier











## **8×8 TWV TANK TRANSPORTER**

8×8 TANK TRANSPORTER can carry 1 MBT or 2 armored vehicles at the same time. It can be coated with an optional ballistic protection.





ALTAY MBT has all of the 3 aspects of a tank warfare:

- Firepower
- Maneuverability
- Crew Protection

Its most remarkable features are:

- Combat Weight of 65 Tons
- Powered by a 1,500 HP Engine
- Equipped with a 120 mm-L55 Caliber Cannon

**ALTAY MBT MAIN BATTLE TANK** 







# ALTUG 8×8 APC ARMORED PERSONNEL CARRIER



ALTUG 8×8 APC can be equipped with a 12.7 mm machine gun firing armor piercing ammunition and its IFV variant can be equipped with up to a 105 mm armament. It can carry up to 12 personnel and provides a high protection level according to NATO STANAG 4569 Standards against both ballistic and mine threats.

#### Roles & Variants:

- Personnel Carrier
- Infantry Fighting Vehicle
- Ambulance
- Tank Hunter





AMAZON 4×4 MPAV (Multi Purpose Armored Vehicle) which can carry up to 7 personnel is the lightest member of our Armored Vehicle Family weighing only 14.5 Tons. It provides a high protection level according to NATO STANAG 4569 Standards against both ballistic and mine threats.

#### Roles & Variants:

- Troop Carrier
- Combat Tactical Vehicle
- Counter Intelligence & Jamming Vehicle



**AMAZON 4×4 MPAV MULTIPURPOSE ARMORED VEHICLE** 







## FIRTINA-II T-155 NEXT GENERATION **HOWITZER**

FIRTINA-II T-155 Next Generation Howitzer features an excellent rate of fire with a pinpoint accuracy from 40 km distance. With a reverse speed exceeding 40 km/h, 48 rounds ammunition capacity and auto reloading system, it is the perfect hit & run unit on any battleground. Units in Service: 280+



### **KİRPİ 4×4 MRAP MINE RESISTANT AMBUSH** PROTECTED VEHICLE

**POYRAZ** VEHICLE SUPPORTING





KİRPİ 4×4 MRAP can carry up to 13 personnel and provides a high protection level according to NATO STANAG 4569 Standards against both ballistic and mine threats.

Roles & Variants:

- Troop Carrier
- Combat Tactical Vehicle
- Utility Vehicle
- 6×6 Variant
- Ambulance
- Mine Detection & Disposal Vehicle



## **AMMUNATION TRANSFER FIRTINA HOWITZERS**



POYRAZ comes in as the support unit for FIRTINA T-155 Howitzer's ammunition supply where a vehicle's sustainability is a crucial aspect of its presence in the field. With a 96 units of ammo capacity, a POYRAZ can load 4 units of FIRTINA T-155 Howitzer during a single deployment.

## **BMC**

TULGA 4×4, the winner of the Turkish Ministry of Interior's tender, is available as SUV and Pick-Up editions and can be further modified according to the end user's request. Unlike any other "add-on armored" vehicle, TULGA 4×4 was "born armored" since during its early design and all its sub-system components were selected to suit its native armor weight. Roles & Variants: VIP Transporter - Police/Gendarmerie/ Military Vehicle - Border Patrol Vehicle



**TULGA 4×4 ARMORED SUV & PICK-UP** 





VURAN 4×4 MPAV (Multi Purpose Armored Vehicle) can carry up to 9 personnel and provides a high protection level according to NATO STANAG 4569 Standards against both ballistic and mine threats. Roles & Variants: Troop Carrier - Combat Tactical Vehicle - Mortar Launcher Vehicle - Multi-Rocket Launcher Vehicle -Laser-Guided Missile Launcher Vehicle

**VURAN 4×4 MPAV MULTIPURPOSE ARMORED VEHICLE** 



# **BMC POWER**

Company Short Name

**BMC** Power

Company Trade Name

BMC Power Motor ve Kontrol Teknolojileri A.Ş.

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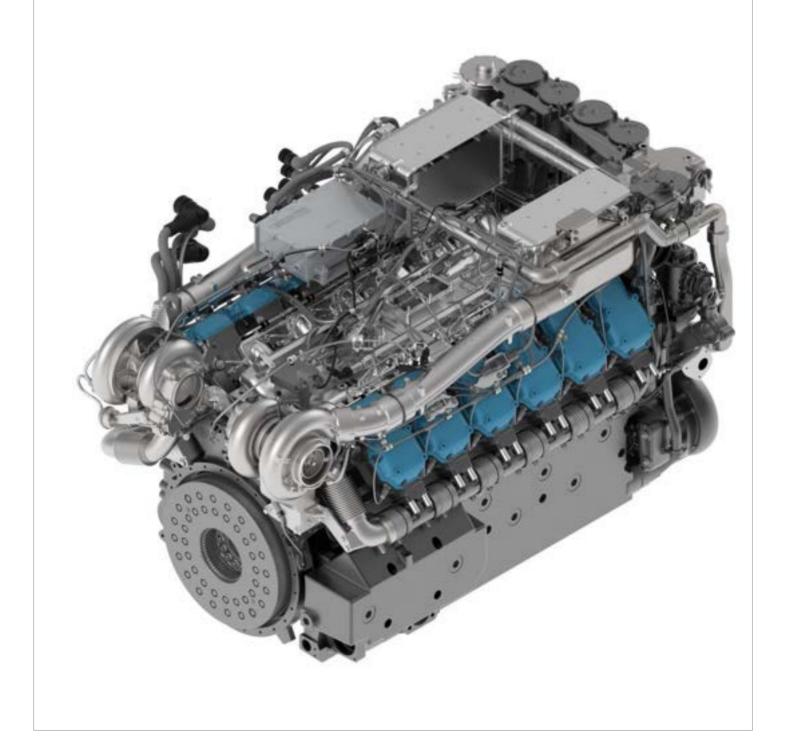
**BMC POWER** 



Testing and calibration work continues on the test rig of the engine, which was successfully first ignited in 2018 and continues to be designed and produced by BMC Power, as well as on the vehicle. It is a 6-cylinder inline diesel engine with 600Hp engine power.



The V12 engine, which is the first 12-cylinder engine designed and developed by Turkish engineers, was successfully fired for the first time in 2021. Testing and qualification studies continue at the BMC POWER test center. n line with the 1500 HP engine, transmission with steering and braking capability and high torque transmission, high efficiency chiller and multi-functional control unit development projects are carried out simultaneously within BMC POWER.



### **LEVEND**



BMC Power's first marine engine, LEVEND, was designed based on the AZRA Engine. Technical specifications are stated below. It is a 6-cylinder inline diesel engine.





The test setup and on-vehicle testing and calibration work of the engine, whose design and production was carried out by BMC Power and whose first ignition was made in 2020, continues.It is a 4-cylinder inline diesel engine with 400Hp engine power.

**TUNA** 



The first V8 engine, designed and developed by Turkish engineers, has the characteristics of being the first V and the first 8-cylinder engine, and its first ignition was carried out successfully in 2020. Test and calibration studies continue at BMC POWER test center. In line with the 1000 HP engine, transmission with steering and braking capability and high torque transmission, high efficiency chiller and multifunctional control unit development projects are carried out simultaneously within BMC POWER.



# BOĞAZİÇİ SAVUNMA TEKNOLOJİLERİ

Company Short Name

BOĞAZİÇİ SAVUNMA TEKNOLOJİLERİ

Company Trade Name

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## ILTER MARITIME DRONE INTERCEPTION SYSTEM







Designed and produced in-house by Boğaziçi Savunma Teknolojileri, İLTER Maritime jams 360 degree surveillance and attacks against ships with UAV/USVs, which increasing day by day. Protects ships operating in open sea or shallow waters up to 5 km against UAV/USV attacks. It can be integrated into the ship's Combat Management System, and according to the incoming threat, the user can choose the method of intervention, including other weapon systems on board.



Designed and produced domestically and nationally by Boğaziçi Defense Technologies, the İLTER Tank protects armored combat vehicles, including tanks and armored personnel carriers on the battlefield, against drone/UAV threats within a 5 km range and 360 degree coverage. It can be customized according to user needs and integrated into the command and control systems of the vehicles.

**ILTER TANK DRONE INTERCEPTION SYSTEM** 







## J350 DRONE DETECTION AND INTERCEPTION SYSTEM



New generation İLTER J350 Drone Detection and Neutralization System, designed and produced in-house by Boğaziçi Savunma Teknolojileri, has automatically omni directional protocol-based and RF detection accompany directional or omnidirectional RF and GNSS jamming capabilities integrated 5 different antenna types against all micro/mini or tactical/operational UAVs. Userfriendly interface and wireless connection feature, centralized command control of multiple ILTER Systems can be operate. Operates with optionally integrated radar, electro-optical or weapon systems and can connect to existing systems in the inventory according to the needs.



Automatic Fire and **Explosion Suppression** System, designed and produced by Boğaziçi Savunma Teknolojileri prevents the loss of personnel by suppressing the fire that will break out inside the vehicle after an attack on armored vehicles. A flame that will be detected in less than 3 milliseconds by UV/IR detectors placed in the vehicles sent signal to the control box and fire suppressed by the activation of the extinguishers in the personnel zone. An environmentally friendly. fire suppression nitrogen gas HFC227-EA (FM200) is used in the extinguishers.







YSIB FIRE EXTINGUISHING AND EXPLOSION SUPPRESSION SYSTEM



Company Short Name

BRG

Company Trade Name

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#### **BRG9 ELITE**



The polymer lower body of the BRG9 ELITE. which operates semi-automatically. is reinforced with reinforced glass fibre. and the front and rear slides are machined from 4140 material in order to have a more durable and stable firing capability. It provides comfort and confidence to the user with three different grip backrests in S-M-L sizes depending on user preference. full chamber indicator, grip safety, firing pin safety indicator and ergonomic grip structure. Available in scratch resistant special black coating or cerakote coating colour options, ELITE is a model that will overcome tough conditions with its robust internal structure.

Calibre: 9x19 mmMagazine capacity: 16Height: 145 mm

- Width: 32 mm - Length:184 mm

Barrel Length: 103 mm
Empty weight without magazine: 750 g ±5





The polymer lower body of the BRG9 ELITE GEN2, which operates semi-automatically, is reinforced with reinforced glass fibre, and the front and rear slides are processed from 4140 material in order to have a more durable and stable firing capability. It provides comfort and confidence to the user with three different grip backrests in S-M-L sizes depending on user preference, high magazine capacity, grip safety, firing needle safety indicator and ergonomic grip structure. GEN2, which has scratch-resistant special black coating or cerakote coating colour options, is a model that will overcome tough conditions with its robust internal structure.

Diameter: 9x19 mmMagazine capacity: 18Height: 155 mm

Width: 35 mmLength: 185 mmBarrel length: 104 mm

- Empty weight without magazine: 735 g ±5

**BRG 9 ELITE GEN 2** 









The polymer lower body of the semi-automatic BRG9 TACTICAL is reinforced glass fibre reinforced, and the front and rear slides are machined from 4140 material in order to make it more durable and capable of stable firing. It provides comfort and confidence to the user with three different grip backrests in S-M-L sizes depending on the user's preference, high magazine capacity, barrel that can be fitted with a silencer, magvel, high sight and front sight, firing needle safety indicator and ergonomic grip structure. It also offers a wide range to its users as an operational pistol preferred by special units thanks to its optical ready connection slot and flashlight mounting, the possibility of using with compensator and silencer, and fast and effective shooting with magvel. Available in scratchresistant special black coating or cerakote coating, TACTICAL is a tactical firearm that will overcome tough conditions with its robust internal structure.

- Diameter: 9x19 mm

- Magazine capacity: 18-20

Height: 170 mmWidth: 34 mmLength: 197 mm

- Barrel length: 117 mm

- Empty weight without magazine: 740 g ±5

The BRG 55 is a precision strike assault rifle that is fed with 5.56X45 mm ammunition, has two different operating principles as gas piston and gas system, has five different barrel length options as 7.5"-10.3"-11"-14.5" and 16", with a rotary head locking system. It offers a sense of confidence to the user in the use of wet, dusty, muddy, hot and cold weather and ambient conditions where challenging task conditions and endurance requirements are required. BRG55, which allows two-handed use, provides picattiny rail on the upper and lower parts and modular stanag rail mounting on both side profiles.





**BRG 55** 

# **CANIK**

Company Short Name

CANiK





#### 

### **CANIK M2 QCB**

-

CANiK® M2 incorporates many improvements over this venerable 12.7mm (.50 cal.) heavy machine gun which has been widely used on armored and light vehicles, shipborne mounts as well as by infantry on a tripod mount in antimaterial, anti-vehicle and antipersonal roles. CANiK® Proudly presents that world most durable and lowest dispersion M2 QCB 12.7mm (.50cal) heavy machine gun with +25.000 rounds barrel life and less than 6 MOA dispersion. The combination of moisture, oxygen and salt, especially sodium chloride, damages metal worse than rust does. Thanks to QCB's unique MARINE GRADE ANTI-CORROSION COATING(MGAC) technology, CANIK M2 QCB provides the best protection against the corrosive effects of salt water, especially against splash, having the highest corrosion effect.





**CANIK M2F** 







In order to operate in the harshest conditions in which the real world tactical situations may unfold, including extreme hot and cold weather, dirty, sandy, and dusty environments, all METE family pistols are expected to meet the highest standards in terms of reliability, durability and accuracy. Therefore, all pistols come with external Tenifer® or Cerakote® over Tenifer® finish, and in addition have their internal firing components nickel plated to ensure smooth operation, corrosion resistance and durability with a service life of well above of 50.000 rounds. Moreover, METE family pistol members are designed and produced to display an exceptional level accuracy with less than 10 cm of bullet dispersion at 25 meters. All METE pistols are equipped with picatinny rail (Mil-Std-1913) and micro red-dot interface with co-witness feature on the slide to be able to carry various accessories to meet changing operational requirements and different operator preferences. All METE pistols (except for TP9 SUB METE) can be installed with a mag-well to allow faster reloading and improve the grip. Even though they come in different sizes, METE family pistols are fully ambidextrous, all have a common trigger weight, same trigger to grip distance, trigger travel distance and reset distance as well as slide and magazine catches positioned in the same place, allowing the shooters to transition easily between different models without impairing their pistol handling and shooting techniques.



**METE Serisi** 



When it came to naming the CANiK® competition pistol, the challenge was to find a name that defined the goal we had when creating the firearm itself. The goal was simple, this platform had to be equal or better than anything used in the world of competitive sports shooting, giving the user a solid advantage to win! With this in mind the name was soon apparent, this firearm was undoubtedly the "RIVAL".



### SFX RIVAL-S





Steel is forged by exposure to the most intense heat and the repeated impact at incredible force, the product of these trials is the strongest and most durable steel in the world. The fire does not consume the metal but rather makes it more flexible and powerful. The blows do not break the metal, instead it actually strengthens the core. Just like forged steel, CANiK has risen from the forge with strength, power, and flexibility in every area to include its manufacturing and technological departments. It is with the knowledge of these trials that CANiK introduces the Rival-S, a firearm so forged that it is instantly ready to withstand every rival it is called upon to challenge.



## **CES**

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CES

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### **BALLISTIC PROTECTIVE CHEST PLATE**

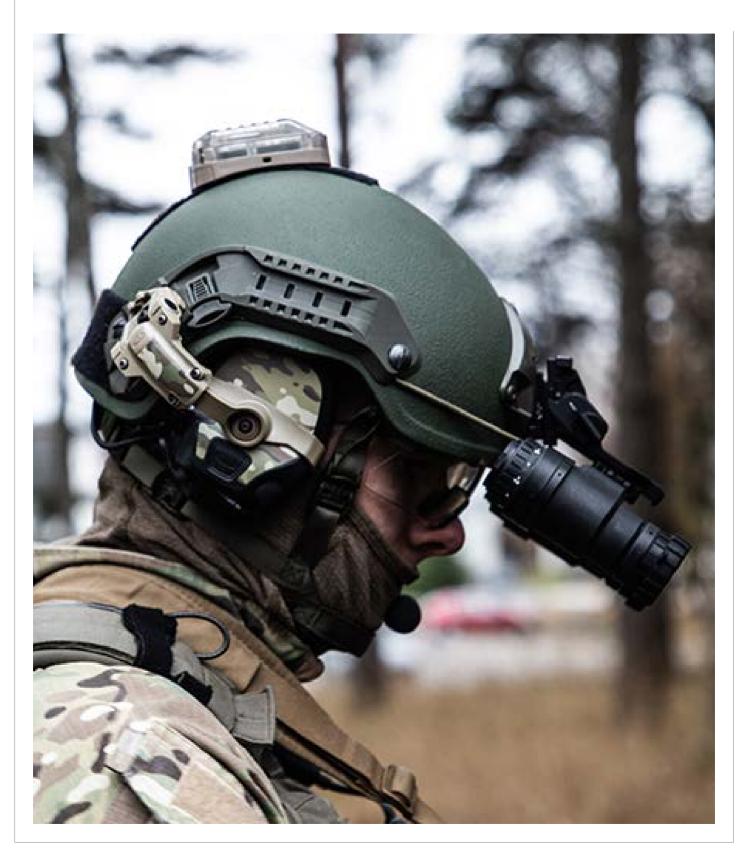
Protecting against bullets, fragments and trauma, CES plates are body conforming, lightweight and thin, with long-term stability and durability in service. CES plates are available in a range of cuts, weights and thicknesses to suit every mission, and can be customised to meet your specific operational requirements.







CES' lightweight PPH helmet portfolio delivers the ultimate fusion of high level ballistic protection and comfort.



### **PROTECTIVE BALLISTIC SHIELD**

**a a b** 

• CES shields' lightweight, ergonomic design enables rapid deployment in confined spaces, while adjustable handles and our unique carry system distribute the load and enable handling for long periods without fatigue.





platforms, CES offers integratedprotection systems.

**SEA PLATFORMS** 





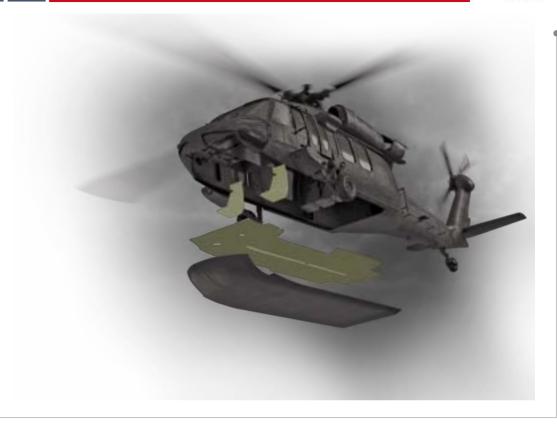




### AIR PLATFORMS



For air platforms, CES offers cockpit, seat and wing floor armour systems.



For land platforms, CES offers addon, spall liner, mine and blast protection system.







LAND PLATFORMS



Company Short Name

CSH

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Coşkunöz Aerospace is a Coşkunöz Holding company who has AS/EN 9100 certification. Coşkunöz Aerospace manufactures and assembles Aircraft and Helicopter Airframes with its existing infrastructure. Coşkunöz Aerospace owns and manages a global supply network for its productions. It delivers the products and services to its foreign and domestic customers on time with superior quality. It also manufactures and integrates systems and subsystems in the field of defense. Coşkunöz Aerospace is especially specialized in launch canisters of air defense systems, transport / storage units, remote-controlled stabilized turret systems, ammunition boxes and radar structures. With new investments, Coşkunöz Aerospace continues to grow in both aerospace and defense fields in the domestic and foreign markets.





**COŞKUNÖZ AEROSPACE** 

COŞKUNÖZ SAVUNMA HAVACILIK

## **CTECH**

Company Short Name

CTech

Company Trade Name

C TECH BİLİŞİM TEKNOLOJİLERİ SAN. VE TİC. A.Ş.

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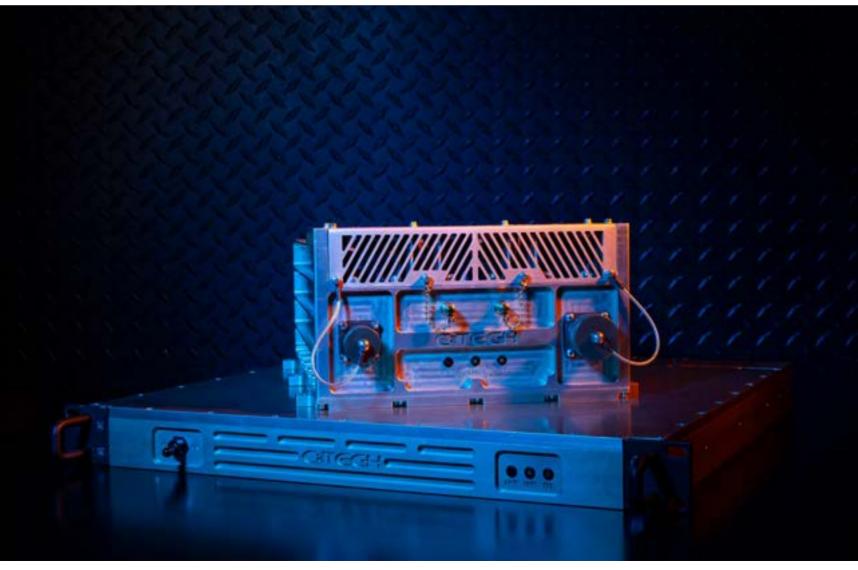
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CTech V-band solution highly integrates full-outdoor product operating at the V band. Its antenna, RF and baseband units are integrated into a single outdoor unit so it is much smaller and lighter comparing to traditional microwave systems. Suitable for short-haul transmission and dense deployment. The radio link is in full duplex (FDD) system configuration. In a FDD V-Band system, any two blocks of frequencies between 57-64 GHz are used for transmission or reception, depending upon the availability of Duplexers. This causes higher throughputs. In a TDD system, radio link can work in the TX or RX model independently.







The antennas, designed and qualified for geostationary satellites, are responsible for receiving RF signals sent from ground or transmitting RF signals generated on-board using the transmitters, to ground. Horn antennas and hemispherical antennas are designed, developed and tested by CTech for satellites using state-of-the-art design and manufacturing techniques.









### **GSSARX**



Surveillance and reconnaissance from air and space are indispensable for successful military operations. Space-based platforms provide the capability of periodic surveillance of large regions without geographical limitation with different information. Such capabilities are critical for troop protection, situational awareness, mission planning, damage assessment and others. All these capabilities can be integrated into a system application that can be adapted to specific needs and presented in a project.





Helicopters are critical for operations around the world in search and rescue, disaster response, military operations, troop and equipment transport, border security, intelligence, surveillance, and reconnaissance (ISR) missions. These operations need brodband, seamless, resilient, real-time communication anywhere and everywhere to make mission-critical decisions.

The rotor of the helicopters reflects the radio waves and acts as a jammer in the three-axis. CTech has made broadband communication possible in helicopters with its Modem technology that allows broadband communication to pass through the rotor blades.

**HELIARX KA 12** 







JAMIDS is CTech's complete simulation solution, a realistic and constructive simulation system that simulates Joint Air and Missile Defense operations with battlefield, maritime and airspace activity. JAMIDS is used to assess the effectiveness of defense systems against the air and missile threats



With cloud storage services becoming a standard for business, data security is an increasing concern for enterprises. It's clear that cloud storages either public or private aren't exactly as secure as they were made out to be. By encrypting your data, you can add a layer of protection before they synchronize to the cloud. But who will hold the keys? No matter what security measure you have, you can't be sure where your data will end up when someone else handles the keys. KRYPTOS decouples the data, that is stored either on Dropbox, Google Drive, etc. or on your private cloud, and the encryption keys required to access it.







**KRYPTOS** 

### **MOBIOT**





MOBIoT has compact design and superior data transmission capability over multiple transmission channels. Fulfilling highly demanding professional video market and IoT requirements reliably and securely.

#### **BUSINESS BENEFITS**

- Up to 3 External GSM Modems with 3xUSB Ports
- · Up to 3 Embedded GSM Modems
- · Configuration Over Cloud
- · Remote Control & Auto F/W Update
- · Cloud Connected Application Development Support





Modeo is a daredevil for live video broadcasting and wide-band transmission over a bandwidth constrained networks with bonding and adaptive bit rating.

The broadcast and media industry relies on wireless communications to transport video and data from virtually anywhere in the world.

#### APPLICATIONS

- · Professional Video Broadcasting
- · Live Breaking News
- · Electronic News Gathering
- · Live Interviews
- · Outdoor Live Shows
- · Rescue Team Assistance
- · Simultaneous Multi Channel Social Media Streaming
- · Remote Real Estate and Property Presentation

### **MODEO LIVE**





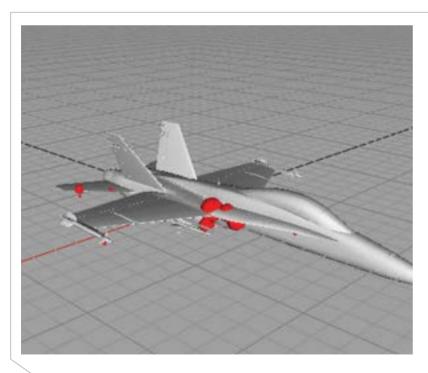


With Network Management System you can;

- · Interpret the information coming from your Network Equipment,
- · Associate with the map,
- · Perform alarm and performance tracking.

The relevant details can be managed through the modules on the system.





Radar signature reduction is a must in order to increase the battle-field effectiveness of any contemporary platform or longrange armament. The crucial step in radar signature reduction or stealth technologies is the determination of the radar signature of the platform under consideration. The following actions can be performed upon the determination of the signature:

- · Shape changes can be aftected for platforms under development
- · Radar absorbing coatings such as RAM can be applied on certain regions of the platform
- · Tactical plans for approach-totarget patterns can be tailored

The RIKA software analyzes the radar signature of any platform based on its CAD model and provides all the necessary information to realize these actions.



**RIKA** 



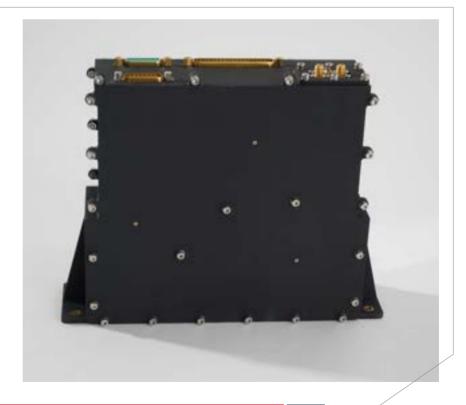
## SATELLITE TELECOMMAND RECEIVER





Telecommand Receiver, which has been developed and qualified to operate on geostationary satellites, is responsible for receiving the commands uplinked from the ground stations and transmit the demodulated data to satellite management unit which is responsible for executing them. These time tagged control commands are sent to the satellite for actions such as controlling the movement of the satellite or turning on and off of other equipment on the satellite. Telecommand Receiver is a state-of-the-art RF equipment with the flexibility to change the frequency inorbit and works on Ku-Band frequencies. Designed for low size, weight, power consumption and cost, required to meet state-of-the-art customer requirements.

Telemetry Transmitter, which has been developed and qualified to operate on geostationary satellites, is responsible for transmitting the telemetry and health status data, that has been collected from the sensors on-board, to ground stations. These status data include mission critical data such as the operational status of the equipment or the exact attitude of the satellite. Telemetry Transmitter is a state-of-the-art RF equipment with the flexibility to change the frequency in-orbit and works on Ku-Band frequencies. It has the capability to work as a modulated telemetry transmitter or an unmodulated beacon signal transmitter.

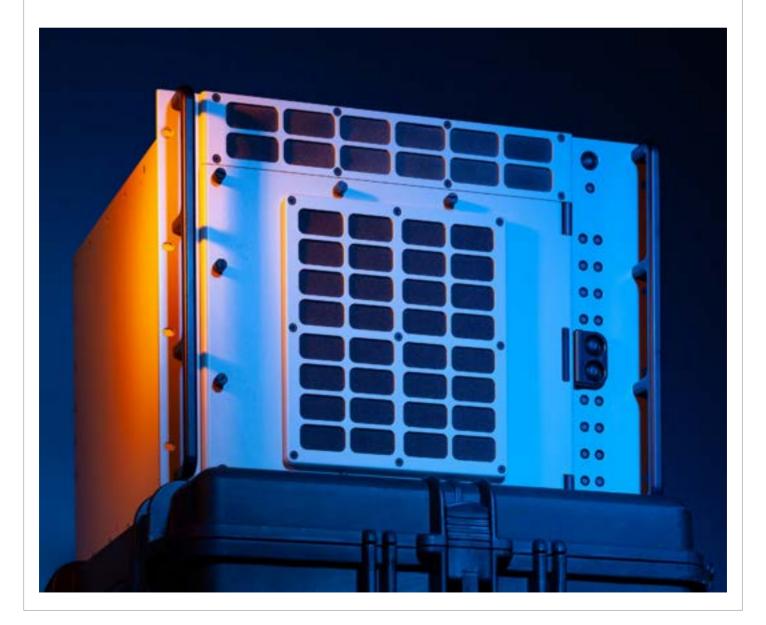


SATELLITE TELEMETRY TRANSMITTER





Military forces and government rely on robust, secure and jamming resistant communications capabilities with a low probability of interception in friendly and hostile environments. Similar communication capabilities are needed for government operations during emergencies, natural disasters and hazardous conditions. CTech's SecureARX Modem is intended for military and government applications, and can satisfy all the requirements for fixed, land-mobile, naval and airborne SATCOM scenarios. It is the most spectrum efficient and secure high speed SATCOM modem solution available in the market, today. By using a mix of fixed, transportable and on-the-move terminals at the same time, reliable, flexible, survivable and secure networks can easily be established, managed and operated under extreme circumstances. CTech's SecureARX Modem is a world class SATCOM modem solution available for military, government and official applications.



### **SKYARX KA 12**





### **TERRAARX KU 12**





The CTech SkyARX-Ka-12 Terminal is a complete airborne satellite terminal with an ultra small, compact and efficient 12" (30cm) antenna and lightweight equipment providing IP communications on the move. With this Ka-band terminal corporate and government users can send live, full motion high definition video over the sky, make secure data communication and perform mission critical communications during flight. Powered by integrated technologies and robust waveform this terminal delivers streaming data rates up to 13 Mbps. Ka-band SOTM airborne

terminal is ultra-small and indigenous now.

The CTech TerraARX Ku-12 Terminal is a complete armored ground vehicle satellite terminal with an 12"(30.4cm) antenna and lightweight equipment providing IP communications on the move. With this Ku-band terminal corporate and government users can send live, full motion high definition video over the sky, make secure data communication and perform mission critical communications on the move.







Whether in mobile, fixed or private networks, the E-band millimetre wave solution represents a fundamental technology tool bridging the gap between fibre high capacity systems and flexible cost effective wireless transmission. UFUK-FO80HDX achieves 10GBps fullduplex ultra high capacity in a single unit, and 20GBps in a 2+0 XPIC configuration. UFUK-FO80HDX provides fibre like capacity, highest deployment flexibility and homogeneous operational behaviour as traditional microwave, allowing operators to fully liaise on existing knowledge and skills, minimizing introduction costs, while modernizing the transport network.

- Broadband mesh for your swarm use cases whether in near or none LOS
- Near/none Los
- Swarm
- Mesh
- Relav
- Smaller Swap



**UFUKLINK FO80HDX** 



**UFUKLINK MICRO** 



### **UFUKLINK MINI**



### **UFUKLINK MINI PRO**



- Broadband mesh for your swarm use cases whether in near or none LOS
- Near/none Los
- Swarm
- Mesh
- Relay
- Smaller Swap





- Broadband mesh for your swarm use cases whether in near or none LOS
- Near/none Los
- Swarm
- Mesh
- Relay
- Smaller Swap





LOS data link system solution for airborne platforms CTech designs, manufactures and provides novel and complete end-to-end communication solutions for unmanned Aerial Vehicles (UAVs). UFUK-DLKu45 is intended for line-of-sight (LOS) data communication applications, and consists of all the components to establish a secure and robust data link for the most severe environments and conditions. It is a complete Full Duplex(FD) communication system solution containing the paired data modems, RF blocks, antennas for both ground and airborne terminals. The up-link carries the command and control information for the real time operation of the UAV, while the down-link conveys all the onboard sensor data, video and audio payload to the ground station.



Waveguide components, which aim to transmit RF signals with low loss or which allows transmission of high power RF signals, are qualified for geostationary satellites. Several different waveguide products with different specifications are available with the possibility of customization according to specific customer or mission requirements. These products can be used to combine, filter or separate RF signals.

**UFUKLINK-DLKU-45** 





**WAVEGUIDE COMPONENTS** 





**C**UKUROVA **D**EFENCE

Company Short Name

ÇUMİTAŞ

Company Trade Name

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### **4X4 14 TONS MULTIPURPOSE ROLLING CHASSIS PLATFORM**

The ÇUKUROVA 4x4 chassis is engineered for superior performance in diverse and challenging environments. Here's a breakdown of its key features: Versatility and Speed: Designed to excel in high-speed conditions across various terrains, including hostile areas where other 4x4 vehicles might struggle. Advanced Traction Control: Offers selectable 4x4 or 4x2 traction with a sophisticated control system to adapt to different driving needs. Exceptional Approach and Departure Angles: Ensures that the vehicle can tackle steep inclines and declines without obstruction. High Ground Clearance: Provides ample space to navigate over obstacles and rough terrain. Heavy-Duty Suspension: Features a four-wheel double wishbone setup with coil springs and shock absorbers, built to handle tough conditions. Full Differential Locks: Includes 100% differential locks in both axles and the transfer case, optimizing power delivery to all wheels for maximum traction. Deep Fording Capability: Equipped to handle water crossings up to 800 mm in depth, thanks to its deep fording system.







ÇUKUROVA DEFENCE



### 17 TONS MULTIPURPOSE ROLLING CHASSIS PLATFORM



The ÇUKUROVA 4x4 chassis is engineered for superior performance in diverse and challenging environments. Here's a breakdown of its key features: Versatility and Speed: Designed to excel in high-speed conditions across various terrains, including hostile areas where other 4x4 vehicles might struggle. Advanced Traction Control: Offers selectable 4x4 or 4x2 traction with a sophisticated control system to adapt to different driving needs. Exceptional Approach and Departure Angles: Ensures that the vehicle can tackle steep inclines and declines without obstruction. High Ground Clearance: Provides ample space to navigate over obstacles and rough terrain. Heavy-Duty Suspension: Features a four-wheel double wishbone setup with coil springs and shock absorbers, built to handle tough conditions. Full Differential Locks: Includes 100% differential locks in both axles and the transfer case, optimizing power delivery to all wheels for maximum traction. Deep Fording Capability: Equipped to handle water crossings up to 800 mm in depth, thanks to its deep fording system.

The ÇUKUROVA 4x4 chassis is engineered for superior performance in diverse and challenging environments. Here's a breakdown of its key features: Versatility and Speed: Designed to excel in high-speed conditions across various terrains, including hostile areas where other 4x4 vehicles might struggle. Advanced Traction Control: Offers selectable 4x4 or 4x2 traction with a sophisticated control system to adapt to different driving needs. Exceptional Approach and Departure Angles: Ensures that the vehicle can tackle steep inclines and declines without obstruction. High Ground Clearance: Provides ample space to navigate over obstacles and rough terrain. Heavy-Duty Suspension: Features a four-wheel double wishbone setup with coil springs and shock absorbers, built to handle tough conditions. Full Differential Locks: Includes 100% differential locks in both axles and the transfer case, optimizing power delivery to all wheels for maximum traction. Deep Fording Capability: Equipped to handle water crossings up to 700 mm in depth, thanks to its deep fording system.









4X4 8/9 TONS MULTIPURPOSE ROLLING CHASSIS PLATFORM

ÇUKUROVA DEFENCE

### **ARMOURED WHEEL LOADER 980**



The Cukurova Armoured Wheel Loader is designed with robust mine protection and defensive features, making it well-suited for high-risk environments. Here's an overview of its protective attributes: Mine Protection: Specialized Seating: The seats are engineered to absorb the impact of mines, enhancing crew safety during explosions. Composite Floor Material: A secondary layer of composite material is integrated into the floor to absorb and mitigate the blast effects of mines. Armor and Ballistic Protection: Steel Armor: The loader is fitted with steel armor to shield against various threats. Armor-Piercing Bullet Protection: It is designed to withstand armor-piercing (A/P) bullets from infantry rifles, providing enhanced protection for the crew. Run-Flat Tires (RTF): Resilience: The loader is equipped with runflat tires that resist deflation when punctured. Operational Capability: Even when tires are compromised, the loader can continue operating at reduced speeds of up to 15 km/h. These features ensure that the Çukurova Armoured Wheel Loader provides both high protection and operational reliability in hazardous conditions.





The ÇUKUROVA 4x4 chassis is engineered to excel in extreme conditions, combining advanced technology and rugged design for optimal performance. Here are the detailed features: Versatile Performance: Capable of high-speed movement across various terrains, including hostile environments where other 4x4 vehicles might struggle. Advanced Traction Control: Features selectable 4x4 or 4x2 traction modes with an advanced system control, allowing for adaptable performance based on driving conditions. Exceptional Angles: Offers excellent approach and departure angles, facilitating navigation over steep inclines and declines without grounding the vehicle. High Ground Clearance: Provides ample ground clearance to traverse rough terrain and obstacles without hindrance. Heavy-Duty Suspension: Four-Wheel Double Wishbone: Equipped with a robust suspension system utilizing double wishbone setups on all four wheels. Coil Springs and Shock Absorbers: Incorporates heavy-duty coil springs and shock absorbers to handle demanding conditions. Full Differential Locks: 100% Differential Locks: Includes differential locks in both axles and the transfer case, ensuring maximum power transfer to all wheels for enhanced traction and adherence. Deep Fording Capability: Designed with a deep fording system, allowing the vehicle to navigate through water up to 700 mm in depth. These features make the ÇUKUROVA 4x4 chassis a highly capable and reliable choice for challenging and diverse environments.





10 TONS MULTIPURPOSE ROLLING CHASSIS PLATFORM



**FAST ARMOURED BACKHOELOADER** 

The preliminary design of Çukurova's highspeed armored backhoe loaders places particular emphasis on mine protection. Here's an overview of the key safety features: Mine protection: Specialized seats: Seats are designed to absorb the impact of mines, offering enhanced protection for crew members. Composite Floor Material: In addition to steel armor, the floor uses a composite material to mitigate the effects of mine explosions. Ballistic protection: Steel armor: The backhoe loader is equipped with steel armor for added protection. Protection against armour-piercing bullets: Designed to resist armor-piercing (A/P) bullets from infantry rifles, guaranteeing effective defense against ballistic threats. These features ensure that Çukurova's high-speed armored backhoe loaders offer a high level of protection against the specific threats encountered in high-risk environments.





# DASAL

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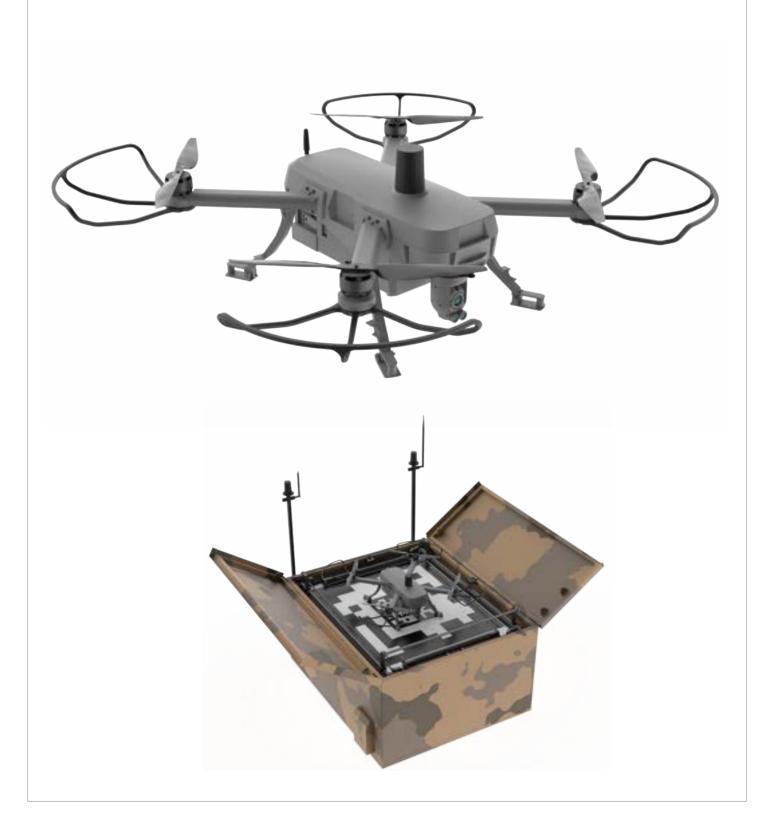






### **BEE-EATER**

BEE-EATER, which can land and take off autonomously on mobile land vehicles, is designed to manage continuous intelligence, reconnaissance, and surveillance missions. The system has a drone nest solution, which carries out autonomous battery replacement and can charge depleted batteries, is the key component that distinguishes the BEE-EATER from other UAVs.









CONDOR-C150 is a Rotary-Wing Cargo UAV system designed to quickly and effectively transport critical support materials such as food and ammunition with its high payload capacity. Thanks to its unique design, it stands out as a platform that has no example in its class. It can be integrated with various payloads for different needs with its modular structure.



### **FALCON-C15**



FALCON-C15 is a Rotary-Wing Cargo UAV system that successfully carries out missions of delivering/carrying various payloads such as cargo, ammunition, and other similar loads with its 15 kg payload capacity. Thanks to its durable mechanical design, it successfully completes its mission even in harsh weather conditions.





FALCON-DAD, also known as the Drone Hunter, is designed to effectively capture threat drone platforms using its integrated net gun payload as a Rotary-Wing Drone Hunter UAV system. It successfully neutralizes the threat drone using data from the integrated radar and imagery from the Electro-Optical and Infrared camera system.

**FALCON-DAD** 







FALCON-R40 is a Rotary Wing Bombardment UAV system that stands out with its special launcher system compatible with different ammunition. The UAV, which has the ability to perform operations with wide-range doctrines thanks to its multiple ammunition capacity launcher system, completes the operation with its precision launching capability in the tactical field.



FALCON-SIHA is a Rotary-Wing Armed UAV system that stands out with its 2-axis stabilized motion capability, 5.56 mm caliber infantry rifle, superior recoil dampening system, and high ammunition carrying capacity. It is designed to directly hit the target with high accuracy or suppress the target with single or burst fire modes, depending on the mission scenario.



**FALCON-SIHA** 



#### **KIRLANGIÇ-X4A**



KIRLANGIÇ-X4A distinguished itself in the tactical field as a reconnaissance, surveillance, and intelligence platform. Compared to its rivals, it has a longer flight time, is resistant to harsh weather, has a modular structure, is easy to install, and can be transported by a single operator.





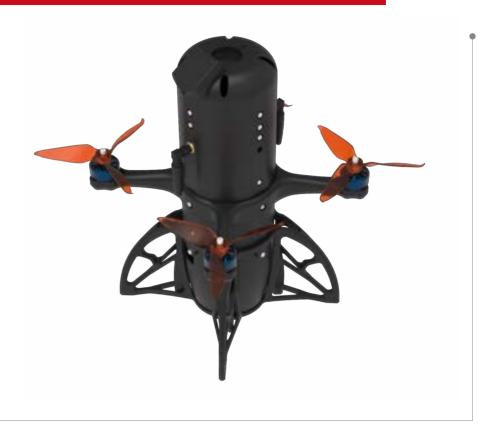
KIRLANGIC-X4C has the ability to perform its duties continuously due to its cable system and fixed power station. It meets the needs of reconnaissance, surveillance and intelligence in coastguard and border security control, security of critical facilities, disaster management and onscene security operations.

**KIRLANGIÇ-X4C** 





PEREGRINE-X4B is a Rotary Wing Kamikaze UAV system made to quickly accelerate to high speeds and destroy dangerous drone platforms. With its design and lightness, PEREGRINE-X4B has an agile construction.





PEREGRINE-X4M is a Rotary Wing Kamikaze UAV system developed for tactical field operations that can be easily carried by a user in multiple quantities. It has the ability to detect and destroy targets.



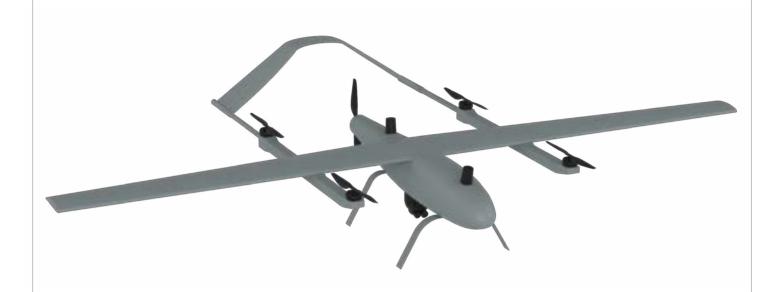
**PEREGRINE-X4M** 

PUHU-C75 is a pioneering Rotary Wing Cargo UAV platform in its field, which has a long-range, high horizontal speed, modular structure, and 75 kg payload capacity. It is designed to autonomously and swiftly deliver essential support materials to the target area using specially designed units. It serves as a unique solution for meeting logistic needs in military operations, disaster zones, and civilian applications. PUHU-C75 operates by providing rapid and effective support in tactical fields at high altitude levels.









SUMRU, Fixed Wing UAV has been developed with a unique autonomous flight control system for long-term observation and reconnaissance operations. It performs target detection/tracking and intelligence missions at high altitudes in day/night conditions. It is very light and ergonomic thanks to its composite body and avionics design.

## **DEARSAN**

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Company Trade Name

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### **15M FAST INTERVENTION BOATS**

15m Fast Intervention Boats were designed and built 10 units in number by DEARSAN according to the needs of Turkmenistan Border Security Command. In 2014, the boats entered the inventory of Turkmenistan Border Security Command and have been operating effectively in the Caspian Sea since then.



## THE 15M ARMED UNMANNED SURFACE VEHICLE SALVO





The 15m Armed Unmanned Surface Vehicle (AUSV), SALVO was designed and built as a prototype by DEARSAN in 2022. The design and construction of the 2nd Armed Unmanned Surface Vehicle in accordance with the needs of the Turkish Republic Naval Forces Command continues within the scope of the contract signed in 2023 with the Defense Industries Agency.





## 33M GUIDED MISSILE FAST INTERVENTION BOATS





33m Guided Missile Fast Intervention Boats, were designed and built by DEARSAN according to the requirements of Turkmenistan Border Security Command. In 2014, the boats entered the inventory of Turkmenistan Border Security Command and have been operating effectively in the Caspian Sea since then.

The 41 m Hydrographic Survey Vessel was designed and built by DEARSAN according to the requirements of the Turkmenistan Naval Forces Command. In 2015, the ship entered the inventory of the Turkmenistan Naval Forces Command and has been performing survey missions effectively in the Caspian Sea since then.



THE 41M HYDROGRAPHIC SURVEY VESSEL





#### **THE 50M FAST ATTACK CRAFTS**



The 50m Fast Attack Crafts were designed by Dearsan according to the requirements of the Qatar Emiri Navy Command. Scheduled to be completed in 2026 and entered into the inventory, the FACs have a main propulsion systems consisting of 3 diesel engines and gearboxes with 3 water jets.



76m Offshore Patrol Vessel is a modern combat platform indigenously designed by Dearsan. It has a CODAD class main propulsion system consisting of 4 diesel engines in two separate engine rooms and a CPP propulsion system on two shaft lines.





**76M OFFSHORE PATROL VESSEL** 





The 92m Corvette is a modern warship indigenously designed by Dearsan. It can also be classified as a "Light Frigate" among its peers in terms of the available weapon and sensor payload. It has a CODAD class main propulsion system consisting of 4 diesel engines in two separate engine rooms and a CPP propulsion system on two shaft lines.





## 57M SERHET CLASS GUIDED MISSILE PATROL VESSELS



57m Serhet Class Guided Missile Patrol Vessels were designed and built by Dearsan according to the requirements of Turkmenistan Border Security and Turkmenistan Naval Forces Command. The first one in 2012 and the 10th one in 2016 entered the inventory of Turkmenistan Border Security and Turkmenistan Naval Forces Command, and have been operating effectively in the Caspian Sea since 2012.





57m Tuzla Class Patrol Vessels were designed by Dearsan according to the requirements of the Turkish Naval Forces Command and a total of 16 were built. Inventoried in 2010, Tuzla Class Patrol Vessels perform all assigned missions effectively in the Black Sea, Marmara, Aegean and Mediterranean seas.



**57M TUZLA CLASS PATROL VESSELS** 





**DEICO** 

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The MIL-STD-1553 communication bus electrically connects multiple devices to obtain reliable communication in both military&civil platforms. These bus configurations are built by different components like cables, bus couplers, terminating resistors and connectors. In data bus structure, bus couplers have a role to obtain shielding, isolation resistance and transformer interface for connection points which are named stubs. In this respect, bus couplers are the COTS solutions for more effortless and reliable wiring. DEICO bus couplers are designed to bring an economic solution not only for the platforms but also for professional and benchtop test systems.





**MIL-STD-1553 BUS COUPLER (BOX & PCB TYPE)** 

DEICO

# DERYA SILAH SANAYI

Company Short Name

Derya Silah Sanayi

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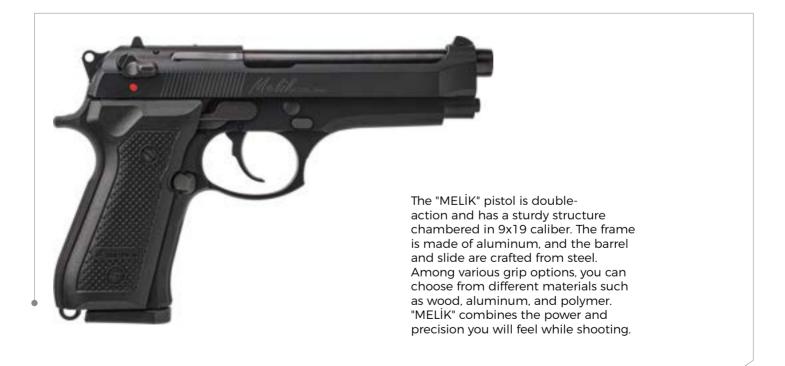


**J-DERYA** 









**MELİK** 





This amazing .22LR semi-automatic firearm has an aluminum stock and receiver. It's also compatible with AR-15 stocks. The charging handle is located on the left side and is easy to charge since it has an ergonomic design. The barrel is also made of steel. The TM-22 is unlike any other rimfire rifle on the market today. The magazine is made of aluminum casting and it has three capacity options; which are 10, 15, and 25 rounds.





The Derya ZY9 is designed to fire 9x19 mm ammunition and is manufactured in a lightweight but effective and ergonomically usable structure, weighing 1.8 kg. It is developed to meet tactical requirements and it can be used in close quarters. It can fire 850 rounds per minute and has an effective range of 150 meters with a 5.9-inch (15 cm) barrel. It features both full-automatic and semi-automatic firing modes. The ZY9 model is equipped with a dual charging handle system, allowing it to operate with both the AR charging handle and the side charging handle.



**ZY9 B6-10** 

# DIGITEST

Company Short Name

DİGİTEST SAVUNMA VE HAVACILIK A.Ş.

SAVUNMA VE HAVACILIK

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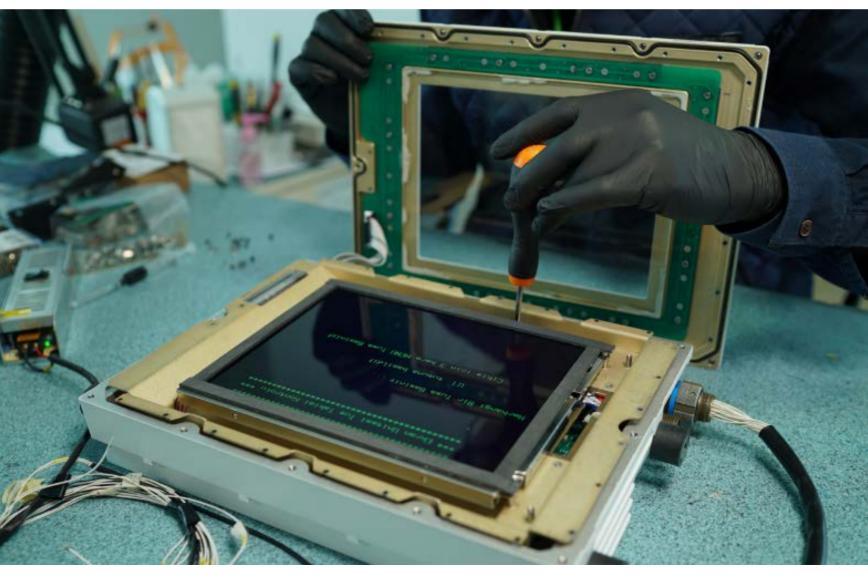
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## **TUFAN-K 7.62MM (6 NAMES) ROTATING BARREL WEAPON SYSTEM (DNSS)**

#### Weapon Features:

- Ammunition: 7.62x51 mm NATO,

- Number of Barrels : 6

- Pulse Rate :1500 / 3000 pcs/min.- Muzzle Velocity : 853 m/s, (+/-%10)

- Weight: 45 Kg,

- Barrel Length: 650 mm,

- Effective Range: 500 - 750 mt.

- Ammunition box: 3000 pcs,

- Service Life of Barrels 33,000 units,

- Operation Temperature: -32°C / +55°C, 24V Battery, Complaince with MIL-STD-810F



#### ÖNDER-K 12.7 MM (3 BARREL)ROTATING **BARREL WEAPON SYSTEM (DNSS)**







- 3 Barrels, 12.7 x 99 mm NATO Ammunition,
- Number of Barrels: 3
- Pulse Rate: 1300 pulses / min
- Muzzle Velocity: 870 m/s
- Weight: 63 Kg.
- Ammunition Capacity: 500 pcs
- Length: 900 mm
- Shooting capability with electric rotary system
- Effective range 1500 1700 mt
- Fire: Upto 1500 pcs./min
- Barrel Lifespan 33,000 pcs
- Usage: -40 °C / + 52 °C
- 24 V/DC Power Supply and Battery







#### 20MM 6 ROTATING BARRELS WEAPON SYSTEM



- Ability to fire with remote control,
- 20mmx102 NATO Ammunition Compatibility,
- Number of Barrels: 6
- Pulse Rate: 3000 pulses / minute,
- Muzzle Velocity: 987 m/s,
- Weight: 135Kg.,
- 1500 ammunition capacity,
- Operating temperature: -32°C +55°C,
- Compliance with MIL-STD-810F,
- Complies with MIL-STD-461E for EMI / EMC,





- 3 Barrel Rotating Barrel Weapon System (RBWS)
- 20mmx102 Ammunition,
- 1500 shots/minute with 3 barrels,
- 500 ammunition capacity,
- Operating temperature: -32°C -+55°C,
- Compliance with MIL-STD-810F,
- Complies with MIL-STD-461E for EMI / EMC,

20 MM CIWS (YHSS) (3 BARREL) ROTATING BARREL WEAPON SYSTEM (DNSS)





## ASPAR 7.62MM REMOTE CONTROLLED STABILIZED WEAPON TOWER WITH DNSS







- Movement Limits:
- Elevation: -10° / +60°,
- Side: n x 360 ° (with Slip Ring)
- Ammunition Capacity:
- 7.62mm: 3000 pieces,
- Weight: < 240 Kg.,
- Height: 85 cm., Width: 150 cm.,
- Angular Velocity,
- Side and Elevation: Max. 45°/sec.,
- Stabilization Ability,

- Shooting on the move and at moving targets,
- Day/night vision ability,
- Automatic target tracking, Ballistic calculation,
- Ability to find distance with laser,
- Computer based fire control functions,
- Number of shots count. End of ammunition warning.
- Operating temperature: -32°C +55°C,
- Compliance with MIL-STD-810F and MIL-STD-461E for  $\ensuremath{\mathsf{EMI/EMC}}$

- Fire with remote command,
- Integration with radars on the Ship & /Land Vehicles.
- 12.7mm Gun and 500 ammunution capacity,
- Shooting at moving and moving targets,
- Stabilization capability,
- Day & Night vision,
- Automatic target tracking,
- Ability to find distance with laser,
- Computer based fire control functions,
- Number of shots count, · End of ammu. warning,
- Operation Temperature: -32°C -+55°C,
- Complaince with MIL-STD-810F & MIL-STD-461E for EMI / EMC,
- Integration with external sensors command & control systems.





ÖNDER-K 12.7 MM REMOTE CONTROLLED STABILIZED WEAPON TOWER WITH DNSS



#### ÖNDER-K CIWS-CLOSE-IN AIR DEFENSE SYSTEM 12.7 MM REMOTE CONTROLLED STABILIZED WEAPON TOWER WITH DNSS



- Movement Limits:
- Elevation: -10° / +60°,
- Side: n x 360 ° (with Slip Ring),
- Ammunition Capacity,
- 12.7mm: 500 pieces,
- Weight and Size

Weight: < 240 Kg. (Except Armor and Ammunition),

Height: 85 cm., Width: 150 cm.,

- Angular Velocity,
- Side and Elevation: Max. 45°/sec.,
- Weapon Spesification:
- Ammunition: 12.7mm x 99mm NATO
- Number of Barrels: 3 Pieces
- Pulse Rate: 1300 pulses / minute
- Muzzle Velocity: 870 m/s
- Weight: 60 Kg.





- · Ability to fire with remote control,
- · Integration with the radar on the ship,
- · Pulse Rate: 3000 pulse / minute,
- · 20mm 6 Barrel Gun and 1500 Ammunition Capacity,
- · Shooting at moving and moving targets thanks to its stabilization ability,
- · Day/night vision ability,
- · Automatic target tracking, Computerbased fire control functions,
- · Ballistic calculation, Ability to find distance with laser,
- · Counting the number of shots, End of ammunition warning,
- · Operating temperature: -32°C +55°C,
- · Complies with MIL-STD-461E for EMI / EMC & MIL-STD-810F
- · Integration with external sensors and command control systems,

20 MM CIWS (YHSS) (6 BARRELS) CLOSE-IN AIR DEFENSE SYSTEM / MARINE PLATFORM WITH DNSS









## 20 MM CIWS (6 BARRELS) CLOSE-IN AIR DEFENSE SYSTEM / LAND PLATFORM WITH DNSS



- · Ability to fire via remote control,
- · Integration with radars on land,
- · 20mm 6 Barrel gun and 1500 ammunition capacity,
- · Pulse Rate: 3000 pulse / minute,
- Day/night vision ability,
   Automatic target tracking,
- · Ballistic calculation,
- · Shooting at moving targets thanks to stabilization ability,
- · Ability to find distance with laser,
- · Computer based fire control functions,
- · Number of shots count, End of ammunition warning,
- · 3000 shots per minute.
- · Tower Platform.
- · 2x 100kwa generator,
- · Command and Control Cabinet for 2 Personnel.



- · Reserve Ammunition Storage,
- · Maintenance/Repair Tool Cabinet,
- · Quick Installation Stabilization Feet,
- · Operating temperature: -32°C +55°C,
- · Compliance with MIL-STD-810F,
- · Compliance with MIL-STD-461E for EMI / EMC,
- Integration with external sensors and command control systems

- · Ability to fire with user control,
- · 20mm 6 Barrel gun and 500 ammunition capacity,
- Day/night vision ability,
   Automatic target tracking,
- · Ballistic calculation, Ability to find distance with laser,
- · Computer based fire control functions,
- · Number of shots count, End of ammunition warning,
- · Operating temperature: -32°C +55°C,
- · Complies with MIL-STD-461E for EMI / EMC.
- · Complies with MIL-STD-810F
- · Integration with command control systems,







20MM CIWS (YHSS) DNSS 6 BARREL TOWED GUN





## GORAX ASPAR TOWERED 7.62 MM 6 BARREL DNSS 8X8 UNMANNED GROUND VEHICLE

- Engine: 1000 cc Two Cylinder Air Cooled 40 HP
- Fuel Capacity: 35 liters
- Body HDPE/Composite
- Transmission CVT
- Weight: 750 kg (may vary depending on configuration).
- Maximum Speed: 40 km
- Capacity 600 kg
- Personnel Maximum 6 persons on land including driver 4 persons on water
- Operation Temperature Range: -25 C°+50 C°
- External Load (Trailer) Capacity: 750 kg



## GORAX 25 MM SINGLE BARREL UNMANNED GROUND VEHICLE







- Engine: 1000 cc Two Cylinder Air Cooled 40 HP
- Fuel Capacity: 35 liters
- Body HDPE/Composite
- Transmission CVT
- Weight: 750 kg (may vary depending on configuration).
- Maximum Speed: 40 km
- Capacity 600 kg
- Personnel Maximum 6 persons on land including driver 4 persons on water
- Operation Temperature Range: -25  $^{\circ}$  +50  $^{\circ}$  External Load (Trailer) Capacity: 750 kg







Company Short Name

Dorçe

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PREFABRIK YAPI VE İNŞAAT SANAYİ TİCARET A.Ş.





### **COMBINED MILITARY CONTAINER**





**BULLET-PROOF GUARD SHED** 





#### **BULLETPROOF PREFABRICATED BUILDING**











MOBILE FIELD HOSPITAL

#### **MODULAR MILITARY CAMP**



#### **MODULAR GSM CABINET**







DÜRCE





PRE-MANUFACTURED HEAVY STEEL AIRCRAFT HANGAR





PILOTKENT LIFE CONTAINER



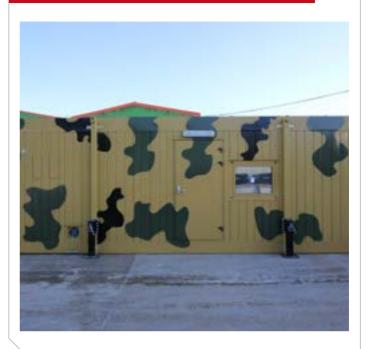
## TRAILER-MOUNTED TOILETS AND SHOWERS



## SYSTEM MANAGEMENT CONTAINER











**TOURISM POLICE CONTAINER** 





LIFE SUPPORT CAMP



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#### **3U VPX MODULE: BITFLEX-VPX3-MZQ1**





The BitFlex-VPX3-MZQ1 is a high-performance FPGA processing module based on the Xilinx Zynq family of FPGAs. It provides multiple high-speed fabric interfaces, external memory, an FMC site, and high-density I/O. It is ideal for customizable, high-bandwidth, signal-processing and image-processing applications.



The BitFlex-VPX3-MZQU is a high-performance FPGA processing module based on the Xilinx Zynq UltraScale + family of FPGAs. It provides multiple high-speed fabric interfaces, external memory, an FMC site and high-density I/O. It is ideal for customizable, high-bandwidth, signal-processing and image-processing applications.

**3U VPX MODULE: BITFLEX-VPX3-MZQU** 





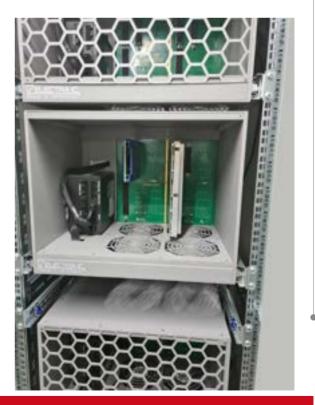
#### **3U VPX OPEN FRAME DEVELOPMENT CHASSIS**



The VPX3-CH101 is a VPX open frame chassis designed for development and test. It supports custom or COTS backplanes up to 10 slots.



The VPX6-CH101 is a VPX open frame chassis designed for development and test. It supports custom or COTS backplanes up to 10 slots.





**6U VPX OPEN FRAME DEVELOPMENT CHASSIS** 

#### **ARINC429 IP CORE**

**VERE** 

#### ARINC664 SWITCH EQUIPMENT





ARINC 429 IP Core implements ARINC 429 standard. IP Core contains Rx and Tx processing blocks, Controller Block, Internal Memory and External Memory Interfaces. A429 IP communicates with CPU (Central Processing Unit) and external memory through AXI interface. IP Core uses AXI interface as internal local bus. AXI interface is 32-bit data bus which has 32-bit addressing, 32-bit read and write channel. IP supports to 32 receive channel number and 16 transmit channel number. The IP is designed to be compatible with DO-254. ARINC 429 IP is field approved.

ARINC664 Switch Equipment implements ARINC664 part 7 and provides switching functionality within the ARINC664 network. It is ideal for use in avionics systems thanks to its light weight, small size, low power consumption. Eight Ethernet ports of 100/1000 Mbps allows to build larger networks. Ethernet ports are isolated from each other; one of the ARINC664 End Systems is disconnected from the network, the switch continues to operate without loss of performance. If the user adapts the configuration, device health information can be injected into the network and sent to the desired destination by joining the network traffic.



Pesign & Verification



ARINC664 Switch IP implements ARINC664 part 7 and provides switching functionality within the ARINC664 network. As an implementation of ARINC664 Switch, IP switches/routes messages of different sizes and different time constraints to their destination with a predictable delay. Two level of priority can be applied to the VLs during configuration of the device. Thus, switch can arrange the data queues according to these priorities. Thanks to the AXI4 interface provided with IP Core, error statistics can be fetched to a desired logic and data injection to the network can be accomplished if desired.



ARINC664 End System Equipment implements ARINC664 part 7 and provides interface between aircraft LRUs and ARINC664 network. It offers an adaptation between RS-422/ARINC664 and Ethernet/ARINC664. In this manner, four RS-422 ports and one Ethernet port are added to the design such that an easy adaptation can be done when a customer wants to use LRUs with flight heritage. Equipment also has a test mode that measures the latency occurred on messages of the relevant VL number.

**ARINC664 SWITCH IP CORE** 



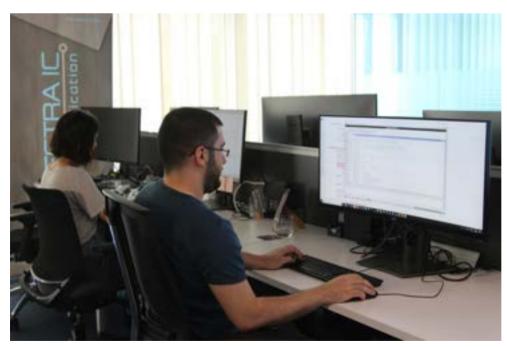
ARINC664 END SYSTEM EQUIPMENT





ARINC664 End System IP is an IP Core that implements ARINC664 part 7 and provides interface between aircraft LRUs and ARINC664 network. As an implementation of End System, IP sends the user's messages of different sizes and different time constraints to their destination with a predictable delay. Since the IP core uses the Ethernet interface when connecting to the network, it takes full advantage of the physical layer functions that Ethernet offers. Thanks to the AXI4 interface provided with IP Core, adaptation can be made between any protocol and ARINC664.





ElectralC's core competence is Digital IC Design. Hence, the company has extensive experience of working in ASIC/FPGA or PCB design projects. Provided the system specification, ElectralC can do the design and verification of the ASIC/FPGA and/or PCB. If needed, the company can do the mechanical design and the production as well and deliver you the final product.



ASIC/FPGA/HW

VELECTRA IC.

#### **ELECTRA IC ENGINEERING SERVICES**



ElectralC develops "ASIC / FPGA, microchip and embedded software/systems, electronic circuit design and verification" projects. In addition to engineering services, ElectralC develops IP cores and embedded system products. Not only does it offer services, but it also offers opportunities to differentiate with niche products and solutions in its area of expertise. ElectralC is one of the five Doulos Certified Training Partners, world-leading training services company, providing the highest quality training services all around the world. More than 200 different trainings, particularly Xilinx, VHDL, SystemVerilog, UVM, Embedded Linux, Embedded Software, Deep Learning are carried out in fully-equipped training rooms.





ElectralC is a Certified Training Partner of global training specialists Doulos. More than 150 different trainings, particularly Xilinx, Intel FPGA, VHDL, SystemVerilog, UVM, ARM, Embedded Linux, Deep Learning are carried out in fully equipped special training rooms. Electra IC also offers courses on specialized topics like functional safety and IC design. DO-254, IC Design Flow and High Reliability are some of the niche areas the company can provide courses from the instructors expert in their fields. Scheduled face-to-face public classes are provided as well as customer specific in-house training and Live Online Training for those with time or travel limitations.

**ELECTRAIC TRAININGS** 

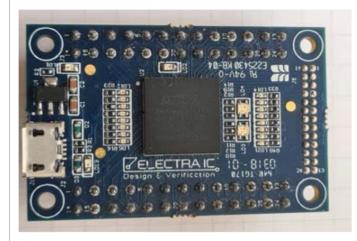


#### **FLEXY FPGA**



#### **FUNCTIONAL SAFETY: DO-254**





The Flexy FPGA board is a low-cost, opensource FPGA board in a tiny form factor. Solder on pins for use in a breadboard or PCB socket; or solder connectors, wires, and components directly onto the board. RTCA/DO-254, Design Assurance Guidance for Airborne Electronic Hardware is a document providing guidance for the development of airborne electronic hardware, published by RTCA incorporated. Having worked in avionic projects, ElectralC has the experience to use DO-254 guidance for electronics hardware development. The company knows DO-254 objectives and helps their customers on the way to a successful DO-254 certification. ElectralC can help you deploy DO-254 objectives in your electronics hardware development projects.



Pesign & Verification



This standard is applicable to safety-related electronic systems (including sub-systems and equipment) for Railway Signalling Applications. EN 50129 Railway applications are communication, signalling and processing systems / safety-related electronic systems for signalling. Thus, this standard is intended to apply to all safety-related railway signalling systems / sub-system / equipment. During your EN 50129 process, ElectralC can help you to generate the related documentation, to implement and generate process assurance related to the standard. The company can also act as an Independent Verification Team whenever required.

Functional safety features form an integral part of each automotive product development phase, ranging from the specification, to design, implementation, integration, verification, validation, and production release. The standard ISO 26262 is an adaptation of the Functional Safety standard IEC 61508 for Automotive Electric/Electronic Systems. ISO 26262 defines functional safety for automotive equipment applicable throughout the lifecycle of all automotive electronic and electrical safety-related systems. ElectralC can implement and help you for ISO 26262 standard compliancy for automotive electronics hardware development. The company can help you on your journey to a successful ISO 26262 certification.

**FUNCTIONAL SAFETY: EN 50129** 



**FUNCTIONAL SAFETY: ISO 26262** 



#### FPGA BASED RF CONTROL BOARD



#### EMBEDDED SYSTEMS & SOFTWARE DESIGN





FPGA based structure offers re-programmable messaging structure. 5 Mbps serial interface to control RF modules via various messages scenarios. Supervisory circuit provides overvoltage protection for RF modules.

ElectralC can design an embedded system as a part of a complete device system that includes hardware, such as electrical and mechanical components. The embedded system is unlike the general-purpose computer, which is engineered to manage a wide range of processing tasks. Because an embedded system is engineered to perform certain tasks only, the company may optimize size, cost, power consumption, reliability, and performance. Embedded systems require different kinds of software design philosophy and disciplines where real-time performance, responsiveness, robustness, resiliency, cost, power and memory budgets are the main vital parameters.



Design & Verification



ElectralC team has the experience of using latest verification methodologies like UVM, UVVM, OSVVM methodologies not only in FPGA design of aerospace and defense projects but also in ASIC design verification projects. ElectralC generates verification metrics and report them back to you such that you can have proofs about the quality of the verification environment. The confidence level of your design gradually increases as ElectralC presents you the code coverage metrics such as statements, branches, FSMs, conditions, expressions in your design code. Functional coverage metrics are also provided so you can see how much of your design requirements are covered.



Re-programmable output characteristics. Isolated RS422. Isolated CAN. USB. Configurable button structure (up to 32 inputs). SPI potentiometer support (2 ports)

#### **ADVANCED VERIFICATION**



#### **HANDLE CONTROLLER**



#### **MIL-STD-1553 BOARD**



#### **MIL-STD-1553 IP CORE**



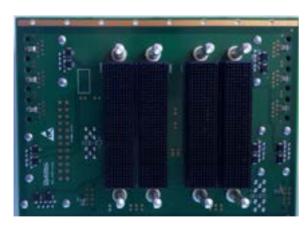
Dual-Redundant MIL-STD-1553B Bus transceiver and transformer. Simultaneously configurable MIL-STD-1553 BC, RT, BM modes. Synchronous/asynchronous parallel or SPI host interface.



# MIL-STD-1553B IP: A Multi-functional IP Core developed by ElectralC

MIL-STD-1553 IP is an IP Core which implements MIL-STD-1553B standard and provides single or multifunctional interface between host processor and MIL-STD-1553 bus transceiver. MIL-STD-1553 IP can function as Bus Controller (BC), two separate Remote Terminal (RT) and Bus Monitor (BM), simultaneously.

Pesign & Verification



ElectralC offers customized VPX backplane and chassis design and manufacturing services according to customer requirements. Using state of the art design tools and fully automated production equipment, we provide custom solutions that fulfils our customer's requirements.







Switching Box is a Military Grade custom product designed by ElectralC. It performs Ethernet, RF, serial interface, power supply and discrete signal switching functionality to facilitate redundancy in radar systems.

SWITCHING BOX FOR RADAR SYSTEMS



# ELEKTROLAND DEFENCE



Company Short Name

ELEKTROLAND DEFENCE

Company Trade Name

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#### ELEKTROAND



- Reverse / Straight, Forward / Backward movement capability 5 kg
- Ability to cross obstacles up to 25 cm
- Slope and stair climbing up to 20 cm
- IP65 Standard
- 3 km / h speed
- 250 m LOS (can be increased)
- Full-HD Touch Screen and Control with Joystick





- 2500x3500x1600 (WxLxH)
- 1850 kg
- Hybrid power system
- Autonomous or remote control use
- 2 km usage distance
- 8-12 hours of work
- + 180 ° + 180 ° Wheel
- Arm movement
- Pivot turn
- Multipurpose Rotary Drum
- Payload Carrying



It is specially designed to neutralize traps such as ditches, barricades, culverts and bombladen vehicles from a distance.





**GAZELLE KAMIKAZE ROBOT** 

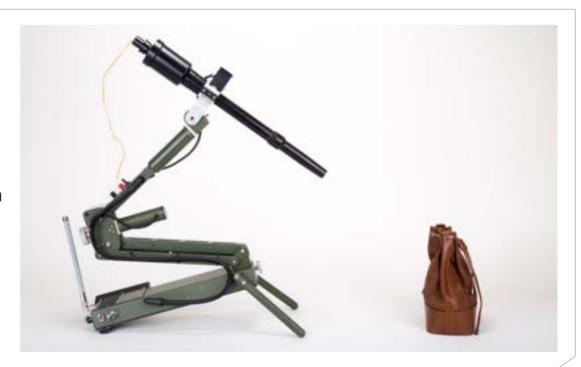
#### **HANÇER**





- 111x134x140 cm (WxLxH) with flippers stowed
- 600 kg (With Gun Tower)
- Speed 5 km/h
- 3 hour Operation Duration
- Semi -Autonomous and
- Remote Operation
- 800 m wireless use

Remote-controlled Carries out the destruction of suspicious package or IED assemblies using water cannon. Developed in line with the demands of General Police Department's bomb disposal experts The remote controlled robotic water polo table is used by the gendarmerie general command bomb disposal experts.



#### **LEVENT ROBOTIC WATER POLO TABLE**



ELEKTROAND



#### **MAXU TELESCOPIC MANIPULATOR ARM**

- Suspicious package, destruction of Handmade Explosive (IED) assemblies
- 4.5 m fully open, 1.65 m fully closed
- With 16.5 kg wheeled stand
- 1- hour operation time



- Firefighter
- Monocoque Metal Body
- Tracked System
- Heat Resistant up to 300  $^{\circ}$
- LOS: 500m
- Horizontal 360 Vertical 180
- Movable Water Monitor
- 65 Meters Shooting Range





**ROBOFIRE FIRE FIGHTING ROBOT** 

#### **TMR-I KHAN**







It is equipped with a 9 mm Glock 17 pistol in order to provide the ability to remotely neutralize various terrorist threats under the control of the operator.

- Reconnaissance, Surveillance and Response

TMR-I TEOMAN TACTICAL

- Portable on the Back
- 5 axis Robotic Arm
- Target marking with a calibrable article interface



It provides area cleaning by performing reconnaissance and monitoring operations of EOD / IEDD teams.

- Possibility of intervention to suspicious object
- Modular structure
- 18 kg
- 500 m LOS
- 5 km / h speed
- 5-axis robotic arm
- Easy to carry
- IP65

ELEKTRUAND



It provides field cleaning by performing reconnaissance and observation operations of IEDD teams.

- Possibility of intervention to suspicious object
- Modular structure
- 4-axis Robotic Arm
- 14 kg
- 500 m LOS
- 5 km / h Speed
- Easy to carry
- IP65



Suitable for remote tactical mobile applications in combination with a pluggable 6-axis manipulator arm and remote control console, which can be carried by a single user or two users.

- 60 kg
- 500 m LOS
- 5 km / h Speed

#### **TMR-I HOUND**



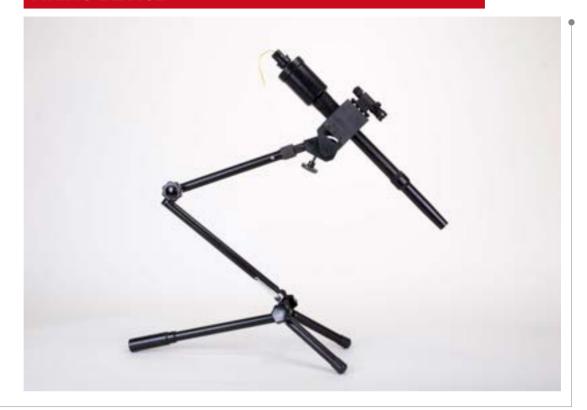
**TMR-II TOUGH EOD ROBOT** 





#### WJD WATER CANNON AND FBOX REMOTE FIRING DEVICE

- Manual
- Carries out the destruction of suspicious package or IED assemblies using water jet





- Suspicious package inspection system
- Standard black / white shooting Image coloring mode
- Organic-inorganic material separation
- 2 hours working time
- 35 kg gripper pressure
- 250 cm gripper opening distance
- 6 rpm rotation speed (loaded)



X-TRACE PORTABLE XRAY IMAGING SYSTEM

## **EPSILON**

Company Short Name

Epsilon Kompozit Teknoloji ve Savunma San. A.S.





**Company Trade Name** 

Epsilon Kompozit Teknoloji ve Savunma Sanayi Anonim Şirketi

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Epsilon Composite Technologies and Defense Industry Inc. is a composite aero-structures manufacturing facility established in 1999. We produce high-quality composite parts that meet the stringent standards of the aerospace industry with our skilled workforce. We create value for our customers by offering low-risk, high-quality composite structures at competitive prices. Our continuous development strategy aims to establish us as a Tier 1 supplier in the aviation industry. We excel in producing composite structures for military and commercial applications while maintaining outstanding customer satisfaction. Our vision is to be a pioneer in Turkey's defense industry through continuous improvement in quality and teamwork.









**a a b** 

**EPSILON COMPOSITE** 

### **ERMAKSAN**

Company Short Name

ERMAKSAN

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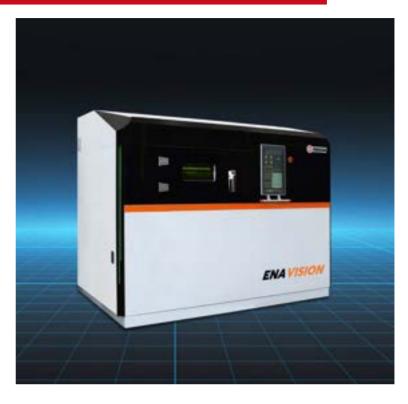
High-Power Fiber Laser Power Sources are integrated into Laser Weapon Systems for deployment on fixed installations, land vehicles, naval platforms, and similar setups. They are used to destroy and/or disable targets. Their effectiveness varies with threat types and ranges, based on the laser source power and weapon system structure. The 2500W Laser Power Source allows easy integration into mobile platforms, offering high beam quality, compact dimensions, military-standard electrical interfaces, and flexible mechanical connection interfaces. With 2500W laser power, targets like IEDs, drones, and aircraft can be neutralized at distances of up to 1km, depending on the focusing system.



#### **3D ADDITIVE MANUFACTURING MACHINE, ENAVISION**



Enavision metal additive manufacturing machine designed with 250 x 250 x 300 mm³ and produced to work powder bed fusion selective laser melting technique. Technical Specifications: 20-100 micron adjustable layer thickness, max. 7 m/s scanning speed, capable to work Argon and Nitrogen inert atmosphere, 3D dynamic focused scanning head, production table temperature up to 80°C, Beckhoff 21.5" touchoperated control panel and servo motor + driver motion control system. Working powders: Ti6Al4V, CoCr, S316L, AlSi10Mg, Inconel718, Inconel625, Maraging steel.





High-Power Fiber Laser Sources are integrated into Laser Weapon Systems deployable on fixed installations, land vehicles, naval platforms, etc. Utilized to destroy and/or render targets non-functional, Laser Power Sources exhibit varying effectiveness on different threats and ranges, depending on the laser source power and integrated weapon system structure. The 5000W Laser Power Source is a laser power unit suitable for both mobile and fixed installations, characterized by compact size, weight, high beam quality, and efficiency. The 5000W Laser Power Source can generate enough laser power to neutralize EFPs, drones, and fixed or rotary-wing aircraft at distances of up to 2km.



**5 KW MILITARY FIBRE LASER POWER SOURCES** 



#### 81 MM BREECH-LOADED MORTAR (SM-81) AND FIRE CONTROL SYSTEM (HAKOS





81 mm Breech-Loaded Mortar (SM-81) and Fire Control System is a mortar weapon system designed and manufactured by Ermaksan. This mortar has a 81 mm barrel and uses the standard 81 mm ammunition available in the inventory. In addition to the standard 81 mm Mortar features, it has the ability of direct fire and breech loading. Fire control computer is available that the system software and hardware fully developed by Ermaksan. It is a simple, effective and inexpensive mortar solution.

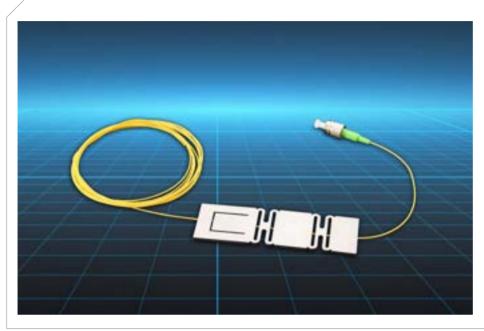
ELD-915-100 series high power fiber coupled laser diodes are designed to meet performance and reliability requirements for fiber laser pumping, material processing, medical, direct applications. ELD-915-100 series high power fiber coupled laser diodes have an important place in its class with its high power, brightness value, high efficiency, superior packaging technology, advanced thermal properties and compact design. ELD-915-100 Series high power fiber coupled laser diodes provide up to 100 W of output power within 0.16 numerical aperture, and center wavelength at 915 nm.



ELD-915-100 ERMAKSAN FIBRE COUPLED LASER DIODE PUMPING MODULE







FBG sensors are considered as to be one of the optical fiber based sensors. It basically provides precise and reliable results in terms of temperature, strain, pressure. acceleration, vibration and etc. If needed, FBG sensors can be easily configured to make ones eligible to measure previously mentioned parameters at once over a single fiber optical cable (e.g simultaneous measurement of temperature and strain on single fiber). Besides that, FBG sensors can be easily embedded into the one of the most popular materials in terms of UAV and other military equipments and devices making processes which is composite. FBG sensors are totally immune to EM and RF interfaces which makes it safe to be used in the field of defence industry.

It is the generator device that provides the transmission of the high powered laser energy which generated from the laser diodes and transporting via optic fibers to the surface of different materials -according to usage area- to be processed. It is formed by the design and assembly of diodes and modules of different powers. The laser beam obtained from modules formed by diodes makes it ready to transmit total power through a combiner device. Ermaksan resonators are designed for industry-standard metal cutting and processing and it generate 1064 nm wavelength laser. They are produced in different power ranges and sizes depending on the type and thickness of the metal to be cut. The system needs a chiller to work.



Ö°°

**FIBRE LASER RESONATOR** 

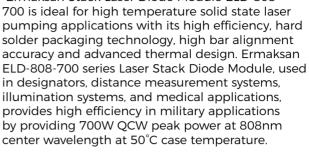
#### LASER ANTI-DRONE SYSTEM (LADRONS)



# Ermaksan Stack Laser Diode Module ELD-808-

**LASER DIOT G-STACK** 





It is a 1065 nm wavelength laser system that can be integrated into armored vehicles or fixed facilities.







LaHAS is a laser communication system that transfers data in the optical spectrum band as an alternative to RF communication. It is designed as an alternative to devices that perform the enemy intervention and jamming in the RF band by considering the physical properties of optics. It is possible to transfer data such as telephone, fax, image, and voice over the E1 link. Our device is designed to be compatible with NATO and National Crypto.





It is designed to direct laser sources in a precise manner to the target in anti drone systems. It has day optics, night vision systems (LWIR/MWIR and SWIR) and laser rangefinder systems.

LASER COMMUNICAION **SYSTEM (LAHAS)** 



**LASER GUIDANCE SYSTEM** (LAYÖS)



O's

#### **QCW LINE LASER DIODE MODULE Z-SHAPE**





With its high peak power and package type that provides advantages in narrow working areas, ELD-808-1000Z Ermaksan Stack Laser Diode Module provides high efficiency at high temperatures. Ideal for solid-state laser pumping applications, the ELD-808-1000Z Ermaksan Stack Laser Diode Module is among the highest efficiency products in its class by providing 1000W QCW peak power at 808nm center wavelength at 50°C case temperature. It is suitable for use in designators, distance measurement systems, illumination systems, and medical applications.

The gun can be loaded with max: 736 bullets with different ammo types. It has 2 barrels. It can fire 600 (300+300) bullets per minutes. If any gun has a failure, the other gun can continue firing independently. It is currently used in 40/70 mm gun Kilic Class Fast Attack Craft, New type patrol boats, coast guard ships and on different platforms in many countries of the world. It is evaluated that in New Ship Construction Projects for domestic and foreign countries, the cannon requirements of LST Landing Ships, coast guard, Fast Attack Craft and Patrol Ships can be met.





**THUNDERBOLT 40/70 T NAVAL GUN** 



Company Short Name

EHSİM

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Protecting aircraft and crew is about having the right Electronic Warfare System that you can truly rely on. EHSIM Countermeasure Dispensing System (CMDS) is crafted with this in mind, providing advanced threat protection for aircrafts. Designed to work seamlessly with electronic warfare (EW) sensors, Missile Warning Systems (MWS) and Radar Warning Receivers (RWR), our CMDS offers a smart, effective defense against IR and RF-guided missiles.

Portable RF Simulator (PRFS) is a modular compact solution to perform a subgroup of integration tests after the platform integration of Radar Warning Receivers (RWR), Electronic Support (ES) receivers and line-level maintenance/repair stages. PRFS can simulate various pulse/scan modulations and be directed to the platform antennas via RF heads.



**PRFS** 

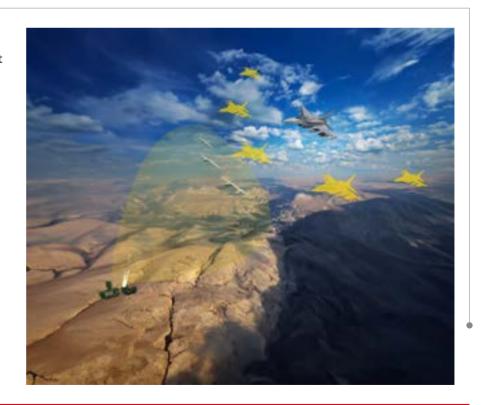




RASSIM is a cutting-edge solution designed to simulate complex RF environments and validate the performance of Electronic Warfare (EW) systems under realistic conditions. With its advanced architecture, RASSIM enables accurate simulation of radar signals, making it an indispensable and cost-effective system for testing EW battlefield in a controlled laboratory setting. It offers flexibility and high level threat performance with custom-made scenarios that replicate real-world conditions to ensure that EW systems are always mission-ready. Highly customizable architecture of RASSIM provides flexibility for specific needs of customers.



Stand-in Jamming aims getting closer to the enemy radar with a platform that carries the jammer. EHSIM SIJ solution is integrated to unmanned aircrafts/ drones for protecting other high value aircraft assets while performing their tasks. In a typical Stand-In Jamming scenario, multiple UAVs equipped with jamming pods are deployed near the enemy's radar systems. These UAVs emit electronic signals that create deceptive echoes, causing confusion and the systems unable to track actual targets. SIJ ensures more precise and efficient disruption compared to traditional jamming techniques.





SIJ

## **FEMSAN**

Company Short Name

FEMSAN

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#### HGK-2



**LGK** 



FEMSAN frameless BLDC motors deliver the torque, power and speed, within a cost-effective package and compact footprint, that give the system designer serious flexibility in specifying a motor that fits the specific performance and dimensional requirements of the application for Fin Actuation Systems. FEMSAN frameless BLDC motors can be combined with servo drives for a complete, fully optimized motion solution.





FEMSAN manufactures linear actuators for precise guidance kit. For this, A ball screw or lead screw / nut assembly to slotless or coreless BLDC motor to translate the rotary motion to linear motion. In this regard, FEMSAN linear actuators are more precise motion source for fin actuation systems.

#### **OFEMSAN** ELEKTRİK MOTORLARI



Linear actuators are more preferred for fin actuation systems in smart ammunition, guided missiles, etc., where volume and weight factors are exceedingly critical. FEMSAN manufactures linear actuators for precise guidance kit. For this, A ball screw or lead screw / nut assembly to slotless or coreless BLDC motor to translate the rotary motion to linear motion. In this regard, FEMSAN linear actuators are more precise motion source for fin actuation systems.



FEMSAN's high efficiency electromechanical actuators have been designed to improve stiffness and positional accuracy of the moving platforms. Radar platforms are indispensable for defence industry with their capabilities of detecting, tracking and classifying targets in a short time. From motion control components to complete actuation systems, FEMSAN offers wide range of services for radar platforms.

**MAB** 



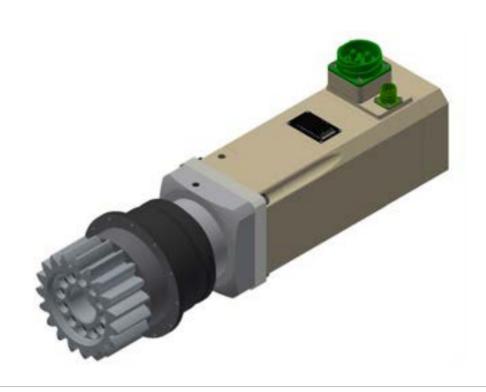
MAR







Stability and accuracy of turret is so important for combat missions. The elevation actuator provides sensitive movement in elevation axis, certainly, as it is needed. FEMSAN has solutions to guarantee rapid response times and longlife utilization even at harsh environmental conditions.



FEMSAN's high efficiency electromechanical actuators have been designed to improve stiffness and positional accuracy of the moving platforms. Radar platforms are indispensable for defence industry with their capabilities of detecting, tracking and classifying targets in a short time. From motion control components to complete actuation systems, FEMSAN offers wide range of services for radar platforms.





**REHIS** 



#### **SARP**



FEMSAN develops and manufactures azimuth axis actuators for weapon systems on armoured ground vehicles. Thanks to reduced backlash gear sets and backlash prevention mechanisms, FEMSAN 's precise actuators are capable of continuous acquiring and tracking of target even on harsh terrain conditions.



FEMSAN's Elevation Axis Actuator for naval gun platforms are designed for exposure to humidity, driving rain, salt, fog, spray, sand, dust, solar radiation, and corrosive atmosphere. FEMSAN products meet or exceed these naval requirements: Shock, vibration and other military standards.





**STAMP** 





#### **STOP**

**35MM RCWS** 

FEMSAN's Elevation Axis Actuator for naval gun platforms are designed for exposure to humidity, driving rain, salt, fog, spray, sand, dust, solar radiation, and corrosive atmosphere. FEMSAN products meet or exceed these naval requirements: Shock, vibration and other military standards.





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#### **RCWS - 1**

FEMSAN develops and manufactures azimuth axis actuators for weapon systems on armoured ground vehicles. Thanks to reduced backlash gear sets and backlash prevention mechanisms, FEMSAN 's precise actuators are capable of continuous acquiring and tracking of target even on harsh terrain conditions.





#### RCWS - 2

FEMSAN develops and manufactures azimuth axis actuators for weapon systems on armoured ground vehicles. Thanks to reduced backlash gear sets and backlash prevention mechanisms, FEMSAN 's precise actuators are capable of continuous acquiring and tracking of target even on harsh terrain conditions.







#### RCWS - 3

FEMSAN develops and manufactures azimuth axis actuators for weapon systems on armoured ground vehicles. Thanks to reduced backlash gear sets and backlash prevention mechanisms, FEMSAN 's precise actuators are capable of continuous acquiring and tracking of target even on harsh terrain conditions.







#### RCWS - 4

FEMSAN develops and manufactures azimuth axis actuators for weapon systems on armoured ground vehicles. Thanks to reduced backlash gear sets and backlash prevention mechanisms, FEMSAN 's precise actuators are capable of continuous acquiring and tracking of target even on harsh terrain conditions.





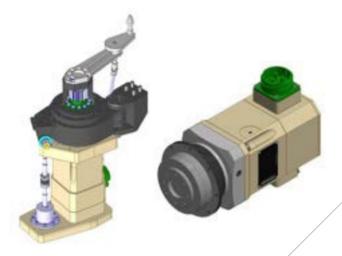
#### **RCWS - 5**



#### **KGK**



FEMSAN develops and manufactures azimuth axis actuators for weapon systems on armoured ground vehicles. Thanks to reduced backlash gear sets and backlash prevention mechanisms, FEMSAN 's precise actuators are capable of continuous acquiring and tracking of target even on harsh terrain conditions.



Fin control actuation systems are sophisticated subsystem to control the position of the missile fins in response to steering commands from the flight computer. The typical FCAS consists of four actuators and associated control electronics all integrated into a ring that matches the outer mold line of the missile. FEMSAN has provided full service engineering and manufacturing of custom electromechanical control actuation systems to guide missile fin position. FEMSAN's proven applications experience includes air launched guided bombs and munitions, direct attack missiles, air defence and naval defence missiles.







Femsan's customized linear actuators for customers' requirements are one of the critical components of the subsystems on armored vehicles. Cost-effective actuator solutions for tears gas systems are exist in the Femsan product range.



ELEKTRİK MOTORLARI



MAST radars are designed to meet the most demanding requirements of transportable communications, intelligence, surveillance, reconnaissance and broadcast systems. FEMSAN has the capabilities of designing and manufacturing customized actuators to provide lifting movement for such kind of telescopic radar applications.

**TEARS GAS** 



**MAST** 



#### **ALPAR**



#### **AKYA**



The serial hybrid propulsion system of ALPAR, Türkiye's first Tracked Unmanned Armored Ground Vehicle, is supported by the electric motor and driver developed by Femsan.





Femsan has developed and continues to produce the main propulsion unit (Electric Motor, Driver, and Control Card) of Akya. Akya stands out as one of the national torpedo systems of the Turkish Navy, operating effectively thanks to these critical components manufactured by Femsan.

## **OFEMSAN** ELEKTRİK MOTORLARI

Femsan will leverage its experience from the Akya national torpedo project to develop its own proprietary design for the propulsion motor of the ORKA lightweight torpedo, currently under development.



Femsan contributes significantly to our defense industry by producing advanced fin actuation system technologies that ensure the precise accuracy of Türkiye's leading tactical missiles and guided munitions.

**ORKA** 



**HİSAR - LAADM** 



#### ITS



#### MAM - C





Femsan provides a diverse selection of actuators tailored for both tactical and strategic missile systems. With extensive expertise, Femsan excels in crafting actuators specifically engineered to thrive in the rigorous conditions characteristic of contemporary missile initiatives, encompassing materials resilient to radiation and elevated temperatures.

Femsan has solutions for wing propulsion fin actuation systems developed for munitions designed for air-to-ground missions launched from UAVs and light attack aircraft.



### **OFEMSAN** ELEKTRİK MOTORLARI

Femsan provides wing propulsion technology solutions for specially developed munitions used in airto-ground operations launched from unmanned aerial vehicles and light attack aircraft.



The fin actuation system solutions of Femsan are utilized in high-precision guidance kits integrated to enhance the strike capability of MK-81 and MK-82 General Purpose Bombs

MAM - L



**TEBER** 



#### **TEBER PGM & K+**



**TRG - 122** 



Reducing the size and weight of motors is crucial for enhancing the agility of vital systems in missions. Direct current (DC) motors are particularly well-suited for managing the position of missile fins, thus enhancing both aerodynamic steadiness and flight path. Femsan's Slotless BLDC motor family provides plenty of different solution for this kind of applications.







Land rocket artillery solutions are designed to meet the needs of modern artillery in modern battlefield scenarios, providing a solution for precise fring of advanced rockets. The technical & production capabilities of Femsan covers different rocket systems at sub-system level.

**OFEMSAN** ELEKTRİK MOTORLARI



Land rocket artillery solutions are designed to meet the needs of modern artillery in modern battlefield scenarios, providing a solution for precise fring of advanced rockets. The technical & production capabilities of Femsan covers different rocket systems at sub-system level. Femsan has the capability to provide customized BLDC motor and electromechanical actuator solutions for turret platforms. The company's engineering expertise aims to develop motors and actuators tailored to customer requirements, optimizing the performance of turret systems.



**TRG-300** 



**TURRET** 





#### **UMTAS - OMTAS**

Femsan, as a significant player in the Turkish defense industry, manufactures wing thruster actuators for long and mediumrange anti-tank missiles (UMTAS/OMTAS). This production represents a strategic step towards enhancing Türkiye's defense capabilities and supporting domestic manufacturing.





#### HGK-3

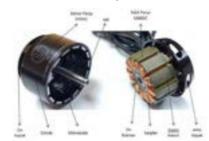
The tail assembly (KAB) used in the HGK (Precision Guidance Kit) is manufactured by Femsan. Femsan's technological expertise and high-level engineering capabilities ensure high quality and reliable operation of the tail assembly of the HGK.





#### **DRONE**

FEMSAN's solution portfolio now includes external rotor drone motors. As a result of localization efforts conducted with internal resources, products of three different types have been developed. All testing and validation activities have been completed, and the products are now ready for field use.





#### **YGYE**



Femsan continues its efforts on space rocket wing thruster actuators to make significant contributions to the development of our country's space industry. These technological advancements represent a strategic step towards strengthening Türkiye's position in the space industry and enhancing national defense capabilities. Femsan's expertise and capabilities are part of a vision aimed at solidifying our country's position in advanced technology.



#### **KGK**

The tail rear assembly (KAB) used in TÜBİTAK SAGE's KGK(Wing Assisted Guidance Kit) product is produced by Femsan. Femsan's superior quality and reliability standards provide a strong guarantee in the production of the tail rear assembly of the KGK.





#### **ANKA**



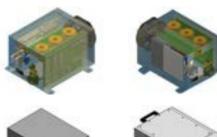
FEMSAN can offer a wide selection of alternators for a variety of power generation applications, and, customize designs to meet customer's exact requirements. Design optimization that is done for maximum efficiency and output power provides the highest performance per volume and besides that minimizes the alternators footprint within the system.

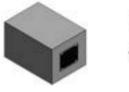
#### **ATAK II**

















Power conversion products, such as AC to DC converters, frequency converters, and DC to AC inverters are major components in almost every aircraft today. Femsan has been developing AC / DC converters for airborne platforms.

Power conversion products, such as AC to DC converters, frequency converters, and DC to AC inverters are major components in almost every aircraft today. Femsan has been developing AC / DC converters for airborne platforms.













**OFEMSAN** ELEKTRIK MOTORLARI

FEMSAN has the

capabilities to
design, develop, test
and manufacture
electromechanical
actuators for use in rotary
wing aircraft landing gear.





Kamikaze drones are one of the subclasses of unmanned aerial vehicles, which is increasingly used in border security. Today, FEMSAN compensates alternator requirements of kamikaze drones along with its technological knowledge.

**GÖKBEY** 



**DP37 DRONE** 



# **FNSS**

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**ACV-19** 

The ACV-19 (Armoured Combat Vehicle) is the general name for 15-19 ton weight class, modern high performance vehicles derived from the highly successful FNSS ACV. The ACV-19 offers the latest developments in high value vehicle performance for internal volume and payload but also maintains the advantages of commonality with the ACV family of vehicles. The differences between the ACV-15 and the ACV-19 consist primarily of a longer, stretched hull with 6 road wheels, heavy duty final drives, and suspensions. Additionally, the 90% spare part commonality among ACV-19s and ACV-15s makes maintenance more convenient for users of both variants.





The CAKA RWS offers great advantages thanks to its light weight, ballistic protection, target acquisition, reliability and accuracy. The CAKA RWS is power operated and armed with a 12.7 mm MG (.50 Cal) and a 40 mm AGL (Automatic Grenade Launcher). The remote turret can be fitted to various manned and unmanned ground vehicles, as well as naval surface vessels. A number of solutions were adopted to protect it against the effects of sea water, in order to ensure maximum reliability, as it must provide the much needed firepower to the marines.







The SHADOW RIDER is a family of modular autonomous unmanned ground vehicles designed to meet the multi-operational needs of the modern battlefield and to support soldiers in complex and challenging terrains. Family of Vehicle is a system solution that will become a force multiplier for the user in full spectrum missions thanks to its artificial intelligence supported autonomy kit, decision support systems, sensor suit, positional and situational awareness systems. The autonomy kit developed by FNSS has autonomous driving modes such as patrol, track and return to military base, as well as various layers of protection for a safe ride.





The new generation KAPLAN MT is the sole and exclusive modern Medium Weight Tank designed with rear powerpack and not a conversion of a variant from an existing IFV. Its unique design provides the lowest silhouette and highest power-to-weight ratio in its class. Its platform is designed for optimum weight and high mobility performance. The KAPLAN MT's design architecture provides a superior level of battlefield survivability that includes advanced ballistic, best-in-class mine protection systems and adequate firepower, the latter ensuring near-real time response against most battlefield threats.







The KAPLAN-10 is a new generation armoured combat fighting vehicle that has the ability to move together with main battle tanks. The KAPLAN-10 platform design enables the integration of different types of subsystems that allow it to perform all kinds of missions. The KAPLAN-10's compact silhouette combined with an advanced suspension system allows it to manoeuvre at high speeds in various terrains and weather conditions. The KAPLAN-10 is one of the very few armoured vehicles that feature amphibious characteristics.



The KAPLAN NG-AFV is a new generation tracked platform designed by FNSS to meet the requirements of the future battlefield. The modular vehicle, designed with possible integration options for manned and unmanned turret systems and the modular design allows to perform full spectrum missions such as mechanised infantry, reconnaissance, command & control, force protection, medical evacuation, recovery, combat engineering and direct or indirect fire support. Vehicle is equipped with modular survivability systems and it is fitted with protection packages against ballistic, mine and improvised explosive threats. The KAPLAN NG-AFV also offers an active protection system option against anti-tank missiles.

**KAPLAN NG-AFV** 





## AACE AMPHIBIOUS ARMOURED COMBAT EARTHMOVER



The AACE is an amphibious, Tracked Armored Engineering Vehicle designed for the preparation of river banks during river crossing missions. It is capable of performing bulldozing, rough grading, excavating, hauling, and scraping operations. Compared to standard heavy-duty vehicles; the AACE has the capability to take in ballast from the soil into its ballast canister, and when necessary the vehicle can discharge its ballast canister at the end of the operation. One of the most important and unique features of the AACE is its amphibious capability. Today the AACE is used by Turkish Land Forces in various missions.

The sustainability solutions cover the entire M113 Family of Vehicles (FoV) for mobility upgrades, regardless of their specific mission equipment. Therefore, all M113 variants can be supported in terms of logistics and spare parts. The FNSS M113A4 solution fully meets the requirements for a modern reliable M113 FoV. The M113A4 is NATO certified and qualified by the original M113 manufacturer. The M113A4 delivers significant improvements on mobility and survivability compared to the older M113 FoV and consists of modern diesel engine and automatic transmission. Reliability and durability have been greatly improved with the installation of the FNSS-developed ACV power pack.









The PARS 4x4 is designed to undertake special operational roles such as advanced surveillance, anti-tank and command and control. The mobility of the PARS 4x4 is enhanced by its central tire inflation system, and it also has a run flat capability. It is fitted with an automatic transmission with an axle lock to enhance mobility on slippery surfaces and soft soil. The vehicle is made of a ballistic hull, which provides protection against mines and improvised explosive devices (IED). With its remarkable payload capacity, open architecture, and significant design, the vehicle is capable of carrying out various missions.



The PARS III 6x6 has been developed with a special emphasis on mobility, protection, payload, and growth potential. It is equipped with cutting edge armoured vehicle technologies to obtain performances and durability answering modern armies' operational requirements. Vehicle front and rear axle steering system gives the vehicle the lowest turning radius in its class. Thanks to the modular design of the vehicle hull and armour package, protection level can be tailored to customers' requests. Vehicle runs ahead of its competitors by offering protections levels similar to MRAP vehicles while maintaining combat and mobility characteristics of modern armoured combat vehicles.

**PARS III 6X6 WACV** 

-<u>-</u>-



The PARS III 8x8 has been developed with special emphasis on mobility, protection, payload, and growth potential. It is equipped with cutting edge armoured vehicle technologies to obtain performances and durability answering modern armies' operational requirements. With its powerpack location and optimal weight balance, the vehicle has equal load on each axle. This design approach gives the vehicle the ability to move comfortably even on loose and soft terrain, providing maximum control at high-speed and short braking distances. Thanks to the modular design of the hull and armour package, the vehicle protection level can be tailored to customers' requests.





The PARS IV 6x6 S-Ops Vehicle is designed to meet the tactical and operational requirements of military and internal security forces whose mission is «special». It is able to operate in a wide range of terrains, climate types. The vehicle has been specifically designed to carry special operations units to their mission objectives, provide fire support in the field. The vehicle design provides the personnel located in the front section of the vehicle with maximum direct view over 180°. Electronic infrastructure provides 360° situational awareness for all team members. The vehicle can easily be operated under armour, keeping hatches closed.

° °

**PARS IV 6X6 SPECIAL OPERATIONS VEHICLE** 

#### **PARS IV 8X8 NG-WAV**





The PARS IV 8x8 New Generation Wheeled Armoured Vehicle (NGWAV) was designed and produced with FNSS' equity, considering the technical features that have evolved according to future requirements and the demands from armies worldwide. The vehicle combines user ergonomics with protection and high mobility. The PARS IV 8x8 NG-WAV has been renewed in order to adapt to different combat environments, and has been updated to accommodate constantly developing technologies and to offer its users tactical advantages on the battlefield. The vehicle is developed to adapt for recent and future hybrid warfare conditions that bring together symmetric and asymmetric threats.



The PARS SCOUT 6x6 modern tactical wheeled armoured combat vehicle is designed to be used in low and highintensity scenarios, offering strategic advantages to the user thanks to its unique features, and incorporate advanced technologies. Vehicle hull can be brought to the level of protection required thanks to its modulardesigned armour system. The hull shape, underbelly structure, bottom plates and specially developed mineresistant seats are designed to protect personnel against high-level mine threats. The modular connection of the vehicle subsystems to its mine-resistant hull ensures ease of maintenance and quick replacement, which makes it superior to its counterparts.

**PARS SCOUT 6X6** 







The PARS SCOUT 8x8 modern tactical wheeled armoured combat vehicle is designed to be used in low and high-intensity scenarios, offering strategic advantages to the user thanks to its unique features. Vehicle hull can be brought to the level of protection required thanks to its modular-designed armour system. The hull shape, underbelly structure, bottom plates and specially developed mine-resistant seats are designed to protect personnel against high-level mine threats. The modular connection of the vehicle subsystems to its mine-resistant hull ensures ease of maintenance and quick replacement, which makes it superior to its counterparts.

The SABER is a medium calibre onemanned, power operated turret that can be fitted on wheeled and tracked armoured vehicles. The SABER turret is equipped with the latest technologies in turret drives, fire control, protection and lethality. Its compact dimensions and light weight make the SABER a suitable choice for different types of armoured vehicles. The turret can be configured with three types of main armament based on user requirements: M242 25 mm dual-feed automatic cannon, 40 mm automatic grenade launcher (AGL) or a 12.7 mm machine gun. A 7.62 mm coaxial machine gun is also available with all these configurations.r.



10

**SABER ONE-MAN TURRET** 

#### **SABER RCT**

IV



The SABER RCT (Remote Controlled Turret) is designed to meet the requirements of Turkish Armed Forces and international customers. It is equipped with a 25 mm M242 Bushmaster chain gun and a coaxial 7.62 mm MG, providing exceptional firepower and high hit performance. The SABER-25 RCT has been designed to be used on a wide range of armoured vehicles from 4x4 to 8x8 wheeled and tracked IFVs. The turret is equipped with an electrooptic sight in order to have effective target acquisition and identification capability on the battlefield. It is also equipped with two-axis independent stabilisation system for fire on the move.

# OTTER RAPID DEPLOYABLE AMPHIBIOUS WET GAP CROSSING SYSTEM





The OTTER is a bridge and ferry system designed for safe, fast transport of combat and logistic military vehicles in river crossing operations. The ability to operate in soft soils allows for significantly less preparation on riverbanks to enter and exit the water. As a ferry, a single OTTER system can transport MLC 21 tracked vehicles. Two OTTER systems can be coupled together forming a pontoon that can transport an MLC 85 T vehicle. By coupling three systems ramp to ramp, up to four MLC 120 W vehicles can be transported over wet gaps.

#### FNSS



The SANCAK (RWS), stands out in its class with distinctive technical specifications and ballistic protection. Being an unmanned system, the SANCAK ensures personnel safety and considerably increases hit probability thanks to its fire control system. To ensure their availability during operations, especially in urban areas, RWS need to be fitted with ballistic protections. SANCAK RWS is capable to carry out its mission with maximum reliability. The SANCAK RWS can be equipped with an M2 12.7 mm/.50 calibre machine gun, a Mk19 40 mm automatic grenade launcher, an M240 or an FN MAG58 7.62 mm machine gun.



The TEBER-30 Two-Man Turret, is a medium caliber turret that can be fitted to wheeled and tracked armoured vehicles and is offered in two configurations. In the conventional two-man configuration, the commander and the gunner are positioned in the turret basket. The TEBER-30 Two-Man Turret incorporates the latest technologies in turret drives, fire control, protection, and lethality. It can operate under all battle environments thanks to its integrated sensors and other electronic systems. Thanks to the manual backup system, the gunner can steer the turret in traverse, can gain elevation and engage the targets.

**SANCAK RWS** 



**TEBER-30 TWO-MAN TURRET** 





The TEBER-30/35 RCT is a remote controlled turret designed to be installed on wheeled and tracked armoured vehicles and equipped with a medium calibre automatic cannon, an advanced target detection and a fire control system. Unlike conventional turrets, remote controlled turrets do not have any basket structure and thus the extra available interior space provides a significant advantage to the user. The TEBER-30/35 RCT incorporates the latest technologies in turret drives, fire control, protection, and lethality. TEBER-30/35 RCT provides multi-level ballistic protection thanks to its modular armour structure which is compatible with STANAG 4569 standard...





The ARCT(Remote Controlled Anti-Tank Turret) was designed specifically for the anti-tank role from the very outset and has some important integrated features that turrets with add-on missile capability are lacking. The ARCT offers the best optimization for low silhouette, armour protection, ergonomics, easy conversion to tripod launch configuration and sighting system. Capable of performing continuous 360 degrees traverse, the ARCT is armed with two anti-tank guided missiles along with a 7.62 mm coaxial machine gun. Unlike conventional manned turrets, the ARCT lacks a basket structure and is installed above the vehicle's roof which increases the vehicle's internal useable volume.

15

**ARCT** 

The Marine Assault Vehicle (MAV) is the latest technology amphibious vehicle designed by FNSS to meet amphibious operational requirements. During the beach landing phase of an amphibious operation, these vehicles are launched from landing helicopter docks (LHD) and are able to rapidly cover the distance between the vessel and the shore, allowing marine units to land under armour protection. Once on land, they are able to operate alongside other armoured vehicles. The MAV fire power is provided by the purposely designed CAKA dual remotecontrolled turret that can be armed with a 12.7 mm MG and a 40 mm AGL.





The ACV-15 Modernisation aims to keep the vehicles up-to-date, in line with the changing threat perception improving their performances and enabling them to continue serving throughout their extended service lives. It is aimed at improving its survivability, situational awareness and firepower. FNSS ACV-15 modernisation solution consists of optimum survivability including improved protection against mines, RPG's and kinetic energy threats, improved situational awareness with integration of up-todate mission equipment's such as: BMS, driver vision system, laser warning system, navigation and GPS or GNSS systems and increased firepower with new generation, medium calibre manned or remotecontrolled turrets and weapon stations.

**ACV-15 MODERNISATION & LIFE EXTENSION PROGRAM** 









Armoured Combat Vehicle (ACV) is the generic designation for a tracked, diesel engine powered, heavy armoured platform in the 13-15 tons class, capable of performing combined arms operations with main battle tanks. The platform design allows the integration of different subsystems for executing a variety of different roles. The ACV-15 is a tracked (5 road wheels), lightweight, low silhouette armoured vehicle capable of high-speed operations in desert conditions, poor infrastructure, roads and/or highways. The all-welded construction provides a watertight hull; and hatches, doors, and other openings have watertight seals.

Thanks to an increased power pack performance and an improved suspension the Air Defence System Platform (ACV AD) has the capacity to carry greater payloads compared to other heavy air defence platforms. The ACV AD was selected by the TAF as the platform of choice for KORKUT and HISAR Air Defence Systems programmes. The Command-and-Control configuration designed under the KORKUT Project is fully amphibious and The Low and Medium Altitude Air Defence Missile System (LAADMIS) designed for the HISAR Project has a 3D Search Radar as well as a Low Altitude Air Defence Missile System installed on the same platform.





**ACV AD** 

## FORA GRUP SAVUNMA

Company Short Name

FORA GRUP SAVUNMA

**FORA**GRUP

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#### **FORA GROUP PRODUCT RANGE**







FORA GROUP was established in 2012 to provide quality products and services for public institutions and private companies in the defense and security sector. Although it was initially established with the aim of being the leading company in its field in Türkiye, it has left behind important milestones in becoming a global brand with its own design and production power, exporting to more 30 countries in 12 years.FORA GROUP has been the 33rd and 22nd fastest growing company in Türkiye in 2019 and 2020, respectively. With our suppliers, subcontractors and 120 employees, we make the Fora Ecosystem more visible every day.



Among the textile group materials used in the military field, mainly; We produce products such as carrying bags, operation bags, emergency response bags, backpacks, individual first aid kits, gun cases, assault vests, tourniquet covers, etc. We produce net stretchers in the field of casualty transportation, durable pocket stretchers that allow portable transportation and storage in the tactical field, and tactical stretchers in-house.

**MILITARY TEXTILE** 





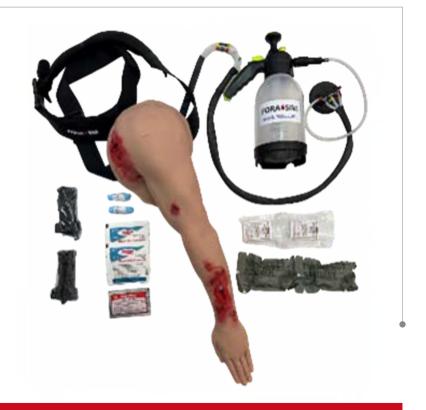




We can supply all the internal contents of all medical equipment and basic/advanced level emergency response bags used in casualty care in the tactical field, and we produce most of them in-house. We supply medical kits, individual first aid kits (IFAK), emergency response operation bags (full of contents). Some of the product groups we produce in the medical field are FR19 GEN2 extremity tourniquet, abdominal tourniquet, tactical neck collar, splints, burn dressings, pelvic belt, etc.



We domestically produce trauma simulators used in tactical casualty care training and operational field war scenarios. On our high-level reality trauma simulators, where large and small injuries such as amputated leg bleeding, gunshot wounds, junction area injuries are simulated; Many applications can be performed such as extremity tourniquet application, abdominal tourniquet application, wound occlusion and wound packing.







**TRAUMA SIMULATORS** 

# FOTONIKS A.Ş.

Company Short Name

FOTONİKS A.Ş.

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#### **OD-250 OPTICAL IFF STROBE**







Dismounted/Combatant Soldier Optical IFF Strobe



Border/Critical
Facility Security,
Area Surveillance
Surveillance,
Reconnaissance &
Target Locator System

ATLAS 2A SURVEILLANCE, RECONNAISSANCE & TARGET LOCATOR SYSTEM





## ATLAS 2B SURVEILLANCE, RECONNAISSANCE & TARGET LOCATOR SYSTEM



Border/Critical Facility Security, Area Surveillance Surveillance, Reconnaissance & Target Locator System





Border/Critical Facility Security, Area Surveillance Integrated to an Anti Drone System - Mast Mounted



ATLAS 660 SURVEILLANCE & RECONNAISSANCE SYSTEM

## AVCI-(HUNTER) DRIVER'S THERMAL CAMERA



## B-G3 BINOCULAR NIGHT VISION GOGGLE



Driver's Day/Night Camera: Armored Vehicles, Infantry Fighting / Combat Vehicles, Amphibious Assault Vehicles, Fast Action Boats and such.















Situational Awareness Camera: Armored Vehicles, Infantry Fighting /Combat Vehicles, Amphibious Assault Vehicles. Fast Action Boats and such.

BOZOK SITUATIONAL AWARENESS CAMERA SYSTEM



Dismounted/ Combatant Soldier Assault Rifles/Ballistic Protective Helmets



**BÖRÜ TACTICAL LIGHT** 



## CSS COMBAT SIGHTS - 1X / 3X / 5X



#### ÇÖL KEDİSİ (DESERT CAT) DRIVER'S THERMAL CAMERA



Driver's Day/Night Camera: Armored Vehicles, Infantry Fighting / Combat Vehicles, and such.



Dismounted/Combatant Soldier Assault Rifles/Hunting Rifles





Driver's Day/Night Camera: Armored Vehicles, Infantry Fighting / Combat Vehicles, Amphibious Assault Vehicles, Fast Action Boats and such.





DAT-2 DRIVER'S FUSION CAMERA SYSTEM



Driver's Day/Night Camera: Armored Vehicles, Infantry Fighting / Combat Vehicles, Amphibious Assault Vehicles, Fast Action Boats and such.

DGGS-DRIVER'S DIGITAL NIGHT VISION CAMERA





#### **DUAL CAMERA DRIVER'S DAY/ THERMAL CAMERA**

Driver's Day/Night Camera Armored Vehicles, Infantry Fighting / Combat Vehicles, Amphibious Assault Vehicles, Fast Action Boats and such.





#### GÖKBÖRÜ TACTICAL LIGHT



Dismounted/Combatant Soldier Tactical Light +IR



#### **HNA HOLOGARPHIC WEAPON SIGHT**





#### **KAPLAN(TIGER) DRIVER'S THERMAL CAMERA**

Driver's Day/ Night Camera: Armored Vehicles. Infantry Fighting / Combat Vehicles, **Amphibious Assault** Vehicles, Fast Action Boats and such.





#### **KESKÍN-A OPTICAL GUNNER/ COMMANDER SIGHT)**



Optical Gunner/Commander Sight -Remote Controlled Weapon Station Electro Optic Suit: Armored Vehicles, Infantry Fighting /Combat Vehicles, Amphibious Assault Vehicles, Fast Action Boats and such.



#### **KESKÍN-B OPTICAL GUNNER/ COMMANDER SIGHT**



Optical Gunner/ Commander Sight -Remote Controlled Weapon Station Electro Optic Suit: Armored Vehicles, Infantry Fighting /Combat Vehicles, Amphibious Assault Vehicles. Fast Action Boats and such.

#### KUKA UAV FUSELAGE CAMERA



#### KUZGUN(RAVEN)-KUZGUN DUAL-SITUATIONAL AWARENESS CAMERA SYSTEM



Situational Awareness Camera: Armored Vehicles, Infantry Fighting / Combat Vehicles, Amphibious Assault Vehicles, Fast Action Boats and such.





Unmanned Aireal Vehicle Fuselage Camera Unmanned Aireal Vehicles & Rotary Wing Aircrafts





Optical Communication in cases where fast and broadband communication is required under Frequency Jammers or where the connection cannot be established due to geographical conditions or where it will take a long time to establish, or where temporary and fast installation is required.

LHS -LASER COMMUNICATION SYSTEM



Fixed Wing Aircrafts



**LITE HUD-HEADUP DISPLAY** 



## M-G3 MONOCULAR NIGHT VISION GOGGLE



#### MT-2X MONOCULAR MINI THERMAL CAMERA)



Dismounted/Combatant Soldier Monocular Night Vision Goggle



Dismounted/Combatant Soldier Thermal Camera





Dismounted/Combatant Soldier Optical IFF Strobe

Optical Gunner/Commander Sight -Remote Controlled Weapon Station Electro Optic Suit Armored Vehicles, Infantry Fighting / Combat Vehicles, Amphibious Assault Vehicles, Fast Action Boats and such.



OGUS-AOPTICAL GUNNER/COMMANDER SIGHT



**OD-60 OPTICAL IFF STROBE** 



## MULTI FUNCTIONAL THERMAL IMAGER



### **RLS-GITACTICAL LIGHT**



Dismounted/Combatant Soldier Assault Rifles



Dismounted/Combatant Soldier





Situational Awareness Camera: Armored Vehicles, Infantry Fighting / Combat Vehicles, Amphibious Assault Vehicles, Fast Action Boats and such.





SAWES SITUATIONAL AWARENESS CAMERA SYSTEM



Driver's Day/Night Camera: Armored Vehicles, Infantry Fighting / Combat Vehicles, Amphibious Assault Vehicles, Fast Action Boats and such.

**DRIVER'S THERMAL CAMERA** 







### ŞİMŞEK(LIGHTNING) OPTICAL IFF SYSTEM



Armored Vehicles, Infantry Fighting /Combat Vehicles, Amphibious Assault Vehicles, Fast Action Boats and such.

### **TAG-1 REDDOT SIGHT**

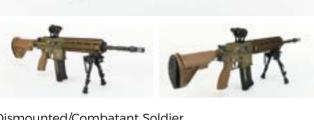


### **TAG-3B 3X MAGNIFIER**



Dismounted/Combatant Soldier Assault Rifles/Machine Guns







Dismounted/Combatant Soldier Assault Rifles/Hunting Rifles





Dismounted/ Combatant Soldier Assault Rifles/ Machine Guns



**TAG-3M 3X MAGNIFIER** 





Dismounted/ Combatant Soldier Pistols



**TAG- MR REFLEX SIGHT** 



# FZK MÜHENDISLIK

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### **KORKUT TOWER MECHANICS**





The KORKUT system is an air defense system developed by ASELSAN in order to effectively carry out air defense of mobile elements and mechanized units. FZK manufactures the armored gun towel body of the KORKUT air defense system.

GÖKDENİZ YHSS; developed by ASELSAN, is a point defense system that can destroy anti-ship missiles with its 35 mm Particulate Ammunition (ATOM), by targeting the ship in which it is stationed. FZK manufactures, the gun turret body frame of Gökdeniz YHSS system and ALCR tower platforms.



**GÖKDENİZ TOWER MECHANICS** 





KORHAN 35 mm
Weapon System,
developed by ASELSAN
with national means to
meet today's battlefield
needs, by utilizing the
newest technological
opportunities; in order to
increase the possibilities
and capabilities of the
Turkish Armed Forces
FZK manufactures the
gun turret body frame
of the Korhan system.





**\$**000

**NEFER TOWER MECHANICS** 



### **35 MM OERLIKON TOP MODERNIZATION**

As the subcontractor of Aselsan, FZK carries out the modernization of 35 mm towed air defense guns in the TAF inventory. These cannons are put into use as an effective low-altitude air defense weapon using up-to-date technology. Within the scope of modernization studies, the ability to fire Particle Ammunition is gained from the cannons.





### **FOLDABLE DIGITAL SYSTEM**



FZK has brought a high level of mobility to the AIC system with the Foldable Axle System that FZK designed and manufactured.



MZK Tower; is a very special turret system for M60A3 tanks to Roketsan for the modernization within the scope of the "TİYK-M60A3 Programme" of M60A3 Main Battle Tanks in the Turkish ArmedForces.

FZK manufactured the MZK gun turret body frame.





**MZK TOWER MECHANICS** 

# GARANTI KOMPOZIT

Company Short Name

GARANTI KOMPOZIT

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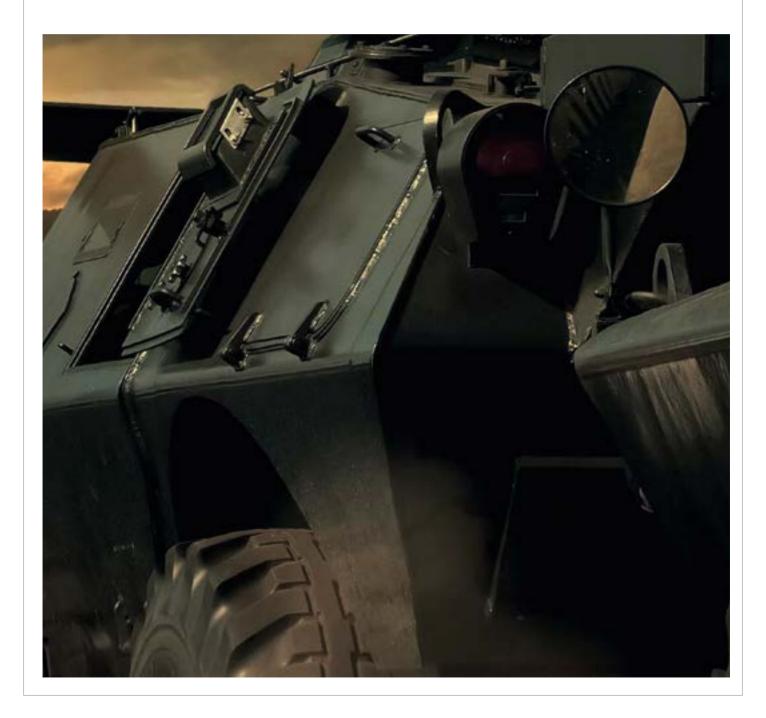






### **VEHICLE ARMOR SOLUTIONS**

STANAG 4569 Level 3-4-5-6 Armor Panels: It is an add-on composite armor structure designed for air, land, sea platforms. We offer solutions including high tech products and alternative material options that will provide top level protection against ballistic threats in line with the vehicle type. Lightweight structures produced with advanced composite manufacturing technology combined with the right ceramic solution. Spall Liner Solutions: It is a composite structure used for the purpose of stopping particles or reducing the spreading angle towards the interior of the vehicle from the hull in case of encountering an over-matching threat over the protection level of armored vehicles.





### **BALLISTIC PROTECTIVE HELMETS**



We manufacture ballistic protective helmets in many different styles such as PASGT, MICH, ACH or ECH, and in 3 to 4 different sizes per style. Our helmets can be made of aramid, UHMWPE or hybrid solutions. All our helmets are manufactured according to NIJ and STANAG standards and tested in our accredited inhouse ballistic testing laboratory. We are the leading helmet manufacturer in Türkiye with a daily helmet manufacturing capacity of 400 (UHMWPE) or 1200 pcs (aramide).





We produces shields in various sizes with different protection levels in accordance with NIJ0108.01, STANAG 4563 and STANAG 2920 standards. We design according to the technical demands of our customers, and the solutions we offer are light, ergonomic and functional. The shields we produce are subjected to a test protocol in our accredited ballistic test laboratory in accordance with our quality plan. Shields, which are used for the purpose of responding to social events, are produced in different models and sizes such as wheeled, ballistic visor, LED light, gun rest version, neck strap. Our shields are field tested.

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**BALLISTIC PROTECTIVE SHIELDS** 



## BALLISTIC PROTECTIVE GARMENTS AND EQUIPMENTS







Garanti Kompozit uses high-tech materials to produce various ballistic protective composite products, performance enhancing clothing and equipment such as EOD suits, Demining suits, Bomb blankets, ballistic briefcase, Fragment and Slash protective garments for military, law enforcement, professional and civilian use.

Usually tactical vests are manufactured as level IIIA and can be upgraded to level III or level IV by adding ballistic protective hard armor plates (HAP). Our HAPs are manufactured in accordance with NIJ0101.04 and NIJ0101.06 standards and tested in our accredited inhouse ballistic testing laboratory. Our HAPs also can be offered as stand alone, which means those HAPs offer specific protection without having a soft vest behind them. All our HAPs are tested according to our quality plans before leaving the factory. We have a pressing capacity of 1500-2000 HAPs per day.



**BALLISTIC PROTECTIVE PLATES** 

**a** 🗎 🔊

### BALLISTIC PROTECTIVE VESTS









Garanti offers two types of non-ballistic helmets for impact protection. Those helmets can be used during tactical exercises, search and rescue operations, on boats and various usages to give end-user an extra protection against impacts.

Accorrding to customer requirements, Garanti designs and manufactures waterproof-breathable cold weather garments, flame retardant garments, sleeping bags, attack vests and back packs. We have exports not only local market, but also producing various types of textile products to various countries.



**FUNCTIONAL OUTERWEAR** 

LLL

### **HELICOPTER HELMET**



A versatile helmet system for commercial and military pilots, designed to be used for air crews of rotary wing aircrafts, which does not have an ejection seat. In addition to this, it has been designed to be used with night vision goggles. Thanks to its lightweight solution, it provides comfort, protection and reliability in various usages and gives utmost comfort to the used during long operations.



In addition to these ballistic protective helmets we have designed and produced several complementary items such as IR strobe, T-Light, add-on ballistic appliques for rifle protection, soft ballistic mandible, side armor, 9 mm & fragment visors NVG mount and counterweights.



**₹** □ 5

**HELMET ACCESSORIES** 

# **GÖKSER ARGE**

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GÖKSER Arge

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### **SHELTER AIR CONDITIONING SYSTEM**

Gökser Arge has successfully designed and manufactured a climate control system that operates under the most challenging conditions, offering reliability, ease of maintenance, and longlasting performance. This has elevated its reputation in the field of Environmental Control Systems (ECS).

With its easy installation, maintenance, and integration, the BRS 24 climate control device has become entirely user-friendly. It is a product that can be easily chosen for areas where heat dissipation is necessary. The BRS 24 product meets the applicable military standards (MIL-STD 810, MIL-STD 461). Additionally, this device, designed to operate under harsh conditions, can be easily integrated into military communication shelters, mobile hospitals, command and control centers, communication areas, military tents, armored vehicles, and radar systems, and it can effectively meet the requirements of these areas.



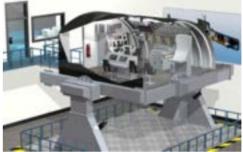




The device is designed for cooling the equipment of underwater simulators and for environmental climate control. It consists of two separate systems: an outdoor unit and an indoor unit. The outdoor unit is installed outside the building premises, while the indoor unit is placed within the simulator environment. The connection between the simulator and the indoor unit is facilitated through a flexible hose. The cooling capacity of the device is approximately 60,000 BTU/h, and its airflow rate is around 3,500 m<sup>3</sup>/h (at 1,000 Pa).







The air conditioner has 2 separate inlets and 2 separate outlets, allowing it to cool two distinct environments. It can reduce the temperature of compartments from  $+50^{\circ}$ C to  $+40^{\circ}$ C. The cooling requirement for the environment is 4.5 kW. Additionally, it can heat compartments from  $-20^{\circ}$ C to  $+10^{\circ}$ C, with a heating requirement of 4 kW.

The air conditioner operates with a 3-phase 380 V voltage. It is suitable for use in a trailer and is resistant to shock and vibration caused by the trailer. It features an automatic transfer control remote and monitoring panel. The air conditioner is equipped with sensors and a thermostat for temperature control, which can be set to different values for heating and cooling. It is capable of operating in temperatures ranging from +50°C to -20°C.







**RADOME AIR CONDITIONING SYSTEM** 



### **PLUG BUSTER ASSEMBLY LINE**

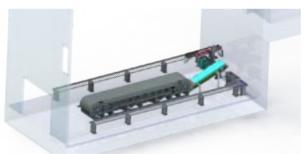


The Buster Dismantling Equipment is used for the safe dismantling of Busters with threaded interfaces on the caps, whether produced within the Cap Directorate, procured from abroad, or received from other institutions for testing purposes.

The equipment is protected with a minimum 20 mm thick steel plate on three sides and the roof to withstand explosions. It also features an automatically opening and closing cover on the front, which is similarly resistant to explosions. The surrounding cabin is designed to be resistant to external environmental conditions or to mitigate the effects of such conditions. Materials used for the holding and clamping components of the equipment are selected to avoid causing damage to the cap or buster bodies. All movable mechanical parts of the equipment are made from materials that do not generate static electricity or sparks. All electrical components of the equipment are ATEX certified for Zone 2 T4.









The process involves the dismantling and disposal of expired munitions using sorting and separation techniques. First, mechanical components of the munitions such as caps, casing envelopes, additional firing pins, and fins are removed. Techniques such as cutting, rotational removal, manual disassembly, and pressing are employed for this purpose. The disassembled components are then subjected to different processes for disposal.

In the Loading Unloading System, munitions filled with explosives are transferred to the Washout System—a fully automated system—without manual labor. In the Washout System, hot water is applied to the explosives inside the munitions to dissolve the fuel. The dissolved fuel is then directed to the Belt Flaker system, where it is processed into Flake (similar to potato chips). The flakes are weighed and packaged in the Packing Weighing system, making them ready for disposal. Both the packaging and weighing systems are automated and controlled entirely without human intervention.



AMMUNITION SORTING AND SEPARATION PLANT



# GROUND SUPPORT SYSTEMS (CIVIL AVIATION)



## MILITARY CAMP AREAS AIR CONDITIONING SYSTEMS





In aviation, it is used for climate control of all equipment involved in ground operations, including cockpit, cabin, mechanical components of aircraft, and avionic systems.



They are mobile systems that provide energy and conditioned air needs for structures such as tents, hangars, and warehouses.





They are systems that provide the necessary energy and conditioned air for aircraft in maintenance hangars.

GROUND SUPPORT SYSTEMS FOR FIGHTER AIRCRAFT (PIT AND PCA SYSTEMS)



It is a device used for testing ammunition caps under the desired G-force.



**CENTRIFUGE TEST MACHINE** 



# GÜRBAĞ SAVUNMA

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GÜRBAĞ SAVUNMA

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9ürbaş

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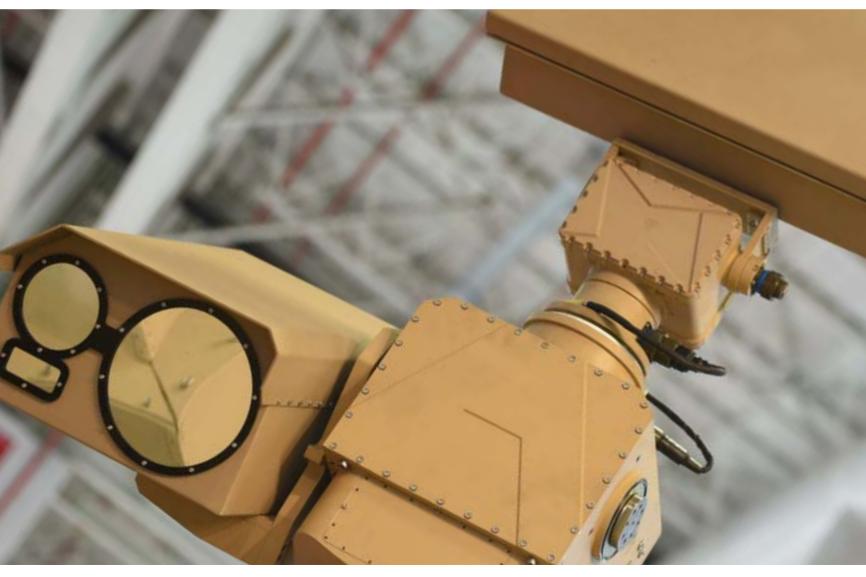
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### **GSPT 0510**





0510, one of our mini control and routing system models, is designed for reconnaissance, surveillance, antenna and optic fields. Our 0510 model, which weighs less than 5 kg, has a body dynamic that can support up to 15 Nm.

Control and routing systems are special units used for precise positioning of various sensors, cameras, weapons, etc. They are electromechanical systems developed to ensure that the camera, radar or any other equipment integrated on it moves stably, in the desired axis and at the desired angular speed. Our products are designed in accordance with the angular axis sensitivities of the users and the needs of the structure to be integrated on it.



**GSPT 1030** 







The GSPT control and routing system series we have developed and produced has original software and can communicate over all protocols. At the same time, with its unique mechanical design, it can lift high weights with low body weight. The GSPT control and routing system series, which has unlimited rotation possibilities, can operate at very low decibels thanks to the electromechanical components used in it and maintain its stable values in terms of heating while working uninterruptedly. In the 40120 L model, the system allows the use of multiple payloads. The 40120 L model, which produces 120 Nm of torque, can carry a payload of up to 50 kg thanks to its strong body.



In our Dual model, which can lift high weights with low body weight with its unique mechanical design, another control and routing system can be integrated on the system with the spindle support, and thanks to the software integration we will make, two connected control and routing systems can be managed from a single screen. This model can be used in radar optic integration in low air defense and detection systems.

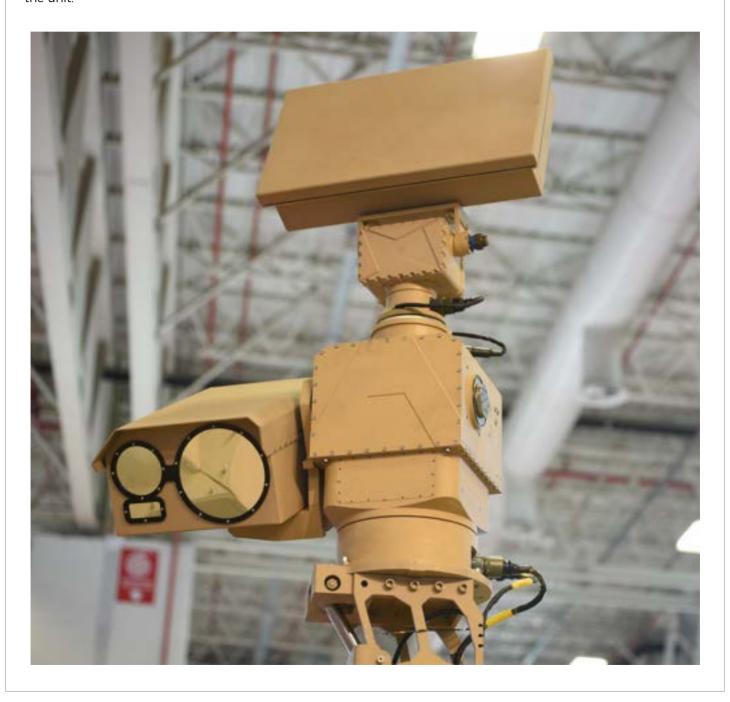




**GSPT DUAL** 



The outstanding feature of the Dual-K control and steering unit is that it has a 35 mm diameter cavity inside the body. It includes an external cabling and mechanical assembly line transition feature within the unit.



### GSPT ONIKS



GSPT-Oniks is a routing system capable of moving payloads (EO equipment, laser equipment) in two axes with internal stabilisation sensors. It is the first equipment in the world to be equipped with an optical cleaning option. Optical lens cleaning on the payload is carried out by compressed air and liquid spraying. The cleaning option is adaptable to sea and land working environments. Thanks to its all-aluminium body, it is both light and robust. The system, which can be integrated into sea and land vehicles, can operate by maintaining its sensitivity even in the most difficult environmental conditions.



Penta provides five axis control and orientation. The optics placed on the ears provide the opportunity to follow the two optics on the same point according to the range by making boresight electronically in the space of space.





**GSPT PENTA** 

# GÜRDESAN

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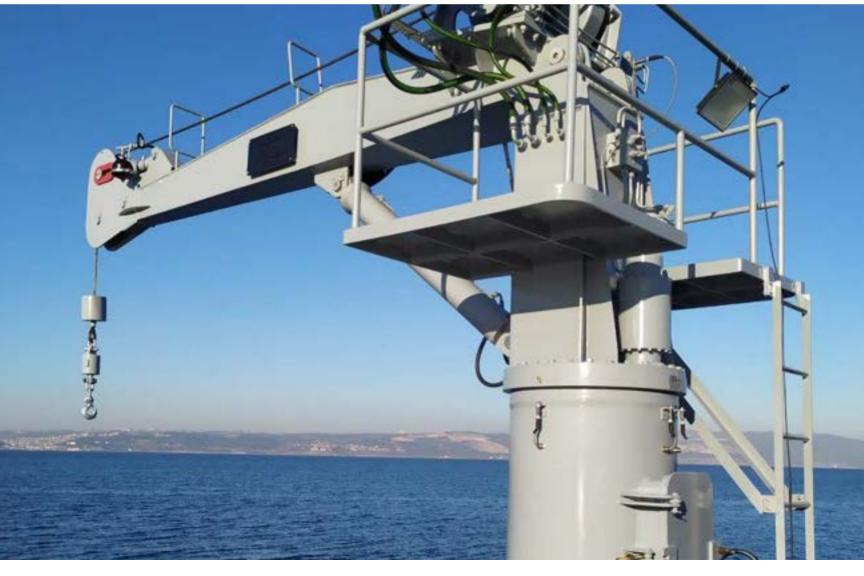
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### **A-TYPE BOAT DAVIT**



## HEAVY MACHINE GUN PLATFORM





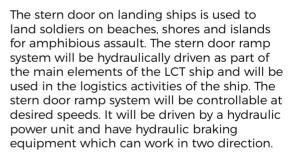
This will work as a part of the ship and can be used for launching and retrieving the boat from the sea.



It is a platform produced for the connection of the heavy machine gun used on the ship to the deck.

#### GURDESAN

These are covers that enable the warehouse section to be closed in order to prevent the cargo used in cargo ships from being affected by weather and sea events during their shipment.





**HATCH COVER** 





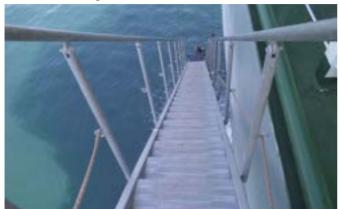
THE STERN DOOR



### rk ki

### **ACCOMODATION LADDER**

A type of ladder that allows entering and exiting a ship by being lowered from the side, which can be lowered or raised according to sea level and can be tilted inside.





### **BRACKETS (A),(I)**

Support elements used in the ship's propulsion and maneuvering systems.





### **SUBMARINE INTERIOR BLOCKS**

In the construction and assembly activities of the submarine, welding works and joining/pre-welding operations of the plates forming the submarine hull/belt.





### THE BOAT WINCH

The Boat winch will be used to take the boat from the sea to the ship or launch it from the ship to the sea.



### 林林

### **ANCHOR WINDLASSES**

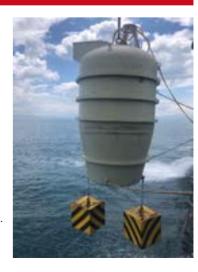
Anchor windlasses will work as a part of the mooring equipment and can also be used in rope maneuvering through their lighthouses.





### **DIVING BELL**

It is a capsule that is clamped to the hull of the sunken submarine by a crane from a rescue ship in the pressure chamber. It does not have the ability to move on its own, it can only move as much as the movement of the ship it is connected to or the arm of the lowering crane via telephone communication.



#### **SEA SUPPLY WINDLASS**



It will be used in supply operations on the ship's side. Sea Supply windlasses will have horizontal warping end. The power and transmission units of the Sea Supply windlasses will be placed on the deck. The electric motor of the Sea Supply windlass will be single-speed, its speed will be controllable without interruption and it will be both directionally operable.



#### **RUDDER SYSTEM**



Rudder System is the equipment used for maneuvering ships. These are the mechanical parts other than the electro-hydraulic control system called the rudder system. It may vary from ship to ship, but military ships have a double rudder system. Rudder System consists of 2 full suspension type rudder ranges, 2 rudder shafts, 2 rudder bodies, 2 upper bodies, bearings and sealing elements to be found in the tiller room for each rudder range.



**GURDESAN** 

Safe operation is ensured through load control and angle controls. While provides more working space on the deck with its telescopic opening boom crane, it is designed and manufactured to take up minimum space when closed.



ELECTRO - HYDRAULIC TELESCOPIC CRANE





- Chain stoppers are equipment used to take the chain load on the windlass after operation.
- Deck hawse are equipment placed on the ship to deflect the ropes used for connection with the shore and prevent damage to the ship's structure.
- These are parts used to safely change the direction of the rope during rope operations on ships.
- Ropes are used to prevent ships from drifting when connecting them to land or other sea vehicles. It is used for the fastening of these ropes on the ship. It is also used for storage purposes.

**DECK EQUIPMENT** 



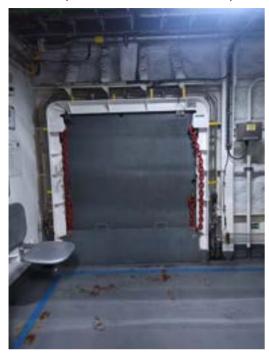
### HYDRAULIC SUBMERSIBLE COVERS

rk) k)

### **HYDRAULIC POWER UNIT**

rk ki

It will be used to take diver personnel from the sea to the ship/launch them from the ship to the sea.





It is the complex part in hydraulic systems that provides the hydraulic energy needed by the system.

#### GURDESAN

It is an equipment consisting of pipes, rods and sealing elements that operate on hydraulic power and are used to push and pull the material (product).



**HYDRAULIC PISTON** 



Jack up platform or jackup barge is a type of mobile platform consisting of several moving legs with the ability to stabilize its hull above the sea. The rising body allows the unit and all connected machines to be moved to the desired location. With the help of the hydraulic power unit and pistons, the hull rises above sea level supported by the sea bed. Jackup barge legs are designed to penetrate the sea bed. Usually jackup barge is not self-propelled and tugs are used for transportation.



**JACK - UP BARGE** 



### **CAVITATION TUNNEL**



## STERN DISPOSAL BOAT DAVIT





This system is aimed to carry out the necessary tests to ensure that the propeller systems of water vehicles operate quieter and faster and to reduce the physical damage caused to the propeller by the formation of steam bubbles.



It will work as a part of the Ship and can be used for launching and retrieving the Boat from the sea.

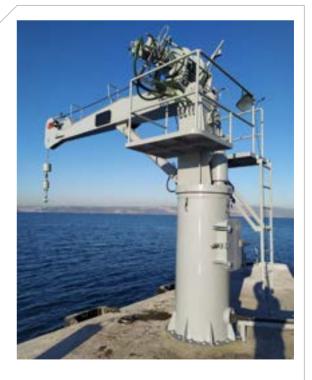
#### GURDESAN

Maneuvering windlasses can be used in rope maneuvering through their warping end. Maneuvering windlasses have vertical warping end. The power and transmission units of the maneuvering windlasses are located below deck. The electric motor of the maneuvering windlass is double-speed, its speed can be controlled without interruption and it can work both direction.



MANEUVERING WINDLASS





It will work as a part of the Ship and can be used for launching and retrieving the Boat from the sea.

**RHIP BOAT CRANE** 





# **SCROLL PUMP**

It is a generator connected equipment used in hydroelectric power plants.





# SECTION 50 TORPEDO HEAD BLOCK

The stem containing the submarine torpedo tubes (section 50)





# **SERVICE CRANE**

Systems that work as a single mast on ships and are used to load or unload all kinds of cargo with the help of hooks at the end.





## **SPANWIRE WINCH**

The Spanwire winch on the military ship has been modernized in accordance with today's technology.





## **STERN TUBE ORKOT**

It is the place at the stern of the ship through which the propeller shaft passes and is filled with oil and prevents sea water from entering the engine room thanks to the seal rings on both sides.





# STEYC CRANE HUMAN TRANSPORT

The Electro-Hydraulic Service Crane will operate as a part of the Logistics Support Ship rescue equipment and can be used for launching and retrieving cargo on deck and for human handling in the rescue operation. The Electro-Hydraulic Service Crane will be capable of operating at high and normal speeds. The two-directional crane will be driven by an electro-hydraulic power unit and has hydraulic braking equipment.



# UNDERWATER AND SURFACE SHIP PROPELLER

rdy, dy

It consists of blades placed on a rotating shaft and given a suitable aerodynamic or hydrodynamic shape; A tool made of aluminum bronze (CU4) or stainless steel material that provides pushing or pulling power.





## **SHAFT**





It is a very important transmission organ that transfers the rotational motion it receives from the engine to the propeller. They are made entirely of stainless steel or forged steel. These shafts, which come in different lengths and diameters, are long cylindrical rods (shafts) as we know them.

#### **GURDESAN**

These are the equipment used to securely fix the tanks and land vehicles on board the landing ships to the ship during sea navigation in order to transport them from sea to land.



TANK-VEHICLE
MARINE TETHER KIT





It will work as a part of the Ship and can be used for launching and retrieving the Boat from the sea.

**CEILING TYPE VEHICLE DAVIT** 



## **BOAT DAVIT**



### **AFT WINDLASSES**





It is a system designed to take the boat from the location on the ship to the sea and/or to take it from the sea to the location designed for the vehicle on the ship.



These will operate as part of the maneuvering equipment of the LCT ship. They will also be used in rope maneuvering via the warping end. For this purpose, there will be a drum and two warping end on the windlass.

#### GURDESAN

It will work as a part of the Ship and can be used for launching and retrieving the Boat from the sea.



**SIDE LOWERING DAVIT** 





Anchor windlasses will work as part of the anchoring equipment and can also be used in rope maneuvering via their warping end.

CHAIN AND MANOEUVRING WINDLASS



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ADVENT is a new generation Combat Management System that responds to the needs of a force-oriented, network-enabled operational approach rather than a single ship. It is possible to access to tactical data link (Link 11, Link 16 and Link 22, SIMPLE, JREAP and VMF) functions fully integrated with ADVENT through all operator consoles. With its decision support systems ADVENT has an architecture that facilitates the speed and correct decision-making process of its user and provides flexible structure in the use of new weapons and sensors. It has been developed in a modular structure that fits in multi-task profiles and other platform types. ADVENT is a platform independent system. With its scalable open architecture structure; ADVENT can be adapt to surface, underwater and air platforms and land facilities.



# **ADVENT MARTI**





Armed forces and security forces require aerial platforms equipped with special mission devices to prevent incidents. ADVENT MARTI is a high technology air command and control system that improves intelligence, reconnaissance, surveillance capabilities and helps fight against drug trafficking, migrant smuggling, trafficking in human beings, ship hijacking. NATO compatible ADVENT MARTI can operate independently from the aircraft types. It includes features that can carry out many activities together on air, sea and land. ADVENT MARTI analyses the data from the sensors on the aircraft for air platforms and compares them with other intelligence data. It creates an operation field image with the combined data. Also, additional privacy measures can be applied to the system, which provides opportunities for data communication.









# HAVELSAN AGES / F-16 VMT

HAVELSAN F-16 Virtual Maintenance Trainer (VMT) is a software and hardware system that allows the development of capabilities of F-16 maintenance technicians to train the System Operation Controls (OpsChck-Operational Checkouts) in the most realistic environment and to detect and interfere any possible problems that may arise on the aircraft (FI-Fault Isolation).









Ethernet switch can meet the needs of high-speed network and redundant data with customizable structure according to many platforms' need. It is designed to withstand harsh climates, changing temperatures and power drops, shock and vibration, and other challenging conditions without sacrificing performance.









# **HAVELSAN ANTI-DRONE SYSTEM**

The system designed to detect and neutralize UAVs in a variety of environments, including urban areas, critical infrastructure facilities, and military installations. It uses a combination of advanced sensors, software, and jamming technology to detect and disrupt drone operations, preventing them from reaching their targets.







ASGER is Mixed Reality (MR) based C4I product family for Navy, Air, Land Forces and Common Operational Picture (COP) C4I systems.



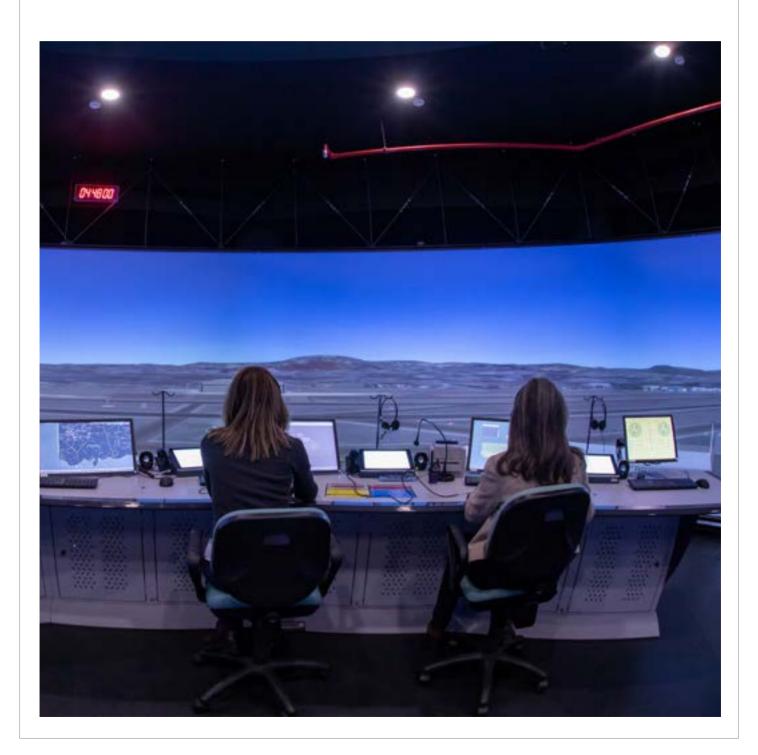






# ATCTRSIM

Air Traffic Control Training Simulator atcTRsim developed for controllers to be prepared for all kinds of situations. With its reliable, scalable and configurable structure, it is ready to train Air Traffic Controllers of all levels from all over the world. HAVELSAN atcTRsim is a complete simulator that meets all levels of training from beginner to expert level. HAVELSAN atcTRsim consists of 4 main components: tower control simulator, radar simulator, pilot role simulator and exercise station.



# 







HAVELSAN has developed Shooting Simulator, which can enable security forces and law enforcement forces to gain experience using weapons in a safe environment with realistic training scenarios. Offering a realistic sense of shooting, Shooting Simulator is a cost-effective solution that allows users to receive training in a repeatable and safe environment in a short time without using ammunition. Designed to provide basic shooting training in the classroom, the Shooting Simulator is equipped with the necessary architecture to enable shooters to develop basic shooting skills and fulfil their tactical tasks. Apart from individual personnel training, the simulator, in which gunners can be trained in groups with realistic interactive scenarios, has various functions such as Basic Training, Interactive Video Tutorial, Virtual Combat Trainer, While the Shooting Training Simulator offers interactive individual or team training in user-definable virtual environments against virtual players or targets, it can provide training with weapons with recoil or recoilless weapons.







BAHA is an Autonomous Sub-Cloud UAV that can perform joint operations with all unmanned systems with its vertical landing and take-off capability, fully autonomous mission capability, modular architecture that allows the integration of different payloads and many more superior features.



# PEACE EAGLE PROJECT





PEACE EAGLE Project has the scope of providing Airborne Early Warning and Control (AEW&C) capabilities constituting a C4ISR System for the Turkish Air Forces. This system consisted of four AEW&C Aircraft in the Airborne Segment and one Ground Support Segment. HAVELSAN played a crucial role in PEACE EAGLE Project by leveraging its expertise in command and control, intelligence, surveillance, and reconnaissance systems. They contributed by developing the major parts of the mission computing software for the airborne segment and provided a turn key solution in design, development, and delivery of the ground support segment.



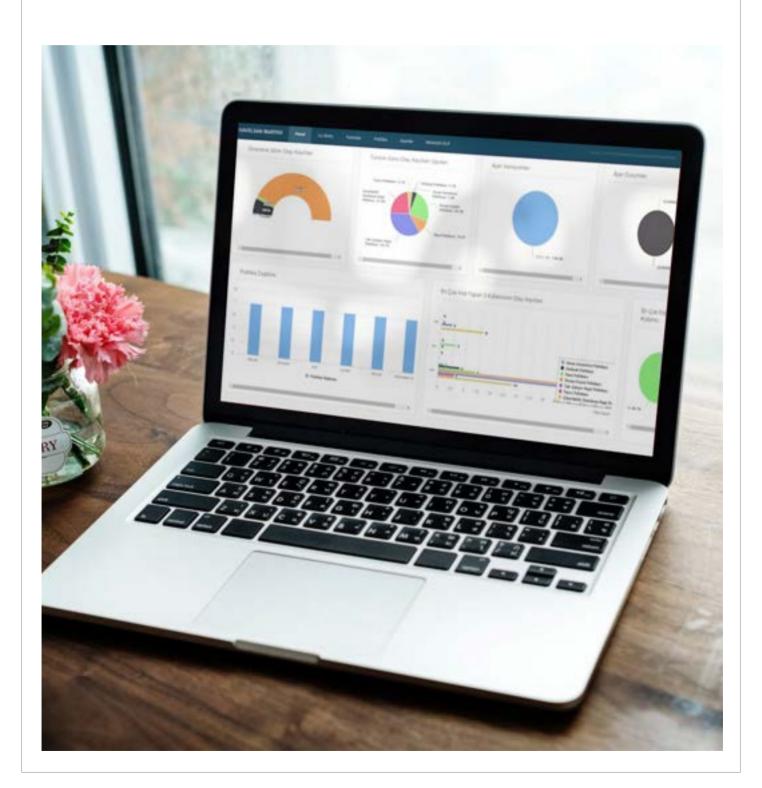




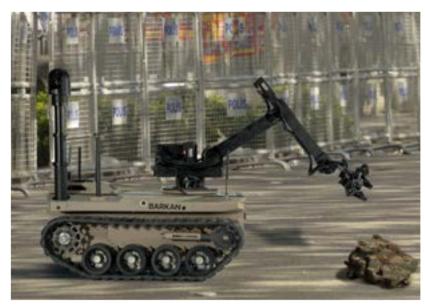




HAVELSAN DLP is a Data Leakage Prevention product that has been developed by HAVELSAN engineers in order to use corporate data in accordance with the determined blocking rules and to prevent unauthorized removal or leakage outside the organization.







HAVELSAN designed and produced BARKAN in response to the needs of the modern combat field. The BARKAN is an important assistant for field personnel in many areas, especially in increasing the success of the operation, preventing losses and reducing operation costs. With its remote control and autonomous mission capabilities in the operation areas of the future, the BARKAN will be a close companion of the military units. Thanks to BARKAN's swarm infrastructure, joint operations with other land and air vehicles will be possible from a single center. The BARKAN can be used in multi-purpose missions thanks to its superior autonomous features and its modular design in which different payloads can be integrated. It has been developed for tasks such as carrying or towing cargo, providing close protection, and armed reconnaissance.



BARKAN 2 can vercome difficult terrain and harsh weather conditions, along with eliminating asymmetric treats against security forces. It can perform a groundbreaking performance in high-risk military tasks, and can increase combat effectiveness. BARKAN 2 can provide advance security by protecting both homeland and abroad. With its modular structure, state-of-the-art payload options and advanced autonomous features, BARKAN 2 can easily perform different tasks such as assault with different types of weapons, carrying equipment, casualty transfer, bomb disposal, surveillance and reconnaissance and war damage assessment. BARKAN 2, an important member of HAVELSAN Digital Troop concept, can perform joint operations with other autonomous vehicles with its Swarm Infrastructure.



**BARKAN 2** 



## **DATAFLOWX**



DATAFLOWX is a New Generation Data Diode developed in a modular structure to meet the data transfer needs of defence, security, energy, distribution networks, financial institutions and institutions and businesses with isolated networks containing critical data.





Submarine Diving Simulator which simulates T.C. U209 PREVEZE / GÜR class submarines in the inventory of the Naval Forces Command, have been designed and manufactured in order to complete the preparatory and periodic training of diving cabin crew without using the submarine.

**HAVELSAN SUBMARINE DIVING SIMULATOR (SDS)** 









HAVELSAN Submarine Data Distribution System (DBDS), a member of the HAVELSAN Platform Data Distribution Systems (PVDS) family, is designed to operate smoothly under any environmental condition of a submarine. HAVELSAN DBDS, a redundant and reliable system, provides 24/7 warfighting readiness and increases navigational safety.





With the developing technology, the nature of war has changed and threats have increased in number and variety. Against these threats, robotic and autonomous systems will act as the main force multiplier on the battlefield and directly affect the success of the operation. **HAVELSAN** Digital Troops elements BAHA UAV. BARKAN. BARKAN 2, KAPGAN UGV are superior to their competitors in various technologies. Additionally, SANCAR Armed Unmanned Surface Vehicle (AUSV) has been developed by HAVELSAN with the partnership of Onuk Shipyard to comply with the modern navy's requirements.





**DIGITAL TROOPS** 



# **DİYALOG**





DİYALOG is a Video Conference System that is easy to set up and manage and provides secure and high quality video and audio meetings. Diyalog is browser-based and meetings can be easily accessed from all platforms, including mobile devices with iOS and Android operating systems.



Rotary Wing Simulator is a turn-key integrated solution based on modern aviation school philosophy for the purpose of supporting the training of pilots and flight technicians. There are various synthetic training devices and supporting equipment such as Full and/or Partial Mission Simulators, Tactical Control Center, Computer-Based Training Rooms and Debriefing Systems, Training Management and Information Systems at the Training Centers.

HAVELSAN ROTARY WING SIMULATOR TRAINING CENTER







DRIVE is a secure file storage and sharing platform. This platform automatically backs up the corporate data of companies and all document and media files (photo. video and audio files) of end users. These documents can be accessed and shared via mobile (devices with iOS and Android operating systems) and web browsers within the scope of collaboration groups and authorizations. HAVELSAN DRIVE is a system that supports Cloud Technologies, which provides secure, fast and easy access from all over the world, offers the opportunity to edit Office documents and prevents any files from being damaged by any kind of virus thanks to its file management system.





The use of simulators in flight training helps pilots to be prepared for risky situations without existence of real threat. In a simulated flight, pilots have the flexibility to make mistakes when it is not possible to survive in the real world. Simulating to identify, evaluate, and mitigate risk helps to learn how to avoid danger. In general, flight training with the simulator is the most practical and safe way to train emergency procedures in a lowstress environment. Well-trained personnel is the most prominent operation factor in today's hybrid operation environment. As the producer of simulators of platforms in service of many armed forces. HAVELSAN provides custom-made training services in order to conduct individual, crew and tactical trainings in a cost-effective way and meet the training needs of other combat function areas.



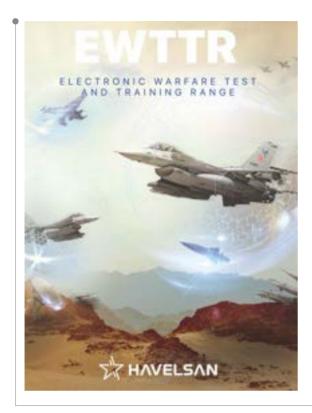
**TRAINING SERVICES** 



# **EWTTR**







EWTTR provides Electronic Warfare Training for pilots and aircraft in an integrated, fully instrumented and real-like threat environment. Designed entirely by HAVELSAN using its original engineering capabilities, the system provides turnkey solutions for electronic Warfare Testing and Training. This enables pilots to work and implement operational scenarios.



Integrated Border Security System represents a state-of-theart technological solution that encompasses an array of advanced features aimed at fortifying border security. This comprehensive system is specifically designed to address the multifaceted challenges encountered by border security forces worldwide, encompassing crucial aspects such as surveillance, detection, and response.

**INTEGRATED BORDER SECURITY SYSTEM** 





ETE3 is an application developed by HAVELSAN for the computer-assisted planning, management and execution of all JWTC (Joint Warfare Training Center) activities. It enables users to execute all JWTC activities in an integrated manner. ETE3 is a webbased, end-to-end solution for the collaborative planning, monitoring and execution and after-action review of training activities.





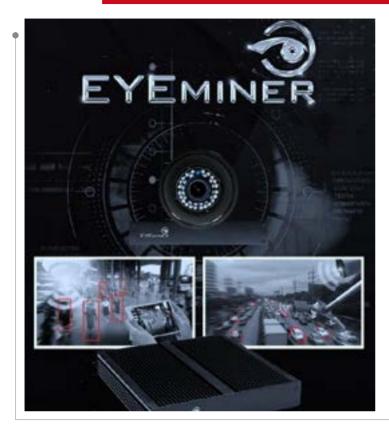
EVRAKA is a web based, easily configurable electronic and mobile signature supported "Electronic Document Management System" which enables institutions to produce documents in accordance with internal guidelines and regulations and to manage all processes from production to liquidation of documents.





## **EYEMINER**





EYEMINER is designed for data retrieval from imaging systems. It is a hardware independent, artificial intelligence supported simultaneous video analysis system that analyzes the images being accessed from the field.



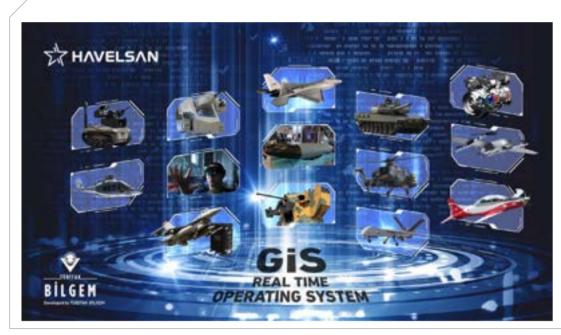
HAVELSAN Ship Data Distribution System (GVDS), a member of the HAVELSAN Platform Data Distribution Systems (PVDS) family, is designed to operate with full performance under any environmental condition of surface platforms. HAVELSAN GVDS, a redundant and reliable system, is developed for use on large, medium and small-sized warships with its 24/7 warfighting readiness and is a key system for the integration of ship systems.

**GVDS** 



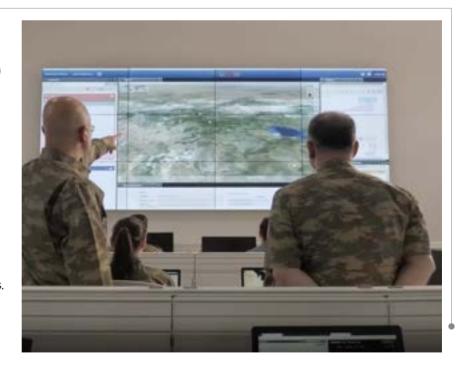






Developed by HAVELSAN and TÜBİTAK BİLGEM, the Real-Time Operating System (GIS) is developed to be adaptable to different processor architectures and hardware configurations. The GIS. which has a layered structure, can easily be ported on many platforms by adapting the hardware abstraction layers, i.e., **Architecture Support** Package (ASP) and **Board Support Package** (BSP), to different architectures and hardware configurations.

HAVELSAN, by combining its vast knowledge and know-how with the most advanced technologies in C2IS field, has developed its DOOB (Defence Out of a Box) product family as an expandable joint C2IS for use by the Armed Forces in its basic war and resource management activities. DOOB Joint Command and Control Information System has been developed for dynamic planning, management, performance and assessment of the operations and tasks at all (strategical, operative and tactical) command echelons. With HAVELSAN DOOB Product Family, which are DOOB -HEADQUARTER, DOOB -TACTICAL BATTLE MANAGMENT SYSTEM and DOOB -MOBILE for different levels of command, it will be easier to make decisions according to changing conditions, to manage military operations successfully and minimize military casualties.





**DOOB** 



# **HARMONI**





HARMONİ is an integrated loT platform that enables the measurement, monitoring, analysis, visualization, and interpretation of data collected from all network-connected devices in the field. It is designed to play an active role in transforming the data generated in many areas into added value and also the managing of the data.



ARTS is a computer based classroom system that can train group of up to 30 trainee Forward Observers Personnel for aircraft recognition and identification. The system designed in detail and provides necessary training for trainees within the every environmental scenario. HAVELSAN ARTS ensures more trained personnel with its special features.

**ARTS** 



# PLATFORM AND COMBAT SYSTEM INTEGRATION SERVICES



HAVELSAN has significant experience in the integration of weapon and sensor systems produced by different manufacturers of different countries with the combat management system, as well as in the integration of the combat system as a whole to the platform. HAVELSAN develops and implements platform-specific solutions and carries out critical processes in the platform integration projects by providing the necessary technical support to main contractors, shipyards and industrial partners within the scope of planning, design, assembly, integration, testing, training, documentation and integrated logistics support services with guarantee delivery of combat system on time and cost. HAVELSAN provides high quality solutions within the scope of system.





Capable of automatic ammunition firing scoring using certain sensors under various environmental conditions, the Video Ammunitions Scoring System (HMUSS) performs scoring of ammunitions based on a standard measurement capability. This in turn makes training assessments more unbiased, objective and reliable.





**HMUSS** 

## WAF





# **KAPGAN**



Is a new generation Web Application Firewall / Load Balancer product that provides load balancing features at the application layer for high-traffic networks and can detect and block attacks on web applications that are at the center of cyber attacks.





KAPGAN is an Autonomous Heavy Class UGV designed to accompany troops in different missions with its high maneuverability, especially in harsh environmental conditions. In addition to cutting edge payload options for different functions such as the Upgradable Perimeter Surveillance System, the integrated 30 mm Gun with an effective range of 2 km provides high deterrence at low volume with its armor-piercing feature against land and air targets in the field.



**HAVELSAN** 

KAŞİF is a Geographic Information System that provides mapping, visualization and location-based analysis services for all defense and IT projects / products. HAVELSAN KAŞİF can be easily adapted to development environments.



KAŞİF





CBRN MENTOR is an integrated information system that enables the automation of all processes for carrying out intervention and postevent improvement activities starting from the preparation stage before the CBRN event. It also includes HAVELSAN CBRN BRIDGE and HAVELSAN CBRN NEWS, which is the reporting and warning application of CBRN. The systems provide real-time integration and monitoring with detection and diagnostic systems that can operate both individually and together in a fully integrated manner.

**CBRN MENTOR** 



## **SNIPER SIMULATOR**





HAVELSAN has developed the Sniper Simulator, which can enable snipers to gain realistic training scenarios, shooting and binocular experience in a safe environment. Sniper Simulator; allows users to receive training in a repeatable and safe environment in a short amount of time. It is also a cost effective solution that increases the level of planning and mission preparation.

# **KOVAN**





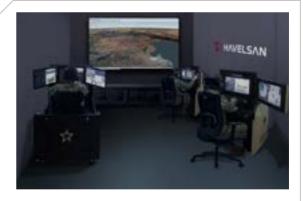
KOVAN is a New Generation Business Management System developed for public institutions, military institutions and the private sector, where internal business processes are provided in a reliable, easy and traceable manner under an integrated system.



#### **HAVELSAN**



LİMAN is a management system that enables central management of all components in Information Technologies (IT) processes remotely; with stable, secure and expandable methods.



M60 Tank Simulator developed to provide tank crews with individual, crew and unit training. It is a compact, portable and easily deployable system. The M60 Desktop Tank Simulator consists of three consoles designed separately for the commander, gunner and driver. Trainees can receive individual training on the consoles with pre-defined scenarios relating to their duties, crew training with the integrated use of three consoles in the same scenario, and unit training with the integrated use of more than one Desktop Simulator.

LİMAN



**M60 TANK SIMULATOR** 



#### **MATRA CSS**



## **MATRA VTS**



MATRA CSS is developed by HAVELSAN with its advance technologies. It aims to provide situational awareness with radar coating for the countries' coastal and territorial waters to create the Recognized Maritime Picture by supporting data from electro-optic sensors, Public Institutions and/or other organizations. MATRA CSS also increases the effectiveness of search and rescue, outpost and reconnoitering activities. MATRA CSS is ready to improve the safety of the coast.





MATRA VTS is an advanced surveillance solution specifically designed for maritime environments. Developed by HAVELSAN, the VTS system provides comprehensive monitoring and management capabilities for maritime traffic, ensuring safe and efficient navigation in busy waterways. With the primary objective of enhancing situational awareness, the MATRA VTS solution combines cutting-edge technologies and robust software applications. By integrating data from various sources, including radar systems, Automatic Identification System (AIS) receivers, and CCTV cameras, the VTS system offers real-time visualization of vessel movements, accurate tracking, and identification of ships, and early detection of potential risks or collisions.



**HAVELSAN** 



HAVELSAN Training, Simulation and Test Center for Combat in Residential Areas is an integrated training center that allows training to be conducted in real and simulated residential areas, virtual simulators and armed conflict simulations. HAVELSAN combines its high knowledge in the field of simulation and training systems with current technologies to provide realistic presentation of the environment of the residential area, management, execution and evaluation of the training by means of simulation systems that the Armed Forces will use in the scope of basic training to combat hostile elements in the residential area.



With the HAVELSAN Tactical Environment Simulation, the behavior of virtual land, air and sea platforms, which can perform the defensive and offensive tasks required for the tactical training of the simulators belonging to the combat platforms, can be modeled and thus, the necessary tactical environments for the simulators can be provided. With the system, simulator users can carry out its comprehensive tactical and operational training in a safe environment, using all kinds of warfare equipment (weapons, sensors, countermeasures, electronic warfare, communication and link systems, etc.) without risk and cost effectively. Similarly, during the development of combat platforms; analysis and verification activities, which are expected to be very costly and risky in analysis, design and testing stages; can be carried out cost-effectively and safely with Tactical Environment Simulation.

# RESIDENTIAL TRAINING CENTRE





# TACTICAL ENVIRONMENT SIMULATION



#### **ODAK**



# **OMTAS / UMTAS**



ODAK Database Management Platform consists of management and configuration components positioned on open-source technologies. ODAK is designed for the conversion and management of databases to the open source database PostgreSQL, and is offered with an integrated software and hardware license model. The platform provides reference architectures related to installation, replication between databases, backup, and security approaches in customized database processes and provides corporate solutions.

ODAK is a DBaaS platform that is performance-oriented, scalable in corporate structures, easy to manage, and it eliminates license dependencies.

OMTAS is a medium-range (200 – 4000 m) anti-tank weapon system, effective against armored threats on the battlefield. Its Imaging Infrared Seeker, permits its use during day & night and in adverse weather conditions. Can be used from its own tripod or integrated onto land platforms with open or closed turrets. UMTAS & L-UMTAS is a long-range (500 – 8000 m) anti-tank precision-guided missile system that has been developed for use primarily on attack helicopters.







**HAVELSAN** 



ORBIT is a platform-independent video management system that enables all imaging and recording systems in the field to operate under a single roof and in an integrated manner, within user authorizations.

Parachute Simulator is a cost effective solution that offers users training in a repeatable and safe environment in a short time, increases the level of planning and task preparation, and reduces the number of actual jumps with individual and group jumps. The system allows vital skills to be developed in real-time, accompanied by trainers, under a wide range of weather conditions. It provides preparation for the mission in a high resolution database and virtual reality environment and aims to increase the real performance of the user.

**ORBIT** 

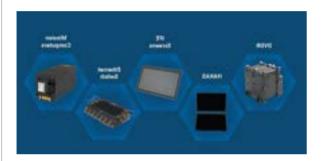


PARACHUTE SIMULATOR



# SIMULATION, AUTONOMOUS AND PLATFORM MANAGEMENT TECHNOLOGIES

Simulation, Autonomous and Platform Management Technologies offer advanced technology platform management systems that have proven to be efficient for land, air, underwater and surface platforms for military and civil needs. Digital Video and Data Recorder (DVDR), Ethernet Switch, Helicopter Search and Rescue and Terrain Awareness System (HAKAS) and IFE Screens are some of the systems that carry the platforms performance to next scale.

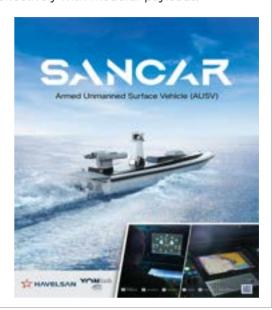


## **SANCAR**

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Developed to autonomously fulfill the duties of harbor/base protection, search/rescue, intelligence, reconnaissance, surveillance, patrol, surface warfare, mine countermeasures, SANCAR AUSV minimizes the risks for human life and it enables many tasks to be carried out more cost-effectively with modular payloads.





**HAVELSAN** 



HAVELSAN offers advanced solutions and products for the civil aviation sector. These solutions enable pilots, air traffic controllers, and other aviation professionals to practice and improve their skills in a safe, controlled environment. HAVELSAN's offerings include full-flight simulators, flight training devices and air traffic control simulators.

**CIVIL AVIATION** 





Swarm Commander is a portable system that ensures advanced control ability for unmanned vehicles and robotic systems. It has durable structure and is easy to transport. Swarm Commander provides high performance and wide range of customization in both software and hardware. Swarm Commander's advanced software allows the control of single and swarm based unmanned vehicles.



**SWARM COMMANDER** 



### **AFOS**



# **TORAKS**



Artillery Forward Observer Simulator is a computer-based classroom system able to train a group of up to 40 Forward Observers and Fire Direction Center Personnel simultaneously.

Toraks is a mobile system that contains all the features that modern torpedoes need. HAVELSAN TORAKS can be installed and integrated with any class of Submarine's Command and Control System. It provides all the firing management needs of a submarine and its operator.







#### **HAVELSAN**



HAVELSAN offers a comprehensive range of cuttingedge solutions in the field of wargaming. These technological advancements by HAVELSAN provide users with immersive and realistic experiences, enabling them to delve into various scenarios and effectively train or simulate real-world operations. The Armored Vehicle & Tank Simulator Systems comprise two modules that replicate the gunner and crew compartments, incorporating authentic controls, indicators, and other critical equipment. These modules faithfully recreate the immersive experience of operating armored vehicles and tanks, enabling trainees to become proficient in handling sophisticated controls and familiarizing themselves with essential devices found within these compartments.



ARMORED VEHICLE SIMULATOR



**WARGAMING** 



# HMS MAKINA

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**HMS Makina** specializes in precision manufacturing, offering an extensive range of complex parts and assemblies for a global portfolio of aerospace OEMs and their sub-tiers. Our comprehensive capabilities include machining, nondestructive testing (NDT), shot peening, chemical processing, painting, heat treatment, and assembly all under a single roof. All of our special processes are approved by major OEMs and NADCAP. HMS operates in its modern 25.000 m<sup>2</sup> production facility built on 35.260 m<sup>2</sup> ground; an additional same-size facility is also available for future expansions. It employs 550 highly skilled personnel, including 105 Engineers and 385 Technicians, working in 3 shifts.









**HMS** 

# HST OTOMOTIV

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#### **X200-4B TRANSMISSION**



### X200-4B



2,251 units were produced for the Turkish Armed Forces and 1,244 units for the Malaysian, Saudi Arabian, UAE and Philippine Armies. It is used in M113 APCs and GZPTs in the Turkish Armed Forces.

#### Features:

- Cross-drive, hydraulically controlled, automatic transmission.
- One gear pack combined with a hydraulic torque converter for the drive
- Hydrostatic pump and motor for steering system
- Integrated hydraulic brake system

It is used in Weapon Carrier Vehicles (STA) and Pedestal Mounted CİRİT (KMC) vehicles, which are still being taken into inventory.

#### Features

- Cross-drive, electronically controlled, automatic transmission.
- A gear pack combined with a hydraulic torque converter for the drive
- Hydrostatic pump and motor for steering system
- Integrated hydraulic brake system
- With a volume of less than 1 m3; it contains the features of Gear Box, Differential, Steering and Brake.

X200-4C



X200-4C TRANSMISSION

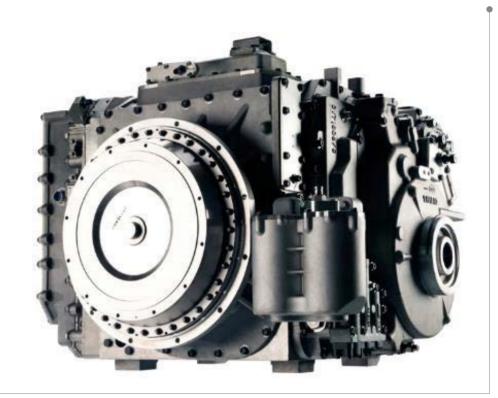




It is used in the vehicles of HİSAR-A, KORKUT, ZAHA systems in the inventory.

#### Features:

- Cross-drive, electronically controlled, automatic transmission
- A gear pack combined with a hydraulic torque converter for the drive
- Hydrostatic pump and motor for steering system
- Integrated hydraulic brake system
- Integrated fault detection
- Easy adaptation to multiple motors



Deliveries within the scope of the T-155 K/M Fırtına-II Fuselage Project continue. Features:

- Cross-drive, hydraulically controlled, automatic transmission
- Torque converter, 4 forward 2 reverse speed, hydraulic brake and hydrostatic controlled steering system
- Easy adaptation to multiple motors
- Integrated drive, steering and brake systems in one package
- Ease of use with minimal user training
- Easy integration into different motor options and flexible structure with modular design
- Optimised architecture for performance, high reliability, durability and minimum cost





X1100-5A4 TRANSMISSION



Company Short Name

HTR A.Ş.

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## ERISIS (EARLY WARNING SYSTEM)

شي

Intelligent alarm management is carried out with ERISIS Integrated Video Management and Analysis Software by integrating different types and brands of devices such as cameras, radar, acoustic sensors, etc.







### HTR PRECISION ROUTING UNIT (PAN TILT PLATFORM - PTP)



HTR Pan & Tilt Platform (PTP) is a sensitive positioning system. PTP has different configurations for different payloads (5, 10, 25, 50 kg). HTR PTP transforms the fixed camera into motion in pan and tilt positions with high sensitivity. It allows optical systems to track targets after motion detection.







HTR Keyboard is a more durable and high quality Pan & Tilt Platform control keyboard designed and produced by HTR. It is used as the Control Unit of ERISIS Video Management and Analysis Software.



IOT Gateway allows sensors and devices to connect to the cloud systems. It provides remote monitoring and control the devices with different communication protocols through its user interface.

**HTR KEYBOARD** 



**IOT GATEWAY** 





#### THE LASER IIIUMINATOR







Electronic and mechanical design and production was carried out in HTR facilities. It provides real-time data flow by communicating with ERISIS software via SNMP(Simple Network Managament Protocol) Communication Protocol.



**FIELD AUTOMATION CABINETS** 



#### **SEZGİ MOTION DETECTION SENSOR**



SEZGİ is able to detect and track human and vehicle targets in border and critical facility araes with high performance in harsh weaher conditions and without lighting. SEZGİ can detect and transmit the range, angle and speed information of multiple targets at the same time, adapt to changing environmental conditions and maintain this performance 7 / 24 without interruption. It can control a wide area due to its electronic scanning capability.







**SWIR CAMERA** 







#### **TANI ACCESS COTROL SYSTEM (ACS)**



Consists of Smart Card Readers and domestic and national TANI Access Control Software components develope by HTR. TANI ACS Software is a modular software that can effectively manage access control with its sub-modules and integration capability. System solutions that can be customized according to the different needs of military, public and private sector institutions and companies are provided with various smart card reader models.







**VNIR CAMERA** 



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## ATROX TACTIC SMOOTHBORE PUMP ACTION RIFLE

- · Working System: Pump Action
- · Caliber: 12 Ga/76 mm
- · Barrel: Processed from full material of 4140 steel
- Magazine Capacity: 7+1
- · Barrel Length: 46 cm
- · Trigger Weight: 2,7 kg







#### **OVIS B08 BOLT ACTION RIFLE**



- · Caliber: .308 (7,62x51 cm)
- Twist Rate: 1:12
- · Barrel: 4 Grooves
- Magazine Capacity: 5+1
- · Barrel Length: 66 cm
- · Trigger: Adjustable Trigger Lenght (0-10 mm),
- · Trigger Weight: (800-2000 gr)
- · Total Length: 131 cm (Max. With Adj. Stock)
- Weight: 4700 ± 100 gr. (Without Accessories And Ammo)



- Working System: Gas Operated
- · Caliber: 12 Ga/76 mm
- Barrel: Processed from full material of 4140 steel
- Magazine Capacity: 7+1
- · Barrel Length: 47 cm
- · Trigger Weight: 2,3 kg
- · Overall Length: 102 cm
- Total Weight: 3,6 kg





VEYRON TACTIC SMOOTHBORE SEMI-AUTOMATIC RIFLE

# **IDC SAVUNMA**

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IDC Savunma

Firma Ticari Unvanı

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IDC Defense Industry Inc. is a 100% Turkish Capital defense company working in the Turkish Defense Industry with National and NATO secret clearance degree for over 20 years dealing with CBRN issues. We are a registered supplier of Turkish Armed Forces, National Police, Disaster and Emergency Management Presidency and Presidency of Defence Industries. We continue our R&D and production development projects on CBRN in out Teknokent facility with expert engineer staff. Our company is also registered to NATO Source File, NSPA. We have different solution partners all over the world.







IDC



# İŞBİR ELEKTRİK

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#### **TACTICAL SILENT CABINET GENERATORS**

These generators, which have very low acoustic and thermal signature and therefore very difficult to detect, are generally used in critical command posts to operate electronic warfare systems and night vision systems. Tactical Silent Cabinet Generators manufactured by İŞBİR, which also allow energy supply to critical systems such as radar and missile systems, have become production-ready thanks to ASELSAN's technical and R&D support for İŞBİR JENERATÖR. The generators have been designed to meet the environmental conditions of MIL-STD 810G and the EMP requirements of MIL-STD 410F. They are available in a power range from 5 to 100 kW and as single or dual options. Projects Used: İhtar, Siper, Hisar O+, Koral, REDET, Gökberk, Gökdemir, Gürz, EİRS, STR, TASMUS, Alka, etc.







İŞBİR Elektrik Sanayi A.Ş. is one of the most important companies capable of designing and manufacturing special type alternators and generators as well as standard alternators and generators capable of meeting power requirements in the range of 10-2000 kVA, and providing after-sales service and maintenance support. The company is able to massproduce single-phase and three-phase standard synchronous alternators as well as water-cooled asynchronous alternators. Furthermore, the company's product portfolio includes 400 Hz military type dynamic frequency converters, variable speed alternators, wagon (1000V) and DC alternators as custommade alternators. The company has accelerated its studies on low and high speed alternators in recent years and plans to verify prototypes, then add them to its product portfolio in this context. All of these products can be combined with an internal combustion engine. They can also be converted into a generator and power unit using a panel manufactured in our company. The aforementioned alternators and generators are designed, manufactured and commissioned in accordance with military standards that can meet the power requirements of the systems in the inventory of the Turkish Armed Forces.



Military type mobile generators designed by İşbir, which are used to supply power during military operations in area conditions, are generator systems with towed trailer infrastructure that can be started and stopped quickly to meet the needs of military units with relocation capability, to support communication systems, to operate equipment and to provide energy in areas such as area hospitals. Military Type Mobile Generators designed by İşbir provide power for jamming systems, UAV Ground Control Systems and communication systems with quick-start and quick-stop capabilities, and offer uninterrupted duty with easy relocation of systems thanks to their quick installation capabilities. Projects Used: Baykar TB2, Akıncı İHA, Anka/Aksungur Mobile Power Supply, TASMUS, ADOP, İETT, Karayel İHA, etc.



MILITARY TYPE MOBILE GENERATORS



#### **MILITARY COMBINED GENERATORS**





Military combined generators are project-specific generators designed for military purposes. In addition to meeting the AC power needs of military units in the area, generators designed by İşbir are manufactured to provide multiple purposes such as air conditioning, ventilation, hydromechanical support and DC energy on a single platform for personnel support systems. Projects Used:AIC, MÇT

These are generator systems that can be transported in accordance with ISO Corner standards designed to meet the need for reliable power supply suitable for the mobility of systems with high energy consumption of 200kVA and above in area operations. The design of İşbir Military Type Power Containers is customised in accordance with the needs and operational requirements of the military units, and they are generator systems that can be customised in accordance with the environmental conditions of MIL-STD 810G and the EMP conditions of MIL-STD 410F with dual structure, control and transfer unit, aluminium switch panel. Projects Used: Teirs, Harbour **Support Generator** 



**MILITARY TYPE POWER CONTAINER** 





#### **MARINE GENERATORS**





Marine generators designed by İşbir in a modular structure specifically for marine vessels and ships perform various tasks such as meeting the ship's power needs, supporting hardware and communication systems, and lighting. As the uninterrupted duty of generators is crucial during military operations, military marine generators manufactured by İşbir are designed to withstand harsh conditions at sea. They include features such as leak-proof, vibration-resistant and resistance to high temperature fluctuations. The marine generators manufactured by İşbir are specially shielded to ensure a long service life against electromagnetic influences and to guarantee economical fuel consumption in long-term operations. It has integration functions that harmonise with other systems on the ship such as power management, data exchange and control systems. Projects Used: Milgem 1-5, New Type Patrol Boatsı, Tank Landing Ship, Offshore Patrol Vessel, etc.



2.25 kVA military type portable diesel generators designed and manufactured by İşbir, which meet the minor power requirements of the Airborne Early Warning and Control Systems controlling air defence activities by establishing a computer network between airborne objects in the tactical area, are also used in critical command posts such as military bases, to meet the emergency power requirements. İşbir's portable diesel generators, which can be carried manually by at least two personnel, have been developed in accordance with the environmental conditions of MIL-STD 810C and the EMP requirements of MIL-STD 410F. Projects Used:Herikks, HTR, EOS, TT, TUMSİS,etc.



PORTABLE DIESEL GENERATORS

# **KALE JET ENGINES**

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Kale Jet Engines





KTJ-1750 turbojet engine, which was developed in a short period of 2 years, started to be shipped to Roketsan for the Çakır Missile. Our KTJ-1750 turbojet engine successfully carried out the first flight tests of the Çakır missile, when it was fired from Baykar's UCAV Akıncı. This engine is optimized for light cruise missile needs, has a very high export potential, especially since it is not subject to export licenses and has a performance code to be verified in Kale Jet Engines internal altitude test system.





With our mission of achieving firsts, we developed Türkiye's first Turbojet Engine KTJ-3200, using domestic and national opportunities for the benefit of our country, and started mass production. With the experience and knowledge we gained from KTJ-3200, we continue to develop and produce New Turbine Engines in different sizes and features. Our KTJ-3200S and KTJ-3200A engines power the SOM and Atmaca Missiles. Our engines went into mass production. All production is carried out in Türkiye, and Kale Aero carries out most of the parts production.



# KALE PRATT & WHITNEY

Company Short Name

Kale Pratt & Whitney

"Kale Pratt & Whitney

Company Trade Name

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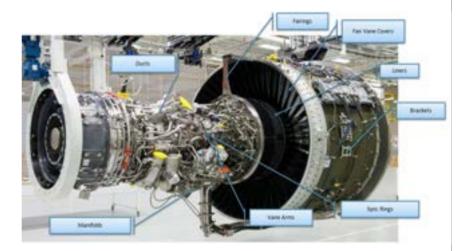
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www.kalepw.com

Kale Pratt & Whitney has a total of 16.250 m2 facilities in Aegean Free Zone; the company is one of the leading aviation companies in Türkiye and its facilities contain many special processes. The company was founded with a 51% Kale Group and 49% Pratt & Whitney partnership, its main field of activity is the manufacturing of aircraft engine parts and subassembly groups. The company started its manufacturing activities at the current plant on 2014. Our company's manufacturing technology includes new generation multi-axial machine tool, 5X Laser, cutting by Water Jet and Wire Erosion, Hydroform, Hot and Cold Forming, Mechanical



presses, Automatic TIG welding machine and Electron Beam Welding Machine, Plasma (HVOF) spray, all types of destructive and non-destructive testing methods, vacuum heat treatment furnace and super cleaning processes. With approximately 500 qualified employees, the company has a considerable experience in processing the titanium, aluminum, stainless steel and super alloys. Kale Pratt & Whitney manufactured many parts for F-135, including the engine of F-35, the most sophisticated fighter aircraft in the world until the end of 2021. Seperately F15 and F16 jet fighter engine (F100) parts are produced in the same facility. The manufacturing processes are among the most prestigious manufacturing technologies in Türkiye and Europe. Also in the same facility Pratt & Whitney new generation commercial engine NGPF parts are produced with the high technology. In addition to all these, company has started to be involved in new projects in line with the target of producing body and structural parts. Kale Pratt & Whitney confirms to AS-9100, which is the quality management standard required for companies that manufacture for aviation sector, and is subject to audits every year regularly. Kale Pratt also has ASQR-01, which is the aviation quality management system standard of UTC Group. Having made many investments in the field of Information Technologies, the company has met the security requirements of United States of America and obtained NIST 800-171 Compliance. It also obtained ISO/ IEC 27001 Information Security Management System certification. The company has also been awarded with OHSAS 18001 and ISO 14001 documents by offering a healthy and safe work environment for its employees.



### AIRCRAFT ENGINE AND AIRFRAME PARTS MANUFACTURING

# KALEKALIP

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KALEKALIP

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#### **KAGL40 AUTOMATIC GRENADE LAUNCHER**





The KAGL40 is a 40x53mm fully automatic, blowback operated, air cooled grenade machine gun. Armed forces worldwide require a universal fire support and force multiplier system, the KAGL40 is their solution. Initially developed for the Turkish Land Forces; the KAGL40 has been in use and gained acceptence in all branches of the Turkish Forces besides international domain. Thanks to its range and high rate of fire with the effective 40mm munitions, the KAGL40 is versatile and highly capable. The standardized mounting interface ensures the deployment from a tripod as an infantry weapon for engaging ground targets, or mounted on vehicles for mobile uses.

Is KALEKALIP's flagship rifle, engineered to deliver exceptional quality, performance under any conditions due to its rugged and battle proven design. It was designed to meet the needs of the Turkish security forces going beyond mil-spec, using the best available materials and production methods available with no corners cut. It features a self-regulating short stroke gas system allowing for unmatched reliability, Picatinny rails and MLOK interfaces for ultimate modularity and configuration ability, a high quality cold forged barrel for exceptional barrel life and an ergonomic design for ease of use allowing for rapid maneuvers in and out of combat. Adopted by forces around the globe along with becoming the Turkish Gendarmeries standard issue assault rifle, it boasts a modular design that will prove effective for years to come.



**KCR556 INFANTRY RIFLE** 

-



#### **KCR739 INFANTRY RIFLE**



Packing the punch of AK-47 7.62mm x 39 round, the KCR739 is the best of both worlds, sharing the proven design of the KCR556 package with its modularity and reliability. The KCR739 is a solution for all users of the AK type rifles allowing major modernization options. Having impressive parts compatibility with the KCR556 also allows for mission configurability between calibers, giving users the ability and freedom of selecting the best options for any given circumstance.



Big brother to the KCR556, the KCR762 is the candidate when the caliber 5.56 mm just isn't enough. Firing the full length 7.62x51mm NATO round from its proprietary magazine, the KCR762 is as powerful as it gets. Providing a variety of barrel lengths from 12.5" /14.4" to 16" and the rugged design of the KCR family, it is a versatile rifle with full length optics rails and MLOK interfaces allowing for any and all accessories to be utilized in the most effective way.



P. Strain

**KCR762 INFANTRY RIFLE** 



#### **KGL38 NON-LETHAL GRENADE LAUNCHER**





The KALEKALIP's KGL38mm is based on the same design principles and characteristics of the successful in-service and battlefield proven KGL40. It fires all types of 38mm less / non lethal and anti riot types of ammunition. The side loading single round barrel allows the quick and very user friendly reloading in any firing position. The KGL38 can be used as a standalone, hand held and shoulder supported weapon or attached to a rifle with a 1913 rail equipped forearm. Its modern interface allows the attachment of any sighting systems and accessories according to the user requirements.

The KGL40 is a universal grenade launcher filling in the role of both the m79 and the m203 grenade launchers in one modular and compact system. Designed for the 40x46mm grenade, it is effective against both unarmored or light armored area and point targets depending on the ammunition. The KGL is compatible with all 40x46mm LV grenades of any length such as: High explosive, Impulse, CS gas, Riot, Smoke, Guided, Dual purpose, Flare and many other types of munitions. The KGL40 was developed for use on both the KCR and MPT family of rifles; but it still retains the modularity to be attached as an underslung grenade launcher onto many standardized rifles. As a universal system, the KGL can also be carried and used as a stand-alone weapon with both a telescoping detachable stock or in pistol configuration by hand held.



**KGL40 UNDER BARREL GRENADE LAUNCHER** 









The KMR762 is a battle- ready designated marksman rifle built from the ground up for optimum reliability and performance. Guaranteeing an accuracy of 1.25 MOA and an effective range of 800 meters; the KMR is uniquely designed for maximum ergonomical performance for the operator having a clean and crisp trigger, a 60° selector, fully ambidextrous weapons controls and an adjustable cheek piece and butt pad on a telescopic stock. The KMR comes standard with a suppressor ready muzzle brake for faster target reacquisition and a regulated gas block for suppressor use allowing a more comfortable and reliable shooting experience. Modularity being one of KALEKALIP's key principles the KMR comes with different attachments and stock options for the specific user requirements as well as MLOK and picatinny rails for any and all accessory requirements.

Is a lightweight and compact belt fed machine gun, especially designed to be deployed mainly from the shoulder as an assault rifle when high fire power to the short and medium distance is required. It offers the proven and fielded design characteristics and principles of the KALEKALIP standard KMG with additional features and capabilities as a folding / telescopic buttstock, short receivers and various barrel options. It is the weapon of choice wherever high fire support is required in a lightweight compact envelope. The weapon can be deployed very comfortably from the shoulder, similar to an assault rifle due its light weight design and moderate recoil. Its grip pod provides an integrated bipod for the classical deployment as a machine gun for accurate target engagement at distance. Its high level of modularity allows the conversion to a standard machine gun by utilizing most of the parts from the standard KMG either in 556 or 762. The modern MLOK interface at 3-6-9 o'clock position allows the attachment of in-service accessories. When accuracy and distance is needed, the KMG556CL can be deployed in a stable supported mode from its bipod which is integrated in the front grip pod.



مشيارح

KMG556CL COMPACT LIGHT WEIGHT MACHINE GUN



#### **KMG556 MACHINE GUN**





Is KALEKALIP's take on what an LMG should be. This lightweight belt fed machine gun is adapted for user ergonomics in the best possible way with its adjustable cheek piece, telescopic stock, ambidextrous weapons controls and ability to both deploy on its integrated bipod and off the shoulder. The integrated hard points allow the deployment of the KMG from any inservice STANAG mount or field tripod. An advanced long-stroke gas piston system with proven endurance and reliability, the KMG will fire reliably under the most adverse conditions.

The new KMG762 and its variants is the consequent evolution of the proven KMG556 chambered in caliber 7.62mmx51 NATO. Wherever the firepower, engagement distance and penetration of the 7.62 mm round is required the KMG762 will be the weapon of choice. The characteristics and principles of operations as well handling and muscle memories are identical to the KMG556 due to the fact that it uses the same envelope as the KMG556. This principle quarantees the same user drills and ease of maintenance. The KMG762 is superior in handling and operation, due to the fact of its low weight, compactness and center point of balance.



**KMG762 MACHINE GUN** 





#### **KNG-C5 INFANTRY RIFLE**



Is KALEKALIP's new generation 5.56mm x 45 NATO caliber combat rifle with foldable butt stock. By taking the durability and accuracy of the KCR556 to the next level, it provides ease of transportation to the end user in narrow spaces such as urbanized terrain operations, inside armored vehicles and even guard duties. Even if the butt stock is folded, it is able to fire and thus it brings the firearm to a more compact size, which can be advantageous in various tactical situations. The KNG-C5 is one of the superior combat rifles of today and near future.





The KSR50 is a battle proven long range anti material rifle with a minimum accuracy of 1.5 MOA guaranteed. Designed for toughness, reliability and ease of maintenance it is a powerful rifle. With its match grade stainless steel barrel and precision machined components, the KSR50 incorporates all the features necessary to ensure a high level of accuracy and consistent cold shot performance in the harsh conditions.



**KSR50 BOLT ACTION SNIPER RIFLE** 

# KARDEMİR

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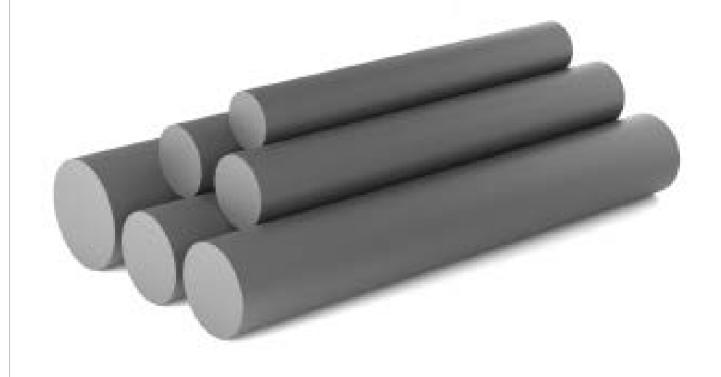




### FLAT ROUND / SPECIAL BAR QUALITY (SBQ)

The SBQ coil product serves as a raw material input for various industries based on specific quality groups. It is available in a nominal diameter range of 20-100 mm, conforming to Dimension Standard TS EN 10060 and Surface Quality Standard TS EN ISO 9443.

- •Medium and high carbon grades; in the machinery manufacturing sector.
- ·Alloy steels are used in the automotive, defense and machinery manufacturing sectors.





#### **KANGAL /WIRE ROD - GARRETS (BAR IN COILS)**



The coil product provides raw material supply to various industries based on specific quality groups, with a nominal diameter range of 5.5-56 mm. Türkiye's highest wire rod production is achieved by the company, setting a benchmark in the sector. Commercial and low carbon grades; construction industry

- ·High carbon grades; furniture industry ·Fastener grades; automotive, machine manufacturing, construction and rail systems ·Tire cord grades; automotive industry
- •PC grades; construction industry
- •Electrode and welding wire grades are used in the automotive, shipbuilding and machinery manufacturing industries.



Kardemir profile product is mainly used in the construction sector. Since we are the only heavy profile manufacturer in Türkiye, the profiles we produce are used extensively in mega projects and in the construction of industrial facilities. (Dimension Standart TS EN 10024/ Quality Standart TS EN 10025-1 / 2) ·I Profiles (160-500mm) ·IPE Profiles (120-600mm) ·HEA, HEB Profiles (120-500mm) ·NPU Profiles (120-400mm)





**PROFILE** 





Kardemir can produce platina products that can be used in our rail and profile rolling mill. In addition to our railway rail, heavy profile and mine fortification products, as a flat product substitute. The product can be produced in 25-80mm thickness from 205mm width to 520mm. Platina product is generally used in mold manufacturing in the machinery manufacturing industry. (Dimension Standard DIN 59200 TS 3061 ISO 9034 / Quality Standard EN 10025-1/2)





Türkiye's first and only railway rail manufacturer provides rail products up to 72 meters in length, supporting various rail system projects. These rails serve as essential infrastructure components for urban, highspeed, and intercity lines. Additionally, railway turnouts can be produced using these high-quality rails.



Railway wheel products are utilized in the maintenance of rail system vehicles, offering solutions for both freight and passenger wagons through six distinct types of wheels. Wheel set products are engineered for application in the production and maintenance of rail system vehicles, meeting the Quality Standard EN 13262+A2 and utilizing Steel Grades ER7 and ER8.





**RAILWAY WHEELS** 



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## **AD101 ALARM AND ANOUNCE SYSTEM**





## AD102 ALARM AND ANOUNCE SYSTEM







AD101 is an alarm and anounce system intended for military vessels. The system can fulfil diverse requirements and form variable configurations thanks to its modular structure. AD101 alarm and announce system, with its advanced features and integrated structure, perfectly meets the alarm and announce needs of the military vessels. The system can be integrated to the Karel brand military vessel PBXs and in case of need, through any of the phones of the vessel, alarm or announce can be given easily. The system can also be integrated to the user stations that are authorized via Communication Switching System.

# HAREL\* SIREN ON ALARM ALAR

AD102 alarm announce system is developed for small size boats such as patrol and coast Guard Boats. With its main and remote units it provides an easy usage. 7 Predefined Alarm Selection, Independent "Marine Alarm - SIREN" Alarm Button abilities are available.

### KAREL



AD103 is an alarm announce system that provides local announce and local alarm through User station. It has a structure that ensures making announcements by selecting region within the ship through Alarm Announcement Stations, initiating and stopping certain selected alarms. With the management PC software, the whole system can be easily configured and fault conditions can be easily monitored.

AD103 ALARM AND ANOUNCE SYSTEM





The new generation military gateway AG-102 is developed with waterproof and ruggedized body to meet the harsh tactical environment. AG102 is used to convert the data getting from analog, CO and ISDN/PRI interfaces to ethernet/ IP data for IP networks. Similarly IP packages coming from the ethernet networks will be converted to the analog, CO and ISDN/PRI interfaces. AG102 establishes a connection using the SIP trunk and is registered to the main voice server.

AG102 MILITARY GATEWAY DEVICE



#### **DS200A SHIP TELEPHONE SWITCHBOARD**





#### **DS200G SHIP TELEPHONE SWITCHBOARD**





IP-Analog Hybrid Flexible Telephone Switch System designed for Corvette & Frigate type navy vessels. The flexible, high quality, reliable and Task-suitable next generation communication Solution that provides, facilitates and develops The communication abilities of naval ships in any Challenging situation. The DS200A is a next-generation modular military communication system has more than 100 programmable functions. DS200A can be remotely programmed when required for repair and maintenance and is sturdily and durably built. The DS200A delivers state of the art, flexible, reliable, suitable and economic communication solutions via

DS200A battle ship's telephone exchange is A durable. its extensive multipurpose properties and usage roles.

IP-Analog Hybrid Telephone Switch System is designed for small to medium size navy vessels. The DS200G battle ship's telephone exchange is A durable, flexible, high quality, reliable and Task-suitable next generation communication Solution that provides, facilitates and develops The communication abilities of naval ships in any Challenging situation. The DS200G is a next-generation modular military communication system has more than 100 programmable functions. DS200G can be remotely programmed when required for repair and maintenance and is sturdily and durably built. The DS200G delivers state of the art, flexible, reliable, suitable and economic communication solutions via its extensive multipurpose properties and usage roles.









DS200T is a tactical IP communication system for military applications. DS200T is designed for field use and shock/waterproof. the system provides IP/SIP facilities for the military operations with its combat net radio connection capability. DS200T supports Co/PSTN lines, analog subscribers, E&M and ISDN PRI/E1 interfaces.

**DS200T MILITARY, IP TELEPHONE SWITCHBOARD** 





It is a digital voice internal communication system that uses PC-based management software for authorisation and management in a ruggedised structure with the features of expansion up to 6 users in internal speech and sending/receiving capacity to 2 different radios. all users can talk at the same time and the ability to send internal speech and radios separately to the right and left headset, providing clean sound with low noise level, hands-free use for internal speech.

**IKT 101A SHIP INTERIOR SPEECH SYSTEM** 





#### IKT102 - INTERNAL SPEECH SYSTEM WITH RADIO INTERFACE





Designed specially for armoured vehicles, IKT102 intercommunication system with radio interface offers the vehicle personnel the opportunity for intercom and radio access with a high sound quality. Her robust structure allows ikt102 to endure harsh enviromental conditions. Ikt102 can be adapted to various platforms with variable number of users.



#### IKT110 - INTERNAL SPEECH SYSTEM WITH RADIO INTERFACE







IKT110, developed for armoured vehicles, supports up to 9 users for in-vehicle and radio communication. With its modular user station configuration it offers a communication system for different sized vehicles. It supports use of headsets and also external loudspeaker in the vehicles. It also provides radio authorization for the crew through commander's user station. The system includes digital voice communication. the ability of all users to be included in the central unit conference circuit, sending/receiving on two separate radios, the ability of all users to listen to all radios and send from one of them when authorized by the commander and the commander, full duplex internal conversation (All users can talk at the same time), internal conversation and radio can be listened to together at the same time.





TD116 is a uniquely designed telephone solution that can fully fulfill its functions under vibration and shock on ships and similar platforms in accordance with military standards. TD116 has IP55 sealing feature with all mechanical parts and design. TD116 Telephone has been developed for use in ships and military environments where

vibration and shock effects are intense. TD116 Telephone has successfully passed vibration tests according to "MIL STD 810G 514.6 Procedure I, Cat.21" standard and "22g 11ms" shock test. In addition, uninterrupted operation of the device has been ensured in humidity, salt and temperature conditions in ship and land conditions. The operating temperature range of the device is -20/55 0C. Despite being used in military vehicles, the TD116 Phone has easy-to-use ergonomics. There is the possibility to select the ringtone type, adjust the ringtone volume and adjust the keypad illumination level. The handset cord of the TD116 Telephone has been selected in accordance with the safety standards set for shaking environments.

IP55 HARDENED ANALOG PHONE (TD116)





It is a communication station that provides realtime transmission of internal conversations communication and radio communications through user station. While the system providing internal voice communication between the crew for coordination and command-control, also allows the authorized personnel to send/receive to 4 different radios. Thanks to the Web Interface, the system is controlled from the IP interface. There are 3 types of user stations in the system to provide communication for intercommunication circuits and radios. The users shall utilize headsets for internal and radio communication. Inter-communication talks is transmitted from left ear cup while the radio communication is transmitted from the right ear cup for detecting the different sources of the voices for the users.

THE MAS200
COMMUNICATIONS
SWITCHING SYSTEM



#### SERTEL MILITARY HAND-HELD COMPUTER



SERTEL is a new generation hand-held computer with resistive touch screen which is developed in accordance with the harsh military field conditions. SERTEL utilizes N4200 processor and embedded GPS/Glonass global positioning system. A single military connector provides power, USB and Ethernet interfaces. SSD module which carries all internal memory can be replacable by means of the waterproof cover which is placed the backside of the computer. The GPS module installed at the top side of the mechanical structure is isolated from the internal electronics to minimize the interference between electronic circuits and the GPS signals. The common Q7 formfactor single board computer is used in the device, to make possible changing the processor for various requirements and future updates.



### SIPTEL HARDENED IP BASED SIP TELEPHONE



SIPTEL is manufactured in accordance with military standards and fulfill all of its functions completely under vibration and shock conditions SIPTEL has waterproof mechanical design. SIPTEL is designed for the harsh environment of ships. armoured vehicles and military use with high vibration and shock effect. SIPTEL is compatible with handset and headset for noisy environment. SIPTEL has successfully passed, MIL-STD 461 RE102,CE102,CS101,CS114, CS115, CS116 and RS103.



## KAREL

The new generation military TAG102-ROIP (radio-over-IP) interface device is developed with waterproof and ruggedized body to meet the harsh tactical environment. TAG102 converts the connected radios into ethernet / IP data and transmits it to IP networks via IP ports. Thanks that it provides the communication of satellite or ethernet networks with analog radio connections and supplementary element for tactical field IP communication. Except radio communication connection it has also the analog /IP network capacity for connecting 14 units FXS subscribes.



TAG102 MILITARY RADIO IP GATEWAY DEVICE



BFI is a backup flight indicator system that provides to calculate the flight critical data from it sensors when the primary flight indicator system is disabled. The display of information of TACAN and VOR/ILS coming through ARINC-429 is also provided except for critical data . BFI system is composed of front-BFI and rear-BFI that are on cockpit, ADU that are in the avionics equipment area of the aircraft and MHSU units that are in front of the aircraft.

REDUNDANT FLIGHT INSTRUMENT SYSTEM



## KATMERCILER

Company Short Name

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#### **4X4 ARMOURED AMBULANCE**





The 4x4 Armored Ambulance is customdesigned on the Ford F550 vehicle chassis and equipped for transportation, first aid and transition of patients on high risk areas around the world. Its wide internal volume enables performing outpatient operations. It has a seating capacity of 8 persons including one driver, two medical attendants and five patients. Armored ambulances with 300 HP and 4x4 driving characteristics, produced for all kinds of roads and climatic conditions, providing full safety of the driver, health personnel and the patient. Katmerciler provides a wide selection of ballistic armoring and ambulance configurations that can be customized to suit specific requirements.

ATEŞ; maintaining all superior features of HIZIR, is a border security vehicle integrated with ASELSAN's high technology reconnaissance and observation systems. The vehicle comes forward with its high technology as well as high level ballistic and mine protection features. With its Radar and Optical systems, it is able to make reconnaissance and observations for troops and vehicles day and night, at a distance of 40 Km. In addition, the vehicle has the shooter detection system to locate the shooter coordinates and share with the allies which only few countries able to produce and use.



**ATEŞ - 4X4** 





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It has an armoured monocoque hull designed by Katmerciler, which is fast, strong, dynamic, highly manoeuvrable, ergonomic and versatile, providing high ballistic and mine-protection. EREN meets all the requirements of the internal security forces for operations under all kinds of climatic conditions, especially for the use and the operations to be done in the residential area in narrow spaces.





HIZIR 4X4 Mine Resistant Ambush Protected (MRAP) is designed and optimised for high performance under extreme operational conditions at rural and urban areas for 9 personnel.

Vehicle has high level of ballistic and mine protection. It is agile, dynamic, versatile, low maintenance and easy care platform for various configurations such as combat vehicle, command control vehicle, CBRN vehicle, weapon carrier (easy integration of various weapon systems), ambulance vehicle, border security vehicle, reconnaissance vehicle.

#### Variances of HIZIR-II:

- · Increased crew capacity up to 14
- Under belly spare tire position for easy handling and lower center of gravity for better driving capability
- · Ramp type rear door for fast operations
- · Higher Level of Ballistic & Mine Protection
- · Face to face sitting positions
- · Single piece windshield
- · Raising cruising range with extended fuel tank capacity



**HIZIR II - 4X4** 



KHAN is 4x4 armoured security vehicle with 8 crew capacity. Monocoque armor steel hull with high level ballistic protection is built on fast, dynamic, versatile, easy care, low maintenance Toyota Land Cruiser chassis. KHAN satisfies interior security forces requirements for any kind of climate conditions.



KIRAÇ New Generation Criminal Investigation Vehicle has a unique design which can be configured as armored personnel carrier, command control vehicle and internal security vehicle. Based on the configuration, it can carry up to 27+1+1 personnel. The fully independent suspension system and 4x4 characteristics with automatic transmission gives excellent mobility on all terrain and weather conditions. KATMERCİLER'S 4x4 KIRAÇ vehicle platform's extra payload capacity allows application of various levels of ballistic protection and use of multiple mission equipment.





**KIRAÇ** 

#### **RIOT CONTROL SHIELD**





It provides protection with 36 personnel with its shields and weapons. It has gun ports especially designed to use for the shootings, which are not mortal directly. It can be used as a gate for the transfer of quick response forces with the lifting feature up to 3 meters. During the drive, it can absorbe impacts on harsh fields and it can be used in the field without any personnel to serve as barrier. It has a guarded elevation platform and can be equipped with a ballistic guard.

- Tank Carrier & Rescuer Lowbed Trailer
- Armoured ADR Fuel Tanker
- Armoured Tipper
- Armoured Water Tanker
- Troop Carrier & Cargo Body
- Armoured Low Bed Trailer













#### **LOGISTICS SUPPORT VEHICLES**



NEFER hidden armour system has been optimized on all wheel drive off-road vehicles for the usage in both urban and rural areas. Unmatched mobility and response abilities are beyond any other vehicle in its class. The vehicle has a proven operating record in any terrain or any climate conditions. An ultra-light advanced material system is uniquely developed by Katmerciler for this vehicle consisting of latest technology composites and ceramics that allowed it to have high level protection with minimal compromising the performance.



- Armoured Gun Turret
- Armoured Shield
- Armoured Cabin







**a a b** 

**SPECIAL PRODUCTS** 

#### **RIOT CONTROL VEHICLE (RCV)**





Katmerciler has been fulfilling most of the Anti-Riot Vehicle demands of the Turkish National Police and Gendarmerie General Command. The Anti-Riot Vehicles with ballistic reinforcement, which are constantly developed through R&D studies, have been successfully exported to many countries around the world. Complete armoring for the cabin including side windows and front windscreen can be provided with various ballistic protection standards.

Armoured Bus and Prisoner Transport Vehicle; It has a unique design that can be configured as an armoured personnel carrier. command control vehicle and internal security vehicle. Depending on the design and need; It has 22+1+1 personnel or prisoner carrying capacity. Thanks to its fully independent suspension system and 4x4 features with fully automatic transmission, it offers comfortable travel and high mobility under any climate, road and terrain conditions. Extra load with its strong chassis designed by Katmerciler R&D Centre. Its capacity allows different levels of ballistic protection and various equipment use.



**ARMOURED BUS & PRISONER CARRIER** 



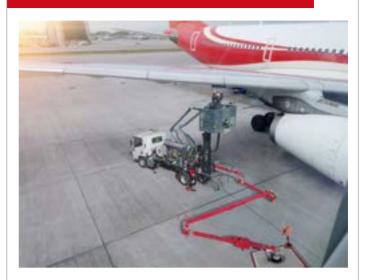
#### **AIRCRAFT REFUELLER**





## AIRCRAFT FUEL HYDRANT DISPENSER





KATMERCILER



Remote Control Weapon Platform (UKAP) is a tracked armoured platform that can easily be configured according to different requirements and having all functions able to be managed remotely. UKAP has a reconnaissance and surveillance feature with the integrated MAST and thermal camera, motion detection cameras and sensors. Bulletproof shield feature allows the vehicle to be used for rescue operations and transitions in combat zones. UKAP is able to carry military ammunition and equipment with a payload capacity of 2 tons. Electric and hybrid models of the platform are also existing.





TRACKED EXCAVATOR - ARMOURED BULLDOZER - ARMOURED BACKHOE LOADER - ARMOURED ARTICULATED WHEEL LOADER - ARMOURED TELESCOPIC FORKLIFT - ARMOURED LOW BED TRAILER Ballistic Hull Protection - Ballistic Body Protection (Fuel Tank, Power Train Compartment, Hydraulic System) - Ballistic Window Protection - Cab Positive Pressure System - Automatic Fire Suppression System - Fire retardant anti-flame featured - 360°Camera (Include Night Vision) System - Mine Lock - Gun Port REMOTE CONTROL SYSTEM LCD: 21" Touchscreen panel 10 hours continuously operation ability Proportional joystick control -25 & +50°C working temperature All functions of unmanned vehicle can be operated remotely.

REMOTE CONTROLLED
ARMOURED CONSTRUCTION
EQUIPMENT



**UKAP** 



## **KAYALAR**

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Kayalar is designed and manufactured so that the kitchen can be accessed in all situations and conditions. It is a mobile catering system to provide hot meals to soldiers. It is designed for mobile applications with armed forces and is preferred by civil defense and disaster control organizations. The oven, pots and pans in the mobile kitchen unit are designed to be removable and can be used in other facilities. Each cooking unit works independently.



#### **DORSE KITCHEN**





Dorse kitchens are kitchens that can be moved to any location and are designed for different needs. These kitchens are ideal especially for temporary needs because they can respond to many different needs thanks to their portable and modular structures. Dorse kitchens are especially important for emergency situations. In cases such as natural disasters, fires, floods, dormitory kitchens can be quickly set up and food preparation and service operations can be carried out quickly. For this reason, they are an important tool for disaster management and rescue teams. Dorse kitchens can be used in many areas such as large events, construction sites, military units, holiday camps, short-term restaurant activities. These kitchens offer high-capacity food preparation, cooking and service opportunities.









#### **CONTAINER KITCHEN**





The 12m long, containerised commercial kitchen is available in 2.4m or 3m widths and has the capacity to cook for up to 500 people. The unit is fully insulated and best in class. It is installed complete with a comprehensive stainless steel worktop and commercial grade lighting, approved by our own range. KAYALAR container kitchens comply with the Global Standard for the Design, Construction and Equipment of Food Premises (AS4674-2004). This not only ensures legal compliance. but also provides a safe and efficient environment for hygienic food preparation. The containers are ISO Certified and (MUB) compliant.

The mobile oven is used to bake bread in the field for the armed forces, civil defense and emergency rescue services and humanitarian organizations. The mobile oven baking process includes different steps involved in the process: kneading, dividing, rolling, manual shaping, fermentation (rising), baking and natural cooling. The mobile oven is specifically designed to meet the bread needs of the area where it is located. The system is fully autonomous for power with a diesel generator. The complete unit is attached to a double-axle pick-up trailer complete with expandable service area. The unit is compact and can be displayed in a very short time



**MOBIL BAKERY** 





#### **KITCHEN AUXILIARY EQUIPMENT**



Kitchen auxiliary equipment made of 304 quality stainless steel has the feature of easy use and easy cleaning. It provides equal heat distribution thanks to its smooth surface. It is manufactured according to hygiene and safety rules. Gastronorm containers can withstand temperatures between 300°C and -40°C. It is suitable for ovens, refrigerators, bain-maries and chafing dishes. They can be washed in the dishwasher. It includes products such as Helvane Pots with Lids, Pans, Kacarolas, Food Carrying Containers, Oven Trays, Travel Bowls, Gastronorm Containers, Restaurant Trays etc.



- \*The product is made of 304 quality chrome stainless steel.
- \*Tea chamber and strainer are made of stainless steel.
- \*It ensures that the tea flavor does not deteriorate for a long time.
- \*It provides suitable use for mass consumption.
- \*There are 8 size models.
- \*It is hygienic and durable.
- \*It is economical with its automatic heat control system.
- \*It has heat insulated handles.
- \*The product has indicators for water and tea levels.
- \*The water heating system is specially designed.
- \*It provides hot water and tea all day long.
- \*Stainless steel tube resistance is used in the product.
- \*It provides ergonomic use with its special model taps.
- \*It is CE certified.





**TEA MACHINE** 



#### **BOILING PAN WITH STEAM**



Made of stainless steel sheet

- \* Internal boiler 304 2,5 mm press form
- \* Outer wall 304 quality 2,5 mm
- \* Cover is double-walled outer 304 quality 1,00 mm and 1.20 mm inner plate is produced with press-printed special form, welded with argon welding and welded with welding marks.
- \* There is a spring mechanism on the cover.
- \* Cover is sealed and there are 2 locking mechanisms on it for locking during cooking.
- \* Steam vent valve on the cover (valve safety valve)
- \* There is a pressure gauge on the boiler and a manometer showing the vapor pressure.
- \* The boiler is covered with insulating material (glass wool) and heat loss is prevented.
- \* The boiler is covered with 0,80 mm stainless steel sheet.
- \* The bottom of the boiler is a profiled chassis, in which there are
- 4 height adjustable diameter 60 mm stainless steel feet.
- \* Boiler steam inlet is 1.5 ".
- \* Boiler steam output is ¾ ".
- \* The boiler food drain valve is 2 "capacity and the safety lid against unintentional opening.
- \* There is a hot-cold double water connection swan type battery for filling water into the boiler on the boiler top plate.
- \* The steam boiler has a pressure of 0,4 bar / 40 pascals (max 0.5 bar).
- \* Steam consumption maximum 90 kg/h
- \* Boiler cylinder is cylindrical form and has 400 lt capacity.



- \*Polyurethane body
- \*Thermostat control
- \*Internal temperature display
- \*Lockable wheel





**HOT BANQUET TROLLEY** 





#### **SERVICE EQUIPMENTS**











Convection ovens use one or more fans to circulate hot air throughout the oven. This circulating air provides an even temperature distribution around the food. Thanks to this feature, convection ovens shorten cooking time and ensure that food is cooked more evenly and properly.



**CONVECTION OVENS** 

## KIM TEKNOLOJI

Company Short Name

KİM Teknoloji

Company Trade Name

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Ballistic ceramics are materials known for their high temperature and chemical resistance and are used in a wide range of industrial applications. Ballistic ceramics are used in a wide range of applications, from electrical and electronic devices to automotive parts, medical equipment and construction materials. One of the most important characteristics of these materials is their long lifetime, which results from their superior resistance to wear and corrosion. They are also preferred in cutting and machining tools, ceramic coatings and even building materials due to their high hardness and temperature resistance. The versatile uses of ballistic ceramics play a critical role in providing robustness and performance in industrial and consumer products. Ballistic ceramics include: Alumina Square Ceramic. Alumina Hexagonal Ceramic. Alumina Rectangular Ceramic, Alumina Triangular Ceramic, Alumina Double Dome Ceramic, Silicon Carbide Square Ceramic, Silicon Carbide Hexagonal Ceramic, Silicon Borkarbide Triangular Ceramic, Silicon Carbide Rectangular Ceramic, Boron Carbide Square Ceramic, Boron Carbide Hexagonal Ceramic, Boron Carbide Triangular Ceramic, Boron Carbide Rectangular Ceramic, Boron Carbide Double Domed Ceramic and many other ceramic types are produced in special dimensions and geometries according to customer requirements.





Ballistic chest plates are materials designed specifically for military and security personnel, providing a high level of protection. These plates provide body protection against bullets and other high-velocity projectiles. Ballistic chest plates are characterized by both durability and light weight and are critical for operational safety and personal protection. Ballistic chest plates can be customized to customer-specified threat levels, providing the level of protection required for each situation. This flexibility guarantees maximum safety for a variety of missions and conditions. Ballistic Chest Plates can be produced for any geometry and threat level. These include; Personal Protective Chest Plate Single Slope Single Shot, Personal Protective Chest Plate Single Slope Multiple Shot, Personal Protective Chest Plate Multi Slope Single Shot, Personal Protective Chest Plate Multi Slope Multiple Shot, Personal Protective Chest Plate Extra Light Single Slope Chest Plate, Personal Protective Chest Plate Extra Light Multi Slope Chest Plate

**BALLISTIC CHEST PLATES** 



Piezoelectric materials are special and versatile materials that can convert both mechanical energy into electrical energy and electrical energy into mechanical energy. These bidirectional properties make them ideal in a variety of applications such as sensors, actuators and energy harvesting systems. Piezoelectric materials have a wide range of applications in the defense industry, sensing devices, guidance systems, micro-positioning applications and other high-performance systems that require precise measurements. These materials are considered a critical component in technological developments and provide high performance and reliability in various industries. The company is engaged in the production of Piezo electric rings.



Piezoelectric materials are special and versatile materials that can convert both mechanical energy into electrical energy and electrical energy into mechanical energy. These bidirectional properties make them ideal in a variety of applications such as sensors, actuators and energy harvesting systems. Piezoelectric materials have a wide range of applications in the defense industry, sensing devices, guidance systems. micro-positioning applications and other high-performance systems that require precise measurements. These materials are considered a critical component in technological developments and provide high performance and reliability in various industries. The company is engaged in the production of Piezo electric rings.



**3 a** 

**PIEZOELECTRIC MATERIALS** 

## KOÇAK - SPEEDOL

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KOÇAK - SPEEDOL

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#### **MILITARY DIESEL ENGINE OIL SAE 15W40**





Military Diesel Engine Oil SAE 15W40 is a heavy-duty diesel engine oil designed formulated with high quality base oils and high performanced additives in API CH-4 class meets the need of latest technology diesel engines for military vehicles operating under difficult conditions. It has OEM approvals of MAN M-3275 and MB 228.3. It is blended to meet the API CH-4 performance level.

Military Diesel Engine Oil SAE 20W50 is a diesel engine oil designed for military vehicles operating under difficult conditions formulated with the combination of high quality paraffinic base oils and high performanced additives. Suitable to be used in turbo and super turbo charged engines of light commercial vehicles like cars, pick-up trucks, minibusses & vans and API CF-4 performanced diesel engines. It is blended to meet the API CF-4 performance level.



**MILITARY DIESEL ENGINE OIL SAE 20W50** 





### **TWO-STROKE OUTBOARD ENGINE OIL**



Two-Stroke OUTBOARD Engine Oil is water cooled gasoline marine engine oil, which provides a homogeneous mixture with gasoline blended with advanced technology using paraffinic based base oils and motor protection enhancing additives. It is used in injected or oilfuel mixed outboard marine engines mixed with gasoline at the mixture ratios recommended by vehicle manufacturers. It is blended to meet the NMMA TC-W3 performance level.





Military Casoline Engine Oil Semi Synthetic SAE 10W40 is a heavy duty semi-synthetic gasoline engine oil created by blending synthetic base oils and high performance additive combinations designed for military vehicles operating in difficult conditions. It can also used in diesel and LPG vehicles. It provides superior performance compared to mineral oils and provides unique protection in all climate and road conditions. It has OEM approval of MB 229.1. It is blended to meet the API SL/CF and ACEA A3/B3 performance levels.



MILITARY GASOLINE ENGINE OIL SEMI-SYNTHETIC SAE 10W40

### MILITARY DIESEL ENGINE OIL (SAE30 / SAE50)



#### **NAVY SPECIAL ANTIFREEZE**



Navy Special Antifreeze is is an biogradable organic radiator cooler that is perfectly tuned to protect all metals of the engine cooling system. It reduces freezing point of the coolant. By raising the boiling point of the water, it prevents the boiling of the radiator water in summer. It prevents rust and corrosion in especially yellow metal structured cooling system and provides excellent protection against corrosion. It has OEM approval of MAN 324





Military Diesel Engine Oil (SAE30 / SAE50) is a mono grade diesel engine oil produced with combining of high performance base oils and API CF performance additives that can meet the expectations of latest technology diesel engines. It has OEM approval of MB 228.0 (SAE 30). It is blended to meet the API CF performance level.





Navy Special Antifreeze is a inorganic radiator cooler that is perfectly tuned to protect all metals of the engine cooling system. It reduces freezing point of the coolant. By raising the boiling point of the water, it prevents the boiling of the radiator water in summer. It prevents rust and corrosion in cooling system and provides excellent protection against corrosion.





High Viscosity Index Automatic Transmission Oil ATF 2 is a high viscosity index oil which is produced by the addition of friction, foaming, rust and corrosion preventive package additive which gives high oxidation resistance to quality base oils for use in automobile automatic transmissions and differential. It has OEM approvals of MAN 339 TYPE V1, MAN 339 TYPE Z1, ZF-TE-ML 14A. It is blended to meet the GM DEXRON II, ALLISON C-4 performance levels.

HIGH VISCOSITY INDEX AUTOMATIC TRANSMISSION OIL ATF 2



### HIGH VISCOSITY INDEX AUTOMATIC TRANSMISSION OIL ATF 3



### HYDRAULIC SYSTEM OILS SERIES



Hydraulic System Oil Series is a product blended with high quality base oils and additives that high resistance against rust and oxidation which can meet the following performance levels. Thanks to the containing demulsifier, it can be separated from the water excellently. It protects its lubrication feature by discarding the water it contains in a short time. It has OEM approvals of MAG P-68, P-69, P-70 and DENISON HF-0, HF-1, HF-2 It is blended to meet DIN 51524 PART 2 standard.





It is a high performance semi synthetic oil blended using specially developed additive technology and highly refined base oils designed by considering the characteristics of modern transmission systems. It has OEM approvals of MAN 339 TYPE V1, MAN 339 TYPE Z1, ZF-TE-ML 14A. It is blended to meet the GM DEXRON IIIG performance level.





Heavy Guns Grease TSK10924G is a high performance synthetic lithium complex soap grease with a wide range of application areas. It is a special semi synthetic grease produced with high quality base oils . Thanks to the extreme pressure (EP) additive it contains, it reduces wear and minimizes maintenance costs. It has heavy load carrying capacity. It is blended to meet the MIL-PRF-10924 G specification.

HEAVY GUNS GREASE TSK10924G



Lithium Soap Grease EP is a yellow colored lithium soap grease containing rust, oxidation, AW and a high amount of EP additives. Especially developed for roller lubrication, can be used for lubrication of chassi, too.lt provides the high resistance to corrosion and rust. Thanks to the extreme pressure (EP) additive it contains, it reduces wear and minimizes maintenance costs.



**LITHIUM SOAP GREASE EP** 



#### LITHIUM SOAP GREASE



### **WEAPON PROTECTIVE OIL**



Lithium Soap Grease is a yellow colored lithium soap grease containing rust and oxidation additives. Especially developed for roller lubrication, can be used for lubrication of chassis. It provides the high resistance to corrosion and rust. It provides working performance between -20°C and +130°C.





Weapon Protective Oil is a protective gun oil which shows high resistance to corrosion by blending special base oils and additives designed to prevent rust and corrosion. Provides high protection up to low temperatures. It creates a thin film layer in the area where it is applied and increases the durability of the surface against water and also dirt. It is blended to meet the VV-L-800C specification.





Weapon Cleaning Oil removes soot and dust particles inside formed in the weapon by enclosing and at the same time it protects the gun against rust and corrosion. It is blended to meet the MIL-C-372 C specification.

**WEAPON CLEANING OIL** 





Steam and Gear Turbine Oil is a premium quality industrial oil blended with paraffinic base oils for use in steam and gear turbines using a special package additive. Provides exceptional resistance to degradation even under high oxidative and thermal stress conditions. It is blended to meet the MIL-PRF-17331 J, DIN 51515 PART 2 performances level.

STEAM AND GEAR TURBINE OILS SERIES





### **MULTI PURPOSE TURBINE OIL SERIES**



Multi-Purpose Turbine Oil is a premium quality oil blended with paraffinic base oils by using a special additive. In addition to the reliable operation of the control system in gear and gas turbines, it includes effective EP (high pressure) / anti-wear additives that provide excellent protection for gear steam and gas turbines for long life of gear sets and bearings. It is blended to meet the MIL-PRF-17672 D, DIN 51515, BS 489 performances level.





Military Transmission and Differential Oil Series is a high performance power transmission oil which is produced with the addition of friction, foaming, rust and anticorrosive package additive which gives high oxidation resistance to quality base oils developed for use in transmissions, braking systems with oil bath, torque converters and hydraulic units of work machines operating under heavy duty conditions. It is blended to meet the CATTERPILLAR TO-4 performance level.



MILITARY CONSTRUCTION MACHINE TRANSMISSION AND DIFFERENTIAL OIL SERIES



### **CLOSED SYSTEM GEAR OILS SERIES**



Closed System Gear Oil Series is a high quality oil blended with paraffinic base oils and special package additive. Due to its wide application area, it provides the use of less oil types. It is blended to meet the AGMA 9005-D-94, US STEEL 224 performances level.





Weapon Protective Oil SPD 63460 (S-761) is based on synergy of synthetic base oils containing special additives to improve the anti-corrosion performance and anti-wear properties, especially developed for military and general purpose weapons for daily use and long term storage. Provides excellent suitability for lubrication, preservation and cleaning of various weapon systems. It is blended to meet the BWB TL 9150-0078 (BW-Code: OY 1045), NATO-Code: S-761, MIL-L 63460F. It is approved by TRTEST-ÜUB-2021/0057. NATO Stock Code: 9150270723637

**WEAPON PROTECTIVE OIL SPD 63460 (S-761)** 



### SPEEDFROST DE-ICER SPD1424/PG90 (TYPE I)



### SP4 ELECTRICAL INSULATING PASTE



SP4 Electrical Insulating Paste is a siliconebased synthetic product and is a white colored paste used as an insulating paste in various areas, especially in electrical systems, as both lubrication and protection against external factors. NATO Stock Code: 8030270729441





Speedfrost De-Icer SPD1424 / PG90 is a biodegradable propylene glycol-based anticorrosive aircraft wing top de-icing fluid that meets all technical requirements of the SAE AMS 1424/1 for Automotive Engineers Aerospace Material Specification SAE AMS 1424/1 and Aircraft Anti-Icing Fluids. It is blended to meet the SAE AMS 1424/1, ISO 11075 specification.



Diesel Engine Oil SAE 10W is a monograde engine oil blended with high-quality paraffinic base oils with special additives for diesel and gasoline vehicles. It is blended to meet the API CF-4 performance level.





It is an economical mineral oil that has high oxidation resistance, can be easily separated from water and does not foam.

**PARAFFINIC BASED OIL** 



**DIESEL ENGINE OIL SAE 10W** 



# **KOLUMAN**

Company Short Name

KOLUMAN

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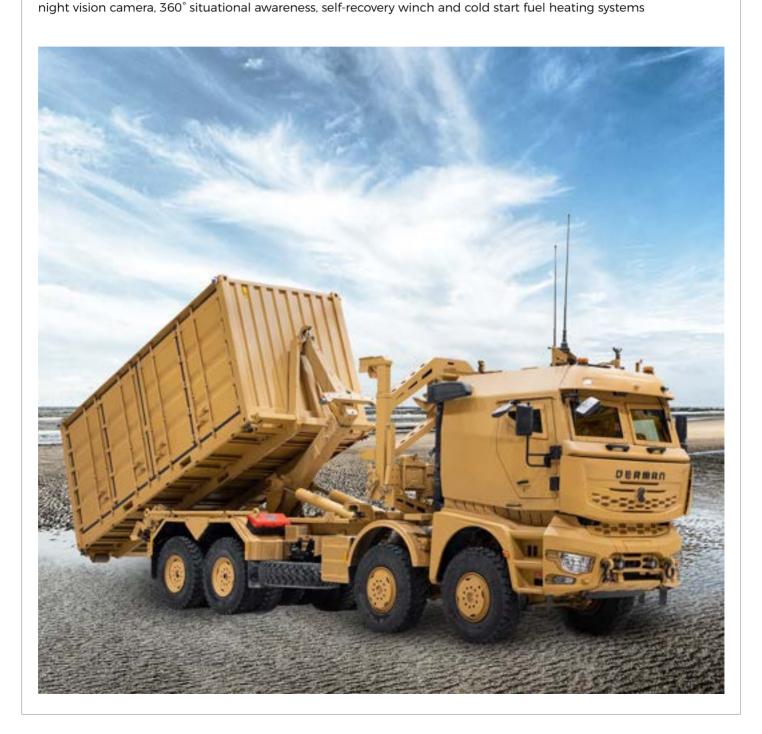


More than 70 units ADR compatible Aircraft Refueller Tankers are designed, developed and delivered to Turkish Land Forces. Koluman also has dedicated solutions for every kind of logistic support vehicles such as tank transporter and recovery vehicles.





The Derman product family is one of the prominent tactical wheeled Logistics Support vehicle developed by Koluman. One of its most notable and distinctive feature is the capability to operate in high terrains with a GVW up to 50 tons without comprimising 60% gradient and a 30% side slope. With engine options up to 625 Hp, along with automatic transmission and powertrain systems, it operates in all terrain conditions without sacrificing superior performance. STANAG 4569 Ballistic Protection level DERMAN has a remarkable cabin structure that can be upgraded up to 6 crew. Can be provided with custom tailored options including central tire inflation, run-flat, CBRN filtration, automatic fire distinguish and suppression,





In the HİSAR Air Defense System, we have served as the primary subcontractor for ASELSAN, providing solutions for chassis design, manufacturing and integration processes across product groups, including ERIMAY (Tactical Data Link Connection System), Fire Control Center, Missile Launching System, Missile Handling and Loading System, as well as Air Defense Radar Systems. The vehicles, which are currently part of the Turkish Armed Forces' inventory, are effectively fulfilling their missions without any interruptions.

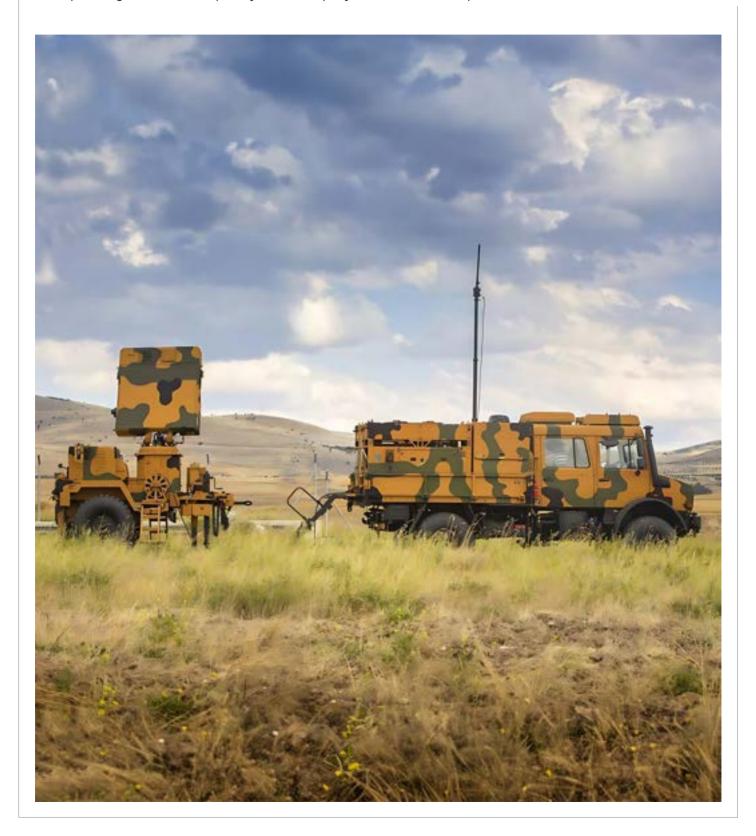








Koluman delivers turnkey chassis and superstructure solutions in defense industry with its deep knowledge, experience and understanding. As a general contractor, "KALKAN" Air Defense Radar Project was one of the key concepts designed and developed by us for company ASELSAN with unique chassis features of UNIMOG vehicle.



# LENTATEK

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#### **DIGITAL MILITARY HEALTH KIT**





The Military Health Kit offers a comprehensive solution to enhance the safety of military personnel during operations while enabling centralized monitoring of soldiers' real-time health data. Developed to meet end-user requirements, this kit integrates software and hardware to measure various physiological parameters, including pulse, respiration, ECG, body temperature, position, and motion. These measurements are conducted with high precision using a wearable sensor embedded in textile, with data transmitted via Bluetooth to smartphones and subsequently shared with team commanders, medical centers, and operation centers.

Proton Exchange Membrane Fuel Cell (PEMFC)

Membrane Electrode Assembly (MEA) is composed of ion exchange membrane, catalyst layer, gas diffusion layer and sub-gasket. These MEA's could made of 3/5/7 layers according to customer's request.

PEM Stack & System

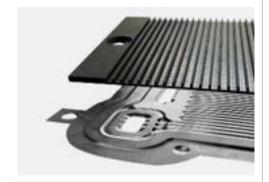
For civil and military purposes, 1-50 kW open cathode and deadend PEMFC stacks and systems with liquid or air cooling, and with metallic or composite graphite bipolar plates are being developed.

Solid Oxide Fuel Cell (SOFC)

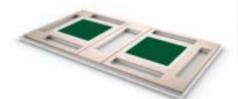
ScSZ and YSZ based electrolyte supported and NiO based anode supported MEAs are produced.

SOFC Stack

For civil and military purposes, 1-1.3 kW SOFC stack is produced.







HYDROGEN FUEL CELL TECHNOLOGIES / FUEL CELL COMPONENTS



### KARAYEL UNMANNED AERIAL VEHICLE FAMILY





State-of-the-art KARAYEL UAV System is an autonomous reconnaissance and surveillance platform and is the first Tactical UAV System designed to be compatible and manufactured in accordance with NATO 'Airworthiness' standard; STANAG 4671. KARAYEL UAV System has novel triple redundant distributed avionics architecture, which ensures protection against all kind of uncontrolled single point failure/crash. Therefore, Lentatek has carried systematic fault safety used only in manned aviation in the world until now to an unmanned aerial vehicle for the first time with KARAYEL. KARAYEL has lightning protection thanks to the aluminum network grid on its composite structure. 'Pneumatic De-Icing System' which automatically detects icing conditions and activates carries KARAYEL one step further in terms of operations in critical climates. KARAYEL, which is an aerial reconnaissance and surveillance platform, can perform target pointing, lighting and ammunition direction with day/night target detection and identification by its EO/IR camera payload system.



# MAKINE VE KIMYA ENDÜSTRISI - (MKE)

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### 0.40 CAL. PISTOL **CARTRIDGE S W**

Has a 28.8 mm cartridge length. The bullet material is Gilding Metal, Lead. It has a 9 mm Primer, Boxer.





### 0.45 CAL. PISTOL **CARTRIDGE AUTO**

Has a 32 mm cartridge length. The bullet material is Gildina Metal, Lead. It has a 9 mm Primer, Boxer.





### 1" FLARE GUN

It is used for communication and gives light with different colors. It is launched by a special pistol.





### **1" LIGHTING FLARE WITH PARACHUTE**

It is used for communication. It is launched by 1" signal pistol and gives white light.





### 1.5" FLARE GUN

It is used for communication and gives light with different colors. It is launched by a special pistol.





### 1000 LB. MK 83 GP AIRCRAFT **BOMB**

1000 lb. MK 83 GP AIRCRAFT BOMB is 410 (±20) kg (with nose plug - with shipping cap), is 1933±10 mm (with nose plug - with shipping cap) long, has TNT as filler and the filler weight is 190 kg. As fuze, it has M904, M905, Onur 1 MOD 3 series, Onur 2 series, FMU-139 series and FMU-152 series fuzes.



### 105 MM AIR TRANSPORTABLE LIGHT TOWED HOWITZER BORAN



Is designed by MKE to pressure on brigade target, to utilize for Turkish Armed Forces internal security operations, to fire support for commando brigade and airborne operations. BORAN has 105mm/30 Caliber barrel and it satisfies 6rds/min rate of fire, exceeding 17 km range at sea level with long range ammunition. It is also operatable with 5 crews. As to deployment, it is less than 1 minute for in-out positioning. The weight is 1745 Kgs (including fire control system) and it can be carried by Sikorsky S-70 General Purpose Helicopter and can be towed by a wide range of light vehicles. BORAN has -3°,+70° degree for angle of elevation and 8 degree both side degree from centerline for angle of traverse. It could be operatable for all kind of firing missions in -32°C,+44°C degree celcius circumstances continuously 8 hours. BORAN has electronic devices like fire control computer, GPS, panoramic cannon binocular, muzzle velocity radar, thermal sight system, GPS//INS, lazer range finder. It can deploy regardless of clasic deployment procedures. BORAN surpasses its alternatives with its advanced shot control system and the above mentioned technical features.





#### 105 MM M68 TI TANK GUN WEAPON SYSTEM



Is mounted on M48 battle tanks. It is a quick firing accurate weapon. The weapon is a rifled gun with a vertical sliding breech. It uses fixed ammunition which is electrically fired. After firing a semi automatic system opens the breech and drops the empty case. A full range of ammunition gives weapon system exceptional performance against all types of targets.



The 105 mm TANK GUNS & HOWITZER AMMUNITION of MKE has four variants: TANK GUN HE MKE MOD 233, TANK GUN TP MKE MOD 234, HOWITZER HE M1 and 105/35 MM MOD 270 SUBCALIBER AMMUNITION. TANK GUN HE MKE MOD 233 has an average length of 1028 mm, is on average 24 505 g, has maximum range of 11 000 m, has a muzzle velocity of 683 m/s and has the M1 propellant. TANK GUN TP MKE MOD 234 has an average length of 1028 mm, is on average 24 125 g, has maximum range of 11 000 m, has a muzzle velocity of 683 m/s and has the M1 propellant. HOWITZER HE M1 has an average length of 790 mm, is on average 19 000 g, has maximum range of 11 000 m, has a muzzle velocity of 465 m/s and has the M67 Dualgrain propellant. 105/35 MM MOD 270 SUBCALIBER AMMUNITION has an average length of 387 mm, is on average 1570 g, has maximum range of 11 000 m, has a muzzle velocity of 1175 m/s and has the NC.01.T.35. OE.M.SMS propellant.



105 MM TANK GUNS & HOWITZER AMMUNITION





### 107 MM ANADOLU ROCKET REAR IGNITER

### 107 MM ANADOLU ROCKET FEEDING CAPSULE

It is igniter of 107 mm Anadolu Rocket. It gives heat and flame.

It is used in the fuze of 107 mm Anadolu Rocket







### **107 MM ARTILLERY ROCKET**

Is used from ground to ground. The warhead is HE and it uses Double Base / 3,4 kg as propellant. The system is 19,3 kg in total and has a maximum range of 8 km.



### 107/122 MM ROCKET IGNITION CAPSULE

It is used in the fuze of 107 mm Anatolia Rocket.







### 107/122 MM ROCKET IGNITION CAPSULE

It is primary igniter of 107 mm Anatolia Rocket. It is ignited electrically.



### 12.7 MM MACHINE GUN (MT12-QCB)

Is 38 kg, 165 cm long and has 1800 m effective range with 450-650 rounds/min rate of fire.







### **12.7 MM X 99 NATO ANTI-MATERIAL SNIPER RIFLE MAM-15**

Has Bolt Action. Accuracy is 1 MOA, it has 5 magazine capacity and is 12 500 g. Effective range is 1800 m. It is Single Shot.





#### 12.7 MMX99 CARTRIDGE AP

Has a 138.43 mm cartridge length. The bullet material is Gilding Metal. Steel Core. It has a 12.7 mm Primer. Boxer. The bullets completely penetrate 10 mm thickness mild stee plate (DIN 40CrMoV4-6. rockwell C30-C45) at a range of 91 meters.





### 12.7 MMX99 CARTRIDGE **API SPECIAL**

Has a 138.43 mm cartridge length. The bullet material is Gilding Metal, Steel Core, Chemicals. It has a 12.7 mm Primer, Boxer. The bullets completely penetrate 10 mm thickness mild stee plate (DIN 40CrMoV4-6, rockwell C30-C45) at a range of 91 meters.





#### 12.7 MMX99 CARTRIDGE BLANK

Has a 99.7 mm cartridge length. It has a 12.7 mm Primer, Boxer.





### 12.7 MMX99 CARTRIDGE M33

Has a 138.43 mm cartridge length. The bullet material is Gilding Metal, Steel Core, Borax. It has a 12.7 mm Primer, Boxer.





### 12.7 MMX99 CARTRIDGE M17

Has a 138.43 mm cartridge length. The bullet material is Gilding Metal, Lead, Tracer Composition. It has a 12.7 mm Primer, Boxer. Tracer bullets exhibit a continuous trace of satisfactory quality for at least 2.5 seconds.



### 12.7 MMX99 CARTRIDGE M20



Has a 138.43 mm cartridge length. The bullet

material is Jacket [Brass], Core [Steel], Disc. Closure [Brass]. It has a 12.7 mm Primer, Boxer.



### 12.7 MMX99 CARTRIDGE M8 API



Has a 138.43 - 1.27 mm cartridge length. The bullet material is Gilding Metal, Steel Core, Incendiary Composition. It has a 12.7 mm Primer, Boxer. The bullets completely perforate DIN 40CrMoV4-6 steel plate 22.2 mm in thickness with rockwell C30-C45 hardness at 91 m distance from barrel.









Has a 138.43 mm cartridge length. The bullet material is Jacket [Brass], Core [Steel], Disc. Closure [Brass]. It has a 12.7 mm Primer, Boxer.

12.7 MMX99 CARTRIDGE M20





Is 3700 kg, is 5812 mm long, has an effective range of 3000 m with a 6 rounds/min rate of fire. It has a smooth bore, chrome plated barrel.

120 MM 44 CAL. M60 **WEAPON SYSTEM** 





#### 120 MM 55 CAL. WEAPON SYSTEM ALTAY



Is 3103 kg, is 7118 mm long, has an effective range of 3000 m with a 6 rounds/min rate of fire. It has a smooth bore, chrome plated barrel.



The 81 mm MORTAR AMMUNITION of MKE has six variants: MKE MOD 209 RIFLED HE, MKE MOD 228 RIFLED TP, MKE MOD 250 RIFLED SMOKE HC, MKE MOD 236 A1 RIFLED ILLUM, MKE MOD 227 RIFLED PRACTICE and MKE MOD 308 SMOOTHE BORE HE. MKE MOD 209 RIFLED HE has an average length of 827 mm, is on average 18 000 g, has maximum range of 8180 m, has a muzzle velocity of 365 m/s and has Leaf Propellant with max 10 propellant increments. MKE MOD 228 RIFLED TP has an average length of 827 mm, is on average 18 000 g, has maximum range of 8180 m, has a muzzle velocity of 365 m/s and has Leaf Propellant with max 10 propellant increments. MKE MOD 250 RIFLED SMOKE HC has an average length of 827 mm, is on average 18 000 g, has maximum range of 8180 m, has a muzzle velocity of 365 m/s and has Leaf Propellant with max 10 propellant increments. MKE MOD 236 A1 RIFLED ILLUM has an average length of 824 mm, is on average 17 000 g, has maximum range of 8180 m, has a muzzle velocity of 365 m/s and has Leaf Propellant with max 10 propellant increments. MKE MOD 227 RIFLED PRACTICE has an average length of 827 mm, is on average 17 000 g and has Leaf Propellant with max 10 propellant increments. MKE MOD 200 g, has maximum range of 10 000 m, has a muzzle velocity of 440 m/s and has Horseshoe Propellant.



120 MM MORTAR AMMUNITION



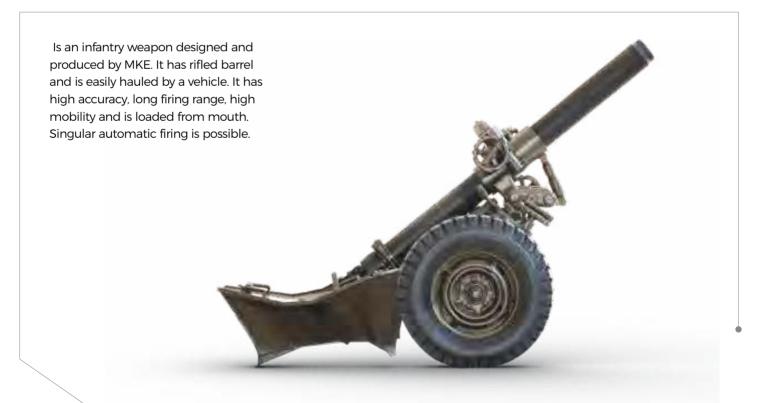


### **120 MM MORTAR SYSTEM**





Has 120 mm caliber, is 1350 kg with an operational range of 9500m. It has 10 rds/min rate of fire and can be loaded either manually or semi-automatic.



**120 MM HY1-12 MORTAR** 



#### 120 MM TANK AMMUNITION





The 120 mm TANK AMMUNITION of MKE has six variants: MKE MOD 300 HE-T, MKE MOD 301 TP-T, MKE MOD 310 HEAT-MP-T, MKE MOD 290 APFSDS-T, MKE MOD 291 TPCSDS-T and MKE MOD 292 HIGH PRESSURE. MKE MOD 300 HE-T has an average length of 984 mm, is on average 27 500 g, has an effective range of 2000 m, has a muzzle velocity of 870 m/s and has CEP-2 Doublebase Propellant. MKE MOD 301 TP-T has an average length of 984 mm, is on average 27 500 g, has a muzzle velocity of 870 m/s and has CEP-2 Doublebase Propellant. MKE MOD 310 HEAT-MP-T has an average length of 984 mm, is on average 25 000 g, has an effective range of 2000 m, has a muzzle velocity of 925 m/s and has CEP-2 Doublebase Propellant. MKE MOD 290 APFSDS-T has an average length of 984 mm, is on average 20 000 g, has an effective range of 2000 m, has a muzzle velocity of 1705±15 m/s and has NC-NG Doublebase Propellant. MKE MOD 291 TPCSDS-T has an average length of 925 mm, is on average 18 300 g, has an effective range of 2000 m, has a muzzle velocity of 1730 m/s and has NC-NG Doublebase Propellant. MKE MOD 292 HIGH PRESSURE has an average length of 933.5 mm, is on average 22000 g for L-44 and 22200 g for L-55, and has NC-NG Doublebase Propellant.

It is used in 120 mm Tank Ammunition.



120 MM TANK AMMUNITION TRACER (TRAINING)



### 120 MM TANK AMMUNITION TRACE (DESTRUCTION)



LAUNCHER

**122 MM SPEAR ROCKET** 



It is used in 120 mm Tank Ammunition.



It is primary igniter of 122 mm it is ignited electrically.



It is used in the fuze of 122 mm Rocket



122 MM SPEAR ROCKET BUSTER



Is used from ground to ground. The warhead is HE, Steel Ball and it uses Double Base as propellant. The system warhead is 18 kg in total and has a maximum range of 20 km.

**122 MM ARTILLERY ROCKET** 





### 130 MM NATIONAL CHAFF LAUNCHER SYSTEMS





Is a system that protects the ship by creating false targets against enemy missiles. The system has Q130 mm C/F Launcher System, CMS Main Control Panel, Power Supply Panel, Bridge Launcher Control Panel, Ammunition Cabinet and the Siren. It has the MKE1302-SYS, MKE1304-SYS and MKE1304-MCAS types.

This gun system is produced by the modification of the standart M44 Howitzer. The major change involves, a new 39 cal. long barrel with large chamber, faster twist rifling and autofrettaged to provide maximum fatigue life. Therefore modifying the M44 with a new cannon assembly using a 39 cal. tube will increase its range capability and interoperability with modern ammunition.



155 MM 39 CAL. L-39 WEAPON SYSTEM





### 155 MM 52 CAL. WEAPON SYSTEM



Has two types. PANTER is 4176 kg; has 4 rds/min normal, 3 rds/15 sec maximum and 2 rds/min sustained rate of fire. The range is 18 km for M107, 30 km for Modern Project and 40 km for ERFB/Base Bleed Projectile. It has monoblock, forged tube with auto frettage barrel. FIRTINA is 4339 kg; has 6 rds/min for normal, 3 rds/15 sec maximum and 2 rds/min sustained rate of fire. The range is 18 km for M107, 30 km for Modern Project and 40 km for ERFB/Base Bleed Projectile. It has monoblock, forged tube with auto frettage barrel.



The 155 mm EXTENDED RANGE HOWITZER AMMUNITION of MKE has four variants: MKE MOD 274 HEER, MKE MOD 276 TRAINING, MKE MOD 277 PRACTICE and MKE MOD 281 TP-ER. MKE MOD 274 HEER has an average length of 950 mm with lifting plug, is on average 45 350 g with lifting plug, has maximum range of 39 000 m and has a muzzle velocity of 945 m/s. MKE MOD 276 TRAINING has an average length of 950 mm with lifting plug and is on average 44 290 g with lifting plug. MKE MOD 277 PRACTICE has an average length of 950 mm with lifting plug, is on average 45 500 g with lifting plug and has maximum range of 31 554 m. MKE MOD 281 TP-ER has an average length of 950 mm with lifting plug, is on average 45 459 g with lifting plug, has maximum range of 39 000 m and has a muzzle velocity of 945 m/s.





155 MM EXTENDED RANGE HOWITZER AMMUNITION



## 155 MM MODULAR CHARGE SYSTEMS (FOR AMMUNITIONS 155 MM MKE MOD 274 AND 155 MM MKE MOD 281)





Used in Firtina and Panter Howitzer (52 Calibre). They have a maximum range of 39 km and a shelf life of minimum 10 years. They can be used with 3,4,5 and 6 modules.

The 155 mm & 8" GUN & HOWITZER AMMUNITION of MKE has four variants: 155 mm GUN M101 HE, 155 mm HOWITZER M107 HE, 155 mm HOWITZER TP MKE MOD 272 and 8" HOWITZER M106 HE. 155 mm GUN M101 HE has an average length of 681 mm with lifting plug, is on average 43 125 g with lifting plug, has maximum range of 23 500 m, has a muzzle velocity of 640 m/s and has the M6 propellant. 155 mm HOWITZER M107 HE has an average length of 681 mm with lifting plug, is on average 42 927 g with lifting plug, has maximum range of 4600-18100 m (with different howitzers), has a muzzle velocity of 564-684 m/s (with different howitzers) and has the M1 propellant. 155 mm HOWITZER TP MKE MOD 272 has an average length of 681 mm with lifting plug, is on average 42 927 g with lifting plug, has maximum range of 4600-18100 m (with different howitzers), has a muzzle velocity of 564-684 m/s (with different howitzers) and has the M1 propellant. 8" HOWITZER M106 HE has an average length of 872 mm with lifting plug, is on average 91 106 g with lifting plug, has maximum range of 16 800 m, has a muzzle velocity of 594 m/s and has the M1 propellant.



155 MM & 8" GUN & HOWITZER AMMUNITION



### **2 KG SMOKE CANISTER**



It is used for camouflage. Ignition mechanism is friction type.



### 2.75 INCH FOLDING-FIN AERIAL **ROCKET FFAR**





Is an unguided air to ground MK4 (from high speed aircraft) and MK40 (from helicopter). It has a Point range of 1500 m, Area range of 3000 m (from helicopter), Dispersion range of 50 m and Maximum range of 7 km from ground to ground. It can use Various (HE M151, TP MK 61 MOD 0, Smoke/Signalling MKE MOD 248) warheads. It uses Double base N5 as propellant.



M151 (HE) DEMOLITION is 328 mm long without fuze, has Comp B as filler and it uses M423, M427 as fuze. MK61 MOD0 PRACTICE is 328 mm long without fuze. MKE MOD 248 SMOKE/SIGNALING is 408 mm long without fuze, has Smoke / Signaling flare as filler and it uses M427 (no booster) as fuze.







It is used to ignite 2.75" Rocket.

2.75" ROCKET LAUNCHER



### 20 X 102 MM 6 BARREL ROTARY CANNON



#### **20 MMX102 CARTRIDGE API**



Has an effective range of 2000 m and 4000-6000 rds/ min fire rate. The length



Has a maximum 168 mm cartridge length. The bullet material is Body (steel), Cover base (steel), Rotating Band (tombac) Fuse (aluminium). It has a M52 A3 B1 Electrical Primer.



Has a maximum 168.02 mm cartridge length. The bullet material is Body (steel), Cover base (steel), Rotating Band (tombac) Fuse (aluminium). It has a M52 A3 B1 Electrical Primer. 20 mmx102 CARTRIDGE TP-T (M55 A2) has a maximum 168.02 mm cartridge length. The bullet material is Body (steel), Cover base (steel), Rotating Band (tombac) Fuse (aluminium). It has a M52 A3 B1 Electrical Primer.



Has a maximum 168 mm cartridge length. It has a M52 A3 B1 Electrical Primer.

20 MMX102 CARTRIDGE



20 MMX102 CARTRIDGE MK149 GFI APDS



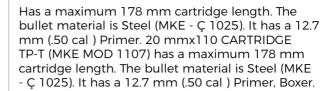
#### **20 MMX110 CARTRIDGE**



**20 MMX110 CARTRIDGE** 



Has a maximum 178 mm cartridge length. The bullet material is Steel (MKE - Ç 1040). It has a 12.7 mm (.50 cal ) Primer. 20 mmx110 CARTRIDGE HEI-T (MKE MOD 1109) has a maximum 178 mm cartridge length. The bullet material is Steel (MKE - Ç 1040). It has a 12.7 mm (.50 cal ) Primer, Boxer.











2000 lb. MK 84 GP AIRCRAFT BOMBs have two variants. MK84 HE is 884 kg, is 3797 mm long, has TNT as filler and the filler weight is 428 kg. MK84 PRACTICE is 884 kg, is 3797 mm long and it has Sorel Cement as filler.

**....** 

Is 1800 kg Travelling Position With Ammunition, 1840 mm long and has 1200 m (Air Targets), 2000 m (Ground Targets) effective range with 2 x 1050 rounds/min rate of fire.

20 MM TWIN BARREL ANTI-AIRCRAFT & INFANTRY SUPPORT GUN



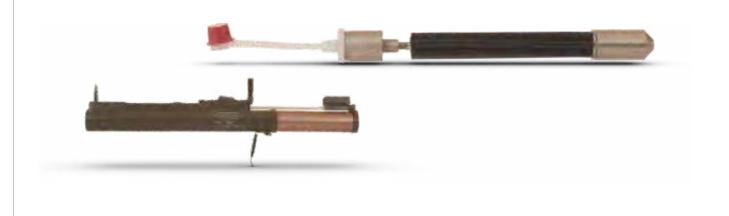
2000 LB. MK 84 GP AIRCRAFT BOMB



### 21 MM TRAINING SYSTEM



Training system of 66 mm Light Anti Tank Weapon System. The weight of training rocket is 200 g. As propellant, it uses M7. The effective range is 200 m.



The 25 mm Ammunition of MKE has three variants: M793 TP-T, M792 HEI-T and M791 APDS-T. M793 TP-T has a maximum length of 219.2 mm, is on average 500 g, has a range of 6000 m (at 650 milyem elevation), has a muzzle velocity of 1100±25 m/s and has the double base propellant. M792 HEI-T has a maximum length of 219.2 mm, is on average 500 g, has a muzzle velocity of 1100±25 m/s and has the double base propellant. If it doesn't crush any target, it will burst between 3800 - 4500 m. M791 APDS-T has a maximum length of 223 mm, is on average 500 g, has a range of 17500 m (at 746 milyem elevation), has a muzzle velocity of 1345±20 m/s and has the single base propellant.



**25 MM AMMUNITION** 



#### 250 LB. MK 81 GP **AIRCRAFT BOMB**



250 lb. MK 81 GP AIRCRAFT BOMB is 115 (±5) kg (with nose plug - with shipping cap), is 1180±10 mm (with nose plug - with shipping cap) long, has TNT as filler and the filler weight is 40 kg. As fuze, it has M904, M905, Onur 1 MOD 3 series, Onur 2 series. FMU-139 series and FMU-152 series fuzes.



## **25 MM AUTOMATIC CANNON ILGAZ**





Is 113+8 kg, 2630 mm long and has 1500 m effective range with 125-400 rounds/ min rate of fire. It has double feeding with a 3 min time for ammunitions.





It creates a hole with a diameter of 10 mm on the steel plate which has a thickness of 2 mm.



It creates a hole with a diameter of 5 mm on the lead plate which has a thickness of 3.5 mm.

**35 MM PM MAIN IGNITER** 



**35 MM PM ELECTRIC IGNITER** 



## 35 MM ANTI-AIRCRAFT AMMUNITION



**35 MM PM ROTOR** 



The 35 mm ANTI-AIRCRAFT AMMUNITION of MKE has three variants: MSD 020 HE-I, ULD 034 TP-T and WK MAD 356 Practice. MSD 020HE-I has a maximum length of 387 mm, is on average 1570 g, has an effective range of 6000 m, has a muzzle velocity of 1175 m/s and has the NC.01.T.35.OE.M.SMS propellant. ULD 034TP-T has a maximum length of 387 mm, is on average 1570 g, has an effective range of 6000 m, has a muzzle velocity of 1175 m/s and has the NC.01.T.35. OE.M.SMS propellant. WK MAD 356 Practice has a maximum length of 387 mm and is on average 1490 g.





It creates a hole with a diameter of 5 mm on the lead plate which has a thickness of 5 mm.

4.5 lb. & 25 lb. AIRCRAFT TRAINING and PRACTICE BOMBS have three variants. 4.5 lb MK 106 MOD 1 is 2041 g and is 495 mm long. 25 lb MK 76 MOD 2 is 11339 g and is 575±2.5 mm long. 25 lb BDU 33 D/B is 11339 g and is 575±2.5 mm long.



4.5 LB. & 25 LB. AIRCRAFT TRAINING AND PRACTICE BOMBS



Is 62,5 kg in total, 1097 mm long, has a maximum effective range of 1500 m with rate of fires 325-375 rds/min for cyclic, 60 rds/min for rapid and 40 rds/min for sustained. It has 24 grooves and uses HE, HEDP, TP type bullets.

40 MM AUTOMATIC GRENADE LAUNCHER



## **40 MM LONG DRUM GRENADE LAUNCHER**



#### **40 MM X 46 LOW VELOCITY GRENADE LAUNCHER**



It is semi-automatic multi shot revolver type. It is maximum 6.75 kg with sight, has a barrel legth of 300 mm and has max. 10 second/ 6 round rate of fire. The effective range is 375 m and has 6 grooves.

The 40 mm x 46 LOW VELOCITY GRENADE LAUNCHER CARTRIDGES of MKE has four variants: MKE MOD 60 HE, TP-T Target Practice W/Tracer, TP and MKE MOD 63 GE Tear Gas. MKE MOD 60 HE has an average length of 100 mm, is on average 210 g, has maximum range of 400 m. has a muzzle velocity of 76±3 m/s and has the M9 propellant. TP-T Target Practice W/Tracer has an average length of 101 mm, is on average 222 g, has maximum range of 400 m and has a muzzle velocity of 76±5 m/s. TP has an average length of 101 mm, is on average 215 g, has maximum range of 400 m and has a muzzle velocity of 76±5 m/s. MKE MOD 63 GE Tear Gas has an average length of 106 mm, is on average 230 g, has maximum range of 400 m, has a muzzle velocity of 76±5 m/s and has the M9 propellant.













Is Manually fed and is 1750 g. It has a fire type of Safe, fire.

40 MM X 46 ST2 T-40 G3 **GRENADE LAUNCHER** 





Is Manually fed and is 1630 g. It has a fire type of Safe, fire.

40 MM X 46 ST5 T-40 HK33E **GRENADE LAUNCHER** 





## **40 MM X 53 HIGH VELOCITY AUTOMATIC GRENADE**



The 40 mm x 53 HIGH VELOCITY AUTOMATIC GRENADE LAUNCHER CARTRIDGES of MKE has three variants: MKE MOD 77 TP, MKE MOD 78 HE and MKE MOD 100 PPHE. MKE MOD 77 TP has a maximum length of 112 mm, is on average 380 g, has a maximum range of 2000 m, has a muzzle velocity of 250 m/s and has the M2 propellant. MKE MOD 78 HE has a maximum length of 112 mm, is on average 380 g, has a maximum range of 2000 m, has a muzzle velocity of 250 m/s and has the M2 propellant. MKE MOD 100 PPHE has a maximum length of 112 mm, is on average 388 g, has a maximum range of 2000 m, has a muzzle velocity of 245 m/s and has the M2 propellant.



Has two types. A2 has 30 magazine capacity and is 3900 g. Effective range is 400 m with 750 rds/min fire rate. It is Semi / Full Automatic or 3 Rounds Burst. A3 has 30 magazine capacity and is 4000 g. Effective range is 400 m with 750 rds/min fire rate. It is Semi / Full Automatic or 3 Rounds Burst.



5.56 MM X 45 NATO HK33E A2/A3 AUTOMATIC INFANTRY RIFLE





## 5.56 MM X 45 NATO MKE T-43 SEMI-AUTOMATIC RIFLE



Has 10/30 magazine capacity and is 4500 g. Effective range is 400 m with semi-automatic shot.



Has two types. MPT-55 is Short Stroke, Gas Operated and has Rotary Bolt Action. Accuracy is 4 MOA, it has 30 magazine capacity and is 3300 g. Effective range is 400 m with 800±100 rds/min fire rate. It is either Semi or Full Automatic. MPT-55K is Short Stroke, Gas Operated and has Rotary Bolt Action. Accuracy is 4 MOA, it has 30 magazine capacity and is 3000 g. Effective range is 400 m with 800±100 rds/min fire rate. It is either Semi or Full Automatic.





5.56 MM X 45 NATO MPT-55 AUTOMATIC INFANTRY RIFLE



## 5.56 MM X 45 NATO T-50 AUTOMATIC RIFLE



Has 30 magazine capacity and is 3900 g. Effective range is 400 m with 750 rds/min fire rate. It is either Semi or Full Automatic.



Is Short Stroke, Gas Operated and has Rotary Bolt Action. Accuracy is 4 MOA, it has 30 magazine capacity and is 2750 g. Effective range is 200 m with 750 rds/min fire rate. It is either Semi or Full Automatic.



5.56 MM X 45 NATO TLS-571 AUTOMATIC CARBINE RIFLE

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## 5.56 MMX45 CARTRIDGE BLANK



# 5.56 MMX45 CARTRIDGE TRACER (LIIO)



Has a 57.4 mm cartridge length. The bullet material is Copper Plated Steel Jacket, Lead Core (Lead-Antimony Alloyed), Tracer Composition. It has a 5.56 mm Primer, Boxer. The bullets meet trace quality and trace distance acceptance requirements (13 m, 140 m, 600 m).



Has a 56 mm cartridge length. It has a 5.56 mm Primer, Boxer.







Has a 57.4 mm cartridge length. The bullet material is Gilding Metal, Steel Core and Lead Core (Lead-Antimony Alloyed). It has a 5.56 mm Primer, Boxer. The bullets compeletly penetrate through 3.5 mm steel plate (SAE 1010 or 1020) at a range of 232 meters.



Has a 57.4 mm cartridge length. The bullet material is Polymer Type and Lead Core (Lead-Antimony Alloyed). It has a 5.56 mm Primer, Boxer.

5.56 MMX45 CARTRIDGE BALL (SS 109)



5.56 MMX45 CARTRIDGE POLYMER TIP



#### 5.56 MMX45 CARTRIDGE M193



Has a 57.4 mm cartridge length. The bullet material is Gilding Metal, Lead Core (Lead-Antimony Alloyed). It has a 5.56 mm Primer, Boxer.



## 5.70 MMX28 CARTRIDGE POLYMER TIP





Has a 40.25 mm cartridge length. The bullet material is Gilding Metal, Steel Core and Lead Core (Lead-Antimony Alloyed) Polymer Tip. It has a 5.56 mm Primer, Boxer.



500 lb. MK 82 GP AIRCRAFT BOMBs have three variants. MK82 MOD1 HE is 239 g, is 2268±11 mm long, has TNT as filler and the filler weight is 87 kg. As fuze, it has M904 (Nose Fuze) and M905 (Tail Fuze). MK82 MOD1 PRE-FRAGMENTED is 245 g, is 2280 mm long, has TNT as filler and the filler weight is 46 kg. As fuze, it has AB 104 LAPT980. MK82 MOD1 PRACTICE is 234 g, is 2268±11 mm long, has Sorel Cement as filler. It uses a Dummy fuze.

500 LB. MK 82 GP AIRCRAFT BOMB



500 lb. MK 82 LOW-COLLATERAL AIRCRAFT BOMB is 233±20 kg (with nose plug - with shipping cap), is 1632±10 mm (with nose plug - with shipping cap) long, has TNT and Sorel Cement as filler and the filler weight is 11.5 kg. As fuze, it has Tail Fuze (Onur 1 MOD 3 series, Onur 2 series, FMU-139 series and FMU-152 series fuzes).



500 LB. MK 82 LOW-COLLATERAL AIRCRAFT BOMB

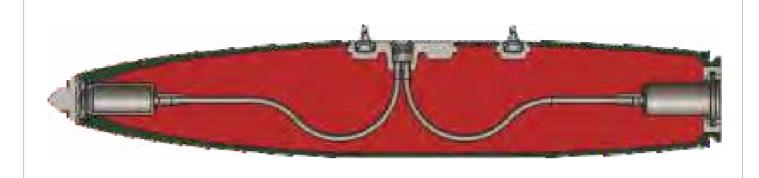




#### **500 LB. MK 82-T THERMOBARIC AIRCRAFT BOMB**



500 lb. MK 82-T THERMOBARIC AIRCRAFT BOMB is 228 (+12/-20) kg (with nose plug – with shipping cap), is 1632±10 mm (with nose plug – with shipping cap) long, has PBP-003 Thermobaric explosive (PBXN-113 equivalent) as filler and the filler weight is 87 kg. As fuze, it has Onur 1 MOD 3 series, Onur 2 series, FMU-139 series and FMU-152 series fuzes.



Is a hand carried light infantry weapon. It can be fired from a vehicle or from the ground. The mortar has a muzzle loading barrel made of special steel. It is a closed firing weapon.





**60 MM COMMANDO MORTAR** 



#### **60 MM MORTAR AMMUNITION**











The 60 mm MORTAR AMMUNITION of MKE has four variants: M49 A2 HE, MKE MOD 257 TP, MKE MOD 260 Pre-Fragmented and MKE MOD 256 Training. M49 A2 HE has an average length of 243 mm, is on average 1421 g, has maximum range of 1814 m, has a muzzle velocity of 158 m/s and has the M3A1 propellant. MKE MOD 257 TP has an average length of 243 mm, is on average 1421 g, has maximum range of 1814 m, has a muzzle velocity of 158 m/s and has the M3A1 propellant. MKE MOD 260 Pre-Fragmented has an average length of 244 mm, is on average 1355 g, has maximum range of 1712 m, has a muzzle velocity of 158 m/s and has the M3A1 propellant. MKE MOD 256 Training has an average length of 243 mm and is on average 1365 g.



Is a single shot disposable launcher. It can use Anti-Personnel (with Steel Ball) warhead. As propellant, it uses M7. The effective range is 200 m.

**66 MM ANTI PERSONNEL WEAPON SYSTEM** 



## 66 MM LIGHT ANTI-TANK WEAPON SYSTEM



## 7.62 MM X 51 NATO G3 A3/A4 AUTOMATIC INFANTRY RIFLE



Is a single shot disposable launcher. It can use Anti-tank (shaped charge) warhead. As propellant, it uses M7. The effective range is 200 m with a flight time of 1,6 sec.

Has two types. A3 has 20 magazine capacity and is 4250 g. Effective range is 400 m with 620 rds/min fire rate. It is Semi or Full Automatic. A4 has 20 magazine capacity and is 4700 g. Effective range is 400 m with 620 rds/min fire rate. It is Semi or Full Automatic.







Has Open Bolt. Accuracy is 8 MOA, it is M13 Belt feed from left and is 12 000 g. Effective range is 800 m and has 650-950 rds/min fire rate. It is Full-automatic.

7.62 MM X 51 NATO GENERAL PURPOSE MACHINE GUN PMT-76/57A



Is Short Stroke, Gas Operated, and has Rotary Bolt Action. Accuracy is 4 MOA, it has 20 magazine capacity and is 3600 g. Effective range is 600 m with 700 rds/min fire rate. It is either Semi or Full Automatic.



7.62 MM X 51 NATO KAAN-717 AUTOMATIC CARBINE RIFLE



## 7.62 MM X 51 NATO SNIPER RIFLE JMK BORA-12



# 7.62 MM X 51 NATO MKE T-41 SEMI-AUTOMATIC RIFLE





Has Bolt Action. Accuracy is 0.3 MOA, it has 10 magazine capacity and is 6400 g. Effective range is 1200 m. It is Single fire type.



Has 5/10 magazine capacity and is 4700 g. Effective range is 400 m with semi-automatic shot.



Has Open and Rotary Bolt. Accuracy is 8 MOA, it is Belt feed from right and is 8000 g. Effective range is 1000 m and has 750 rds/min fire rate. It is Full-automatic.



7.62 MM X 51 NATO MMT MODERN MACHINE GUN





Is Short Stroke, Gas Operated and has Rotary Bolt Action. Accuracy is 4 MOA, it has 20 magazine capacity and is 3750 g. Effective range is 600 m with 750 rds/min fire rate. It is either Semi or Full Automatic.

7.62 MM X 51 NATO MPT-76MH AUTOMATIC INFANTRY RIFLE



# 7.62 MM X 51 NATO AUTOMATIC INFANTRY RIFLE MPT-76



## 7.62 MM X 51 NATO PMT-76T/57A GENERAL PURPOSE MACHINE GUN







Is Gas Operated and has Rotary Bolt Action. Accuracy is 4 MOA, it has 20 magazine capacity and is 4200 g. Effective range is 600 m with 700 rds/min fire rate. It is either Semi or Full Automatic.



Has Open Bolt. Accuracy is 8 MOA, it is M13 Belt feed from left and is 12 000 g. Effective range is 800 m and has 650-950 rds/min fire rate. It is Full-automatic.





Has Gas Operated Rotary Bolt Action. Accuracy is 1.5 MOA, it has 20 magazine capacity and is 5000 g. Effective range is 800 m. It is Semi-automatic.

7.62 MM X 51 NATO SEMI-AUTOMATIC SNIPER RIFLE KNT-76





Has a 55.60 mm cartridge length. The bullet material is Tombac, Steel Core. It has a 7.62 mm Primer, Boxer.

7.62 MMX39 CARTRIDGE WITH STEEL CORE



#### 7.62 MMX51 CARTRIDGE BLANK



#### 7.62 MMX51 CARTRIDGE M118





Has a 63.15 mm cartridge length. It has a 7.62 mm Primer, Boxer.



Has a 71.12 mm cartridge length. The bullet material is Gilding Metal, Lead Core (Lead-Antimony Alloyed). It has a 7.62 mm Primer, Boxer.



Has a 71.12 mm cartridge length. The bullet material is Copper Plated Steel Jacket, Lead Core (Lead - Antimony Alloyed), Tracer Composition. It has a 7.62 mm Primer, Boxer. The bullets meet trace quality and trace distance accetance requirements (13 m, 140 m, 775 m).



7.62 MMX51 CARTRIDGE TRACER (M62)





Has a 71.12 mm cartridge length. The bullet material is Gilding Metal, Lead Core (Lead-Antimony Alloyed). It has a 7.62 mm Primer, Boxer.

7.62 MMX51 CARTRIDGE BALL (M80)



## 7.62 MMX51 CARTRIDGE **SUBSONIC**



## 7.62 MMX51 CARTRIDGE **ARMOUR PIERCING (M61)**



Has a 71.12 mm cartridge length. The bullet material is Copper Plated Steel Jacket, Steel Core and Lead Core (Lead -Antimony Alloyed). It has a 7.62 mm Primer, Boxer. The bullets compeletly penetrate 10 mm thickness mild steel plate (SAE 1010 or 1020) at a range of 91 meters.



Has a 66.9 mm cartridge length. The bullet material is Gilding Metal, Lead Core (Lead-Antimony Alloyed). It has a 7.62 mm Primer, Boxer.



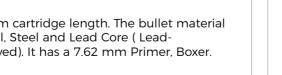




Has a 77.16 mm cartridge length. The bullet material is Gilding Metal, Steel and Lead Core (Lead-Antimony Alloyed). It has a 7.62 mm Primer, Boxer.



Has a 77.16 mm cartridge length. The bullet material is Gilding Metal, Steel and Lead Core (Lead-Antimony Alloyed). It has a 7.62 mm Primer, Boxer.







7.62 MMX54 CARTRIDGE BALL



## 7.62 MMX63 CARTRIDGE BLANK



# 7.65 MMX17 PISTOL CARTRIDGE BALL





Has a 62.7 mm cartridge length. It has a 7.62 mm Primer, Boxer.



Has a 25 mm cartridge length. The bullet material is Gilding Metal, Lead Core (Lead-Antimony Alloyed). It has a 7.65 mm Primer, Boxer.



It is used for communication and gives light with different colors. It is launched by a special pistol.



Has Bolt Action. Accuracy is 1 MOA, it has 5 (8,59) / 10 (7,62) magazine capacity and is 7200 g. Effective range is 1500 m. It is Single Shot.



7/8" FLARE GUN



8.59 MM X 69 / 7.62 MM X 51 MULTI-CALIBER SNIPER RIFLE KN-12



#### 8.59 MMX70 CARTRIDGE AP



#### 8.59 MMX70 CARTRIDGE AP I



Has a 91.86 mm cartridge length. The bullet material is Jacket [Brass], Core [Steel]. It has a Boxer as primer.

Has a 91.86 mm cartridge length. The bullet material is Jacket [Brass], Core [Steel]. It has a Boxer as primer.







Has a 91.86 mm cartridge length. The bullet material is Gilding Metal, Lead Core (Lead-Antimony Alloyed). It has a Boxer as primer.



Has a 92.25 mm cartridge length. The bullet material is Gilding Metal. It has a Boxer as primer.

8.59 MMX70 CARTRIDGE BALL



8.59 MMX70 CARTRIDGE SOLID





#### 81 MM MORTAR AMMUNITION



The 81 mm MORTAR AMMUNITION of MKE has seven variants: MKE MOD 214 HE-Long Range, MKE MOD 238 Target Practice Long Range, MKE MOD 239 Training Long Range, M301 A2 Illuminating, M43 A1 B1 HE, MKE MOD 273 Target Practice and MKE MOD 216 Training. MKE MOD 214 HE-Long Range has an average length of 500 mm, is on average 4820 g, has maximum range of 5800 m, has a muzzle velocity of 330 m/s and has the M8 Leaf propellant block with max 6 increments. MKE MOD 238 Target Practice Long Range has an average length of 500 mm, is on average 4820 g, has maximum range of 5800 m, has a muzzle velocity of 330 m/s and has the M8 Leaf propellant block with max 6 increments. MKE MOD 239 Training Long Range has an average length of 500 mm and is on average 4850 g. M301 A2 Illuminating has an average length of 571 mm, is on average 4863 g, has maximum range of 2100 m, has a muzzle velocity of 173 m/s and has the M8 Leaf propellant block with max 4 increments. M43 A1 B1 HE has an average length of 338 mm, is on average 3253 g, has maximum range of 3000 m, has a muzzle velocity of 213 m/s and has the M1A1 with max 6 increments. MKE MOD 273 Target Practice has an average length of 338 mm, is on average 3253 g. has maximum range of 3000 m. has a muzzle velocity of 213 m/s and has the M1A1 with max 6 increments. MKE MOD 216 Training has an average length of 338 mm and is on average 3140 g.





Is a unique weapon system providing extremely high performance with its operational logistics economy. It is designed and produced by MKE. It has Exceptional Range, Accuracy, Rapid movement to battle positions and easy portability over severe conditions.

81 MM UT-1 MORTAR



## 9 MM X 19 AP5 SEMI-AUTOMATIC PISTOL



## 9 MM X 19 AP5-M SEMI-AUTOMATIC PISTOL



Has Roller-Lock Delayed Blowback Action. It has 10/15/30 magazine capacity and is 2000 g. Effective range is 100 m.





Has Roller-Lock Delayed Blowback Action. It has 10/15/30 magazine capacity and is 2500 g. Effective range is 100 m.





Has Roller-Lock Delayed Blowback Action. It has 10/15/30 magazine capacity and is 2090 g. Effective range is 100 m.





9 MM X 19 AP5-P SEMI-AUTOMATIC PISTOL



9 MM X 19 MKE T-94 A2 SEMI-AUTOMATIC PISTOL



## 9 MM X 19 MKE T-94 A3 SEMI-AUTOMATIC PISTOL



## 9 MM X 19 MKE T-94 K SEMI-AUTOMATIC PISTOL





Has 15/30 magazine capacity and is 2800 g. It has semi-automatic shot.



Has 15/30 magazine capacity and is 3100 g. It has semi-automatic shot.



Has 15/30 magazine capacity and is 3100 g. It has semi-automatic shot.



9 MM X 19 MKE T-94 SD SEMI-AUTOMATIC SILENCED PISTOL





Is Short Stroke, Gas Operated and has Rotary Bolt Action. Accuracy is 4 MOA, it has 30 magazine capacity and is 2,3 kg. Effective range is 200 m with 900 rds/min fire rate. It is either Semi or Full Automatic.

9 MM X 19 MOT-919 SUBMACHINE GUN



## 9 MM X 19 MP5 A2 SUBMACHINE GUN



## 9 MM X 19 MP5 A3 SUBMACHINE GUN



Has 30 magazine capacity and is 3025 g. Effective range is 100 m with 800 rds/min fire rate. It is Semi or Full Automatic.



Has 30 magazine capacity and is 3025 g. Effective range is 100 m with 800 rds/min fire rate. It is Semi or Full Automatic.







Has 30 magazine capacity and is 2000 g. Effective range is 100 m with 900 rds/min fire rate. It is Semi or Full Automatic.



Has 30 magazine capacity and is 3250 g. Effective range is 100 m with 800 rds/min fire rate. It is Semi or Full Automatic.

9 MM X 19 MP5 K SUBMACHINE GUN



9 MM X 19 MP5 MTS A2 SILENCED SUBMACHINE GUN





## 9 MM X 19 MP5 MTS A3 SILENCED SUBMACHINE GUN

9 MMX17 PISTOL CARTRIDGE SHORT

Has 30 magazine capacity and is 3460 g. Effective range is 100 m with 800 rds/min fire rate. It is Semi or Full Automatic.

Has a 24.5 mm cartridge length. The bullet material is Gilding Metal, Lead Core (Lead-Antimony Alloyed). It has a 9 mm Primer, Boxer.







## 9 MMX19 PISTOL CARTRIDGE 115GR

Has a 29.69 mm cartridge length. The bullet material is FMJ, Brass (CuZn30), Lead Core (Lead-Antimony Alloyed). It has a 9 mm Primer, Boxer.



## 9 MMX19 PISTOL CARTRIDGE BLANK

Has a 29.3 mm cartridge length. It has a 9 mm Primer, Boxer.







# 9 MMX19 PISTOL CARTRIDGE PARABELLUM

Has a 29.69 mm cartridge length. The bullet material is Jacket CuZn30, Lead Core (Lead-Antimony Alloyed). It has a 9 mm Primer, Boxer.





Has a 27.5 mm cartridge length. The bullet material is Jacket CuZn30, Lead Core (Lead-Antimony Alloyed). It has a 9 mm Primer, Boxer.



## 9.65 MM (.38 CAL) PISTOL CARTRIDGE SHORT



## ALUMINIUM ELECTRIC CAPSULE



Ball type has a 30.6 mm cartridge length. The bullet material is Copper Alloy, Lead Core (Lead-Antimony Alloyed). It has a 9 mm Primer, Boxer. Special type has a 38.86 mm cartridge length. The bullet material is Copper Alloy, Lead Core (Lead-Antimony Alloyed). It has a 9 mm Primer, Boxer.

It is a detonator which has electrically ignitable fusehead by the action of dynamo type or condenser type exploder. Shell material of this deto-nator is chosen as aluminium to explode dynamite and similar explosives in the open mines. It can be manufactured at the desired cable length.









It is a detonator which has electrically ignitable fusehead by the action of dynamo type or condenser type exploder. It is used to explode the permitted explo-sives in the gassy and dusty mines (coal mines etc.) Tube material is copper and the deto-nator is firedamp safe. It can be manufactured at the desired cable length.



It is made from a special medical fabric and can be used for a long time without disturbing the ears thanks to its flexible strap. Properties:

- · Nonwoven fabric
- · Anti-allergic and high air-permeability
- · Ultrasonic stitches
- Disposable
- · 3 layers
- · It has UTS and CE certificate.

**COPPER ELECTRIC CAPSULE** 



**SURGICAL MASK** 





#### **CHAFF AMMUNITION**



It is used for countermeasure. It acts as a decoy for radar guided missiles. When ejected from an aircraft, chaff forms a metal coated chaff cloud that hides the aircraft from radar.



## **SUBMARINE PARACHUTE SMOKE CANDLE**

It is ejected from submarines and is used for communication in daytime. It gives colored smoke while landing parachute.





## **SUBMARINE PARACHUTE LIGHT CANDLE**

It is ejected from submarines and is used for communication in night. It gives colored light while landing parachute.





#### **DM 1019 DETONATOR**

It creates a hole with a diameter of 4 mm on the aluminium plate which has a thickness of 2 mm.





## **DM 1020 A1 DETONATOR**

It creates a hole with a diameter of 4 mm on the aluminium plate which has a thickness of 2 mm.





## 12.7 X 99 MM 3 BARREL **ROTARY CANNON**

Has an effective range of 1700 m and 1200 rds/min fire rate. It has 3 barrels which are 910 mm long.





## **E-FIRTINA HYBRID PROPULSION**



Has two types. DIESEL is 47 Tons with a maximum speed of 65 km/h. It has diesel fuel and 226 km range (when fully loaded). Engine type is MT-881 Ka-500. HIBRIT is 48.4 Tons with a maximum speed of 60 km/h (± 10 km/h). It has diesel (generator) fuel and 300 km (± 30km) range (when fully loaded). It has 2x38 kW generator capacity with 4 hours charching time. The engine type is Electric 2P2S.







**TRAINING SOUND CAPSULES (SESK-1, SESK-2)** 



#### **HAND GRENADES**



MKE MOD 119 OZOK is 111 mm long, has a 1020-1030 Steel body and has C4 or TNT as filler. It uses MKE MOD 49 as fuze. MKE MOD 125 THERMOBARIC is 113 mm long, has a plastic body and has Thermobaric Explosive PBP-003 (equivalent of PBXN-113) as filler. It uses MKE MOD 49 as fuze. MKE MOD 50 PRE-FRAGMENTED DEFENCE is 73 mm long, has a plastic body and has Comp B as filler. It uses MKE MOD 117 as fuze. MK2 DEFENCE is 120 mm long, has a cast iron body and has Comp B or TNT as filler. It uses MKE MOD 45 or MKE MOD 45 B1 as fuze. MK2 MOD 44 DEFENCE is 120 mm long, has a cast iron body and has Comp B or TNT as filler. It uses M204A2 or M204A2T1 as fuze. MK2 MOD 46 PRACTICE is 120 mm long, has a cast iron body and has Sorel Cement as filler. It uses MKE MOD47 or MKE MOD47B1 as fuze. MK2 PRACTICE is 120 mm long, has a cast iron body and has Sorel Cement as filler. It uses M205A2 or M205A2T1 as fuze. MKE MOD 56 A1 B1 RIOT CONTROL is 175 mm long, has a plastic body and has OC as filler. It uses MKE MOD 57 as fuze. MKE MOD 48 OFFENSIVE is 111 mm long, has a craft paper body and has TNT as filler. It uses MKE MOD 49 or MKE MOD 49 B1 as fuze. MK3 A2 OFFENSIVE is 111 mm long, has a craft paper body and has TNT as filler. It uses M206 A2 or M206 A2 T1 as fuze.





The Hand Grenade Fuzes of MKE has three variants: MKE MOD 45 HAND GRENADE FUZE, MKE MOD 47 HAND GRENADE FUZE and MKE MOD 49 HAND GRENADE FUZE. MKE MOD 45 HAND GRENADE FUZE function is Pyrotechnic delayed detonation. It has a weight of 85 g, the body is made of Die Casting Zinc Alloy and it is used in MK2 Defence Hand Grenade. MKE MOD 47 HAND GRENADE FUZE function is Pyrotechnic delayed detonation. It has a weight of 85 g, the body is made of Polycarbonate Plastic and it is used in MK2 MOD 46 Practice Hand Grenade. MKE MOD 49 HAND GRENADE FUZE function is Pyrotechnic delayed detonation. It has a weight of 85 g, the body is made of Die Casting Zinc Alloy and it is used in MKE MOD 48 Offensive Hand Grenade.

**HAND GRENADE FUZES** 



## **HAND-LAUNCHED ILLUMINATION ROCKET**



It is used for air-to-air or ground-to-air IR heat guided missiles training. When Flare is initiated,

**ELECTRIC RED FLARE** 







It is used in any situation where illumination and communication are required. Because of product property, it can be used for military and civilian purpose.



This type of detonator is used as an igniter to initiate the dynamite and similar explosives in dams, roads and mining constructions. It is ignited with a safety fuse which is crimped by a special pens. It explodes with delay depending on the fuse length being used.



It is used in radar training.



**ELECTRICAL SMOKE CAN** 



**NON-ELECTRIC CAPSULES** 





#### **ELECTRONIC PROXIMITY FUZES**



The Electronic Proximity Fuzes has two variants: MKE MOD 135 and MKE MOD 145. MKE MOD 135 function is Proximity, PD Mode. It has a weight of 700 g, has a booster explosive of approximately 22 g RDX/Tetryl and it is used in Spin-Stabilized HE Ammunition between 105-203 mm. MKE MOD 145 function is Proximity, PD Mode. It has a weight of 710 g and it is used in Spin-Stabilized Smoke Ammunition between 105-203 mm.







The Electronic Time Fuzes has two variants: MKE MOD 124 and MKE MOD 134. MKE MOD 124 function is Electronic time, PD Mode. It has a weight of 700 g, has a booster explosive of approximately 5 g Black Powder and it is used in Spin-Stabilized HE Ammunition between 105-203 mm. MKE MOD 134 function is Electronic time, PD Mode. It has a weight of 685 g, has a booster explosive of approximately 22 g RDX/Tetryl and it is used in Spin-Stabilized Smoke/Illumination Ammunition between 105-203 mm.

**ELECTRONIC TIME FUZE** 



## EYP-1



## EYP-2





It is used in mine and hand made explosive trainings. It is ignited electrically and it gives sound, light and smoke.

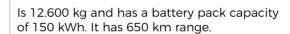


It is used in mine and hand made explosive trainings. It is ignited electrically and it gives light and smoke.



It is used in mine and hand made explosive trainings. It is ignited electrically and it gives sound, light and smoke.

EYP-3





E-ZPT E-ARMOURED PERSONNEL CARRIER





# MKE FFP3-TYPE VALVED / WITHOUT VALVED MASK



#### **FG3 FLARE AMMUNITION**



It is used as a countermeasure against IR heat guided missiles.



The MKE FFP3-type Valved / Without Valved Mask provides the user with effective and comfortable respiration. Its 3 dimensional flexible frame is designed to fit all face types. These products meet the requirements laid down in the European Community Directive 89/686/EEC (Personal Protective Equipment Directive) and are thus CE-marked. Properties:

- Non-irritating
- · Nanofiber nonwoven textile material with 3 layers
- · Nose piece
- · Nano-fiber coating technology
- · Filtration Efficiency: at max 0.6 µm + 99%
- · Outlet valve available







It is used as a countermeasure against IR heat guided missiles.

**FG3 FLARE AMMUNITION** 



Has 47000 kg combat weight. It has a firing range of 18 km for M107(HE), 30 km for M549A1/RAP(HE) and 40 km+ for ERFB/BB(HE). The fire rates of the howitzer are 3 rounds / 15 seconds for normal, 6-7 rounds / minute for maximum and 2 rounds / minute for sustained. It has an operational range of 360 km and can host 5 crew members.



155 MM 52 CAL. FIRTINA FOR SELF PROPELLED HOWITZER



## ALUMINIUM ELECTRIC CAPSULES WITH DELAY



## COPPER ELECTRIC CAPSULES WITH DELAY



It is a detonator which has electrically ignitable fusehead by the action of dynamo type or condenser type exploder with delay time. They are used to blast dynamite and similar explosives at desired intervals and sequence, to obtain a good and uniform fragmentation, the desired particule size, to decrease vibration and to increase the yield of the blasting in the great blasting operations. It can be manufactured at the desired cable length.

It is a detonator which has electrically ignitable fusehead by the action of dynamo type or condenser type exploder with delay time. They are used to blast the dynamite and similar explosives at desired intervals and sequence, to obtain the desired particule size, to decrase the vibration and to increase the yield of the blasting in the gassy and dusty mines, especially. It can be manufactured at the desired cable lenght.





It is a detonator which has electrically ignitable fusehead by the action of dynamo type or condenser type exploder with delay time. They are used to blast dynamite and similar explosives at desired intervals and sequence, to obtain a good and uniform fragmentation, the desired particule size, to decrese vibration and to increse the yield of the blasting in the great blasting operations. It can be manufactured at the desired cable length.





It is used for military training and dispersing crowds. When exploded, it gives high sound. Its sound can be heard from 1 km. distance.

ALUMINIUM ELECTRIC CAPSULES WITH DELAY



**DEMONSTRATION GRENADE** 



#### **MORTAR FUZES**



The Mortar Fuzes of MKE has two variants: MKE MOD 502 MORTAR FUZE and AZDM 111 A2 MORTAR FUZE.MKE MOD 502 MORTAR FUZE function is Mechanical PD-Delay (0.06 s). It has a weight of 200 g, has a booster explosive of Tetryl (13 g) and it is used in 60 mm, 81 mm and 120 mm Mortar Ammunition. AZDM 111 A2 MORTAR FUZE function is Mechanical PD-Delay (0.06 s). It has a weight of 201 g, has a booster explosive of Tetryl (13 g) and it is used in 60 mm, 81 mm and 120 mm Mortar Ammunition.



# NOSE MOUNTED ROTARY CANNON



Has an effective range of 2000 m and 750  $\pm$  75 rds/min fire rate. The length of the barrel is 1521 mm.





HMX (Octogen) is white crystal in appearance. Minimum melting point is 277 in degrees Celsius and have large range granulation.



**HMX (OCTOGEN)** 





It is used for signalling and communication. It gives colored smoke.

DREADNOUGHT TYPE COLOURED SMOKE CAN









UAV AMMUNITIONs have four variants. 81 mm MKE MOD 132 is 1900 g, is 337 mm long, has Comp B as filler and the filler weight is 550 g. As fuze, it has MKE MOD 128 UAV Mortar Ammunition Fuze. 60 mm MKE MOD 129 is 835 g, is 245 mm long, has Comp B as filler and the filler weight is 160 g. As fuze, it has MKE MOD 128 UAV Mortar Ammunition Fuze. MKE MOD 130 is 700 g, has C4 as filler and the filler weight is 450 g. As fuze, it has Electronic Fuze (STM). MKE MOD 131 is 300 g, has C4 as filler and the filler weight is 95 g.









**BLACKPOWDERS** 



#### **CARTRIDGES AND SQUIBS**



AVF 1 MOD 1 Impulse Cartridge is used for releasing load and bombs from the plane. MKE FG-3 Squib is used for dispensing 1x1x8" Flare countermeasure decoy. MKE CG 17 Squib is used for dispensing 1x1x8" Chaff countermeasure decoy. MKE FG-6 Squib is used for dispensing 2x1x8" Flare countermeasure decoy. Aker Propelling Cartridge is used by bomb disposal experts to destroy the suspicious packages. MKE 18 Detonator creates a hole with a diameter of 5 mm on the steel plate which has a thickness of 3 mm. It activates the parachute systems of sea mines thrown from the plane. 12.7 mm Electric Flame Cartridge DLT is used to open rocket fuse and bomb disposal apparatus. N2 Training Cartridge is used in the destruction training of the submarine mines. ARD 446 Impulse Cartridges is used for releasing of loads and heavy bombs from the aircrafts. N12 War Cartridge is used in the destruction procedure of the submarine mines. ARD 863 Impulse Cartridge is used for releasing of loads and heavy bombs from the aircrafts.





R&D & Techno. D.2003-1/NBC and ENC1, TS 8861, MIL-C-0013724 standards. It can be placed in a 12x12x8 cm box. Protects against organic, inorganic, toxic, acidic gases, solvents and vapours. It has CE certificate.

**CBRN AND INDUSTRIAL TYPE FILTERS** 



#### **FIRECRACKER (RAILWAYS)**



#### **PROTECTIVE GOGGLES TYPE A**





It is used to make a loud sound as a warning signal to train drivers.



It is designed to fit all face types. Properties:

- · Reflex edges made of TPU material.
- · Adjustable head strap available.
- · 100% vision clarity
- · With CE Certification.





It is designed to fit all face types. Thanks to its anti-fog feature, it blocks moisture from sticking on the glasses during use. Properties:

- · Reflex frame borders made of medical PVC material.
- · Adjustable head strap available.
- · 100% vision clarity
- · With CE Certification.

It is made from nonwoven fabric, it is particle-and liquidresistant. Properties:

- The face part of the hood as well as the wrist and ankle parts, all elastic, do not disturb the user.
- The hood and collar as an entirety do not hinder neck movements.
- · Zip front from chin to legs
- Disposable
- · Low pressure and resistant to liquid splashes.
- · Available in 3 sizes: M, L, XL



**PROTECTIVE GOGGLES TYPE B** 



**PROTECTIVE OVERALLS** 





# SPHERICAL PROPULSION POWDER

Ball Powder (5.56 mm x 45) is Spherical and Double Base.5.56 (M200 Blank) Ball Powder is Spherical and Double Base. Ball Powder (7.62 mm x 51) is Spherical and Double Base.7.62mm x 39 Kalashnikov Ball Powder, Ball Powder (9 mm x 19), Ball Powder (12.7 mm x 99) and Ball Powder (20 mm x 102) are all Spherical and Double Base.





## KZD 242 (35 MM AMMUNITION) FUZE

KZD 242 (35 MM AMMUNITION) FUZE function is Mechanical, PD, Self-Destruction. It has a weight of 46 g and it is used in 35 mm.





## **MI DETONATOR**

It creates a hole with a diameter of 5 mm on the lead plate which has a thickness of 3,5 mm.





#### M125 BUSTER

It is used in M557 fuze.





## **M17 DETONATOR**

It creates a hole with a diameter of 4.7 mm on the lead plate which has a thickness of 3.5 mm.





## **M2 DELAY ELEMENT**

It creates a hole with a diameter of 4 mm on the aluminium plate which has a thickness of 2 mm.





### **M204 DETONATOR**



### **M24 DETONATOR**

It creates a hole with a diameter of 5 mm on the lead plate which has a thickness of 5 mm. It creates a hole with a diameter of 4,7 mm on the lead plate which has a thickness of 2 mm.







### M-47 ELECTRIC FIRE EXTINGUISHER CAPSULE



### M505 A3 (20 MM AMMUNITION) FUZE



It is used in fireextinguishing systems.



M505 A3 (20 MM AMMUNITION) FUZE function is PD. It has a weight of 21,45 g and it is used in 20 mmx102 M56A3 HEI ve HEI-T Ammunition, 20 mmx110 HEI and HEI-T Ammunition (MKE MOD 1102-1109).



### **M505 BUSTER**



### **M80 NAVAL DETONATOR**

It creates a hole with a diameter of 9 mm. on the lead plate which has a thickness of 2 mm.



It is used for training and gives high sound like a hand grenade.



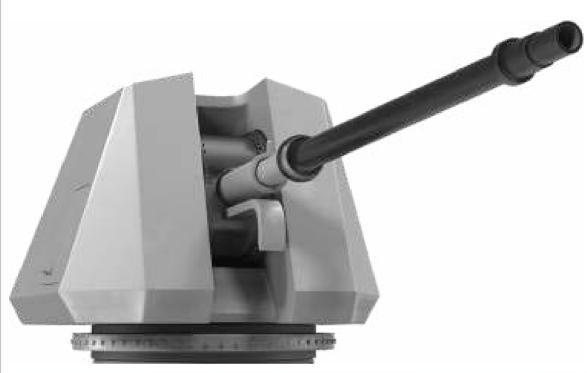






### 76/62 MM NATIONAL NAVAL GUN

Is used for Anti-Air Warfare, Anti-Surface Warfare and Shore Bombardment operations. The range of the gun is 16 km for standart ammo and 20 km with extended range ammunition. It has a Reduced Radar Cross Section for shielding.







### **MK1 MODO ELECTRICAL CAPSULE**



### **MK4 MOD3 SMOKE CAN**

It is used in 2,75" Rocket Igniter.





It is used by mounting to the training bomb which is activated by hitting the target result in dense white smoke.



### **MKE 06 PRIMER**



### **MKE 1049 DETONATOR**



It creates an upset with a depth of 2.4 mm on the lead plate which has a thickness of 12 mm.



### **MKE 12 BOMB SCISSOR DETONATOR**

It is used in MKE 12 Bomb Cutter Set.



### **MKE 19 MOD 1 TRAINING FUSE**

It is used to release the hawser in submarine mines.





### **MKE 2019 DETONATOR**



### **MKE 6 ELECTRIC DETONATORS**





It creates a hole with a diameter of 13 mm on the steel plate which has a thickness of 2 mm.

It is used in MKE 33 Bomb-Cutter Set.







It is used for igniting the safety fuses.

MKE MOD 122 (76/62 mm NAVAL AMMUNITION) FUZE function is PD / Selldestruct (0,05 s). It has a weight of 895 g and it is used in 76/62 mm Naval Ammunition. It has a booster explosive of Tetryl (46,5 g).



MKE 61 SECONDS WICK LIGHTER



MKE MOD 122 (76/62 MM NAVAL AMMUNITION) FUZE



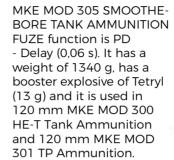
### MKE MOD 127 INDUCTIVE PLUG SETTING DEVICE



MKE MOD 305 SMOOTHE-BORE TANK AMMUNITION FUZE



The fuses used by this device are MKE MOD 124/134 Electronic Time Fuzes and MKE MOD 135/145 Electronic Proximity Fuzes. It has 3 pieces of 1.5V Alkaline batteries and rechargeable embedded battery with 5V adapter. The special properties of the device are the status check of the bulb battery in the fuze, status indicator of batteries and embedded battery in the setting device and also serial programming via the key on the programming interface. The LED on the programming interface of the device indicates whether the programming is successful or not.







MKE MOD 51 (M82) PRIMER is percussion type, 4,93 cm long and uses 1,43 g black powder as filler.



MKE MOD 51 (M82) PRIMER





MKE MOD 79 (40 MM GRENADE LAUNCHER CARTRIDGE) FUZE function is PD Mode. It has a weight of 90 g and it is used in 40 mm High Velocity Grenade Launcher Cartridges.

MKE MOD 79 (40 MM GRENADE LAUNCHER CARTRIDGE) FUZE





### **MKE MOD 53 ROCKET FUZE**



•



MKE MOD 53 ROCKET FUZE function is PD/Delay (0,05 s). It has a weight of 637 g and it is used in 107 mm Multi-Barrel Rocket Launcher Ammunition (Artillery Rocket).

It makes a loud noise and emits a bright flash of light when it explodes. It temporarily blinds and deafens people nearby.



MKE SOUND AND LIGHT BOMB (FLASHBANG) MOD 1



### **MKE THERMAL CAMERA SYSTEM**





MKE Thermal Camera System can be used in places where there is a continual movement of people, such as healthcare and education institutions, shopping malls, military and civil institutions, airports and customs gates. MKE Thermal Camera System that will be installed at the entries and exits of mass transport stations will be able to sense the body temperature of all incoming and outgoing passengers. This system offers instant screening of passengers through a camera that focuses on turnstiles to detect the passengers with high body temperature. Also, with this system installed in the passenger boarding bridges of the airports, the passengers with higher-than-normal body temperature will be spotted before they leave the boarding bridge. Once a person with a risk of infection is pinpointed, the personnel on duty at the station/facility will immediately be alerted and provided with the facial image of the possible case. In this way, the possible case would be prevented from using any public transport or entering into the crowd.

### **MKE ESCAPE MASK**

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### **MKE BELLOWS IGNITER**



The insertion and removal time for the MKE ESCAPE MASK is less than 30 seconds. It offers protection against hydrogen cyanide, cyanogen chloride, phosgene, chlorpicrin and sarin. The packaging is available with a 4-laver aluminium foil barrier compartment surrounded by a reinforced nylon backing. It is CE certified.



It is used in the safety mechanisms of fuzes.

This mask has double air valves. Properties:

- · Adjustable head strap
- $\cdot$  It provides superior protection compared to N99-and FFP3-type masks.
- · Half-face mask that can be decontaminated.



MKEK HALF FACE MASK AND FILTERS



It is used in fire extinguishing systems.





### YAVUZ TRUCK MOUNTED HOWITZER





Is 32 tons.It has a firing range of 18 km for M107(HE), 30 km for M549A1(HE) and 40 km for MOD 274. The fire rate of the howitzer is 4-6 rds/min. It has an operational range of 600 km and can host 5 crew members.



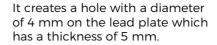
#### **MKE-NEFES**



#### **MOD 36 DETONATOR**



It is designed for use by military, civil defense, police and emegency personal in toxic environments, potentially contamined with Chemical, Biological, Radiological and Nucleer (CBRN) agents. It is suitable to be used with any gas mask via a connection screw compliant with TS EN 148-1 standard, quality of their respiration resistance and other features are compliant with the NATO and European Standards.









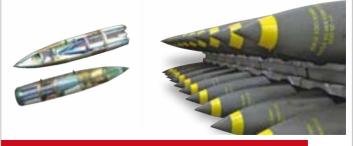
It is igniter of 120 mm Tank Ammunition.



**MOD 500 ELECTRIC CAPSULE** 



NEB / NEB-T PENETRATOR BOMB have two variants. NEB is 870 kg, is 2600 mm long, has 24 kg Augmenting Charge PBXN-110 and 35kg Follow Through Bomb PBXN-109 as explosive. As fuze, it uses in Augmenting charge ONUR-1 MOD4 and in Follow through bomb FMU-152 A/B 3" hard target fuzes. NEB-T (Thermobaric) is 870 kg, is 2600 mm long, has 24 kg Augmenting Charge PBXN-110 and 35kg Follow Through Bomb Thermobaric Explosive PBP-003 or PBP-003-02 (equivalent of PBXN-113) as explosive. As fuze, it uses in Augmenting charge ONUR-1 MOD4 and in Follow through bomb FMU-152 A/B 3" hard target fuzes.



NEB / NEB-T PENETRATOR BOMB



### HOWITZER AMMUNITION GUNPOWDER RIGHT



SELF-DEFENCE MUNITION (MKE MOD 38)



SELF-DEFENCE MUNITION (MKE MOD 38) is 218 mm long, 1330 g with Comp C4 as filler.



The M3A1 propelling charge is a green bag type designed for use in 155 mm howitzers for firing in Zones 1 through 5. The M4A2 propelling charge is a white bag type designed for use in 155 mm howitzers for firing in Zones 3 through 7. The M119A2 propelling charge is a Zone 7 red bag charge for firing in 155 mm Howitzers containing M185 and M199 cannon tubes. M1, Green bag propelling charge is used for zone firing with Charges 1 to 5 in 8" howitzer cannons. The charge consists of a base section (Charge 1) and four unequal increments (2 through 5) of propellant M1 in green cloth bags. M2, white bag propelling charge is used for zone firing with Charges 5 through 7 in 8" howitzer cannons the charge consists of a base section (Charge 5) and two unequal increments (6 and 7) for zone firing.



RDX (Hexogen) has two types. Both types are white crystal in appearance. Minimum melting point is 200 in degrees Celsius and have large range granulation.



**RDX (HEXOGEN)** 





It is used for signalling and communication. It gives colored smoke.

DREADNOUGHT TYPE COLOURED SMOKE CAN



### ROCKET MAINTENANCE AND OVERHAUL





### S-68 FIRE EXTINGUISHER CAPSULE





MKE Rocket and Explosive Factory has the capabilities of:

- -Testing,
- Controlling,
- Maintenance,
- Life-Extension
- Overhauling for the rocket system besides its production activities.





It is the fire extinguishing detonator used in armoured vehicles.



It has followng main features:

- $\cdot$  Up to 4 hours working time with internal battery unit
- · Input Voltage DC 12 VDC
- · Power consumption 24W
- It complies with IEC 60601 standards. It's Usage Areas are:
- $\cdot$  Health and care units to be established related to the pandemic.
- · Medical units of military base areas or barracks
- · Field hospitals
- · Building or facilities reserved for quarantine
- · Hospitals, emergency intensive care units
- Ambulances
- · Home treatment



FIELD MECHANICAL RESPIRATOR



It makes a hole with diameter of 5 mm on the lead plate which has a thickness of 3,4 mm. It is used in the fuze of general purpose bombs: MK-81, MK-82, MK-83 and MK-84. It is exploded by UNL 10-X primer and explodes MA 71-X.



**SC 71-X DETONATOR** 



#### **60 MM SALUTING GUN**



### SALUTING AND MANOEUVRING CEREMONIAL CHARGES



Is 135 kg in total, has monoblock, smoothbore barrel with manual firing. Mininmum sound level it generates is 110 dB which has a diameter rantge of 5 km.



These charges have three variants. 60 MM MKE MOD 82 SALUTING CHARGE has MKE MOD 82 cartridge case, 133 g propellant and has MKE MOD 73 Primer Assembly with M35 Primer. 105 MM HOWITZER SALUTING CHARGE has Shortened M14 cartridge case and has MKE MOD 89 Primer Assembly with M35 Primer. 105 MM TANK GUN SALUTING CHARGE has Shortened MKE MOD 26 cartridge case, 805 g propellant and has MKE MOD 27 Electrical Percussion Primer.





Various dimension and diameter Sheet, flake or cylindirical rod, various internal configuration

Composition: Double base(NC/NGL)

**PROPELLANTS AND** 

**ROCKET FUELS** 





Ignition charge and primers have four variants. In M5A1 Ignition Charge and M32 Primer, Ignition Charge has a Craft Paper body and 3.2 g M9 Propellant. It has brass primer with black powder as primer propellant. In MKE MOD 29 Ignition Charge and M34 Primer, Ignition Charge has a Craft Paper body and 6.5 g M9 Propellant. It has brass primer with black powder as primer propellant. In MKE MOD 30 Ignition Charge and M34 Primer, Ignition Charge has a Craft Paper body and 6.5 g M9 Propellant. It has brass primer with black powder as primer propellant. In MKE MOD 37 Ignition Charge, Ignition Charge has a Craft Paper body and 30 g M8 Propellant. It has brass primer with black powder as primer propellant. It has brass primer with black powder as primer propellant.

### IGNITION CHARGE AND PRIMERS





### **35 MM WEAPON ASSEMBLY AND RECOIL MECHANISM**





Is 432 kg in total, is 4.424 mm long with barrel and muzzle brake and has 4000 m effective range with 2x550 round/ min rate of fire.



It is used in smoke operations.

**SMOKE HAND GRENADE** 





#### CYLINDRICAL GUNPOWDER AND PROPELLANT



M9(0) Propellant has a 5,8 g charge weight, is Cylindrical and Double Base. CBI (Tip II) Propellant is Cylindrical and Single Base. 155 mm M1 Propellant has a 2600 g charge weight, is Cylindrical and Single Base. 155 mm M1 Propellant with 7 Perforations has a 6200 g charge weight, is Cylindrical with 7 perforations and Single Base. 155 mm M6 Propellant has a 9560 g charge weight, is Cylindrical with 7 perforations and Single Base. 120 mm CEP-2 Propellant is Cylindrical with 7 perforations and Double Base. 106 mm M26 Propellant has a 3650 g charge weight, is Cylindrical with 7 perforations and Double Base. 105 mm M1 Propellant (PANTER) has a 2850 g charge weight, is Cylindrical with 7 perforations and Single Base. 105 mm M30 Propellant has a 5800 g charge weight, is Cylindrical with 7 perforations and Triple Base. 40 mm M9 Propellant has a 0.45 g charge weight, is Cylindrical and Double Base. 35 mm Anti-Aircraft Propellant has a 330 g charge weight, is Cylindrical and Single Base. 12.7 mm Cartridge Powder has 15,35 g charge weight, is Cylindrical and Double Base.



Smokeless Shutgun (Flake) is Cylindrical and Single Base. 120 mm NC-NG Propellant is Cylindrical with 7 perforations and Double Base. 7.62 mm Nato Powder has a 2,85 g charge weight, is Cylindrical and Double Base. 7.62 mm (M82) Blank Powder has a 0,74 g charge weight, is Cylindrical and Single Base. 7.62 mm Nato High Pressure Powder has a 2,5 g charge weight, is Cylindrical and Single Base. 35 mm Air Burst Ammunition has a 310 g charge weight, is Cylindrical and Single Base. 25 mm HEI-T/TP-T Propellant has a 90 g charge weight, is Cylindrical and Double Base. 25 mm APDS-T Propellant has a 96 g charge weight, is Cylindrical with 7 perforations and Single Base. 40 mm M2 Propellant has a 4,5 g charge weight, is Cylindrical and Double Base. 120 mm MOD300 Propellant has a 5430 g charge weight, is Cylindrical with 7 perforations and Double Base. 155 mm Moduler Charge System Propellant has a 2350 g charge weight, Rosette shaped (hexogonal) with 19 holes and Triple Base. 35mm Primer Powder has a 1,2 g charge weight, is Cylindrical and Single Base.





CYLINDRICAL GUNPOWDER AND PROPELLANT

#### **SKX 115 DETONATOR**



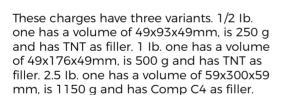
### **SR10 / SR10 ST / SR10 MC**



It creates a hole with a diameter of 7 mm on the lead plate which has a thickness of 4 mm.

It is designed for use by military, civil defense, police and emegency personel in toxic environments, potentially contamined with Chemical, Biological, Radiological and Nucleer (CBRN) agents. It is suitable to be used with any gas mask via a connection screw compliant with TS EN 148-1 standard, quality of their respiration resistance and other features are compliant with the NATO and European Standards.











Shaped demolition charges have four variants. 40 lb.MKE MOD 83 (M3A1) has a steel cone and composite body, has a diameter of 245 mm, uses 12 500 g Comp B as main charge and has CompC4 as booster. 15 lb. MKE MOD 84 (M2A4) has either an aluminum(Type 1) or copper(Type 2) cone and composite body, has a diameter of 182 mm, uses 5800 g Comp B as main charge and has CompC4 as booster. MKE MOD 85 (EXROD) (MK23 MOD 0) has a copper cone and Plastic (ABS) body, has a diameter of 45 mm and uses 65 g Comp B as main charge. MKE MOD 86 (EXROD) (MK24 MOD 0) has a copper cone and Plastic (ABS) body, has a diameter of 80 mm and uses 415 g Comp B as main charge.



**DEMOLITION MOULD** 



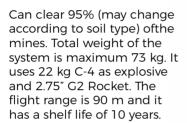
**DEMOLITION CHARGES** 





## TAMGEÇ MINE CLEARING LINE CHARGE SYSTEM (FOR INFANTRY TROOPS)







Can clear pressure and single impulse type mines (TM-45, TM-57, TMKR-2, MK-56 and similar mines). Total weight of the system is 2800 kg (Included trailer, launcher, line charge and rocket group). It uses 400 kg C-4 as explosive and 2.75" G1 Rocket. The flight range is 200 m and it has a shelf life of 10 years.





TAMKAR MINE CLEARING LINE CHARGE SYSTEM (FOR VEHICLE)

### TANK SMOKE MORTAR AMMUNITION



### **TNT (TRINITROTOLUEN)**



It is from light to dark yellow in color flake. The average thickness of the flakes are less than 0.63 mm, the individual thickness of the flakes are less than 1.02 mm.





It is used to camouflage the military vehicle with smoke. It is ignited electrically.





The Artillery Fuzes of MKE has two variants: MKE MOD 92 MECHANICAL ARTILLERY FUZE and M557 MECHANICAL ARTILLERY FUZE. MKE MOD 92 MECHANICAL ARTILLERY FUZE function is Mechanical PD-Delay (0.05 s). It has a weight of 730 g, has a booster explosive of approximately 22 g RDX/Tetryl and it is used in ammunitions 105 mm M1, 105 mm MKE MOD 233, 155 mm M107, 155 mm MKE MOD 274, 120 mm MKE MOD 209. M557 MECHANICAL ARTILLERY FUZE function is Mechanical PD-Delay (0.05 s). It has a weight of 975 g, has a booster explosive of approximately 22 g RDX/Tetryl and it is used in ammunitions Howitzer and also Tank Ammunitions between 105-203 mm.



Is 6800 kg, has 3150 mm long barrel length and has 4000 m effective range with 2x550 rounds/min rate of fire. It has 2 cannon, 2 generators and a Radar.





#### **ARTILLERY FUZES**

### **UNL 10-X PRIMER**



### **VKX 440 BUSTER**



It is used as the electrical initiator in the fuze of general purpose bombs: MK-81, MK-82, MK-83, MK-84. It explodes SC-71X detonator.



It creates a hole with a diameter of 6 mm. on the lead plate which has a thickness of 8 mm.









120 mm Combustible Case and Adaptor are components used in 120 mm APFSDS-T and 120 mm TPCSDS-T tank amunitions. 120 mm HE Combustible Adaptor HE-T/HEAT are components used in 120 mm HE tank amunition. 155 mm Combustible Cartridge Cases are components of modular charge systems used in the firing of 155 mm MKE MOD 274 and 155 mm MKE MOD 281 artillery amunitions.



It is designed for use by military, civil defense, police and emegency personel in toxic environments, potentially contamined with CN/SC/OC agents. It is suitable to be used with any gas mask via a connection screw compliant with TS EN 148-1 standard, quality of their respiration resistance and other features are compliant with the NATO and European Standards.

**COMBUSTIBLE CARTRIDGES** 



NEW GENERATION PANORAMIC





### **YHSS CLOSE AIR DEFENCE SYSTEM**



Electro-optical sensor units on the turret consist of thermal camera (cooled), day vision camera, laser distance meter system. The weapon system used is 20 mm 6-Barrel Rotary Cannon.





It has replaceable plexiglass transparent sheet. Properties:

- · Flexible, adjustable head strap
- · Polypropylene cap
- · With CE Certification.



**FACE PROTECTION VISOR TYPE C** 





### **SURFACE ILLUMINATION TRAP**



It is used as a trap in the fields which need to be secured. When the flare is activated by the trap wire, the pyrotechnic illuminant mixture is ignited immediately and it provides an intense illumination.



APC Vehicle Gas Mask Set consists; Gas Mask, CBRN Hose, Canister Holder with Connector, D12 Canister and Shoulder Carrying Bag. It provides complete protection in all chemical, biological, radiological and nuclear environments.



⊕,⊕

**GAS MASK FOR ARMOURED PERSONNEL CARRIERS** 

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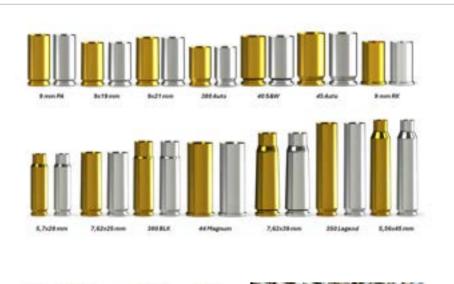
Company Website

www.abramakbilisim.com

Meca Metal operates a manufacturing facility with a wide range of calibers, specializing in the production of brass and steel casings and lead bullets. Our production portfolio includes the following calibers:

- 9 mm
- · 10 mm
- · 380 Auto
- · 40 S&W
- 45 Auto
- · 44 Remington Magnum
- · 300 Blackout
- 5.7 mm
- · 7.62 mm
- 5.56 mm
- · 350 Legend
- · 12.7 mm (.50 Cal)

In addition to our existing casing and bullet production capabilities, our company also manufactures specialized machines for these calibers. We excel in designing and setting up custom machinery and production lines tailored to specific production methods based on customer requirements. Our commitment to quality and innovation ensures that we provide the most suitable solutions for industry needs, with a primary focus on customer satisfaction













**MECA METAL** 

# **MENATEK**

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Shock absorber is a suspension component which damps jounce and rebound motion of the road arms & wheels. There are two major types of shock absorbers which are used on military vehicles: linear dampers and rotary dampers.







Angle Drives are gearboxes used to direct and transmit the power of a driving unit such as a motor. Spiral bevel gears are used in Angle Drives to change the direction of the transmission by 90 degrees with respect to the driving shaft. Menatek have the capability to design and manufacture a variety of Angle Drives used on different vehicles for different applications.







Support Arm is the main component of the suspension system which enables movement of wheel and takes role in conducting the displacement of wheel into other suspension components such as rotary damper, shock absorber or torsion bar.









Sprocket assembly is a component of running gear of military tracked vehicles which takes role in driving the track assembly. It conducts the torque from final drive to track assembly. It is consist of two different main parts: sprocket gear and sprocket carrier.



**SPROCKET ASSEMBLY** 



### **FINAL DRIVE**



Final Drive is a crucial component of the running gear, located between the transmission output shaft and sprocket assembly. The purpose of the final drive is to provide the final stage of gear reduction to decrease RPM and increase torque before the power is transmitted to the track shoes.





MeVu - M Series is the first and only indigenous Mono-Block glass periscope series manufactured in Türkiye. Mono-Block glass body provides ultraclear peripheral view while offering superior ballistic performance. MeVu - Series offers integrated heating on both Upper and Lower windows.





**MEVU PERISCOPE** 







Self-lubricating bearings under the designation "NAZ" are all-terrain products engineered specifically to show constant ultra-high performance under heavy dynamic and static loads. These new generation bearings endowed with a robust liner technology and ultra-durable structure to complete two objectives: survival of the vehicle on the battlefield and uninterrupted logistics.

Track Adjuster is an important component which adjusts the tension of track assembly by collapsing and extending when needed. Track adjuster works together with the idler assembly to provide the right amount of flexibility for the track assembly.





TRACK ADJUSTER



### **TRACK ASSEMBLY**





Track Assembly is a unique component which provides the vehicle mobility. By transmitting the torque coming from the final drive into directional movement, it enables the tracked platforms to move in almost all types of terrain. Track assembly composes of center guide, track shoe links and each links are connected with end connectors.

PTOs are complex gearboxes used to take power from a power source such as an engine or a transmission and transmit it to various mechanical and/or electromechanical components such as generators, pumps and etc. Menatek have the capability to design and manufacture a variety of PTOs used on different vehicles for different applications.





### **POWER TAKE OFF**



#### **RADIATOR**



### **TRANSFER CASE**





Internal combustion engines are cooled via radiators, which act as heat exchangers. These kinds of engines are frequently cooled by pumping hot water or oil-based coolant through the engine block, radiator, and back into the engine. The radiator is where the coolant loses heat to the atmosphere and is subsequently returned to the engine.



Transfer Cases are power transmitting gear boxes used where parallel, angled or differential power transmission is needed throughout the driveline of various tracked and wheeled vehicles. Menatek have the capability to design and manufacture a variety of Transfer Cases used on different vehicles for different applications.





Turret drive is the main gear box assembly that constitutes the body that delivers mechanical and hydraulic alignment force needed to turn the tank turret precisely. Menatek have the capability to design and manufacture a variety of Turret Drives used on different vehicles for different applications.



Road Wheels are other important components of running gear which create the interference between the support arm and the track assembly. They are basically metal rims vulcanized with a tough rubber around. Constantly working under high pressure and friction, the rubber's recipe and adhesion strength to the rim are key points to Road Wheel production.

#### **TURRET DRIVE**



### **ROAD WHEEL**



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### **MEDAR MTS**



MEDAR MTS is an originally developed mobile speed enforcement system. System, which can track multiple vehicles up to four lanes, creates a speed violation record by indicating speed, class, and lane detection of target vehicles. It can either transfer violation data instantly or saves data to be examined offline by detecting multiple vehicles simultaneously in multiple lanes thanks to its LIDAR based technology. Additionally MTS can provide brand, color, class information of vehicles with plate data by plate recognition system, which lets the data used for public security purposes by law enforcement. It is the first national system with type approval certificate.











It is a new-generation Mine and IED detection system that GPR sensor developed with company's own resources has been mounted to a drone. It enables the detection of mines and IEDs under the ground surface by flying autonomously or manually up to 1 meter above the ground with the sensor, which is aproximately 2.5 kgs, integrated under drone. System, which has the ability of autonomous fly, can provide detection data to users by scanning a whole area in given coordinates.

**MEDRO** 





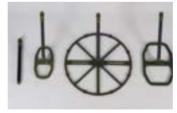
MEKA a cable/IED detector with GPR technology, has been originally developed with company's own resources. Detector, which was designed as convenient for the usage of troops in C-IED activities, enables detection of crush wires and cables, used in IEDs, regardless of length with high sensitivity. MEKA has an ability to differentiate detected objects as "possible target"s and "not possible target"s with high level of accuracy support of AI. It provides the end-user audial and vibrational as well as graphical display. It is compatible with MIL STD 810 and IP standards.





MEMAR has been developed with a special designation in compliance with needs of humanitarian demining troops and organizations. With its augmented sensitivity, it provides detection of AP mines with low/high metallic content. AT mines. IEDs with metallic content, ordnance. It has certain spesifications come to the fore such as adjustable telescopic pole, pinpointing feature, audial/visual/ vibrational alert system, exchangeable search heads in the field, ergonomic design, and long operating time. Enables demining in deeper depths in the ground and challenging territories with exchangeable heads. Officially reported by end-users and independent institutions to be compatible with MIL STD 810, IP and IMAS standards.















### **MEPAK**











MEPAK has been developed especially for operational troops for detecting AP mines with low/high metallic content, AT mines, IEDs with metallic content with high sensitivity. Thanks to cutting-edge signal processing technology, it detects trapped mines, targets under ice and shallow water. When folded, it takes minimum space in military backpacks and its telescopic pole can be easily arranged due to the height of the operator. MEPAK has user-friendly interface, which helps operators focus on detection rather than adjustments, pinpointing feature, audial/visual/vibrational alert system. Officially reported by end-users and independent institutions to be compatible with MIL STD 810, IP and IMAS standards.

MERGEN PARKUR has been developed to provide virtual real-field experience in counter-mine and C-IED operations to detector operators. It helps trainees learn differentiated alerts of detectors to mine and IEDs in different depths and scenarios. It includes three different scenarios in basic version of the sytem, of which its software can always be improved according to end-users requests. It is a unique training device with virtual routes, optional mine and IED threats, adjustable threat depth in the ground, audial/vibrational/visual alerts, the ratio of scanned areas and detailed reporting after training.







**MERGEN PARKUR** 







MERGEN-TIM detector training system has been developed to minimize detector operators' sweeping errors and correct the forms of sweeping movements such as sweeping height, speed, sweep angle, and wrist angle. During training, it gives audial and visual alerts to trainer and trainee instantly, along with providing report to trainer after session. Being compatible with all detectors regardless of brand, allows training ability up to five trainees at the same time. Trainers can follow up the sweeping movements of trainees real-time thanks to KUTAD software, uploaded to tablets provided in the system. It is compatible with MIL STD 810 and IP standards.

MEROB is a robotic arm model, integratable to a platform. MEROB is designed as to be integrated to ground vehicles in order to detect mine/ IEDs autonomously or semi-autonomously. It has options as EMI sensor for metallic content targets, and GPR sensor for non-metallic content targets, autonomous and manual scanning ability, four DOF scanning and exchangeable search heads. Remote controlled command and results follow-up are provided by the system.







**MEROB** 

MKT-ST, a complete set of mine protection suit, provides high level of protection to users in mine actions with optional accessories. The suit, of which its protection level and quality approved by users, is designed and manufactured by taking IMAS 10.30 standards into consideration along with providing high movement ability to users. The suit has a level of 450 m/s protection against fragmentation, in compliance with STANAG 2920 v50 standards. MKT-ST provides all necessary protection, with recommended additional accessories; mine vizor, hand protector, prodding needle, and mine protection boot.

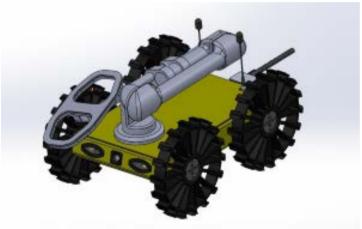


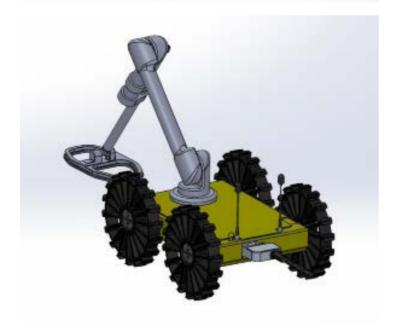


### MINE DETECTION SYSTEM INTEGRATED TO ROBOTIC PLATFORM









Unmanned ground system can implement mine and IED detection with its EMI sensor mounted on UGV. It can detect and mark exact point of detection remotecontrolled thanks to its advanced camera and robotic arm. System that has a crucial importance in high-level mine/ IED threat areas and operations which require autonomous search includes high level of metal detection sensitivity. Area mine/IED search and detection can be performed thanks to EMI sensor integrated with robotic arm of UGV, imitating sweep movements of a detector operator.

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#### **AGNOSIS ANTI-JAM GNSS**



Today, most military platforms depend on Global Navigation Satellite Systems (GNSS). Jamming GNSS signals may cause many platforms to fail their mission. For this reason, the development of GNSS anti-jamming systems and sustaining the performance of the military platforms in jamming environments is a crucial need.

AGNOSIS Anti-Jamming GNSS includes CRPA antenna with 4 or 8 antenna array configuration and 1 signal processing unit with multi receive channels. Signals acquired by CRPA are digitized with high dynamic range receivers and processed by a signal processing unit. Jamming signals are filtered by using signal processing techniques, and the original signal without the jamming signal is reconstructed again to deliver standard GNSS receivers





AKSON C-Band Data Link that is LOS air-to-air and air-to-ground real-time bi-directional communication system which transmits Manned/Unmanned Systems command & control data and receives telemetry & high data rate real-time video data on a ground system with highly reliable Electronic Warfare (EW) protection. Surveillance data of Manned and Unmanned Air Vehicle sensors are compressed in H.264 format and transmitted to the ground control stations in long-range by C-Band Data Link. Also, UAV remote control data is transmitted from the ground control station to the UAV flight computer in real-time.

**AKSON C-BAND DATA LINK** 







Naval vessels need to reduce their visibility and hence maximize their survivability by ensuring that their RCS signature is as small as possible. Decreasing the RCS signature is necessary to ensure that a ship can successfully perform its mission while maintaining its level of survivability and ensuring its crew remains safe. ALACA is used in the measurement of the Radar Cross Section (RCS). which is a crucial parameter in the protection of the naval platforms. The system provides protection data to platforms from fire control radars and guided-missile seeker radars existing in hostile platforms.





CRA is a low-power radar altimeter that measures the distance between the platform and the terrain and provides AGL (Above Ground Level) height information to the platform. Like other radar devices, they transmit electromagnetic waves and measure the round-trip time delay to the earth's surface to determine the distance (i.e. height) from the air or spaceborne sensor. With its miniature design and low power consumption features, CRA Radar Altimeter Family of Meteksan provides an efficient workload planning opportunity in any air platform.



**CRA RADAR ALTIMETER** 



#### **DAMAGE CONTROL SIMULATOR (DCSIM)**

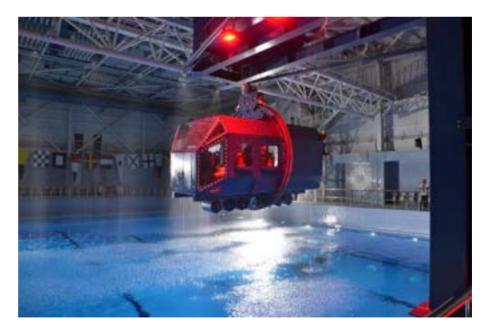


Naval Damage Control (DC) capability is a critical effect for preserving the integrity, stability and maneuverability of vessels. The key to enable these capacities is a realistic training environment for the ship's crew to develop and conduct damage control exercises. Consistent and realistic training produces an optimal level of readiness that prepares repair party teams to react more efficiently and effectively to actual casualties. Damage Control Simulator (DCSIM) provides a realistic training environment to develop and conduct damage control exercises to provide the shipboard personnel as part of damage control readiness and the internationally recognized commercial and naval standards.



The DUNKER (HUET) Facility is designed based on the international standards & OPITO criterion for the personnel who regularly travel by helicopter to provide/ensure the skills and knowledge of what to do in an emergency situation where there is a need to exit a ditched helicopter and survive at sea. Contemporary facility includes various distinct training capabilities to enable discrete training including the components below:

- -Helicopter Underwater Escape Trainer,
- -Portable SWET chairs for Shallow Water Egress Training (SWET),
- -Simulated Rescue Helicopter to enable rescue activity.
- -Simulated Landing with Parachute.



**HUET** 





#### FIREFIGHTING TRAINING SIMULATOR (FTSIM)



Firefighting Training Simulator (FTSIM) provides effective and safe training in a realistic environment where members of the Fire Fighting team can take the role of a firefighter, practice tactics and procedures through interaction with fixed and portable fire extinguishing equipment in simulated conditions without risking lives or property. Thanks to state of art and fail-safe design of the system, the Firefighting Training Simulator (FTSIM) provides a safe training environment with adjustable and controllable difficulty levels.





Helicopter platforms are widely used in adverse weather and low-altitude/high-speed conditions for mission success. In these circumstances, detection of the vertical and horizontal obstacles and alerting the pilot in a timely manner is an important safety issue. HETS is equipment that uses 1550 nm wavelength fiber-laser, which detects obstacles such as wires, poles, trees, etc. The system detects the obstacles and gives necessary alerts to the pilots with aural and visual means.



HETS HELICOPTER OBSTACLE DETECTION SYSTEM



### KAPAN COUNTER DRONE SYSTEM

Meteksan Defence developed KAPAN Counter Drone System for military and security officers to help them fight with drone threats. KAPAN offers a superior drone detection, tracking and neutralization performance for border and critical infrastructure security with its high technology drone detection radar, electro-optic and jammer sub-systems. KAPAN offers precise drone detection and tracking performance with Radar and Electro-Optic system combinations and its artificial intelligence integrated algorithms. Besides its detection and tracking capability, KAPAN also allows the neutralization of drones with RF Jammer. The target drone, which is detected and started to track, is identified with the thermal / day cameras and afterward, more precise positioning and tracking are performed. In this case, by the command and control software, the targets can be fused and viewed as a single track on a common operational picture. The direction and position information of the target drone provided by sensors can be assigned to the RF jammer for neutralization.





### MERT PORTABLE ELECTRONIC ATTACK SYSTEM

MERT Portable Electronic Attack System is a modern EW system used for jamming the target communication systems from long distances by using new generation electronic attack techniques in V / UHF frequency bands. MERT Portable Electronic Attack System can meet different operational needs. The system, which covers the entire V/UHF frequency band, can be used to protect fixed facilities and moving vehicles, patrol/convoy from radio-controlled IEDs. In addition, MERT can be used as a tactical RF communication jamming system to protect friendly forces. The system contains the new generation channelized wideband RF receiver; in this way, MERT can detect RF emissions simultaneously in the entire operating frequency band. Reactive jamming and barrage jamming is possible at the same time for different targets. MERT can be controlled via PCs and smart tablets. Moreover, the system contains ethernet-based communication channels such as M/W RL, tactical radio and F/O for remote-controlled operations. MERT can power up from their own rechargeable batteries, AC input and power generator. MERT can detect multiple targets with different features via a wideband RF receiver. After target detection, intelligent electronic attack is applied to targets according to mission planning scenarios based on the electronic attack techniques in a reactive way.





### MERTER MAN-PACK PORTABLE ELECTRONIC ATTACK SYSTEM





MERTER Man-Pack Portable Electronic Attack System is a modern EW system used for jamming the target communication systems from long distances by using new generation electronic attack techniques in VHF frequency bands. MERTER can meet different operational needs. The system can be used both for the protection of patrols against RCIED threats and to generate extended coverage protection area via the portable mast and directional antenna usage. Also, cooperated electronic warfare operation is possible by using multiple systems.

MILSAR SAR/MTI Radar is designed to be used on airborne platforms for intelligence, surveillance, reconnaissance, deterrence, and attack operations. It has versatile Moving Target Indication (MTI) for detection and tracking of potential targets and Synthetic Aperture Radar (SAR) modes for high resolution and all weather radar imagery, target classification and ground mapping. MILSAR detects and tracks potential targets either low-speed small size or fast-moving objects even in adverse weather and low visibility conditions including cloud and fog.



**MILSAR SAR / MTI RADAR** 









Electro-optical (EO) and Infrared (IR) guided missiles are becoming more and more threatening for military bases, ammunition storage areas and civilian strategic facilities due to emerging technologies. This system offers broadband state-of-the-art laser electronic attack capabilities against EO/IR guided missile threats to protect critical civilian or military buildings and facilities as its primary goal. The system is capable of detecting EO and IR guided missiles and applying directed laser dazzling and soft-kill techniques to counteract such threats. So, EO/IR guided missiles can be neutralized from far away distances.

PELIKAN Missile Seeker Simulator (MSS) is a Naval EW test and evaluation asset designed to evaluate Onboard Electronic Defence and Electronic Attack Systems' effectiveness. PELIKAN MSS, can be used for evaluating the effectiveness of a ship's electronic warfare techniques (ESM, ECM, RF Chaffs/ decovs, etc.). simulation for Radar ECM development and evaluation, radar ECM testing & verification and electronic warfare equipment testing and evaluation. Once the emulated attack commences, real-time information is available regarding the emulated missile's behavior so that live evaluation of the effectiveness of the countermeasures employed by the target ship can be assessed. In addition, PELIKAN Missile Seeker Simulator records all relevant data to enable a further analysis to be undertaken once the simulation phase of the trial is complete.





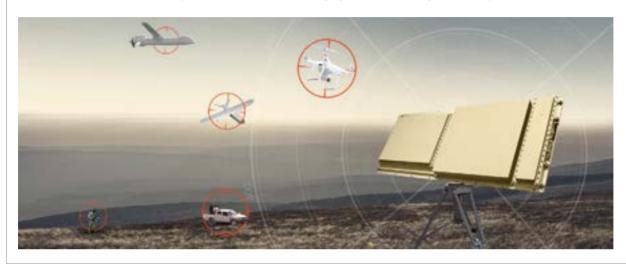
**PELIKAN MISSILE SEEKER SIMULATOR (MSS)** 



#### **RETINAR AESA MULTI-MISSION RADAR**



Retinar AESA can simultaneously detect slow targets such as humans, mini/micro UAVs and fast targets such as loitering munitions and Tactical UAVs. With its advanced detection and tracking features, it can be used to precisely direct other systems such as cameras, weapons and jammers to the target. Retinar AESA is an advanced technology radar system that has been developed in a way that will not leave a blind zone in security systems with its high update frequency, precise positioning features, high tracking and classification performance. Thanks to its design structure and low power consumption, this advanced radar system can be integrated on vehicles for on-the-move operation, as well as with fixed installation for the protection of critical facilities and borders. With its On-The-Move operation capability, Retinar AESA can also take place as a critical security system in convoy and VIP protection missions.



Retinar FAR-AD Drone Detection Radar, developed by Meteksan Defence, is a radar system to enable security against mini/ micro unmanned aerial vehicles. Retinar FAR-AD can automatically scan large areas and low altitude air space as the primary sensor of the security forces against drones. Retinar FAR-AD provides effective protection against low altitude drones, with it is 40 degree elevation angle. The targets followed by Retinar FAR-AD user interface software provide the location, distance, speed, and direction information to the operator. Target Analysis Mode enables the classification of targets.



**RETINAR FAR-AD DRONE DETECTION RADAR** 

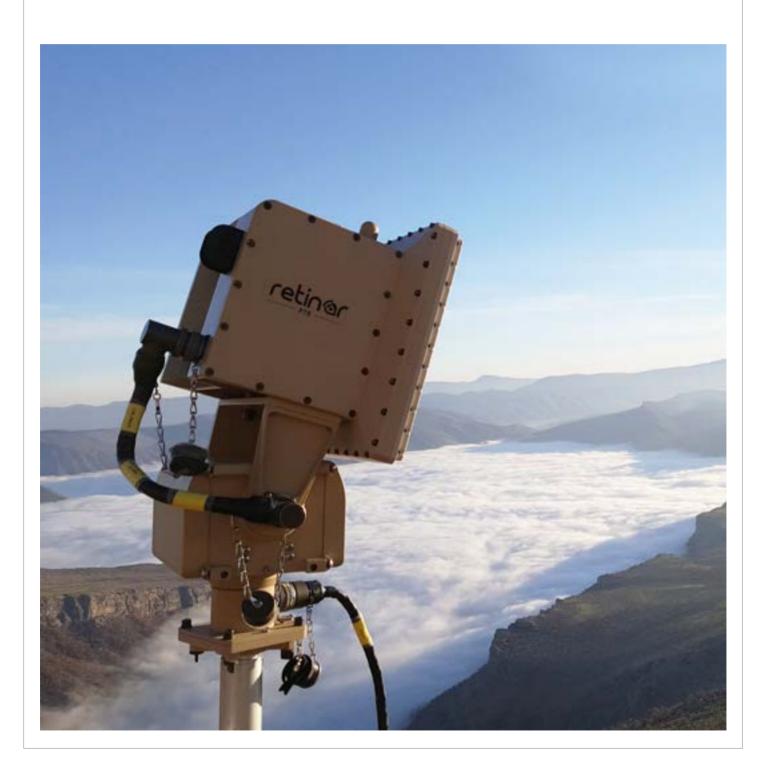


### RETINAR PTR GROUND SURVEILLANCE RADAR





Retinar PTR is a perimeter and ground surveillance radar, designed for border security. Retinar PTR has technological features such as human/animal detection and target classification, low size, low weight, low power consumption, mobility and rapid deployment. The system is designed to be carried by two personnel and easily operated by single personnel thanks to its user-friendly interface. Retinar PTR automatically scans large areas, eliminating the need for security personnel to constantly scan with cameras or binoculars, can be integrated with camera systems and various other sensors, and creates "Safe Zones" in the area.



ULAQ is the name of the Unmanned Maritime Aircraft (UAV) product family, which includes different platform types, capabilities and functionalities to fulfill various C4ISR and maritime missions. ULAQ can tackle complex and challenging missions that require very high endurance, which is difficult to accomplish with frontline humans. Therefore, ULAQ can be considered as a cost-effective, crewless system that allows fewer personnel to perform difficult and risky missions. ULAQ is not only capable of remote control, but also tackles difficult missions with advanced hardware and software designed to perform predetermined autonomous tasks. Thanks to its autonomous algorithms and artificial intelligence infrastructure, ULAQ platforms can safely navigate, avoid ships/floating platforms, regain lost communication and return to base according to the Regulation on Preventing Collisions at Sea. Command and control of the ULAQ can be effectively managed from mobile or fixed sites ashore or from stations installed on ships. As a capable surface platform, ULAQ can perform Intelligence-Surveillance-Reconnaissance (ISR), Anti-Surface Warfare (ASuW), Anti-Submarine Warfare (ASW), Mine Warfare (MW), Maritime Security (MARSEC) and various other maritime, civil, industrial and environmental missions.







YAKAMOS 2020 Hull Mounted Sonar System, with its improved technology, is a new generation medium frequency, surface ship Anti-Submarine Warfare (ASW) and obstacle avoidance sonar, which is designed for the surveillance of the underwater environment to automatically detect and track underwater targets such as submarines, submersibles, torpedoes and mine-like objects. Compared with YAKAMOS Hull Mounted Sonar System, YAKAMOS 2020 is easily adaptable to developing technology and changing acoustic environmental conditions with a more compact, more capable, modular, scalable innovative hardware and configurable software architecture.



## **MICROINA**

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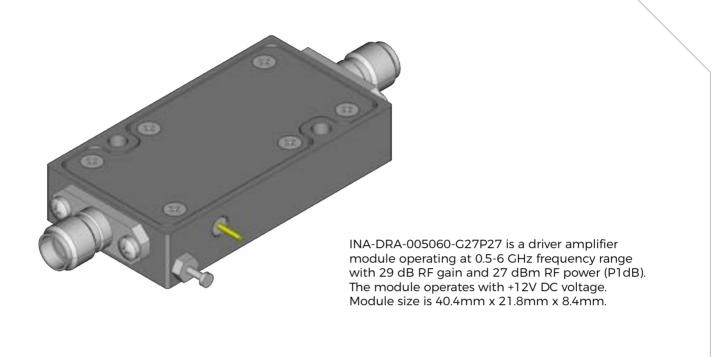




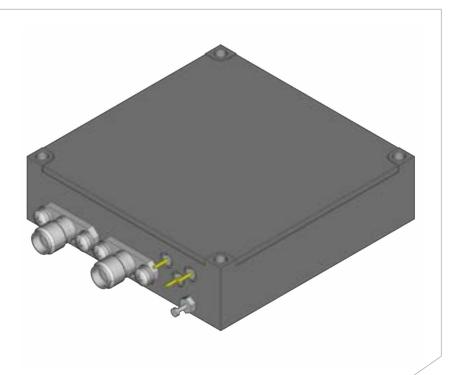


#### 0.5-6 GHZ 0.5W RF AMPLIFIER MODULE





INA\_PLO\_10000\_100\_E is a phase locked dielectric oscillator (PLDRO) module generating 10 GHz low phase noise RF signal locked to an external 100 MHz reference signal. The module operates with +12V DC voltage. Module size is 57.15mm x 57.15mm x 16mm.



10 GHZ PHASE LOCKED DIELECTRIC OSCILLATOR MODULE





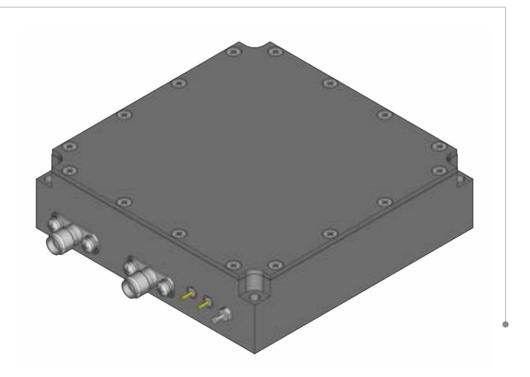
#### **100-3000 MHZ SIGNAL CONDITIONING UNIT**



INA-SCU-001030-1U is a 1U, 19 inch rack mountable unit operating at 100-3000 MHz frequency range and performing switching and attenuation operations between 5 RF inputs and 9 RF outputs by command sets via ethernet interface. Switch isolation is 70 dB minimum and attenuation range is 60 dB maximum.



INA\_PLO\_20000\_100\_IE is a phase locked dielectric oscillator (PLDRO) module generating 20 GHz low phase noise RF signal locked to an internal or external 100 MHz reference signal. The module operates with +12V DC voltage. Module size is 80mm x 80mm x 22mm.





**20 GHZ PHASE LOCKED DIELECTRIC OSCILLATOR MODULE** 

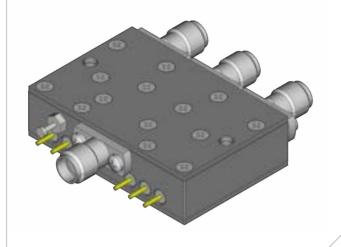
### 2-18 GHZ SP3T RF SWITCH MODULE

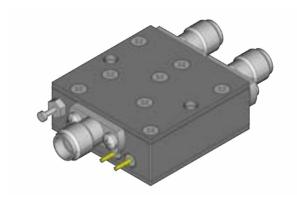


2-18 GHZ SPDT RF SWITCH MODULE



INA-S3R-020180-60-IP is a high speed SP3T pin diode RF switch module operating at 2-18 GHz frequency range with 2.5 dB maximum RF loss and 60 dB minimum RF isolation. The module operates with +5V and -5V DC voltages. Module size is 38.1 mm x 25.4 mm x 10.2 mm.

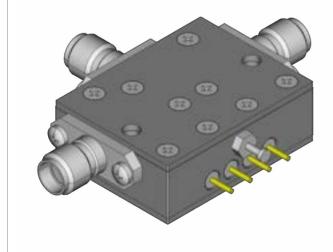




INA-S2R-020180-60-IP is a high speed SPDT pin diode RF switch module operating at 2-18 GHz frequency range with 2.4 dB maximum RF loss and 60 dB minimum RF isolation. The module operates with +5V and -5V DC voltages. Module size is 25.4mm x 25.4mm x 10.2mm.

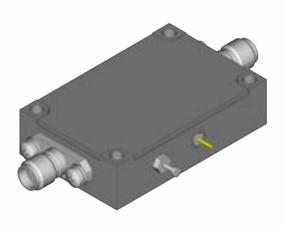


INA-S2R-020180-60-RP is a high speed SPDT pin diode RF switch module operating at 2-18 GHz frequency range with 2.2 dB maximum RF loss and 60 dB minimum RF isolation. The module operates with +5V and -5V DC voltages. Module size is 27.9mm x 21.6mm x 9.7mm.



2-18 GHZ SPDT RF SWITCH MODULE





INA-DRA-020200-G29P27 is a driver amplifier module operating at 2-20 GHz frequency range with 29 dB RF gain and 27 dBm RF power (Psat). The module operates with +12V DC voltage. Module size is 40mm x 26mm x 10.3mm.

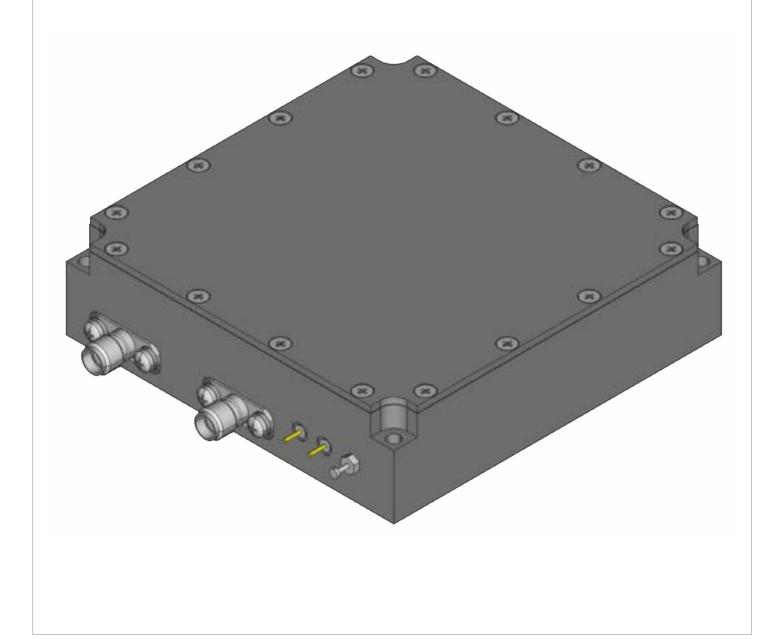
2-20 GHZ 0.5W RF AMPLIFIER MODULE



### 40 GHZ PHASE LOCKED DIELECTRIC OSCILLATOR MODULE



INA\_PLO\_40000\_100\_IE is a phase locked dielectric oscillator (PLDRO) module generating 40 GHz low phase noise RF signal locked to an internal or external 100 MHz reference signal. The module operates with +12V DC voltage. Module size is 80mm x 80mm x 22mm.



## MIILUX OY

Company Short Name

Miilux Oy

**Miilux®oy** 

Company Trade Name

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### ARMOUR STEEL

Miilux Protection's armouring steel products provide ballistic protection for heavy-use transportation and tracked combat vehicles. It is ideal on the move and inside structures where you need an extra armour of protection. We also offer solutions for different heat-treated product types in need of ballistic protection. Miilux Protection steels are bullet proof tested and approved. They have high toughness with excellent workshop properties for bending and welding. Product range include quenched steel grades Miilux Protection 400, Miilux Protection 450 and Miilux Protection 500. Quenched and tempered steel grades include Miilux Protection 280T, Protection 360T, Protection 440T, Protection 500T and Miilux Protection 600T with 4-152 mm thickness and 2500x8500mm maximum dimensions.



Miilux products are dimensionally accurate, and they are ready for use as abrasionresistant component parts and abrasionresistant plates. Homogeneous hardness is ensured in the whole part by using edge-to-edge hardening technology in component part production. It offers excellent design solutions for the parts of crushers, excavators, mining machinery, damper bodies, bulldozer blades, chute-feeders, etc. that are subjected to wearing. Millux 400, Miilux 450 and Miilux 500 products offer a high service life against friction and abrasion compared to conventional materials. It also reduces body weight by allowing the use of thinner material and improves the load capacity. It shows positive cutting and welding behavior in production.



Miilux M690, highstrength structural steel supplied with minimum 690 MPa yield strength. M690 is preferred in areas with difficult load-bearing tasks.





HIGH STRENGTH HEAT TREATED STRUCTURAL STEELS



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Military Big Data is a professional database that provides all the world's defence data at a high level of accuracy for strategic planning, intelligence, education, academic and business development purposes. Military Big Data offers the user the desired depth of analysis on any platform with its weapon/system, map information system, warfare analysis and defence trade modules. The portal can be licensed both as an annual subscription and as integration into embedded software.







**MILITARY BIG DATA** 

MILDATA>

# MILKAB SAVUNMA

Company Short Name

MİLKAB SAVUNMA

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Based on MIL-SPEC standards and utilizing domestic capabilities, we offer locally produced alternatives/equivalents to;

Fluoropolymer cables (MIL44, MIL22, MIL16, MIL27), Military-grade silicone power group cables (MILST/MILSP/MILYM/MILYS)

Data cables [CAT6, CAT7 (Turkish Lloyd certified), CAT8]

Coaxial cables (RG58, RG179, RG213, RG214, and RG316, etc.)

to serve the Turkish Defense Industry.











**MILITARY GRADE CABLE** 

781

## **MILMAST**

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Milmast

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MİLMAST, established in Ankara in 2017, is a subsidiary of SSTEK Defense Industry Technologies Inc. It focuses on developing and manufacturing mobile, electromechanical, composite telescopic elevation systems for military purposes using domestic resources. The company's shareholders include FİGES, SSTEK, and key employees involved in product development. The telescopic elevation systems, with approximately 80% localization achieved through various engineering disciplines, are currently in mass production. These systems are used to raise important payloads, such as intelligence-gathering antennas, optical systems, border surveillance systems, and weapon turrets, ranging from 2 to 15 meters in height.











**MILMAST PRODUCT GROUP** 

## **MILSOFT**

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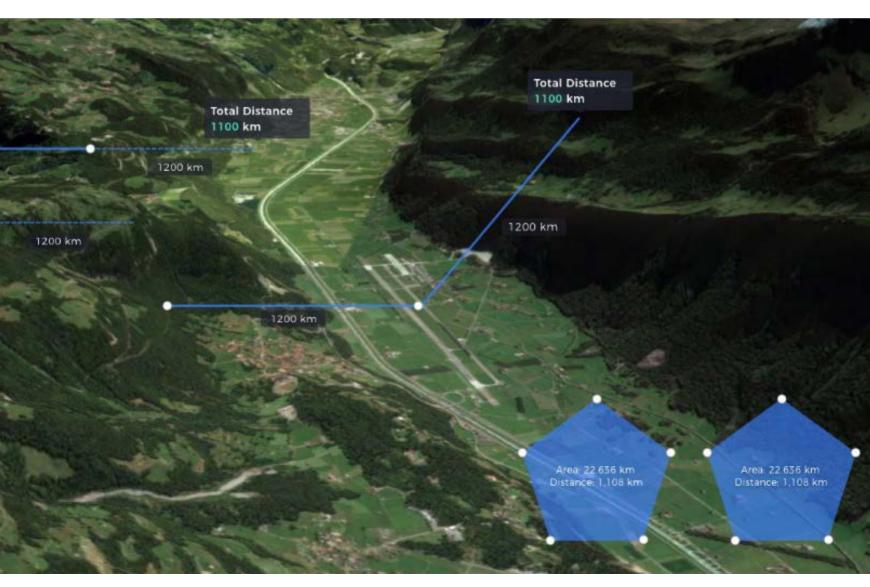
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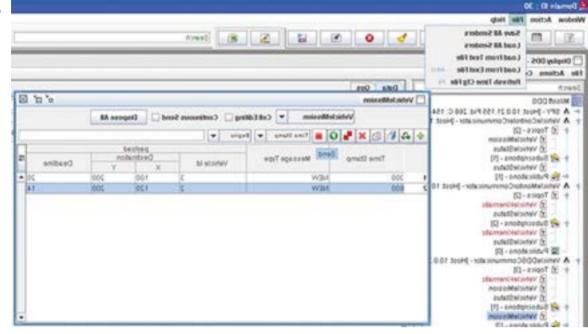




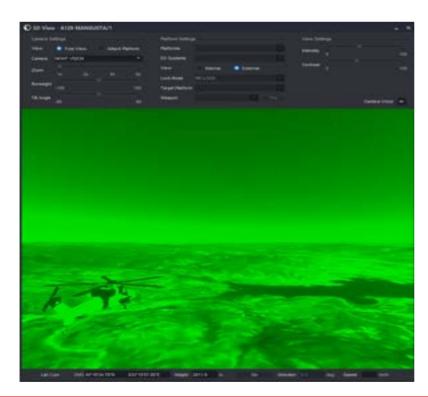








Mil-DDS is a middleware software providing data centric publishsubscribe mechanism for distributed applications.



Jetsim is a Joint Electronic Warfare Training&Simulation Center which provides EW training both in theory and practice for planners and decision makers.

**JETSIM SIMULATION AND TRAINING** 



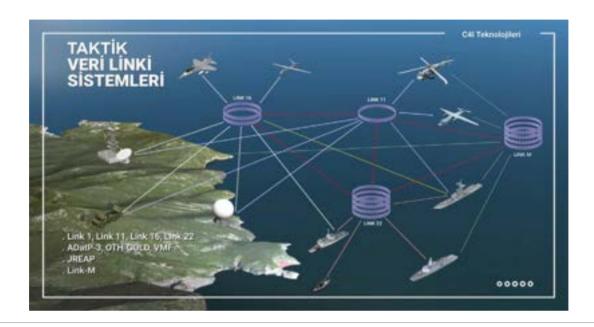








Link-M is an Indigenous Tactical Data Link System, which enables information sharing amongst land/naval/air platforms using existing or new HF and V/UHF Radios, satellite and any other IP based fast media connections. Data forwarding capability to/from NATO Tactical Data Links also exists.





As a major outcome of the studies in C4I, Electronic Warfare (EW), Tactical Data Link (TDL), Image Exploitation, and Simulation systems, the Naval Combat Management System (CMS) software called "Mil\_CMS" has been developed in accordance with CMMI-5 maturity level to integrate sensors and effectors, establish recognized maritime tactical picture as well as operator support functions to enable effective decision making onboard ships. Systems with modern technology and architecture provides integrated functionality to execute unrestricted operations together with ability to integrate new sensors/effectors in order to improve platform efficiency.





**MIL-CMS** 



### **MIL-CDS CROSS DOMAIN SECURITY**







Provides secure data transfer between different security domains. Prevents unintended data leaks with full control over ingress and egress data flow. It also detects and prevents instrusions.

Data Distribution Unit (DDU) collects data from its subsystems and distributes data to other subsystems in order for the platform to function effectively. It has a redundant system architecture to make the data distribution process efficient and uninterrupted. The system architecture is extensible and can support different interface formats.



**MIL-DDU** 



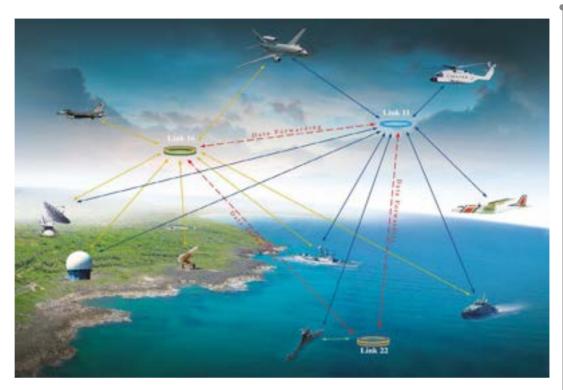


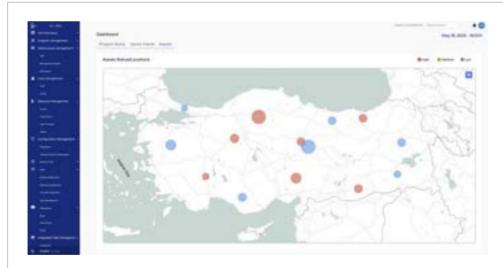


### **MIL-DLP**



Mil-DLP provides the air, surface, subsurface and land platforms with the capability to exchange tactical information amnog each other via tactical data links, which are the main enablers of the network centric capability, in accordence with the NATO standards.





Mil-ILS supports military and non-military products throughout their lifecycle in full compliance with S-series IPS (EUD) Specifications (S1000D to S6000T). The application of reliability and supportability analyzes to improve the logistics support of the product during the design and development stages, the production of technical data and technical publications with the logistics elements to be used in the maintenance of the product. In the usage phase, it provides effective and efficient maintenance management to optimize the performance, availability and support cost of the product until the product leaves the inventory.





MIL-ILS



### **MIL-INTEL**



Mil-INTEL is a Critical Decision Making and Enhancing Solution, which uses sensor information and various types of intelligence data gathered over a wide area of sources and offers disseminations thorough Air/Ground Links/Networks. It presents the data received from these sources in a fast and comprehensible format on a common geospatial infrastructure, catering the needs of different user groups (such as operational command centers, target development/monitoring units, etc.).





Link-M product is a unique 'Tactical Data Link' based on HF/V/UHF and Satellite Channel for Land, Sea and Air platforms.

**MIL-LINK** 











PiriMap addresses a vast variety of Geographical Information Systems' (GIS) needs and it enables customers to build systems across many domain independent from platform with following components:

- PiriMap Desktop component is Java SDK for developing high performance 2D and 3D desktop application.
- PiriMap Web component is a JavaScript SDK for developing web 2D and 3D applications
- PiriMap GeoBoard component is distributed and scalable web based data management and map server application.

WACCS with a WEB-based Architecture based on micro services runs on more than one HQ in a fully synchronized manner, with additional functionalities like On Scene Tactical Command (OTC) and TASK Group (HVU focused) concept introduced as well as Blue-Orange Force for Naval exercises and Floating HQ (FHQ) in case no other Land Based Command Center or HQ is available.





## **NETA COMMUNICATIONS**

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Founded in 1987; NETA Elektronik, which operates in the fields of antenna and communication, continues to develop products under the NETA Communications brand in the field of defense industry with strong projects, especially on antenna and RF products with a broad range of applications of telemetry, GNSS, FTS, airborne and ground data link and satellite communication. The main products are the antennas developed in conformal, wrap around and blade types with omni or directional characteristics. There are also parabolic, cassegrain, slotted waveguide structures at frequencies ranging from UHF to Ka-band.





**ANTENNAS AND ANTENNA SYSTEMS** 

NETA

COMMUNICATIONS



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#### **EMUX**



#### **GNSS RECEIVER N21**





eMUX acts as a gateway by enabling circuit-switched networks to work in harmony with packet-switched networks. This converter allows synchronous TDM data to be carried with asynchronous Ethernet packets. eMUX transmits data at three different speeds (E1 - 2Mbps) / E2 - 8Mbps / E3 - 34Mbps,) received over four independent TDM interfaces, over two 10/100/1000Mbps Ethernet ports bidirectionally. Netaş developed the adaptive clock synchronization method to retrieve the clock signal in the receiver section.



Netas N21 is a Global Navigation Satellite System (GNSS) receiver that produces uninterrupted and highly accurate position, velocity and time outputs using GPS L1 C/A, GLONASS L1OF signals and SBAS corrections. The N21 GNSS reciever is developed to operate under severe conditions such as high dynamics and low signal levels. The N21 provides highly accurate and precise position, velocity, and time outputs, as well as low TTFF times and ultra fast reacquisitions. It also offrs hybrid PVT output with increased availability and reliability through the joint use of GPS and GLONASS satellites.





Netaş N30 is a Gun-Hardened, Dual Frequency Global Navigation Satellite System (GNSS) receiver that produces precise and uninterrupted Position, Velocity, and Time outputs using GPS, GLONASS and Galileo signals and SBAS corrections. Developed to operate under severe conditions such as high dynamics and low signal levels, N30 GPS receiver can be programmed on the field according to the needs of the platform. The N30 provides highly accurate and precise Position, Velocity and Time outputs, as well as low TTFF times and ultra fast signal reacquisition. It offers hybrid PVT output through the joint use of GPS and GLONASS satellites.



It is a 1U high, 19 inch wide, 10 MHz and 1 PPS signal generator unit designed to ensure time synchronization between different stations in fixed and mobile communication systems. It guarantees uninterrupted operation thanks to its multiple power supply structures. It can be controlled with SCPI-99 commands via RS-232/USB. It has 4 10 MHz signal output slots, 4 PPS signal output slots, redundant power supply line (220 V AC and 48 V DC) and the ability to work as an NTP/PTP master. 1 PPS signal accuracy is less than 50 ns. 10 MHz signal output power is 13 dBm.

**GNSS RECEIVER N30** 



PRECISION CLOCK GENERATOR



#### **IP MKS - FORA IP TELEPHONE**





Fora is a red-black compatible, touch screen, IP based user terminal. Features include Individual, Conference, S/P, Wireless, Alarm & Announcement, phone calls, SIP signaling, red / black zone switching within 2 seconds, HD quality audio coding, ability to work as an analog user station in case of connection loss or power failure, PTT/ VOX active selection possibility, Radar, Sonar listening, registration to the Combat Management System, User login authorization control, task-specific user profile loading, User-friendly and easy menu management, phone call screen (features such as contacts, number entry, speed dial, etc.), accessories and microphone selection mechanism.

### IP MKS - IP MBM MECHANICAL CONNECTION MODULE





IP MBM is physical switching device managed over Ethernet. It enables physical switching of time-critical signals between radio and modem devices in data transmission. Features include transfer of input ports to desired output ports via relays, default connection mode (in case of power outage or Ethernet connection loss), configuration possibility via web interface, power via Ethernet with PoE+, connection redundancy with two 100 Mbit Ethernet ports, 7 inputs and 16 outputs. port Ethernet connections include "activity" LED indicators, "Running" and "Ready" LED indicators, 14 wires per port. It is 2U high and 19 inches wide.

### **NETAS**



Rota is a gateway device that enables the connection of non-IP radio, data and crypto devices to the IP network. Features include narrowband, broadband radio calls, S/P calls, SONAR, S/P Circuit, connection with Underwater Phone devices, SIP signaling, PTT management, HD quality voice coding, synchronous-asynchronous serial data support, default connection mode (no power), radio silence with Emission Control, collection and distribution of TGM, AIN, PTT\_IN information, transmission of PTT\_OUT, TSUS information to the radio, IPv4, IGMP, ICMP, DHCP, ARP, RTP, RTCP, SIP, TCP, UDP, RSTP protocols are supported and configuration is possible via web interface.

### IP MKS - ROTA RADIO GATEWAY





IP CCS can be scaled to meet the mission and needs of any ship, from small-scale platforms to warships. New devices and interfaces can be easily added or removed from the system as needed. The system is easy to install, maintain and operate thanks to its IP-based infrastructure. It provides configurative interfaces for a wide variety of communication devices available on board with three different types of devices (FORA, ROTA, and IPMBM). IP CCS provides high security and accessibility with its redundant and zone-separated structure. It is a complete communication solution with System Management, Voice Recording, and Call Server software.

### IP BASED COMMUNICATION CONTROL SYSTEM



### MAGN (MOBILE SUBSCRIBER ACCESS POINT)



### MOLTU (MULTIPLE OPTICAL LINE TERMINATING UNIT)



MAGN consists of Tactical Access Switches and is the backbone of systems responsible for end-toend IP routing, ATM and Ethernet switching, ISDN and X.25 packet switching data communications. MAGN provides voice, data and video services over IP / ATM / ISDN infrastructures. MAGN's features include VoIP / POTS / ISDN Voice and Data (IP. Circuit Switched Data, X.25), SIP, H.323v4 and Media Gateway features. 30 Gbps switching capacity. Fiber Optic Gigabit Ethernet connection. UTP 10/100/ Includes 1000 Mbps Ethernet ports, 10 Gbps IP Quality of Service (OoS) support. 60 million packet forwarding per second, and IP VPN and VLAN support.



MOLTU (Multiple Optical Line Terminating Unit), an optical termination device with a ruggedized structure. MOLTU is an SDH Terminal Multiplexer that takes E1 (2 Mbit/s), E2 (8 Mbit/s), E3 (34 Mbit/s) data transmission lines from concurrent traffic interfaces and synchronously maps them into a single 155 Mbit/s cluster. The data the device receives from these lines is converted into a single-mode 1310nm optical signal. This optical signal is converted into an electrical equivalent signal with the help of the optical transceiver in the target unit, data traffic is separated from the total received

signal and transmitted to the associated traffic.





Is a new generation 2U 2 socket mainstream rack server that supports two Intel R Xeon R fourth generation scalable processors (Eagle Stream). N4 offers a high-density, modular and streamlined design. It features high capability, large capacity, high reliability, easy expansion and management, which can be widely applied to interconnection, networking, cloud computing, big data and virtualization. Supports a total of two Intel XeonR 4th Generation with a single processor with up to 60 cores. Provides dual CPUs for high-speed interconnection. There is support for up to three UPIs for fast channel interconnection.



Military Tactical Switch is a multiservice communication platform that is designed by NETAS for effective and continuous communication in tactical and strategic fields. Its internal battery charge unit, lightweight design and small size improve mobility of military units and simplify installation and deployment. Its scalable and modular architecture eases network planning. With its non-blocking switching matrix, redundant processor, power converter card and hot swappable modules, NETAŞ Military Tactical Switch ensures high availability and reliability. Military Tactical Switch offers an integrated solution for voice, data and video transmission in the tactical and strategic field.

**N4 NETAS CLOUD SERVER** 



**MILITARY TACTICAL SWITCH** 



#### **ISDN TERMINAL**







ISDN terminal is designed to perform voice, data and video communication over ISDN BRI connection in a tactical field environment. ISDN Terminal features include ISDN BRI S/T access, encrypted voice and data communications, line feeding, 4800 bps voice coding (CELP), X.21 and X.21 bis / X.20bis ports, circuit Switched and X.25 Features data services, Ethernet port - IP access, ruggedized design for tactical field environment, LCD display and Category-1, -40°C, +55°C operation.

### TES (INTEGRATED ACCESS PANEL)



TES is a Media Gateway and Packet Switching / Routing device designed to withstand challenging conditions and serve in the tactical field. TES provides secure voice, data, and video communication services and meets the communication needs of the tactical field with its portable, easy-to-use, reliable, and IP technology-based structure.

Designed to meet the harsh environmental conditions on the field, easy-to-use TES provides maximum mobility to users as it can be assembled and disassembled quickly





C-V2X OBU is the basic communication unit of Vehicle-to-Everything technology and increases the awareness of vehicles and drivers by instantly communicating with other vehicles, road infrastructure and pedestrians in the environment. In this way, important traffic information can be received in real time and faster and more informed decisions can be made. It reduces the risk of accidents by detecting traffic hazards in advance, increases safety at intersections and maximizes pedestrian safety. It also reduces traffic congestion and increases fuel efficiency. Features include 3GPP Release-14 Cellular-V2X (LTE-V2X) 5.9 GHz Communication Interface and 3GPP Release 15 4G Cellular Communication Interface.

V2X VEHICLE MOUNTED COMMUNICATION UNIT



C-V2X RSU is a smart device equipped with Vehicle-to-Everything technology, one of the cornerstones of modern transportation. C-V2X RSU is placed at strategic points on roads and intersections,

facilitating the interaction between vehicles and traffic infrastructure. Vehicles and other V2X-enabled elements (V2X OBUs, traffic lights, road signs), improving traffic safety and efficiency by communicating in real time. Thanks to its ability to collect and analyze data, C-V2X RSU provides traffic management centers with valuable information about current traffic conditions and events. provides information, thus reducing traffic congestion and faster response to emergencies and prevents traffic accidents.

V2X ROADSIDE COMMUNICATION UNIT



# NORM TECHNOLOGIES

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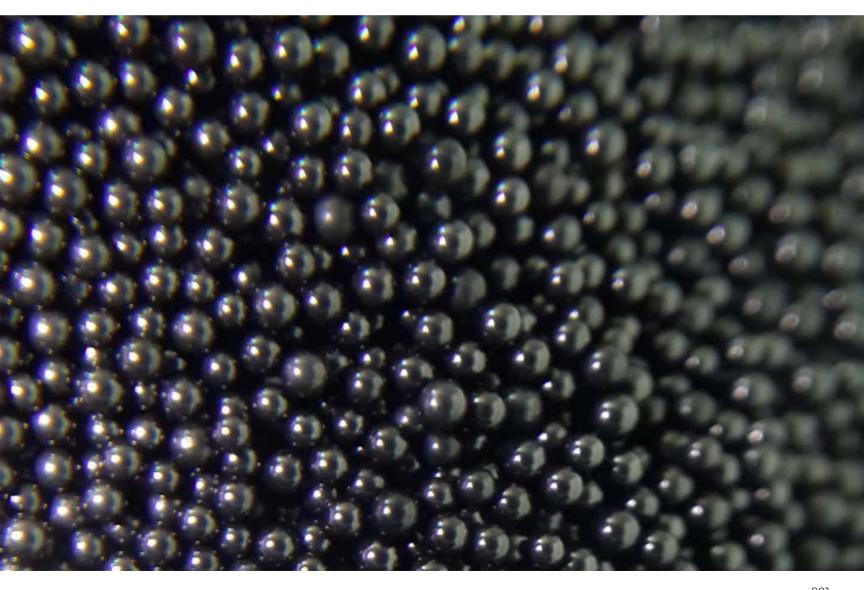
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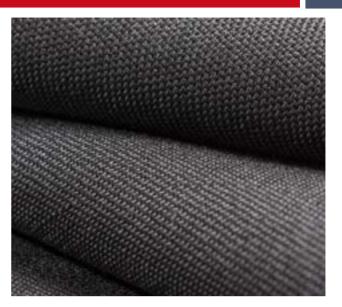
### HEAVY WEAPON AMMUNITIONS





#### **ACTIVATED CARBON FABRIC**





Our activated carbon fabrics with high surface area and large pore structure are used in CBRN protective suits and systems that require special filtration.

Protective filters produced from activated carbon fabrics with high surface area and large pore structure are used in CBRN protective suits. It is light, flexible and has high protection value.

mm HE ERFB IM. 155 mm

SMK ER, 155 mm ILL ER and

120 mm tank ammunition.



ACTIVATED CARBON FABRIC PROTECTIVE FILTER





It produces all kinds of training suits, military equipment, cold climate clothes, and clothes that are not caught by thermal cameras.

**MILITARY TRAINING SUIT** 

L

## BALLISTIC PROTECTIVE HELMET

**a a b** 

### BALLISTIC PROTECTIVE VEST

**a a b** 

It has 2 models as under shirt and shirt top models. It is produced in different protection levels as Level IIA, Level II, Level IIIA, Level III and Level IV. We can produce the desired model, color and protection level.







It is produced at the desired protection level. We have 2 different models as full protection and tactical type.



EXPLOSIVE ORDNANCEDISPOSAL (EOD)



Granular, pellet and powder activated carbons are used in all kinds of filter systems.

INDUSTRIAL ACTIVATED CARBON

**a a b** 







### **LIGHT WEAPON AMMUNITIONS**



We sell light weapons ammunition such as 5,56x45 mm, 7,62x39 mm, 7,62x51 mm, 7,62x54 mm, 12.7x99 mm.



### CBRN PROTECTIVE OVERBOOT

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## CBRN PROTECTIVE SUIT (TYPE C)

⊕,⊕

Protective overboots that we produce from butyl rubber material against Chemical, Biological, Radiological, Nuclear (CBRN) warfare agents have a high protection capacity. It has 5 sizes as XS-S-ML-XL and 2 models as laced and zippered models. It is comfortable and does not restrict mobility.



The protective suits we produce against Chemical, Biological, Radiological, Nuclear (CBRN) warfare agents have a high protection capacity. It is light, comfortable and has high mobility. It is produced in the desired model, size, color and protection capacity.







Protective gloves that we produce from butyl rubber material against Chemical, Biological, Radiological, Nuclear (CBRN) warfare agents have a high protection capacity. There are 3 sizes as S-M-L and 2 models as symmetrical and asymmetrical models. It is comfortable and does not restrict mobility.

CBRN PROTECTIVE GLOVE



It produces carbon and fireproof fabrics that are resistant to high temperatures and do not deform after exposure to high temperatures.



**CARBON & FIREPROOF FABRIC** 



### SPHERICAL ACTIVATED CARBON



## SPHERICAL ACTIVATED CARBON PROTECTIVE FILTER





Our spherical activated carbons with high surface area and large pore structure are used in CBRN protective suits and systems that require special filtration.





Protective filters produced from spherical activated carbons with high surface area and large pore structure are used in CBRN protective suits. It is light, flexible and has high protection value.





Our demining suits, which are used in mine search and clearance activities, are produced at the desired protection level. The standard protection level is at least 450 m/s.



Ballistic fibers with high strength and flexibility developed by our company are used especially in ballistic protective vests and fabrics where high strength is required.

**DEMINING SUIT** 



"NORAR" BALLISTIC FIBER







It produces fireproof clothing from fabrics that are resistant to high temperatures and do not deform after exposure to high temperatures.

# **NUROL MAKINA**

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#### **EJDER KUNTER**





EJDER KUNTER which was uniquely designed by Nurol Makina is a platform that has fully independent suspension system. With its superior off-road performance, EJDER KUNTER can operate effectively in rural areas as well as urban areas in all terrain condition. The system design of EJDER KUNTER can be configured according to user requirements and offers special platform solution including the integration of special mission equipments. There are various configurations of EJDER KUNTER such as; Truck, Repair Maintenance Tool, Prisoner Transport Vehicle, Ammunition Transport Vehicle, Command Control Center Tool, Unmanned Ground Vehicle Transport Vehicle. Ambulance Vehicle and VIP Vehicle.

EJDER TOMA, which has 4x4 mobility, indigenous military chassis and fully independent suspension system, is manufactured for the security forces to interfere quickly and effectively against the civil disobedience. EJDER TOMA which was uniquely designed by Nurol Makina, has been developed to maintain public order and security in rural and urban areas as well as border regions with its highoff-road performance.



**EJDER TOMA 4X4** 

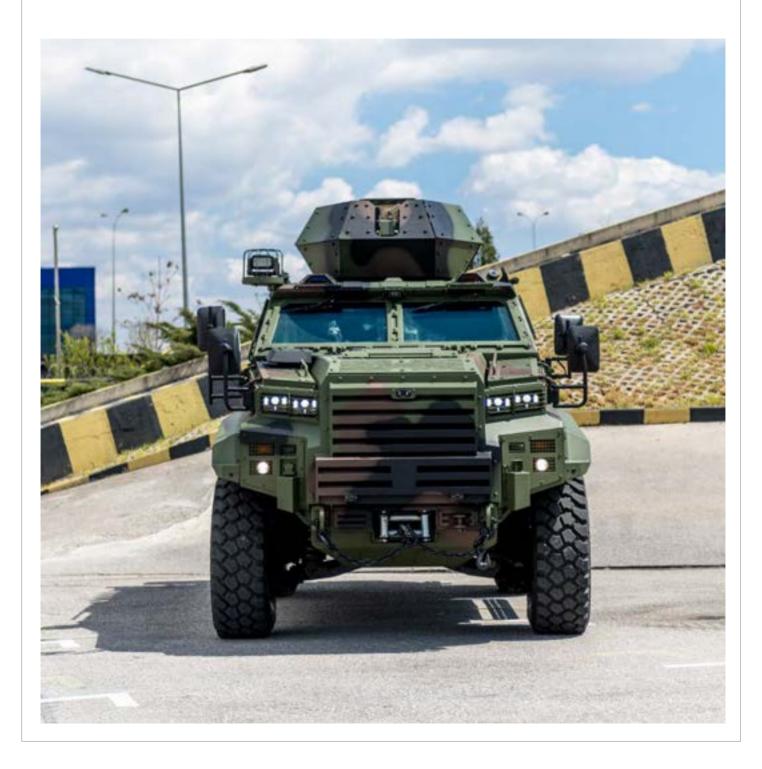


### **EJDER YALÇIN 4X4**

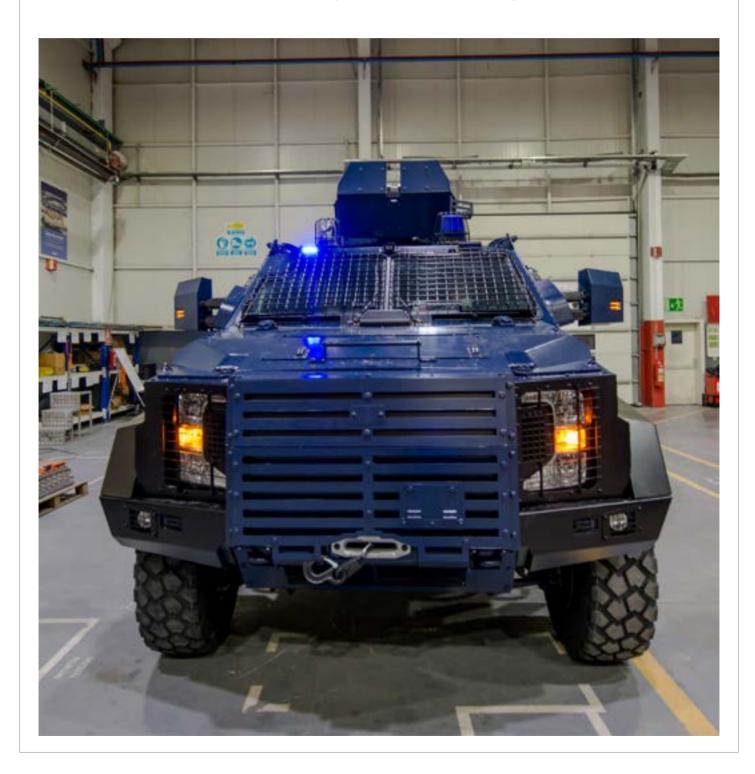




EJDER YALÇIN 4x4 Armored Combat Vehicle is a unique platform that has high protection and mobility. It is developed to meet the operational requirements of military units and security forces in every region including rural and urban areas. During the development of EJDER YALÇIN 4x4, in addition to the superior protection features, user's operational & ergonomic requirements were also considered and an ideal platform was created for the personnel to operate more efficiently and more secure in the field. By its unique design and high payload capacity, different payloads can be integrated; therefore EJDER YALÇIN 4x4 can be customized for various missions.



ILGAZ-II 4x4 was developed in order to meet the requirements of special operation forces, military units and security forces to intervene with social events and illegal demonstration, restoring public order and for rapid response in residential and rural areas. Into the design phase of ILGAZ-II 4x4, Nurol Makina paid particular attention to the crews protection while ensuring that the crew can carry out their tasks safely and effectively. ILGAZ-II 4X4; offers special solutions for the different requirements of users with Ambulance, Anti-Tank Vehicle, Combat Vehicle, Command&Control Vehicle, Recce&Surveillance Vehicle, Counter Terrorism Vehicle, Internal Security Vehicle, Crime Scene Investigation Vehicle.

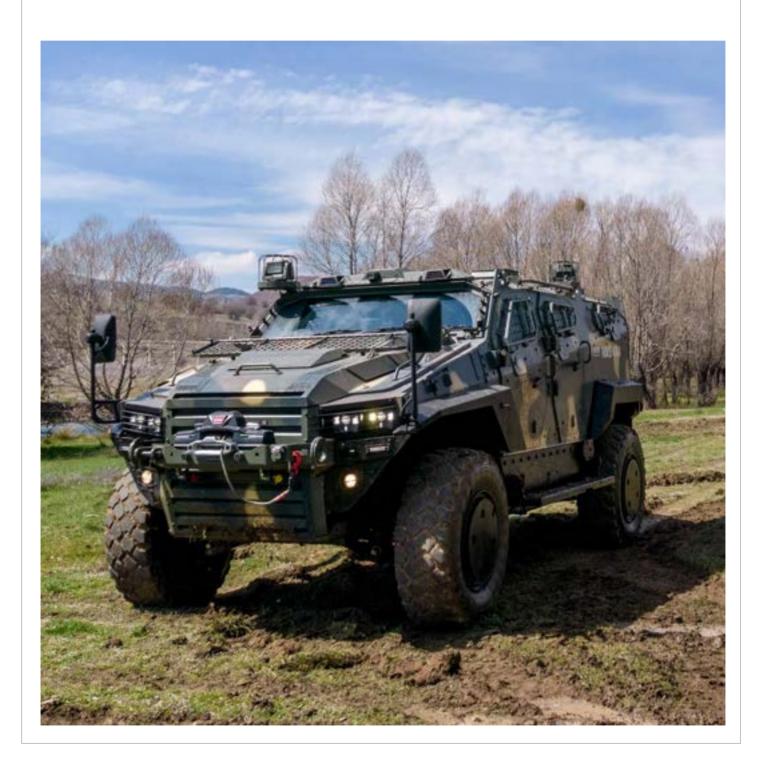


### YÖRÜK (NMS) 4X4





NMS 4X4, the indigenous design of Nurol Makina, provides operational superiority and resilience in the face of the most aggressive and asymmetric threats, thanks to its low weight and high protection features. Furthermore, thanks to its higher speed and superior protection features compared to other vehicles in his segment, the vehicle is suitable as an escort in VIP convoys. The modular design of NMS 4x4 enables the users to cover wide range of special operations such as combat operations, transportation of troops and equipment, air defense, and reconnaisance. NMS 4x4 provides scalable ballistic protection and offers superior mine&IED protection.



# **NUROL TEKNOLOJI**

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### **ARMOUR PANELS FOR LAND-AIR-SEA VEHICLES**

We produce ceramic + composite armour systems for land, air and sea platforms in accordance with all international standards.





### ADVANCED TECHNICAL BALLISTIC CERAMICS COMMON





In addition to boron carbide ceramics produced by the world's leading countries, we produce technical ceramics such as silicon carbide and alumina, which are the most critical materials in the field of ballistics.





In accordance with NIJ and EN 1063 Standards, we produce high-mobility ballistic protection visor sets that can be placed side by side when needed.

We produce ceramic+composite/ polyethylene hand shields in accordance with all personnel protection standards in the world and according to customer specifications.



**BALLISTIC PROTECTIVE HAND SHIELD** 

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#### **BALLISTIC PROTECTIVE CHEST PLATE**



We produce ceramic+composite/polyethylene chest plates in accordance with all personnel protection standards in the world and according to customer specifications.





€ 0 5

**BALLISTIC PROTECTIVE MOBILE VISOR (MODKOR)** 



#### **BALLISTIC PROTECTIVE SIDE PLATE**

**a a b** 

We produce ceramic+composite/polyethylene side plates in accordance with all personnel protection standards in the world and according to customer specifications.



We produce armoured security cabins in accordance with EN 1522 and EN 1063 standards according to customer requirements, interior furnishing and dimensions.



**BALLISTIC PROTECTIVE ARMOURED SECURITY CABIN** 

₹ 🗎 🔊

## SOFT BALLISTIC PROTECTIVE INNER AND OUTER TACTICAL VEST





We produce soft ballistic protective vests according to various personnel protection standards in the world and according to customer requirements.



# ONUR YÜKSEK TEKNOLOJI (OYT)

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## **AUDIO COMMUNICATION SYSTEM (OCS-NG4000)**



With its flexible architecture, continuous operation capability, redundant network topology, and compliance with international standards, it is used in Air Traffic Management operations (ACC/ TWR), Remote Tower Applications, and UAV/UAS/RPAS Communication Systems. Designed with Voice over Internet Protocol (VoIP) architecture and a network-centric operating concept, the system distinguishes itself from other traditional TDMbased VCS products through endto-end IP implementation. This technology, based on VOIP, enables effective interconnection of multiple communication sources, including legacy HF/VHF/UHF radios, analog/ IP telephones, intercom systems, and legacy audio distribution systems. The system allows operators to utilize advanced features such as video conferencing, messaging, and alarm system management.







The Recording and Playback System encompasses applications in air traffic management, UAV systems, command and control centers, and surveillance systems. Utilizing the latest technologies, it ensures data is recorded with accurate time stamps while providing complete protection against unauthorized access. In addition to supporting all analog and digital audio interfaces, it is compatible with ED 137-compliant next-generation audio sources. The system also features advanced capabilities such as screen recording, CCTV and video sources, web-based playback, data transfer, re-streaming, access control, authentication, reporting, alarm management, action logs, and system management, offering a comprehensive solution for modern operational needs.

**RECORD AND PLAYBACK SYSTEM (ORS-IP1000)** 





## UAV VOICE COMMUNICATION AND RECORDING SYSTEM (OCS-NG4000-RPS)





It's flexible, reliable, and efficient voice communication solution designed specifically for UAV. Based on Voice over Internet Protocol (VoIP) technologies, it enables the effective integration of multiple communication devices, including HF/VHF/UHF radios (digital or analog), various telephone interfaces, SATCOM, GSM, intercom systems, and legacy audio distribution systems.

It is designed to operate continuously across all operational scenarios. The system offers different levels of availability, ranging from space-saving, "non-redundant" small versions to "fully redundant" systems.

The system comprises the VCS Server, User Panel (CWP), Integrated Recording Service, Radio-IP Gateway (RIG), Telephony Gateway (TG), and UAV Radio-IP Converter (UAV RIG) subcomponents.



The Mobile Air Traffic Control Tower is a flexible and fast solution designed for air traffic control services in emergency/disaster situations where infrastructure is lacking. It consists of two main components: the lifting system and the tower cabin. The tower cabin includes essential subsystems such as Voice Communication, Recording and Playback, radios, Tower Information System, Uninterruptible Power Supply, GPSLock, and CCTV Surveillance Systems. All equipment complies with ICAO standards and is supported by a generator for uninterrupted operation. Auxiliary systems, such as meteorological equipment, can be added, and the tower operates with three control panels.



**MOBILE AIR TRAFFIC CONTROL TOWER (OMT-M2000)** 

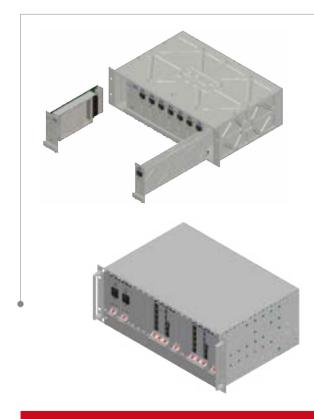


#### **RUGGED RIG (/RIG-300R)**



Rugged RIG unit is an electronic device developed to convert radio communication functions on aircraft into IP-based structures, allowing usage through various transmission media (e.g., data link, SATCOM). It integrates airborne radios with ground units like ATM/ATC, enhancing aircraft capabilities. It enables seamless communication with nearby ATC units (air-to-air or air-to-ground), radio relay via data links, and site extension. The unit supports PLS (Personnel Location System) via airborne radios, encrypted voice access, and cross-band relay between different frequency bands (HF/VHF/UHF). Designed to meet military aviation standards, it complies with MIL-STD-810G and MIL-STD-410F requirements.





The system provides a tactical IP network infrastructure without location constraints. It integrates existing HF/VHF/UHF radios for narrowband communications while supporting next-generation broadband wireless systems from a single management point. It is compatible with all IP-based applications, such as web services, chat, email, and messaging. The solution supports multiple platforms and can automatically activate radio broadcasts from different operational areas within the same network. It offers reliable, cost-effective IPbased communication between maritime platforms and coastal stations. Featuring dynamic relay selection and bandwidth provisioning, it operates as a self-healing Mesh network and complies with NATO STANAG 5066, 4691, and 4538 standards.

**TACTICAL NETWORK ROUTER (HSNR-500)** 

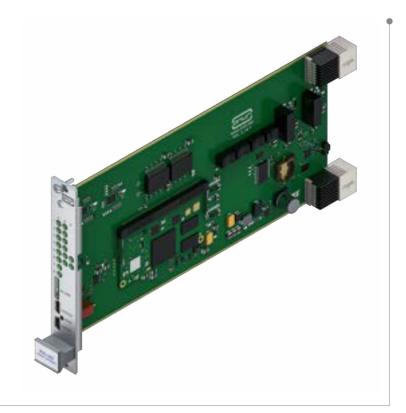


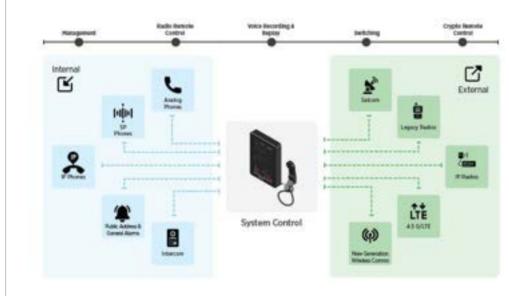


#### **WIRELESS IP DIALER (RIG-300/)**



The Radio IP Gateway transforms analog signals from legacy systems into industry-standard IP format, enabling access to radios at both near and remote locations via standard network connections. With interface control information, operators can remotely control radios through the network, serial lines, and I/O lines, and transfer all system functions to the CWP. Each module features redundant power supplies and network interfaces. Manufactured with industrial-grade components, it offers unlimited service life and logistical support. The device integrates CPU, signal processing, audio, and data interfaces into a single unit, and its software-centric modules allow easy addition of new features through simple software updates.





The OIC-MP2000 interconnects a wide range of communication channels with different architectures and technologies onboard naval platforms. The system consolidates legacy equipment such as HF, VHF, UHF radios, sound-powered phones, phone lines, and voice and data crypto devices into an IP-based pool, shared among user stations based on dynamic role selection rules. Its scalable design supports from one to an unlimited number of user stations. The primary feature is its ability to integrate existing legacy communication infrastructure into nextgeneration IP networks. IPbased voice services offer seamless switching without quality loss, allowing high numbers of users to access the system efficiently.



SHIP INTEGRATED COMMUNICATION SYSTEM (OIC-MP2000)

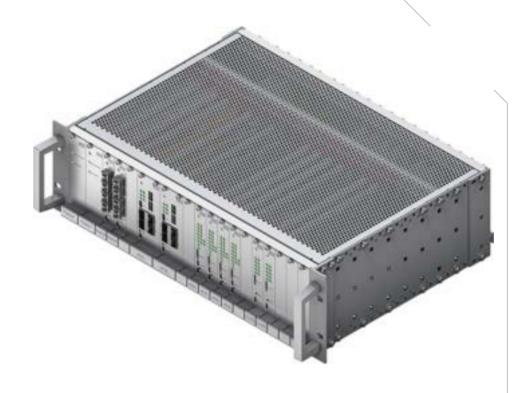


#### **TIME DISTRIBUTION SYSTEM (NTSC-3000)**



The system enables the distribution of precise time information from various sources to other systems through industry-standard interfaces. It supports a wide range of civil and military time formats for applications such as data centers, telecommunications, data communication infrastructures, critical facility automation systems, and data recording systems.

Developed entirely with inhouse resources, this product offers alternative features to imported solutions subject to export licenses, specifically addressing military precise time distribution needs (e.g., STANAG 4246-compliant HaveQuick applications).





OSR-IP1000 is a network management solution designed to effectively establish mobile data networks while offering scalability and flexibility. The system provides IP-based network capabilities not only for next-generation satellite, broadband data networks, and GSM systems but also for legacy HF, VHF, and UHF radios. It offers a scalable, reliable, cost-effective, and self-organizing network solution for maritime, land, air platforms, and fixed stations. The system consists of intelligent hybrid subnet routers, software-based modems, and wireless communication modules that can connect to standard IPbased communication channels.

TACTICAL FORMAL NETWORK COMMUNICATION SYSTEM (OSR-IP1000)



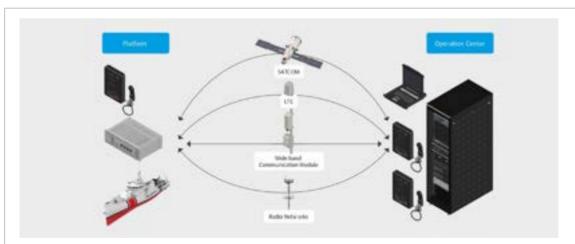


## INTEGRATED TACTICAL MISSION MANAGEMENT SYSTEM (ITMS)



The Integrated Tactical Mission Management System (ITMS) is a hardware platform that provides the communication and data processing backbone for operational and strategic (mobile or static) units in the field. ITMS combines voice/video switching. Analog/IP radio integration, LAN/ WAN data communication, hybrid network management, and processing power for C4I applications. It runs essential software such as Command and Control. Tactical Communication. Radio Control, and Tactical Router. and provides necessary interfaces for Communication Channels, Radios, and Applications. ITMS can be deployed in various forms based on capacity and installation requirements, operating on industrial servers in Operation Centers and other facilities, or in military-standard formats for naval and land vehicles.





The ONC-IP1000 is designed to meet internal and external communication needs by integrating network-enabled capabilities, minimizing human intervention. The system consists of two main components: the Integrated Communication System and the Tactical Formal Network Communication System. These components work together to address communication requirements through network-enabled capabilities. The network infrastructure supports services such as voice calls, video calls, messaging, file transfer, email, teleconferencing, and video conferencing. Existing radios can be easily integrated into the system and used from any point within the network's reach. Integrating traditional radios with an IP-based network enables the distribution and utilization of resources independently of location.



OPERATIONAL IP COMMUNICATION SYSTEM (ONC-IP1000)



## UNMANNED MARITIME VEHICLE DATA COMMUNICATION SYSTEM (OSV-IP1000)





The Unmanned Surface Vehicle (USV) Data Communication System is designed to enhance the quality and ensure the continuity of data links required by maritime platforms. It improves the network connectivity of USVs by enabling mobile and ad-hoc network setup and management. For extended range enhancement, nextgeneration data network systems can be integrated with existing satellite connections, and traditional HF and U/ VHF radios can also be incorporated into the data network. The system is based on the ONUR Tactical Formal Network Communication System, which has been used in the field for many years. Its scalable architecture allows it to meet all data transmission needs of USVs and be used on various sizes and types of vehicles.

The Wireless Communication Module (WCM-500) is developed to establish a formal data network between mobile platforms, stations, and fixed centers to meet next-generation communication needs. It enhances and maintains the network while supporting voice, data, and video transmission services. Each Wireless Communication Module provides extensive coverage within a mesh network, eliminating the need for signals to originate from a single central point and allowing signal range to extend over broader areas. The system's output power and frequency band can be selected according to the platform requirements. It is designed to withstand harsh environmental conditions and is compliant with MIL-STD-810 and 461G standards.



WIRELESS COMMUNICATION MODULE (PLATFORM AND STATION TYPE) (WCM-500)





## WIRELESS COMMUNICATION MODULE (HANDHELD) (WCM-500H)



The WCM-500H delivers ad-hoc mobile network capability for personnel or small platforms to remain connected in operational theatre. It offers wideband self-forming and self-healing mesh network for stationary and mobile platforms. WCM-500H is designed to meet high mobility requirement for personnel or small form platforms. The system is compatible with stationary and vehicular WCMs, and may establish an efficient network with other deployed WCM units.





The Helicopter Wireless Communication Module is developed to establish IP-based networks between airborne platforms, stations, and mobile units, meeting the need for broadband communication. It addresses next-generation communication requirements by creating a formal data network, enhancing and maintaining it, and supporting voice, data, and video transmission services.

With its integrated video encoder, the system can transmit real-time imagery from onboard optical systems to other platforms and command centers. Additionally, its serial communication interfaces allow the transmission of flight data from the aircraft. The module's scalable design enables configuration in various architectures and can be equipped with the minimum required components, providing a cost-effective solution.



WIRELESS COMMUNICATION MODULE (HELICOPTER TYPE) (WCM-500A)



## WIRELESS COMMUNICATION MODULE (UNMANNED LAND AND SEA VEHICLES TYPE) (WCM-500U)





The Wireless Communication Module (WCM-500M) was developed to provide fast, reliable and mobile communication between teams working in the tactical field. It is equipped with minimum components suitable for carrying on personnel for security, emergency, coordination and tactical field cooperation. It allows instant coordination and information sharing between teams and/ or units to be established via a mesh network.



This advanced cybersecurity product ensures secure data packet transfer between networks of different security levels. AGGS controls network traffic by allowing only permitted protocols and services while blocking others. It offers a multi-layered security architecture with integrated firewall, intrusion detection and prevention system (IDS/IPS), and antivirus components. Additionally, it ensures secure data transfer by creating an air gap using its proprietary methods without relying on Ethernet and IP protocols.

SECURE INTER-NETWORK TRANSITION SYSTEM (HONOR-AGGS)



## SECURE OPERATOR VOICE/DATA GATEWAY (HONOR-SVG)





IP-Based Secure Operator Voice Gateway (SVG) is a migration device supported by hardware and software components that allows the Decoupling of voice and data traffic between secure/secure (red) and insecure/insecure (black) networks. According to NATO and National Decryption standards, it blocks traffic between these two networks. With SVG, all kinds of traffic in voice and data communication are controlled and routed to a secure network or an insecure network according to the security level. SVG works as a switching mechanism between secure and insecure networks for communication purposes and ensures the protection of communication against security threats in the SVG environment.



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AKREP II offers low silhouette, high mine protection and effective fire power on the same platform. AKREP II has an infrastructure that allows the use of alternative power sources such as diesel, hybrid and electricity. AKREP II's four-wheel drive system and steerable rear axle (optional) give the vehicle excellent maneuverability. As a multi-role vehicle suitable for various mission types, AKREP II has the ability to provide effective firepower without compromising survivability. Medium caliber turrets up to 90 mm can be integrated on it. AKREP II can also be configured for; weapon platform for quick reaction, surveillance missions, armed reconnaissance, air defense missions, forward observation and other similar tasks.



Türkiye's first unmanned heavy ground vehicle ALPAR is capable of undertaking missions together with manned and unmanned assets in the battlefield. Alpar's serial hybrid-electric drive and modular electronic infrastructure enables critical silent operations for successful reconnaissance and surveillance whilst it can serve as an important fire and fire support platform. It has autonomous and remote control capability, low thermal and acoustic signature, follow me mode, agile high off-road mobility similar to Armoured Fighting Vehicles and Light Tanks. It has a maximum combat weight of 15 tons.



Otokar's multi-wheeled modular armored vehicle ARMA 6x6 offers superior mobility, high mine and ballistic protection, as well as medium and high-caliber weapon system integration options. Offering high tactical and technical features, ARMA comes with an optional amphibious variant in the most demanding terrain and climate conditions. ARMA can be equipped with different weapons and manned / unmanned turrets according to the needs. The ARMA 6x6 can be used for various missions as surveillance, recovery, armored personnel carrier, armored combat vehicle, command control, reconnaissance, and CBRN reconnaissance vehicle.



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**ARMA 6X6** 



Otokar's combat proven multi-wheeled modular armored vehicle ARMA 8x8 offers superior mobility, high mine and ballistic protection, as well as medium and high-caliber weapon system integration options. Offering high tactical and technical features, ARMA is capable to serve modern armies in most demanding terrain and climate conditions. ARMA 8x8 stands out especially with its high payload capacity and large interior volume. ARMA can be equipped with different weapon stations from 7,62mm to 105 mm, manned / unmanned turrets. ARMA 8x8 can be used in different missions such as armored personnel carrier. armored combat vehicle, command and control, CBRN reconnaissance vehicle and it also has an amphibious option.

ARMA II offers best-in-class ballistic. mine and improvised explosive device (IED) protection and optimal terrain capability. With a maximum payload of 40 tons, ARMA II comes with higher payload and improved protection, and can be configured for the integration of heavy weapon systems up to 120mm caliber. ARMA II is equipped with a 12.7-liter, 6-cylinder, turbodiesel, 720 HP engine. ARMA II offers a platform suitable for many different missions; from armored combat vehicle to armored personnel carrier: from command and control vehicles to air defense missions. With the extra interior volume provided by the expanded hull, ARMA II is the most superior vehicle in its class with the modularity to operate as a maintenance and repair vehicle or an ambulance.



**ARMA II 8X8** 







COBRA offers a superior mobility and serves many different missions. The powerful turbo diesel V8 engine and high power to weight ratio give COBRA, power to navigate in the toughest terrain conditions.

The Independent Suspension, the Central Tyre Inflation Systems along with the permanent four-wheel drive, automatic transmission ensure the highest level of mobility. Thanks to the remarkable ballistic protection, superior mobility as well as the modular design adaptable to various missions, COBRA is always ready for the mission.





COBRA



COBRA II 4x4 tactical wheel armored vehicle offers a high level of protection, payload, and large internal volume. In addition to superior mobility, COBRA II also comes with the capacity to accommodate 10 personnel including the driver and commander, offering high protection against ballistic, mine and IED threats. Delivering high performance in the toughest terrain and climate conditions with high power to weight ratio, COBRA II is fully mission ready for any task. Preferred especially for offering a wide range of weapon integration and mission equipment options, COBRA II is successfully used for border protection as well as internal security and peacekeeping missions in Türkiye and export markets.



COBRA II - MRAP is a next generation MRAP vehicle which unites high level of survivability and mobility in a modular package. COBRA II -MRAP is specifically designed to provide high reliability, ease of maintenance and quick removal / installation of power pack. With its modular design, COBRA II - MRAP provides high payload and spacious internal space for integration of weapon systems and mission equipment. COBRA II - MRAP can be configured with alternative seating layouts for up to 11 personnel with 3 or 5 door configurations as per specific user requirements.

**COBRA II MRAP** 



Otokar ISV is designed and developed for various public security missions. The vehicle is the right solution for personnel carriage in risky territories with its high level of armour protection. Thanks to its high and imposing appearance, ISV attracts attention in the crowd and discourages groups by generating a psychological effect on them. Otokar ISV also provides the crew with a wide range of sight and enables controlling the progressing events outside the vehicle. High power weight ratio, permanent 4 wheel drive and ample ground clearance ease negotiating obstacles in and around the streets when required. Water Cannon Variant is also avaliable.





KAYA is specially designed and developed as a Mine Resistant Ambush Protected Personnel Carrier. KAYA provides enhanced mine and ballistic protection along with superior mobility in a wide range of demanding terrains under diverse climatic conditions. Single cabin monocoque body of KAYA carries up to ten troops including the driver and commander.



**KAYA** 

#### Otokar



KESKIN Remote Control Weapon Station is a combat proven, lightweight and modular remote control weapon system which can be operated with 14.5 mm/12.7 mm/7.62 mm machine gun or 40 mm automatic grenade launcher. KESKIN RCWS is fitted with an optical suite composed of thermal sight, day sight and laser range finder. The gunner can monitor and control the sight system inside of the vehicle. The system can be operated both in day and night. The system also provides 360 degrees of situational awareness and gunner sight's facility. The system has an optical suite composed of thermal sight, day sight and laser range finder providing 360° situational awareness and fire zone.



MIZRAK-30 is an unmanned turret system, designed for armoured vehicles, controlled by the gunner and the commander located inside the vehicle. MIZRAK is fitted with 30 mm dual-feed automatic main gun and 7,62 mm co-axial machine gun. MIZRAK-30 can fire all type of 30X173 mm NATO ammunitions including armour piercing and high explosive ammunitions. Weapon system can be reloaded under armour protection. MIZRAK-30 is equipped with the latest generation digital fire control system, having independent commander and gunner dual axes stabilized sights with highest performance cooled thermal camera, CCD camera, laser range finder and meteorological sensor with integrated GPS. Turret provides target tracking function.





MIZRAK-S is an unmanned turret system, designed for armoured vehicles controlled by the gunner located inside the vehicle. Compact structure and low weight of MIZRAK-S, allow its integration to the vehicles with limited payload capacity. MIZRAK-S is fitted with 30mm dual-feed automatic main gun and 7,62 mm co-axial machine gun. MIZRAK-S can fire all type of 30X173 mm NATO ammunitions including armour piercing and high explosive ammunitions. MIZRAK-30 is equipped with the latest generation digital fire control system having gunner dual axes stabilized sights with highest performance cooled thermal camera, CCD camera, laser range finder and meteorological sensor with integrated GPS. Turret provides target tracking function.

1

**MIZRAK-S** 





TULPAR Armored Combat Vehicle stands out with mobility, high firepower, and survivability features. TULPAR is designed as a multi-purpose tracked vehicle with variants ranging from 28,000kg to 45,000kg to fully satisfy the future requirements. The forward-looking design approach to modularity increases operational flexibility by using common components and a common chassis over wide range of vehicle variants. TULPAR comes in several variants that share common subsystems. Tested in the toughest climates and on rough terrain, TULPAR boasts best-in-class ballistic and mine protection with modular armor technology and armor structure that can be configured and scaled according to threats.

TULPAR-S is designed as an amphibious light tracked vehicle offering a common platform for mission specific variants such as: Infantry Fighting Vehicle, Armored Personnel Carrier, Armored Weapon Carrier. Maintenance and Recovery Vehicle, Command and Control, Ambulance, Reconnaissance Vehicle Common platform design approach provides significant tactical and logistics advantages as well as reducing training burdens. TULPAR-S can be tailored for high density combat, stabilization operations, peacekeeping missions, and disaster relief missions to list a few.



**TULPAR S** 





The URAL platform, a unique product of Otokar's innovative approach, is designed as a versatile and modular solution to meet the requirements of different users for 4x4 armored or unarmored tactical vehicles in various configurations. With a modular structure and dimensions, the URAL platform can be easily adapted to different missions' equipment, weapon systems, and configuration requirements.





ÜÇOK Remote Control Weapon Station is a stabilized machine gun platform which can be equipped with 12.7 mm/7.62 mm machine gun or 40 mm automatic grenade launcher. The weapon station has dual axes independently driven sight which is equipped with thermal camera, a CCD camera and a laser range finder. Independently driven sight allows the aiming while having the super elevation and lead angles for accurate firing. ÜÇOK RCWS has an electrical drive, automatic ballistic calculations and stabilization system with automatic target tracking capability. It can also be operated manually from the outside on the vehicle. In reconnaissance mode while the gun is stationary; target search can be realized by using cameras independently from the gun.

TE

ÜÇOK

# ÖZTİRYAKİLER

Company Short Name

Öztiryakiler

Company Trade Name

Öztiryakiler Savunma Ekipmanları San. Tic. A.Ş.

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Company Website

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It is prepared for units that work in the field for short periods and frequently move. It consists of 9 compartment showers and the sections are separated from each other by a tarpaulin. 90 people can be washed in 90 minutes.

20 foot container has 8 shower compartments. The outer door is on the short side of the cont. There is a technical room on the other short side. In each shower compartment there are four towel racks, mounted on the inside of the door, so that they can be used as clothes hangers when necessary. A shower curtain between the wet area and the door to protect the clothes. Equipment to prevent the water in the tank from freezing. Cold water installation is suitable for water supply from the network or from the tank. There must be a booster system that increases the water outlet pressure. Heating water; diesel heating system.



#### ōztiryakiler



It has 2 pieces of 20 kg. capacity washing machine and 2pieces of 20 kg capacity dryers, double flank outer door, 2 wall-hung type sliding door metal cabinets made of stainless steel, 4 laundry baskets with a capacity of 20 kg in order to put clean and dirty laundry in the 20 foot container. It also has a diesel generator with a capacity to enable the system to operate when there is no electricity in the container.

It is a 20 foot container and the floor is covered with 2/3 mm thick aluminum floor covering in a sealed manner. There is waterproofing with a membrane under the floor. It also has double flank outer door on one of the short side of the container and a diesel generator capable of operating the system when there is no electricity in the container.



**LAUNDRY UNIT** 



**FOOD STORAGE UNIT** 



#### **KITCHEN UNIT**

The container has three opening features. When it is to be transported, the covers can be closed and shipped in ISO 20 foot dimensions. The inner wall surfaces of the containers are covered with stainless steel. The container includes a conventional oven, oven trolley, cooking pan, deep fryer, meat grinder, mixer, vegetable chopping machine, potato peeling machine, There is a knife sterilization device, work bench, hood, sink, garbage truck, chopping table and hand tools (knife, ladle, etc.), dishwasher, refrigerator. There is a diesel generator in the container.



### OFK SERIES TRAILER TYPE FIELD KITCHENS





Possibility of transportation by land, air, sea and rail: OFK series field kitchens are designed to cook meals for 250-400 people in 2 hours, depending on the model, in all climate

and terrain conditions. Food contact areas,made of stainless steel. Work with diesel oil or LPG. In modular type kitchens, the cooking units can be separated from the trailer and work alone. It can be easily towed by all types of vehicles with its height-adjustable towing ring that complies with NATO standards. Trailer also has a brake system and handbrake. Cooking units consist of double-walled and single-walled cauldrons, frying pans and ovens. 69 pieces of accessories are included. Clean watertank, waste watertank and outdoor climate tent are optional.

#### öztiryakiler



It is a 20 foot container. The floor is covered with an aluminum floor covering with a minimum of 2/3 mm thickness to be impermeable and under the floor waterproofing is provided with a membrane. It consists of two parts, one for clean laundry and the other for dirty laundry storage.

MOBILE LAUNDRY STORAGE UNIT





20 foot double-winged external door on one of the short sides of the container. Aluminum, fly screen, single-mechanism ventilation grille on the external door. Stacking shelf for stacking the ingredients. Garbage cart and dish-scraping bench for cleaning the residues on the plates. Washing bench/sink suitable for washing the drum inside the container. Pre-washes and drum washing integrated into the counter. Spray washing hose for dishwashers Entrance counter with spray washing hose for pre-washing at the entrance counter System that can combine the waste at a single point and throw it out. Tank washing machine with hose on the sink.

### MOBILE FIELD DISHWASHING UNIT



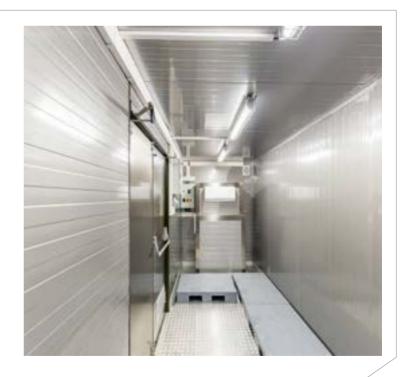
#### **MOBILE FIELD OVEN UNIT**





The oven has the capacity to bake 6240 pieces (150 gr) of bread in 8 hours. The oven unit consists of three 20 foot containers: preparation, baking and proofing containers. The inside of the containers are covered with stainless steel. A diesel generator is available for power outages. It has a capacity of at least 2000 liters that can be carried with the container. There is one main and one spare clean water tank.

It is a 20 foot container. The floor is covered with 2/3 mm thick aluminum floor covering in a sealed manner and it has waterproofing with a membrane under the floor. Single flank outer door is on one of the short side of the container. There is a diesel generator capable of operating the system when there is no electricity in the container.



**MOBILE FIELD FLOUR STORAGE UNIT** 



The 20 foot cold room container has 2 rooms and there is a section at the entrance where mechanical equipment is placed. Single flank exterior door is on one of its short sides. There are metal shelves in cold rooms and a meat hanger cart in freezer. There is a diesel generator capable of operating the system when there is no electricity in the container.



#### WATER TREATMENT AND STORAGE UNIT





The system is equipped to work in all kinds of natural water resources. A pump and pump group that can draw water from water resources and pump purified water into water tanks. It has a treatment system with UV (ultraviolet) and reverse osmosis. A single-winged external door is located on one of the long sides of the 20 foot container. There is a diesel generator. Mobile water analysis can be done with the water analysis set.

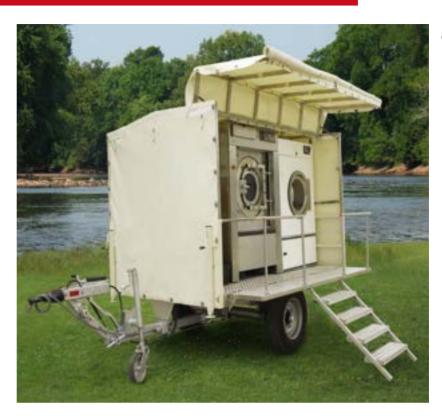
Öztiryakiler water treatment system produces drinking water from sea water, stream, lake and pond water. The system cleans residue, heavy metal, organic and bacteriological dirt with reverse osmosis technology and without using chemicals. It can be easily transferred and operated anywhere in the world.



TRAILER TYPE WATER TREATMENT SYSTEM



Trailer Type Laundry, placed on a trailer, provides a modern solution to the need for washing and drying laundry on the field. It has a structure that can be easily used by military units, humanitarian aid organizations and natural disaster response organizations. The diesel generator and diesel water heating system allow independent operation. It washes and dries 20 Kg of laundry per hour. The washing machine's 5 types of chemical washer compartments, including powder and liquid, are controlled electronically. 13 of the 50 programs are preset. Once the water is removed, it starts to spin and ensures that the laundry is fully wetted and the chemical spreads homogeneously.





There are 10 latrine compartments and a single-winged external door that opens to the outside on one of the short sides of the 20-foot container. In each toilet compartment: Stainless steel toilet bowl Single hanger Faucet Stainless steel sink of appropriate size, Sink mixer, Float mirror for each sink Toilet paper holder Towel holder Trash can Toilet brush Liquid soap dispenser Cold water installation is suitable for water supply from the mains or tank. Booster system that increases the water outlet pressure. Floor drain and sink waste water drains are combined as a single outlet.

**TOILET AND HAND-FACE WASHING UNIT** 

# **PAGETEL**

Company Short Name

Pagetel

**Company Trade Name** 

Pagetel Sistem Sistem Mühendisliği Sanayi ve Ticaret Limited Şirketi

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www.pagetel.com.tr



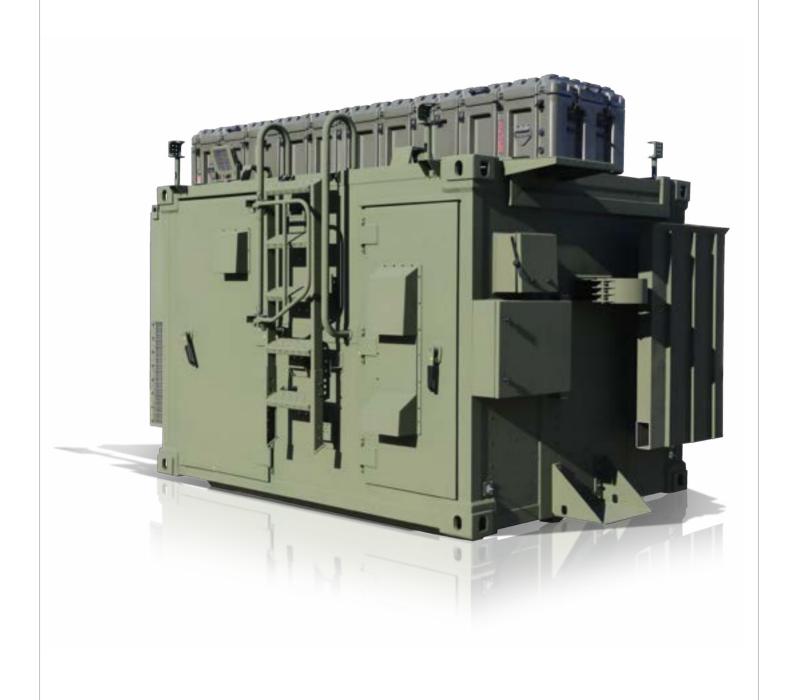






#### **ELECTRONIC ATTACK SYSTEM SHELTER**

This system shelter controls the Electronic Attack system.





Single sided, expandable and lifting mobile system shelter





This system provides communication between Air Defence System and Other Subsytems.



**AIR DEFENCE COMMUNICATION SHELTER** 

#### **UAV GROUND CONTROL STATION**





This system commands and controls UAV fleets.

This system shelter controls and commands all subsystems.



**MOBILE COMMAND AND CONTROL SHELTER** 



## COASTAL SURVEILLANCE RADAR SYSTEM SHELTER



PAGETEL

This system shelter provides monitoring to Coastal Surveillance Radar.



# PAPILON SAVUNMA

Company Short Name

PAPİLON SAVUNMA

Company Trade Name

PAPİLON SAVUNMA TEKNOLOJİ VE TİCARET A.Ş.

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(+90) 312 231 20 26

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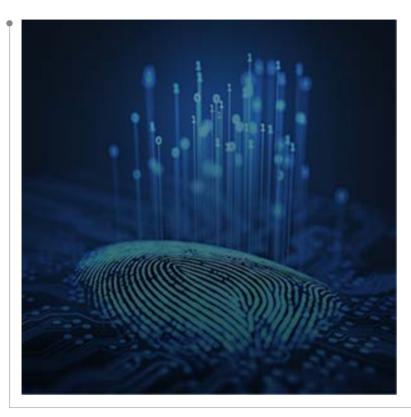
www.papilon.com.tr





#### **PAPILON HOLISTIKA**





HOLISTIKA ABIS is a multi-modal technology that can capture and identify fingerprints, palmprints, plantar prints, face images, and iris images to fulfill the biometric identity of civilians and criminals, by acquiring, searching, matching, editing, and storing biometric data.

Finger and palm print scanner that takes rolled and flat prints besides palm-side prints. All Papilon biometric scanners have Turkish Origin and FBI Certificate.



**PAPILON PAPT-1155** 



Real-time fingerprinting device that scans both flat and rolled fingerprints. In flat fingerprinting, four fingers of each hand, starting with the index finger, are placed on the device, then both thumbs are placed on the scanning surface for simultaneous scanning. In rolled printing, the finger is rolled from one edge of the nail to the other. Prints taken with LS-4421 are recorded to be sent to the central dataset. All Papilon biometric scanners have Turkish Origin and FBI Certificate.





The smallest member of our fingerprint scanners, LS-01 is designed to ease identity checks in the field. You will need LS-01 when you want to use a portable, hand-held, and incapacious device that makes identity verification in the field considerably easier. All Papilon biometric scanners have Turkish Origin and FBI Certificate.



**PAPILON LS01** 



#### **PAPILON MT-07**



MT-07 can do instantaneous identification and identity verification in the field. With the document scanner embedded in the module the chips and MRZs of e-passports and next generation ID cards. With MT-07 you can also photograph the subjects whose identities are inquired within the system. All Papilon biometric scanners have Turkish Origin and FBI Certificate.





Papilon MT Suitcase is a biometric workstation that includes either a Papilon fingerprint scanner or a Papilon ballistic scanner (FORENSIKA BS), a camera, a laptop, a document scanner, a mobile printer, an extended battery, and peripheral parts in order to achieve military standarts. Behind Papilon MT Suitcase, are the power of Papilon's superior fingerprinting and ballistic analysis software HOLISTIKA LS application and FORENSIKA and its central biometric data management system, Papilon HOLISTIKA. Having the resources and efficiency of the best in the sector, Papilon MT Suitcase offers an effective data registration and management system that could be used even in the hardest environmental and technological conditions. All Papilon biometric scanners have Turkish Origin and FBI Certificate.

#### **PAPILON MT-SUITCASE**



### PAPILON HOLISTIKA STATION 1101



PAPILON HOLISTIKA STATION
4421



Designed for police units and other institutions that carry out daily biometric / fingerprint and palmprint registration and operational verification of detainees, suspects and other categories of persons. Also designed for intensive use. Law enforcement needs to reach information more quickly and safely day by day. And so, local and interregional automatic fingerprint and palm print record terminals (HOLISTIKA ABIS) have to be reachable by law enforcement even if they are far away from a crime scene.



In that case, technology and engineering come to help. One of the solutions is PAPILON's multifunctional LS workstation HOLISTIKA Station 1101 which includes PAPILON PAPT-1155 fingerprint-palm print scanner, and also useful peripherals. All Papilon biometric scanners have Turkish Origin and FBI Certificate.



Designed for police units and other institutions that carry out daily biometric / fingerprint registration and operational verification of detainees, suspects and other categories of persons. Also designed for intensive use. HOLISTIKA Station 4421 uses PAPT-4114 fingerprint device to enroll fingerprints instead of PAPT-1155 palm and fingerprint device. Thanks to PAPT-4114 fingerprint scanner it is possible to enroll fingerprints as 4+4+2 form.





HOLISTIKA Station F is a multi-functional biometric photography station. The station consists of a photography stand, LED lamps placed at the bottom and the top of the unit to create ideal lighting conditions, and a metal measuring stand that is designed to measure any height between 110 and 180 centimeters. HOLISTIKA Station F is the only market available device which merges fingerprints and photos at the same enrollment record. Moreover, this product was created from scratch according to customer requests and demands.

PAPILON HOLISTIKA STATION
F



FORENSIKA software is used by law enforcement officials in the analysis of bullets and cartridge cases collected from crime scenes of cases that involve the use of firearms. It digitizes the bullet and cartridge case scans produced by FORENSIKA BS, PAPILON'S ballistic scanner, and aids the criminal experts in the analysis of these cases and bullets.



**PAPILON FORENSIKA** 



#### **PAPILON FORENSIKA - BS**







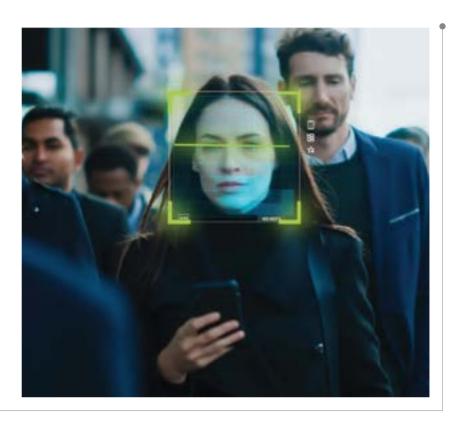
PYUZ is PAPILON's face recognition software that does face recognition from photographs and videos. Unlike some face recognition systems PYUZ is able to recognize faces from moving image, such as videos or CCTV footage. This feature allows PYUZ to run queries from videos, and is especially useful in processing visual evidence collected from crime scenes. Thanks to it, suspects and criminals can easily be identified from security footage. Thanks to its cross-referencing feature, PYUZ can run inquiries from video footage in the photograph dataset and the vice versa.

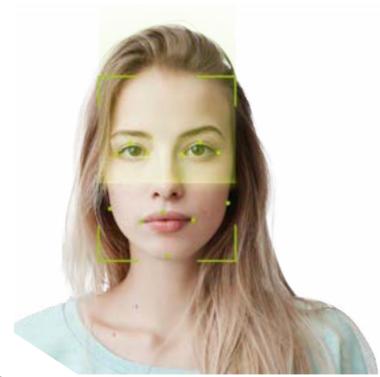
**PAPILON PYUZ** 





PYUZ SnapFace compares real-time footage to visual material kept in the datasets and performs identification and identity verification. Face recognition softwares can be classified as the ones that perform recognition from recorded visual materials such as videos and photographs, and the ones that do realtime face recognition by comparing a person's face to a set of visuals kept in the dataset. PYUZ SnapFace is a face recognition software that does the letter.





TOP NIST FRVT face recognition SDK for server, mobile & embedded solutions with passive and active liveness detection, detailed documentation and expert tech support. Papilon Face SDK is a comprehensive set of software components aimed at developing face recognition solutions. It offers a broad spectrum of features including face detection, face tracking and verification, attribute estimation like gender and age, image quality assessment, liveness estimation, and supports various programming interfaces for development across different platforms.



**PAPILON FACE SDK** 

## **PROFEN**

Company Short Name

PROFEN

Company Trade Name PROFEN SAVUNMA VE

GÜVENLİK TEKNOLOJİLERİ SANAYİ VE TİC.A.Ş.

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Company Website

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#### **PROFEN**

## NSPECTOR G6P REAL TIME SPECTURM ANALYSER





Portable spectrum analyzer specially developed for frequency spectrum and carrier monitoring with single RF input. It has a web-based GUI.

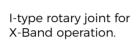


1RU rack-type spectrum analyzer, developed specifically for frequency spectrum and carrier monitoring, which can accept either a single RF input or up to 8 RF inputs and combine them all in the same window display. It features a web-based interface.

### NSPECTOR G6R1/G6RM REAL TIME SPECTURM ANALYSER













**PROFEN OZAN** 



#### **PROFEN VISIOMAX MRO**

\*



#### **PROFEN VISIONIC M&C**

M&C software for mainly satellite ground stations and Data Centers

MRO Software for especially aviation market.







#### PROTECTOR PRS-101/102 SERIES

Basic redundancy switch system in 1:1 configuration with SMA input and output ports, and internal electro-mechanical RF switch, which can support up to 3 GHz.





#### PSA-180XY, 1.8M X-BAND ANTENNA SYSTEM



X-Y type positioner available with 1.8m parabolic antenna operating in X bands.



#### PSA-700AZEL, 7.3M KU-BAND ANTENNA SYSTEM

The AZEL-type positioner is available with dish antennas from 45cm to 10m. The antennas are mainly available in Ku-Band as standard but optionally available in all other frequency bands from S-Band to V-Q Bands.





### PSA-700XY, 7.3M S AND X BANDS ANTENNA SYSTEM

X-Y type positioner available with 7.3m parabolic antenna operating in S and X bands with FSS type sub-reflector.





### PTA-120 KU-BAND MANUAL FLYAWAY ANTENNA



#### PTA-120M KU-BAND AUTOPOINT FLYAWAY ANTENNA



1.2m Ku-Band Offset type Flyaway antenna.





## PTA-130 KU/KA-BAND MANUAL FLYAWAY ANTENNA PTA-130 KU/KA-BANDE ANTENNE



#### PTA-130M X/KU/KA-BAND AUTOPOINT FLYAWAY ANTENNA



1.3m X,Ku and Ka Bands Paraboic type Fly-away antenna with replacebale feed system.



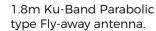
1.3m Parabolic type Flyaway antenna with autopoint feature operating in X. Ku. and Ka Bands.



### PTA-180 KU-BAND MANUAL FLYAWAY ANTENNA



## PTA-240 KU-BAND MANUAL FLYAWAY ANTENNA







2.4m Ku-Band Paraboic type Flyaway antenna.

## RAFF MILITARY TEXTILE

Company Short Name

Raff Military Textile

Company Trade Name RAFF GİYİM SANAYİ İÇ VE DIŞ TİCARET LİMİTED ŞİRKETİ

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#### **MILITARY CAMOUFLAGE SUIT**

Raff Military Textile holds a pioneering position in the military textile sector with half a century of experience. We offer a wide range of products, including military uniforms, ceremonial clothing, police and security uniforms, military boots, and anti-riot suits. We prioritize customer satisfaction by providing custom design options to meet their specific needs. While maintaining our commitment to delivering high-quality materials, we continue to offer competitive prices. With our extensive production capacity, we ensure the comprehensive manufacturing of various military textiles and materials. We deliver maximum quality in our products, meeting international customer demands with precision and tailoring solutions to their specific needs.









#### **COAT OF ARMS**



#### **MILITARY BOOTS**

















#### **MILITARY CEREMONIAL SUIT**



#### **SHOES**







**BERETS** 



#### TENT







#### BAGS



#### SHIRT





**ASSAULT VESTS** 



COATS





**SWEATER** 



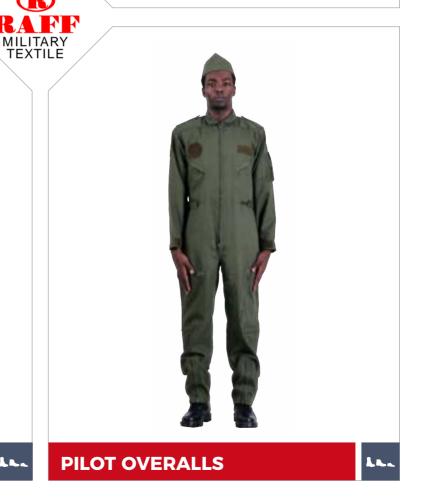


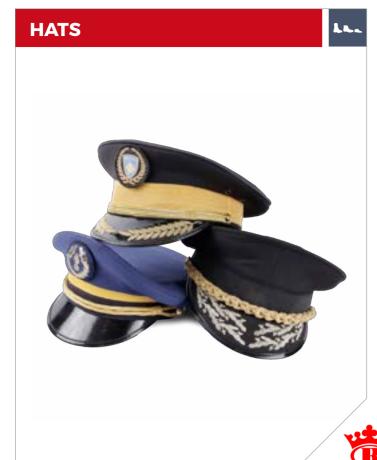




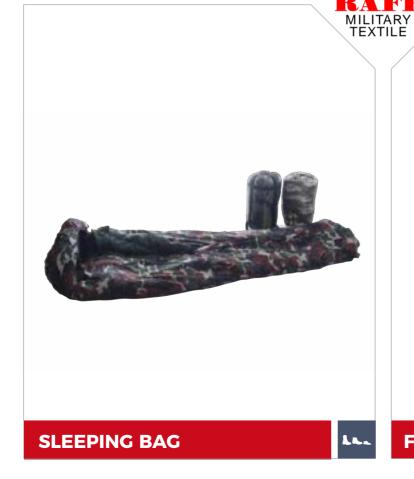














# REKROM OPTOELEKTRONIK

Company Short Name

Rekrom Optoelektronik

Company Trade Name Rekrom Optoelektronik Mühendislik Sistem Teknolojileri A.Ş.

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Company Website

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#### **LASIR-270 M2**





LASIR-270 M2 is a two dimensional LIDAR sensor with mechanical scanner. Thanks to its adjustable scanning speed, high resolution and eye-safe laser, LASIR-270 M2 has a wide range of uses.

High frequency laser altitude measurement sensor specialized for aerial vehicles. LASIR-A can be used safely in all kinds of applications with its eye-safe laser.



**LASIR-A** 



#### **LASIR-P**



#### ортік смм



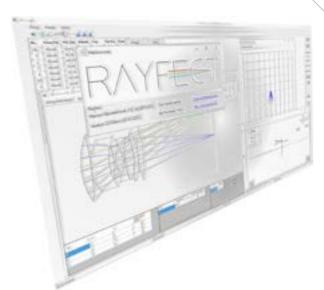


The position, speed and distance of high objects can be determined with high precision using LASIR-P thanks to its high measurement frequency. Offering different field of view options for different needs, LASIR-P can be used safely in all kinds of applications with its eye-safe laser.

Optical CMM is used in production, quality control and product development processes in factories and R&D companies, in construction projects such as bridges, dams, tunnels and infrastructure, and especially in ground survey studies, landscaping and similar field works, both large (1~20m) and small (10~100cm). It is a portable and easy-to-use measuring device that can be used in measurements and/or positioning of objects.







RAYFECT which we have developed using Real Ray Trace technique, is a software tool that you can quickly perform any type of optical design from simple to improved. We will take your optical designs one step further with easy to use interface.

RAYFECT



High magnification near infrared optimized visible camera for security applications.



REV30



## REPKON

Company Short Name

REPKON

Company Trade Name

Marketing email Address

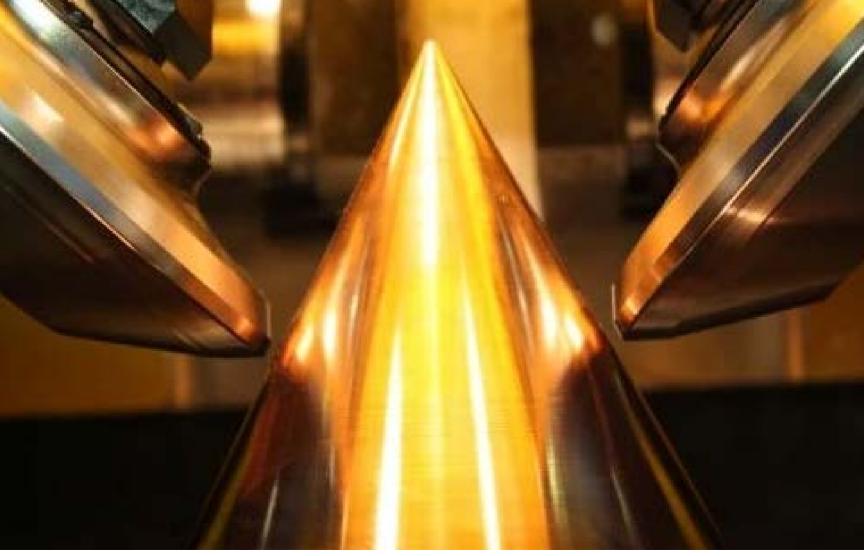
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Company Website

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REPKON

REPKON



REPKON is a provider of turn-key complete production plants for the metal forming sector as well as a designer, manufacturer and supplier of key metal forming machines for the global market, with a well established reputation for outstanding performance. Recognized worldwide for its proprietary design and manufacturing know how, REPKON has been selling sheet metal forming equipment to producers across the globe since 1978. REPKON combines its power, process and know-how in design and production of customer-specific process solutions with the technological capacity of Flowforming Machine, Rotational Cold Forging Machine for Barrel Production, Shear Forming Machine, Hot Spinning, Hydraulic Press and mold production.



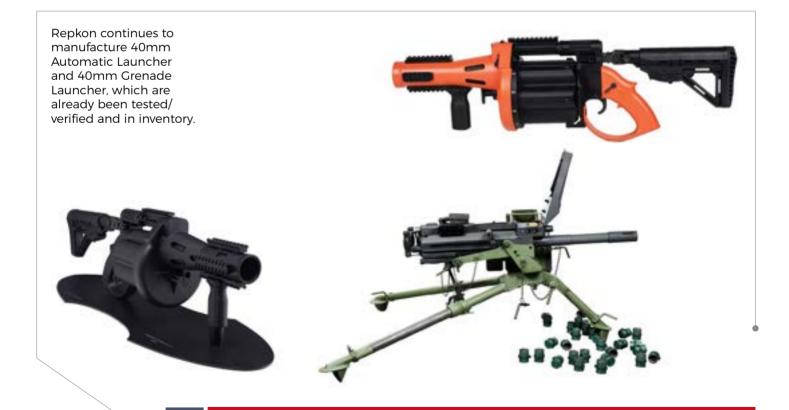






Repkon Production Technologies Contracting Industry and Trade Inc. currently manufactures rocket-missile engine bodies from 70 mm diameter to 480 mm diameter with critical flowforming technology. The production of a 40 mm rifled barrel, ammunition racks and shafts is also among the capabilities of the company. Flowforming technique is a superior cold forming method and provides significant increases in the requested tolerances and material strength values compared to machining. Rotary-symmetrical parts made of steel, aluminum, titanium, inconel materials with high precision values are produced in RFM series Flowforming machines developed by REPKON. These are especially used in the aerospace and defense sectors.





WEAPON SYSTEMS PRODUCTION CAPABILITY

# **RFTR**

Company Short Name

**RFTR** 

Company Trade Name

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www.rftrelectronics.com

RFTR Electronics designs and manufactures high power RF/Microwave products both in the module level and in the system level. Focus of the company is on High Power Amplifiers, RF Front Ends, Block Up Converters and RF Passives. The frequency of the products range from 1 MHz to 18 GHz, specialized bands are: 1.5-30 MHz, 20-520 MHz, 500-3000 MHz, 2000-6000 MHz and 6000-18000 MHz. Power levels up to 10 kW are covered. Upon request, Up/Down converter blocks can be included into the amplifier products. RFTR Electronics have delivered more than 40,000 products, most of them are used in harsh environmental conditions including the airborne systems and the naval systems.







## ROKETSAN

Company Short Name

ROKETSAN

Company Trade Name

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105/155 mm Howitzer Ammunition Range Correction Kit [MDK] is a guidance kit that can be used instead of the standard fuzes of unguided artillery ammunition, reducing the range probable error to 50 m.



### **AKYA NEXT-GENERATION HEAVY-CLASS TORPEDO**



roketsan

AKYA is a fully indigenous design, new generation Heavyweight Torpedo launched from submarines to engage submarines and surface targets of various types. AKYA is a high speed, long range, fully autonomous or fibre optic wire guided torpedo with active/passive sonar homing head. In addition, AKYA employs wake homing guidance for surface targets. AKYA, which operates at high speeds and at long ranges, features an active/passive sonar head, while internal guidance is provided via internal and fibre-optic cabling. It makes use of wake guidance against surface targets.





## **ALKA NEW NETWORK ENABLED WEAPON**







**ALKA Directed Energy** Weapon System [DEWS]; uses electromagnetic and laser technology against asymmetric threats as very close hybrid air defense system. Threats are interfered by Electromagnetic Jamming System [EJS] and are destroyed by Laser Destruction System [LDS] with two-layered defense architecture. It can also be used to counter bomb traps in residential areas and roadside Improvised Explosive Devices [IEDs].



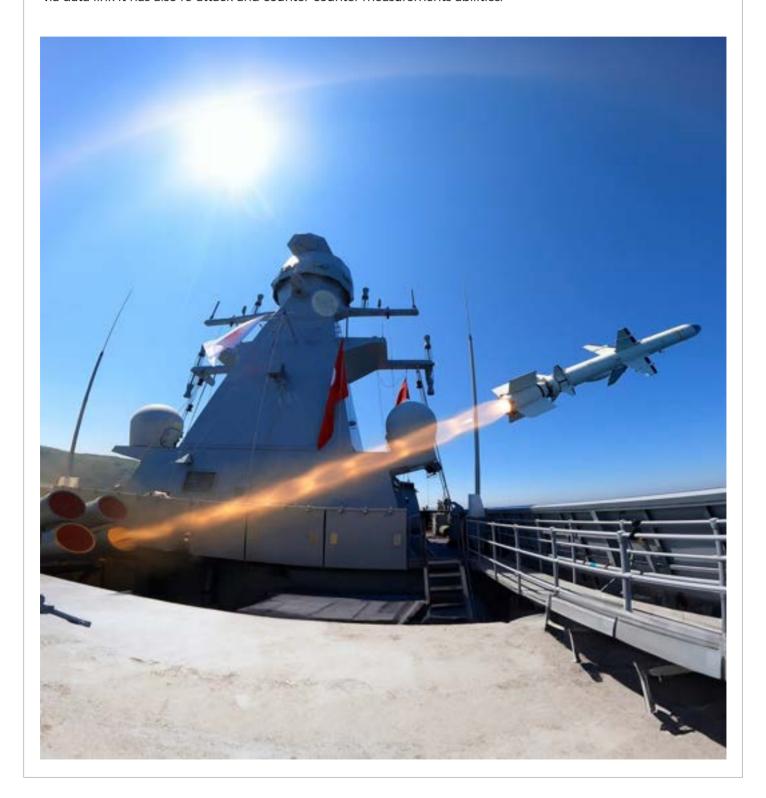
ALPAGUT, which can be operated day or night, is effective against mobile or stationary land and sea targets, radar and communication systems, critical facilities, personnel and targets of opportunity. ALPAGUT can be used in single or swarm configurations with an operational radius of 60 kilometers, an operational time more than 60 minutes and different types of warheads. Once fired or released, the system will enter into target detection, tracking and evaluation mode, hovering in the air and the onboard TV/IIR seeker feeds the real time video image to the operator. ALPAGUT then attacks the identified target after obtaining user approval from the ground autonomously. ALPAGUT can detect and recognize targets with its dual-mode seeker without being noticed or affected by jamming systems. The target can be pinpointed with an onboard guidancecontrol system. In addition to all these features, the system also offers significant advantages to its users through its fire and forget ability, and its rapid integration into manned and unmanned land/air/sea vehicles.

ALPAGUT SMART LOITERING MUNITION SYSTEM



## ATMACA ANTI-SHIP MISSILE

ATMACA is a cruise missile with a range of 250km, low radar cross-section and high accuracy, which can be integrated into surface ships, submarines, air platforms, fixed launchers and tactical wheeled vehicles. With advanced navigation systems, the target set consists of moving surface ships and fixed land targets. ATMACA, which can be used in all weather conditions, has re-attack, target update and mission abort abiliteis via data link it has also re-attack and counter-counter measurements abilities.



### **BARBAROS COASTAL DEFENSE SYSTEM**





It is a Coastal Defense System that can operate ATMACA and CAKIR Cruise missiles integrated into a mobile vehicle battalion structure. Mission planning can be done within the battery structure of Launch Vehicle and Command Control Vehicle. It can be also integrated into a central control element/ battle management system. **BARBAROS** Coastal Defense System, which can be configured according to user needs thanks to its modular structure, can be integrated with a coast surveillance radar into the Command Control Vehicle if necessary.

The KHAN Missile , provides accurate and effective fire power on strategic targets in the battlefield. The missile can be launched from an 8x8 Multi-Barrel Rocket Launcher [MBRL]. In accordance with the customer's requirements, it can also be launched from other tactical wheeled vehicle platforms with integration-compatible interfaces.



**KHAN MISSILE** 

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## BURC AIR DEFENCE MISSILE SYSTEM



roketsan

Main Missions of BURC are the protection mobile stationary units deployed in the battlefield and point defence of facilities and critical assets against conventional threats such as jet fighters, helicopters as well as evolving threat such as unmanned aerial vehicles loitering munitions and drones. BURC Air Defence Unit can operate as standalone or in cooperation with a higher echelon command and control infrastructure. When in standalone mode, BURC is capable of 360 degree surveillance of 20km+ range area, can detect, track and operate on targets autonomously through its own radar and E/O sensors.





## CIRIT LASER-GUIDED MISSILE

2.75" Laser Guided CİRİT Missile is a highly accurate and cost-effective solution for armed helicopters. It is optimized to be used against static or moving lightly armored/unarmored targets. The next generation CİRİT has been designed to fill the tactical gap between 2.75" unguided rockets and guided anti-tank missiles.



ÇAKIR - Roketsan's new Cruise Missile - can be launched from fixed and rotary-wing aircraft, Assault Unmanned Aerial Vehicles (AUAVs)/UCAVs, AUSVs, tactical wheeled vehicles and naval platforms, and offers operational versatility against land and surface targets. With a range of over 150 kilometers, ÇAKIR's targets include surface targets, land and surface targets close to shore, strategic land targets, field targets and caves.



Multi-Barrel Rocket Launcher [MBRL], is capable of providing precise fire on critical targets between the ranges of 10-280 km. The MBRL is a highly maneuverable fire support system that can fire TR-122 & TRB-122 Unguided Rockets, TRG-122, TRLG-122, TRG-230, TRLG-230, TRG-300 and KHAN Missiles. A MBRL battery is composed of a Command & Control Vehicle, Launching Vehicles, Ammunition Supply Vehicles, a Meteorology Vehicle and a Maintenance & Repair Vehicle, as well as other mission vehicles that are needed.

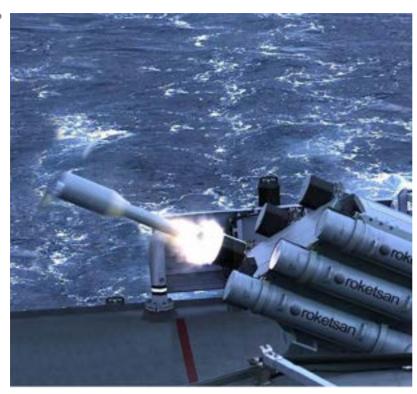




**MULTI BARREL ROCKET LAUNCHER** 

# ANTI-SUBMARINE WARFARE [ASW] ROCKET AND LAUNCHER SYSTEM





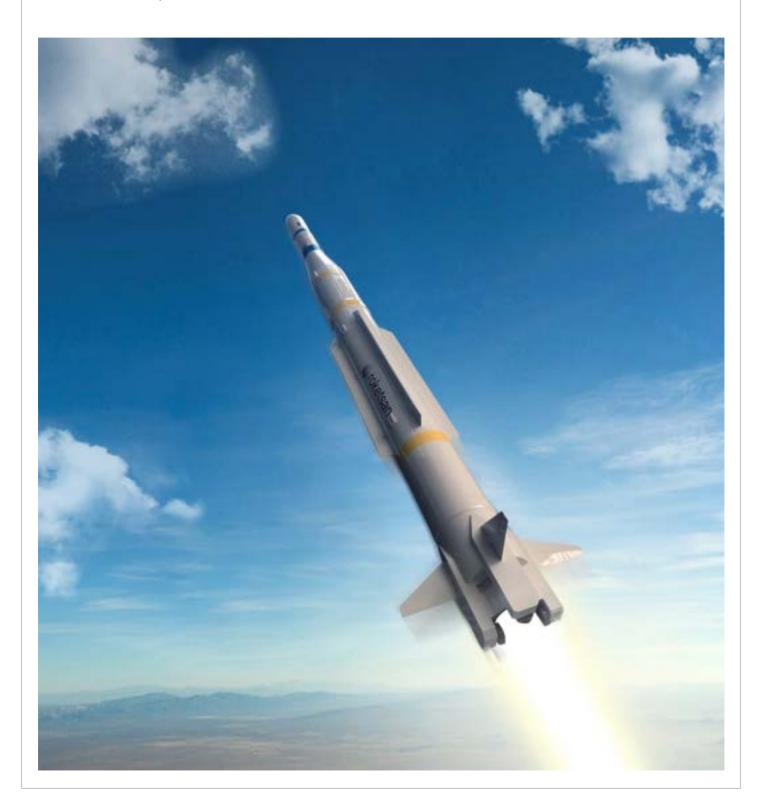
Anti-Submarine Warfare [ASW] Rocket and Launcher System is developed to be deployed on new type patrol boats in order to engage undersea targets within a range of 500-2,000 m and a depth of 15-300 m and it has an automatic laving system that works in tandem with the vessel's weapon management system and sonar. The system can generate single or salvo fire against its targets, while its setting fuze allows the rockets to be detonated at the desired depth. The ASW Rocket, with its high explosive warhead, also has an insensitive ammunition feature. The firing system is capable of stabilization and automatically/manually laying. The Fire Control System utilizes the navigation and target information provided by the vessel and calculates the necessary firing data.



Multi-layered ballistic protection add-on armor solutions are optimized for keeping minumum effect on power to weight ratio change on platform. Add-on armor solution has capability to withstand both KE and IED threats.

**MULTI-LAYERED BALLISTIC PROTECTION** 

HİSAR Air Defence Missiles are used for the protection of military bases, ports, facilities and troops against attacks from rotary- and fixed-wing aircraft, cruise missiles, airto-ground missiles and unmanned aerial vehicles [UAV]. HISAR-A and HISAR-O have a modular structure as part of a family concept, and are designed to be compatible with different platforms, fire control, and command control infrastructures.



### **UAV-122 AIR-TO-SURFACE BALLISTIC MISSILE**





The UAV-122, which can operate day and night, is an effective weapon used against stationary land and sea targets, air defence radar and communication systems, lightly armoured land or sea vehicles, critical facilities such as command centres, personnel, and targets of opportunity. Its operational range is 50+ kilometres, depending on the speed and altitude at which the missile is released. Equipped with a fragmentation warhead, the UAV-122 uses different versions of this warhead against different target types. The system is readied for its mission after completion of the firing preparation process before leaving the UAV. After being released from the UAV, it falls freely in the air for a certain period and autonomously ignites the solid fuel engine. The UAV-122 is guided precisely to the target thanks to its GNSS-supported inertial guidance capability, which provides a countermeasure against jamming systems. The system functions with a fire-and-forget capability. It offers the user the opportunity to use it for critical missions without infiltrating deep into enemy positions.



The UAV-230, which can operate day and night, is an effective weapon used against stationary land and sea targets, air defence radar and communication systems, lightly armoured land or sea vehicles, critical facilities such as command centres, personnel, and targets of opportunity. Its operational range is 150+ kilometres, depending on the speed and altitude at which the missile is released. Equipped with a fragmentation warhead, the UAV-230 uses different versions of this warhead against different target types. The system is readied for its mission after completion of the firing preparation process before leaving the UAV. After being released from the UAV, it falls freely in the air for a certain period and autonomously ignites the solid fuel engine. The UAV-230 is guided precisely to the target thanks to its GNSS-supported inertial guidance capability, which provides a countermeasure against jamming systems. The system functions with a fire-and-forget capability. It offers the user the opportunity to use it for critical missions without infiltrating deep into enemy positions.

UAV-230 AIR-TO-SURFACE BALLISTIC SUPERSONIC MISSILE



KARA ATMACA SURFACE-TO-SURFACE CRUISE MISSILE

roketsan



Kara Atmaca Weapon System, is a jammingresistant cruise missile system launched on tactical wheeled vehicles and used against strategical land targets.





Man Portable Short-Range Fire-and-Forget Anti- Tank Guided Missile KARAOK is a portable system that is effective at both day and night due to its Imaging Infrared Seeker.



**KARAOK SHORT-RANGE ANTI-TANK WEAPON** 

## **LAÇİN GUIDANCE KIT AND LAÇİN POD (L-POD)**



LAÇİN guidance kit can be used against stationary and mobile targets with its imaging infrared seeker and data link via fighter aircraft. There are two versions, these are fixed wing and folded wing. Testing and integration activities for both version continue. LAÇİN, in which the pilot is kept in the loop via L-POD, is compatible with MK-82 general purpose bombs. The guidance kit transforms General- Purpose Bombs into smart weapon systems through the integration of an Inertial Measurement Unit [IMU], a Global Positioning System [GPS] and an Infrared Seeker. The L-POD transmits the image signal produced by the Infrared Seeker to the cockpit via the datalink, and simultaneously sends the commands inputted by the pilot to the LAÇİN munition. Integration works for its use from UAV continue.



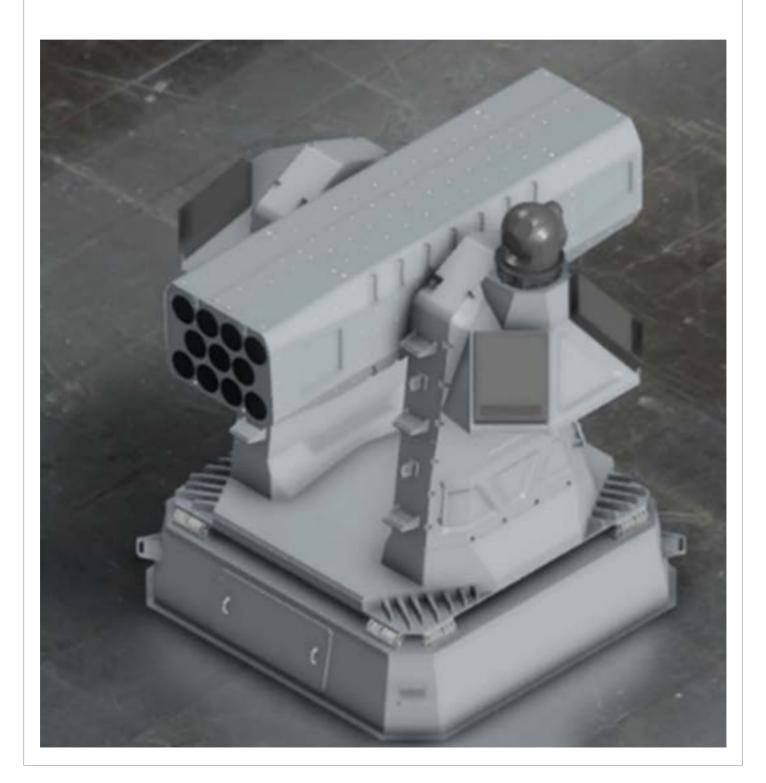


**LASER GUIDED MINI MISSILE SYSTEM** 



# LEVENT MISSILE BASED CLOSE-IN WEAPON SYSTEM

Levent Missile Based Close-in Weapon System is a short-range, all-weather, surface-to-air missile system performs target acquisition, target track, command, control, communication, target evaluation, weapon allocation, target engagement and target interception functions. Main mission of the system is to provide defense against anti-ship missiles attacking at low altitudes (sea-skimmer) up to high altitudes (high-divers) with subsonic to supersonic speeds and other airborne threats such as UAVs, hovering helicopters, air to ground missiles with 360° engagement range by radar and EOS.



## L-OMTAS LASER GUIDED MEDIUM-RANGE ANTI-TANK WEAPON SYSTEM





Laser guided L-OMTAS is a mediumrange anti-tank weapon system that is effective against armoured threats on the battlefield. The missile can lock onto the target before or after launch and effective against static and mobile targets. L-OMTAS can be fired from its tripod and can also be integrated into land platforms with open or closed turrets.

Laser Guided Long Range Anti-Tank Missile System [L-UMTAS] is an anti-tank precision-guided missile system developed primarily for integration with helicopter platforms. The laser guidance and tandem armour-piercing warhead features of L-UMTAS ensure its effectivity against both static and mobile targets. The missile can lock onto the target before or after launch. The L-UMTAS system can be used from air and ground platforms against main battle tanks, concrete bunkers, armored and unarmored vehicles and personnel.



L-UMTAS LASER GUIDED LONG-RANGE ANTI-TANK MISSILE SYSTEM











MAM-L IIR Munition is a munition system that is Imaging Infrared (IIR) guided, can be used from air to ground, does not contain a propulsion system, has a multi-purpose warhead and can be integrated into **Unmanned Aerial Vehicles** (UAVs) and fixed-wing platforms. It is designed for use against anti-personnel, armored/ light-armored vehicles, other surface targets and suitable targets of opportunity. Thanks to the IIR seeker head, it has approximately doubled range in all environmental conditions and has added the ability to select ammunition trajectory depending on these conditions. It features pre/post-fire locking and target update capabilities.



**MAM-L IIR SMART MICRO MUNITION** 

### **MAM-L SMART MICRO MUNITION**





MAM-L lightweight Smart Micro Munition has been developed for unmanned aerial vehicles [UAV], light attack aircraft and airto-ground missions. MAM-L offers high strike precision and efficiency with alternative warheads against fixed and mobile targets.



MAM-T IIR Munition is a munition system that is Imaging Infrared (IIR) guided, can be used from air to ground, does not contain a propulsion system, has a high-conductivity particle effect warhead, and can be integrated into Unmanned Aerial Vehicles (UAVs) and fixed-wing platforms. With its fixed wing structure and new improved seeker head, it offers a more comprehensive field of activity thanks to its approximately doubled range as well as increased functionality in harsh conditions. In addition, MAM-T IIR has pre/post-fire targeting and in-flight target update capabilities.

### **MAM-T IIR MUNITION**



## MAM-T SMART MICRO MUNITION

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MAM-T lightweight Smart Micro Munition has been developed for unmanned aerial vehicles [UAV], light attack aircraft and air-to-ground missions. MAM-T offers high strike precision and efficiency with alternative warheads against fixed and mobile targets.



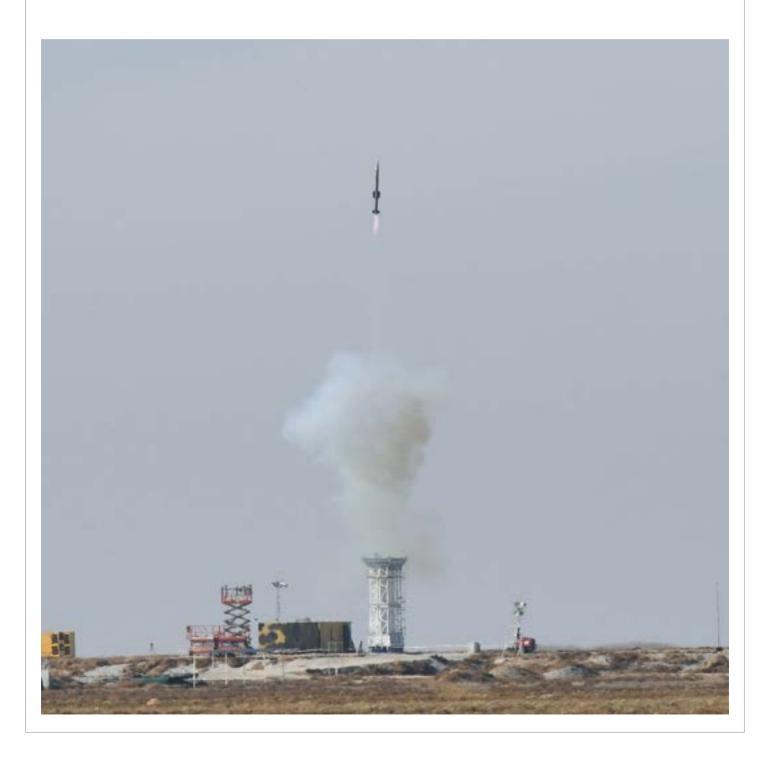






## MIDLAS VERTICAL LAUNCHING SYSTEM

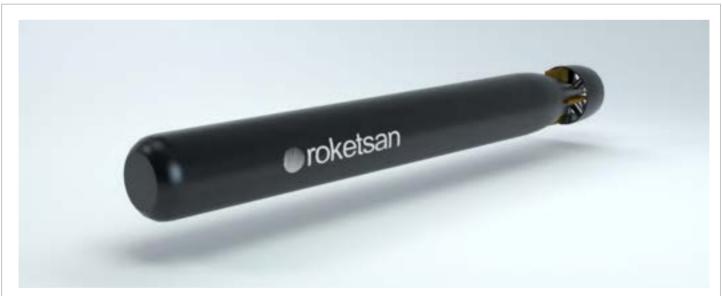
MiDLAS can store guided missiles (G/M) with canisters below deck, has the ability to launch different G/M types with hot or cold launch methods with the commands it receives through the ship combat management system and has the ability to launch surface-to-air, surface-to-surface, surface-to-land and torpedo type missiles simultaneously from its different cells. It is an electromechanical launch system that can contain different missile types and fire these missiles individually or sequentially at different targets, and can take preventive and isolating security measures when necessary for the safety of the ship and personnel. MiDLAS has tactical size version and attack size version which carry longer range missiles. In addition, there are single-cell versions for adaptive deployment and station-based versions for base/port/region protection.



# OMTAS MEDIUM-RANGE ANTI-TANK MISSILE SYSTEM



OMTAS is a medium-range antitank weapon system that is effective against armoured threats on the battlefield. Its Imaging Infrared Seeker permits day and night use, and in all adverse weather conditions. The RF data link between the launcher and the missile provides the user with operational flexibility. The missile can be used in fire-and-forget or fire-and- update modes, and offers both lock-on before launch or lockon after launch capabilities. With its precision guidance capability and its armour-piercing tandem warhead, OMTAS ensures effective strikes against armoured threats.



ORKA is a fully indigenous, new generation Lightweight Torpedo capable of being launched from surface ships and air vehicles to engage submarines of various types. ORKA is a high speed, fully autonomous torpedo with active/passive sonar homing head.



**ORKA NEXT-GENERATION LIGHTWEIGHT TORPEDO** 





Roketsan BPC has developed solutions for the protection of armored vehicles against RPG threats in order to meet different system requirements.



## SIPER LONG-RANGE AIR AND MISSILE DEFENSE SYSTEM

SIPER is a Long-Range Air and Missile Defense System designed to ensure effective deterrence in peace and crisis, while safeguarding the survival of friendly forces during war. Its mission involves limiting, delaying, or neutralizing enemy air-breathing targets. cruise missiles, and air-to-ground ammunition attacks. Additionally, SIPER aims to protect strategic and economic facilities against these threats, facilitating joint operations under more favorable conditions. In summary, SİPER designed to serve as a sophisticated defense system, providing a comprehensive shield against airborne threats and enhancing the viability of allied forces in diverse operational scenarios.



roketsan

Stand-Off Missile [SOM] is an air-to-surface cruise missile fired from beyond the range of air defence systems, and is suited for use against heavily defended land or naval targets deep in the battlefield.



**SOM STAND-OFF MISSILE** 



SOM-J is an air-to-surface munition that has been developed for use against heavily defended land and naval targets, and that is mounted inside the aircraft/ below the wing. The missile's modular design supports the operational flexibility of the missile. Being built based on the existing SOM technologies that are already in service with the Turkish Air Force, SOM-J today provides enhanced capabilities. The long-range SOM-J is a cost-effective solution due to its reduced observability, among its other capabilities.

**SOM-J STAND-OFF MISSILE** 



## **SUNGUR AIR DEFENCE MISSILE SYSTEM**



SUNGUR Air Defence Missile System has been developed for the short-range air defence of moving/stationary troops and facilities located in the battlefield and its surroundings.





# T-107/122 MULTI BARREL ROCKET LAUNCHER [MBRL] SYSTEM

T-107/122 Multi Barrel Rocket Launcher [MBRL] is a weapon system that provides concentrated and effective fire support to maneuvering forces against high priority targets in all weather and terrain conditions during the day and night. A T-107/122 MBRL Battery is capable of carrying out independent missions with its mission support vehicles. A T-107/122 Battery is composed of 1 x C-107/122 Command & Control Vehicle, 6 x T-107/122 Launchers, 6 x L-107/122 Ammunition Supply Vehicles, 1 x M-107/122 Meteorology Vehicle and 1 x R-107/122 Maintenance and Repair Vehicle. The number and type of vehicles can be customized according to the customer's requirements.



### **TACTICAL MISSILE WEAPON SYSTEM**

Tactical Missile Launching System [TMLS] is a stabilised turret system that can be used both while stationary and mobile due to its high mobility, its 360° rotation and its ability to be controlled from inside the vehicle. This system can carry four UMTAS/L-UMTAS missiles or eight CİRİT missiles, or two UMTAS/L-UMTAS and four CIRIT Missiles. The system has high reconnaissance, surveillance and target tracking capabilities, the offers STANAG 3733-compliant autonomous laser marking, full HD IR, TV and SWIR video with ISR [Intelligence, Surveillance and Reconnaissance] and a day/night operational capability, operator and command console, MIL-STD-1760 compatibility is a weapon system that provides the user with high control and firepower with onboard spare munition storage areas.





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TANK SURVIVABILITY SYSTEM

# TANOK 120 MM LASER GUIDED TANK CANNON MUNITIONS





TANOK 120 mm Laser Guided Tank Cannon Munition has been developed as an innovative alternative to the conventional munitions used in tanks and other artillery guns, and provides accurate and cost-effective firepower on the battlefield. TANOK Missile satisfies the need of the Turkish Armed Forces for laser-guided antitank artillery ammunition. Thanks to its low weight and soft launch engine, which ensures the safety of the user, the missile can be fired from both land and portable platforms.

TEBER is a guidance kit that enhances the hit capability of MK-81 and MK-82 general purpose bombs. It can be used against targets on the ground via fighter aircrafts and UAVs. Testing activities for the fixed wing version continue. TEBER converts these bombs into smart weapon systems through the incorporation of an Inertial Measurement Unit [IMU], a Global Positioning System [GPS] and a Laser [SAL] Seeker. TEBER increases the ability of the bomb to strike both stationary and mobile targets with high precision. TEBER can also be detonated by its proximity sensor.



**TEBER GUIDANCE KIT** 





The Temren Project is a project for the integration of UMTAS and L-UMTAS missiles into Seahawk helicopters and the procurement of G/M.





**ARTILLERY ROCKETS (107-122-TRB122)** 

## **TRG-122 GUIDED ROCKET**





122 mm TRLG-122 Missile provides accurate and effective fire power on high priority targets within the ranges 13 - 30 km.

The TRG-230 Missile provides accurate and effective fire power against high priority targets within the ranges of 20-70 km. TRG-230 Missile can be launched from ROKETSAN Multi-Barrel Rocket Launcher [MBRL] and other platforms with compatible interfaces.



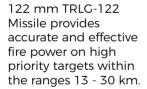
## **TRG-230 GUIDED MISSILE**







TRG-300 Guided Missile Missile provides accurate and effective fire power on high priority targets within the ranges 20 - 120 km. TRG-300 Guided Missile can be launched from ROKETSAN Multi Barrel Rocket Launcher [MBRL] Weapon System and other platforms with compatible interfaces.

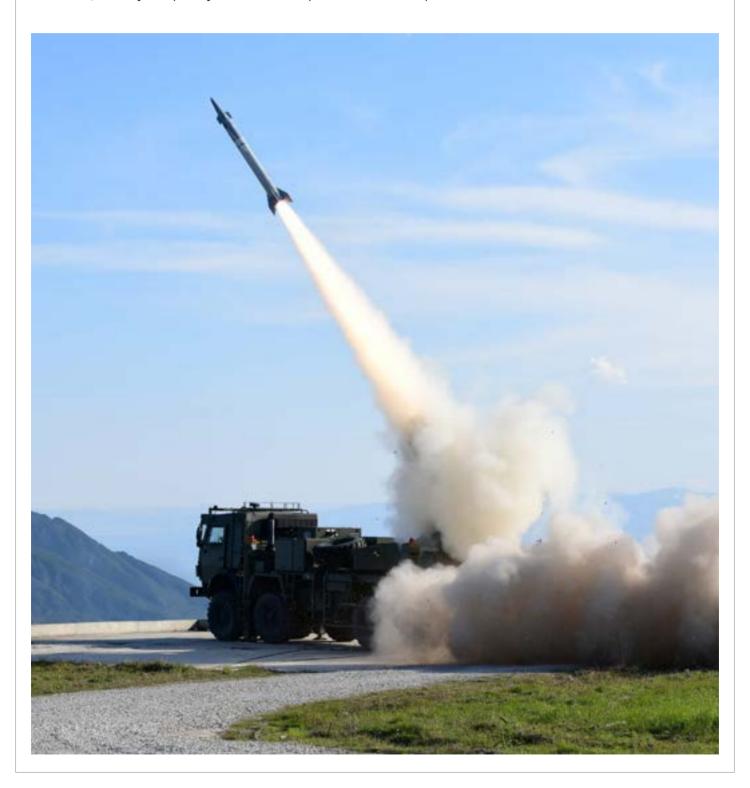




**TRLG-122 LASER GUIDED MISSILE** 

## **TRLG-230 LASER GUIDED MISSILE**

TRLG-230 Missile provides accurate and effective fire power on high priority targets within the ranges 20 - 70 km. TRLG-230 Missile can be launched from ROKETSAN MCL [Multi-Caliber Launcher] Artillery Weapon System and other platforms with compatible interfaces.



UMTAS LONG-RANGE ANTI-TANK
MISSILE SYSTEM

roketsan

Long-Range Anti-Tank Missile System [UMTAS] is an anti-tank precision guided missile system that has been developed for integration primarily with attack helicopters. Its Imaging Infrared Seeker permits day and night use, and in all adverse weather conditions. The missile has fire-and-update flight modes that permit lock-on before or after launch through the RF data link between the launcher and the missile. Its precision guidance and control capability, together with its tandem armour piercing warhead, make UMTAS an effective weapon system against armoured targets.



UMTAS-GM Block-1 IIR (Imaging Infrared) Configuration and UMTAS-GM Block-1 YAL (Semi-Active LASER) Configuration can provide effectiveness against targets beyond the line of sight without approaching enemy and being noticed. This feature provides the advantage of laying an ambush against the enemy, both in defense and attack. With this property, the system can be used behind a mask. L/UMTAS-GM Block-1 (IIR or YAL) can be launched day or night from attack helicopters, naval platforms and land vehicles, and depending on its warhead type; It can be used against main battle tanks, armored personnel carriers, trucks, all-terrain vehicles, light pillboxes, trenches, buildings and low-altitude hovering helicopters.





UMTAS-GM LONG RANGE ANTI-TANK MISSILE SYSTEM

# **RST**

Company Short Name

RST

Company Trade Name RST Uzaktan Algılama ve Güv. Tekn. Bil. Elk. Dan. Müh. Mim. Tic. A.Ş.

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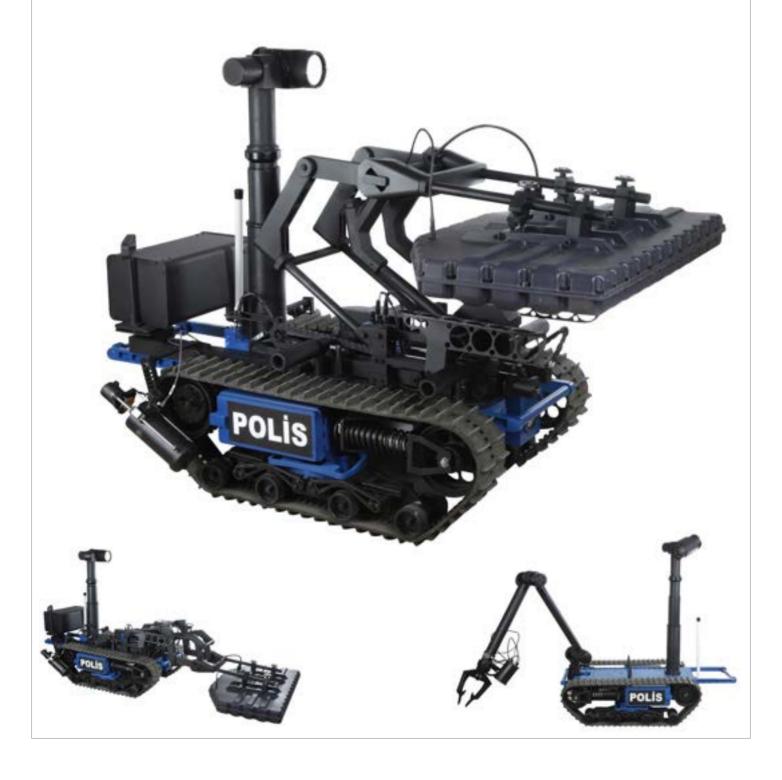






## **GAMBI**

GAMBI is an unmanned system that is equipped with the latest technology and can be remote-controlled; consists of a highly mobile, durable, light and uniquely designed robot and task-specific handmade explosive (IED) detection or destruction payloads that can be easily integrated. It can operate with 2 essential modes. One is detection mode, the other is disposal mode. With detection mode the sensor can detect metallic and plastic explosives embedded underground with a high precision. Also, the sensor can be replaced with a gripper integrated robotic arm to be used for disposal purposes. It can be carried by two people. Compliant with MIL-STD-810 and MIL-STD-461.







UAV Detection Radar is suitable for detecting the targets moving at low altitudes over land or sea. While performing the detection and classification functions, it generates information about the angle, range, radar cross-sectional area, radial velocity, direction and doppler frequency spectrum width of the target. It also makes it possible to track the target over the map. Detects low RCS targets with remarkable range performance which is very important in today's threat environment. It is powered by a solid state transmitter and is driven by user-friendly open architecture software. With its unique design, it can be located anywhere easily. It can be integrated into cars, trucks, trailers, etc. smoothly. It supports an Industry-standard communication interface.

RST has a ready-to-use Ka-Band radar available as a commercial product developed with the company's own capital. The radar provides high resolution experimental meteorological measurements and can be used to detect very slow moving ground, air and weather targets. RST's Ka-Band radar that is capable of detecting low RCS targets is a ready-to-use solution for drone incidents frequently encountered near airports and highly strategic facilities.



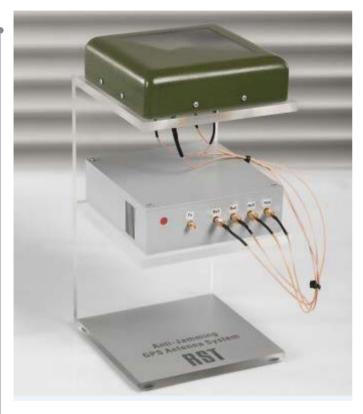


**KA-BANT** 



### **JAMMING-RESISTANT GPS ANTENNA SYSTEM**





RST has developed an Anti-Interference GPS Antenna System consisting of Active Antenna Array and Electronic Unit to respond to this need. The system is not a GPS receiver. It works as a jam protection unit used in front of the GPS receiver. It receives GPS signals with 4 antennas and retransmits them on a processed channel.





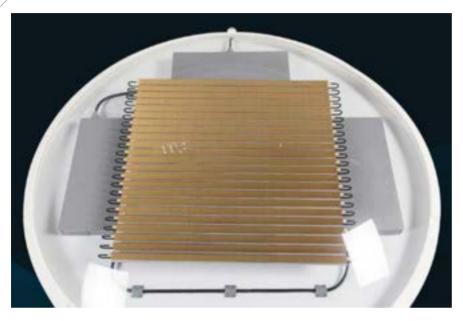
KUBBE Anti-Drone System offers superior drone detection and tracking performance with its radar system and optional thermal / optical cameras, it also allows the drone and mini UAV threats to be neutralized with the optional RF mixer. In the KUBBE Anti-Drone System, in order to create the most effective solution against threats, according to on-site inspections; different configurations and sensor types can be integrated according to the purpose. On the other hand, if necessary, these different sensors and countermeasures can be integrated together in positions such as on the vehicle.

**KUBBE** 









Ku-Band Hybrid Scanned Phased Array Antenna System is developed for Satcom-On-The-Move Applications. It mechanically scans in azimuth and electronically scans in elevation. With this scan pattern solution, it provides 360° coverage in azimuth while provides 90° coverage in elevation. KuMETAS provides receiving and transmitting capability in the wide band.

METRAD is a new X-Band weather radar with high sensitivity and a wide dynamic range. These features allow the METRAD to detect even the weakest hydro-meteorological targets such as drizzle or light snow. The compact size and portability of the X-Band system make it an excellent choice for both quick fixed installation and rapid deployment to the operation site. The system meets a wide range of needs such as instant forecasting, flood and hail warnings, scientific research and coverage of geographically blind areas by detecting situations that C Band radars cannot detect, thanks to the use of full caliber and dual-polarization STAR (Simultaneous Transmit and Receive) topology, which is the most advanced 16-bit signal processing unit and the use of meteorological radar algorithms optimized in X Band.







**METRAD** 

# **SARSILMAZ**

Company Short Name

SARSILMAZ

SARSILMAZ

Company Trade Name

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#### SARSILMAZ



Produced by Sarsılmaz by means of full local design and engineering is the product of a project initiated with the philosophy of "Manufacturing the best possible pistol". New generation light-weight polymer bodied SAR9 METE is attractive due to having a weight of only 750 grams. This pistol, whose barrel and flap made of forged steel alloy introduces three different sizes of changeable butt and backboard alternatives. Possessing optical fixed back-sight, SAR9 METE ensures secure usage by means of both its safety latch and the trigger and pin safety. SAR9 METE further enables accessories by means of the special rail system on its body.





Kılınç 2000 Mega, bearing the title of the Turkish Police Organization's duty weapon, holds an important place among Sarsılmaz's steel-bodied pistols. Kılınç 2000 Mega, with its special walnut-engraved grip cover option, is indispensable for both professionals and firearm enthusiasts. Kılınç 2000 MEGA's ergonomic trigger guard combines a classic design with a solid grip and weapon mastery.



P-Marie

**MPT 76 SH INFANTRY RIFLE** 

SARSILMAZ

#### **SAR 109T MACHINE GUN**





Originally designed by Sarsılmaz for use at inhabited sites, SAR 109T is developed to meet the tactical requirements of close combat environments. SAR 109T fires 9x19 mm diameter standard NATO ammunition. SAR 109T machine gun runs at a speed as high as 900 shots per minute. Having a barrel of length 220 mm, SAR 109T's fully loaded magazine weight with 30 bullet capacity is 3.032 grams. Recently, SAR 109T adopted a new outlook by means of developments like polymer rail holster facilitating grasp and modern compact tactical butt. This gun is being used actively on site by Turkish Armed Forces (TSK), General Command Of Gendarmerie (Gendarmerie General Command) and General Directorate of Security (EGM).



As one of the brand new models of Sarsılmaz, SAR 15T is the one hundred percent locally produced version of the legendary AK-47 platform in the military weaponry field. With its upper flap as well as bottom and top hand stocks modernized by Picatinny rails, SAR 15T is in the inventory of Turkish Armed Forces. The weapon exhibiting a modern appearance by means of its high-endurance polymer magazine reinforced with steel parts, stub and hand stock, is highlighted as an artillery rifle much lighter than the similar ones. By means of 5-level foldable butt and superior performance in all weather conditions, SAR 15T is providing its user the advantage of carrying it with ease. This legendary infantry rifle of 7.62x39 millimeters caliber, introduces single as well as serial shooting alternatives while operating with a gas piston drive system.

#### **SAR 15T INFANTRY RIFLE**



#### **SAR 127 MT AIR MACHINE GUN**

SARSILMAZ



As the version of SAR 127 MT developed to be integrated to aircraft; SAR 127 MT Air, with its whole data package prepared by Sarsılmaz, is designed to provide fire support from the air thanks to its range up to a maximum of 7 km and effective range of 1,8 km. The gun having 12.7x99 mm caliber at NATO standards is being installed on Hürkuş C within a special pod developed by the company TR Mekatronik, established as a joint venture of Sarsılmaz-TUSAŞ. SAR 127 MT Air possesses higher firing capacity according to its land version, thanks to its fixed barrel equipped with fast cooling elements as well as lightened inner parts.

All of its technical data package developed in TÜRKİYE exclusively by Sarsılmaz, 12,7x99 mm national machine gun SAR 127 MT is capable of operating both fully automatic as well as firing individual shots. SAR 127 MT, which could possibly be integrated to remote controlled weapon systems (UKSS/RCWS), is further installed on land, sea and air platforms by making any necessary interface connections. As the land version of 12.7x99 mm heavy machine gun with qualification tests completed and incorporating fast barrel changing system, it could be used on all armored land vehicles and platforms. The system having completed the qualification tests would possibly be used on all kinds of land, sea and air platforms. When the weapon which has a weight of nearly 38 kilograms is used together with a tripod, its effective range for regional targets reaches 1.830 meters.

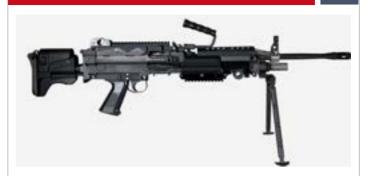


P-James

**SAR 127 MT MACHINE GUN** 



Sarsılmaz has modernized the legendary AK-47 platform and produced the SAR 308 model as a 100% domestic product. SAR 308 Version 2, with reinforced steel parts and a high-strength polymer magazine cover, stock, and handguard, offers a modern appearance while being much lighter than its counterparts. SAR 308 Version 2, which has superior performance in all weather conditions, offers both single and burst fire options. This legendary infantry rifle, with a 7.62 x 39mm caliber, operates with a gas piston drive system, offering a rate of fire of 650 rounds per minute and a muzzle velocity of 680 meters per second.



The SAR 556 submachine gun, one of Sarsılmaz's newly developed products, is designed to be used not only by infantry, but also by special operations units in urban areas. The submachine gun, which uses 5.56mm ammunition in NATO standards, is the result of Sarsılmaz's many years of experience. SAR 556, which has a user-friendly design, has the technical capabilities to meet the needs of different conditions both in the field and in urban areas. It will make a significant contribution to the Turkish Armed Forces' domestic and national weapon inventory.

SARSILMAZ



SAR 56 infantry rifle developed by Sarsılmaz, merging its know-how accumulation acquired in the field of infantry rifles with the feedback received from the specialized personnel in the field, is one of the most attractive models. Possessing a user-friendly design, SAR 56 of 5,56x45 mm diameter could possibly be adapted to all field conditions thanks to its five-position, cheek supported butt and removable hand stock as well as its angled handle. Ensuring high performance thanks to its short-stroke gas piston drive system, SAR 56 introduces three different barrel length alternatives, namely 7,5 inches, 11 inches and 14.5 inches.



First deliveries of the gun have been made to Gendarmerie General Command. The weapons are integrated to remote controlled weapon systems on 4x4 tactic wheeled armored vehicles. SAR 762 MT has five different versions as A, B, C, D and E. From these, SAR 762 MT-A could be used on Remote Controlled Weapon Systems (UKSS/RCWS). While SAR 762 MT-B model is developed for the infantry, it could be fired both on a bipod as well as a tripod. SAR 762 MT-C is designed to be used as a co-axial machine gun on both wheeled as well as palette-driven armored vehicles. Shots per minute speed of SAR 762 MT-D, possessing similar characteristics with SAR 762 MT-B, could be changed thanks to its 3-position gas valve. Whereas the last member of this series, SAR 762 MT-E could be used on sea-craft thanks to its corrosion-resistant structure.

**SAR 56 INFANTRY RIFLE** 

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**SAR 762 MT MACHINE GUN** 

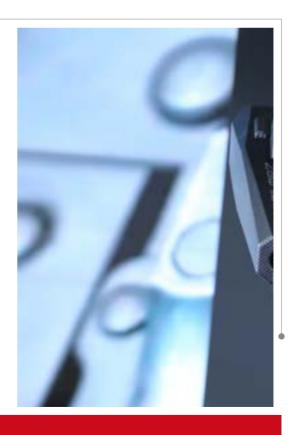
Marie Contract





As one of the new members of SAR9 family. SAR9 SP is developed by taking into consideration the requirements of Special Forces Command. This new model entering the inventory of Turkish Armed Forces and possessing all superior characteristics of SAR9 series. is equipped with technical capabilities addressing varying and personalized requirements. This pistol provides secure as well as practical user advantage with its polymer body and forged steel alloy barrel like other SAR9 models. On this pistol besides pin and trigger safety there is also elevated fixed back-sight and foresight. SAR9 SP further incorporates enhancement alternatives by means of its silencer connection, magazine guide and cord ring. SAR9 SP has the properties of meeting the requirements of close combat environments.

SARBOT, a critical project under Sarsılmaz's vision of being a "technology brand focused on the defense industry," is one of the most significant milestones on the new roadmap drawn by the company. Developed as an initiative of "LA2 Dynamics," a company founded in collaboration with Sarsılmaz, with the vision of bringing advanced technologies to our country and developing value-added products, SARBOT continues its work on the development of a four-legged robot. Within the scope of R&D activities carried out in collaboration with Sarsılmaz, LA2 Dynamics is counting the days for the first prototype of the four-legged robot to walk. SARBOT, which is expected to have various uses with different loads and to be updated according to needs, stands out as a critical project with advanced technology hardware and software that also allows updates.





**SARBOT ARMED ROBOT** 

# SAVRONIK

Company Short Name

SAVRONİK

Company Website

www.savronik.com.tr





Savronik







PORSUK Smart Power Distribution Management Unit (SPDMU) is a 19" rack-mount type, 1U, remotely-controlled, expandable Power Distribution and Management Unit (PDMU) with 8 220V AC outlets. PORSUK provides a smart, secure and centralized management of power distribution needed by communication networks, servers and data center equipment in the IT rooms. While the PORSUK PDMUs, which have all the functional specifications of a PDU required by IT centers, can be used individually, they allow 16 PDMUs to be managed and controlled by a single center. The Porsuk PDMUs, which brought a breath of fresh air to the usual rack-mount power distribution understanding, make the power distribution process in IT rooms more reliable and more controllable. The PORSUK PDMUs designed according to the users in IT centers measure the heat and humidity in the surrounding environment and operate in different modes by allowing the user to determine the temperature and humidity level. They operate within the time frame and in different modes determined by the user before, warn in case of voltage, current and frequency changes and realize working mode changes.





The Antenna Control Unit (ACU) is a unit controlling the communication subsystems and antennas for air (UAV, helicopter, aircraft), sea and land platforms and positioning the antenna precisely on two axes, and providing its communication with all subunits and surrounding units. The ACU has the target tracking capability with 3-D precise space tracking algorithms. The ACU also has the capability of processing the messages received over the external serial and Ethernet interfaces and then switching and filtering them into different interfaces.

With the TELEMETRY and ITMMIX solutions, it is possible to run the following tracking mechanisms and monitor the entire operation digitally over the "Common Operational Picture".

- Real-time Vehicle Tracking
- GIS-supported Incident Management
- Location-based Display of Vehicle Data
- Layered Architecture and Digital/ Geographical Map Reporting
- Reporting
- Historical Data Reporting
- Error Analysis
- Usage on PC and Mobile Devices





**VEHICLE INFORMATION SYSTEM** 



#### **INTERFACE AND DISPLAY UNITS**



The Interface and Display Units show the system's present situation on the LSD display automatically, let the user see the malfunction/fault warnings and deliver the user commands to the Power Distribution System via the buttons and menus. Savronik's Interface and Display Units have the user control the system's interior powers. With the capability for the voiced warning signal for certain situations, the user is made aware of the warnings. If wanted, the information about the system or the vehicle's engine such as heat, speed, pressure, revolution are shown on the display through the sensors. With the LEDs, switches and displays on panels, the user is able to get the information about situation of the certain equipment and control them.





ARK-101 is a hermetic, pressurisedgas, three-electrode high voltage triggered arc switch consisting of ceramic-metal parts. It ensures that the pyrotechnic elements remain safe after the installation of high voltage capacitor in electronic plugs.

**ARK-101 HIGH VOLTAGE TRIGGERED ARC SWITCH** 



# MILITARY SYSTEM EQUIPMENT, INTEGRATION AND TEST ACTIVITIES



Turnkey solutions to the design, development, qualification, integration and test activities for the military (land, air and marine) platforms, mobile shelters and on-vehicle systems. Savronik carries out the followings:

- · Functional engineering solutions and the shelter design in accordance with NATO-6516,
- Commissioning activities through assembly and functional installation tests on electronic, mechanic and electro-mechanic components.
- · Cabling Systems Design and Production, ğin accordance with IPC/WHMA-A-620,
- · Tests, Simulations and Quality checks for Cabling Systems in accordance with IPC-620,
- Design, development, analysis and qualification services for components such as rack cabinets, console mechanism, power distribution units, inverters/converters, Control Panels and other mechanic/electronic components of mobile and immobile systems.
- Design, analysis, qualification and cabling activities for the building's/shelter's rack cabinets, console mechanism and power distribution units,
- · Console design in accordance with MIL-STD-1472.
- Implementation of various analysis services on the systems such as airconditioning thermal, lighting, vibration, shock,
- · Implementation of EMI-EMC and Raining Simulation Tests in accordance with MIL-STD-810,
- · Implementation of Platform Design/Analysis and On-Vehicle System Integration,
- · After-Sales Support, Guarantee & Consultancy.







#### **SHOOTING TRAINING SIMULATOR (SHOOTERSIM)**

Shooting Training Simulator (SHOOTERSIM) is a product family consisting of different shooting simulators that will allow shooting and marksmanship training, such as basic marksmanship training, reactive shooting training, sniper/sharp shooter shooting training, which can be done with light weapons.

Shooting Simulators enable trainees to shoot in virtual environments, with real and simulated weapons, with different ammunition types (blank, real) and dry fire, while moving or stationary in various shooting positions (standing, prone). Existing shooting training simulators consist of:

- · Basic Marksmanship Shooting Training Simulator (Stationary/Portable)
- · Sniper/Sharp Shooter Shooting Training Simulator (Stationary/Portable)
- · Close Quarter Battle Shooting Training Simulator
- Helicopter Door Gunner Shooting Training Simulator
- · Vehicle/Boat Gunner Shooting Training Simulator
- · Shoot House and their sub-units, kits, ammunition and equipment.









Illuminated panels in the cockpits are designed in accordance with NVIS (Night Vision Imaging Systems) compatibility. All Lighted Panels designed in different types for different needs are produced in accordance with SAE-AS 7788 and MIL-STD-3009 standards. On lighted panels designed in accordance with the customer's requirements, NVIS GreenA, NVIS GreenB and NVIS Red led and filters can be/ are used and they can be driven by led or lamp driver circuits.









#### **DIMMER UNITS**



Dimmer Units centrally control the helicopter and aircraft cockpit lighted panels and helicopter/aircraft interior lighting systems. To meet the different needs, they are designed as AC and DC, FPGAbased (Field-Programmable Gate Array) and compliant with MIL-STD-704 to meet the different needs and types according to lighting characteristics. Savronik's Dimmer Units' designs are created in accordance with RTCA/DO-254, Design Assurance Guidance for Airborne Electronic Hardware and MIL-SDT-704, Aircraft **Electric Power Characteristics** and they are compliant with the qualification requirements of MIL-SDT-810, MIL-SDT-461 and RTCA/DO-160.





Electronic Safe Arm and Fire Devices (ESAFD) is an electronic arming and ignition system which keeps the missile flight/launch motors, warhead safety on and starts the explosion/the activation of the detonation process in tandem when certain conditions are met. The ESAFD realizes the related pyrotechnic activation by checking the current flight profile compliance with the scenario sequence through the data measured by the sensors such as acceleration, speed, distance, pressure etc. Upon the physical contact with the fuze or detected proximity to the target, depending on the mode selected, it starts instantaneous or delayed warhead activation. In case of unexpected situations during the missile's mission period, it is used to terminate the flight. The ESAFD ensures safe storing, transportation and mission accomplishment of the critically energetic ammunition in electromagnetic conditions such as Electro Magnetic Pulse (EMP) and Electromagnetic Radiation Operation (EMRO).

# **ELECTRONIC SAFE ARM AND FIRE DEVICES** (ESAFD)





# **ELECTRONIC TIME FUZE AND INDUCTIVE FUZE SETTING DEVICE**



Electronic Time Fuze has been designed in accordance with the ballistic forms indicated in STANAC 2916 to detonate the fuzes of tank and artillery ammunition fired from howitzer and mortars at a preset time. The Inductive Fuze Setting Device sets the Electronic Time Module according to the AOP-22 and STANAC 4369 standards.



Electronic Safe and Arm Devices (ESAD) is an electronic arming and ignition system which keeps the missile warhead safety on and starts the activation of the front and main warheads detonation process in tandem when certain conditions are met and physical contact/proximity to the target is detected. During the transportation, storing and free flight, it provides safety of the ammunition along the way. The ESAD ensures safe storing, transportation and operation of the critically energetic ammunition in electromagnetic conditions such as Electro Magnetic Pulse (EMP) and Electromagnetic Radiation Operation (EMRO).







**ELECTRONIC SAFE AND ARM DEVICES** 



# **AERIAL PLATFORMS ELECTRICAL POWER SYSTEMS**



The on-board aircraft power systems have the proven and platform-specific designed product lines, both in the field of Primary Power Distribution Unit (PPDU) and Secondary Power Distribution Unit (SPDU).

Power System designs are created in accordance with RTCA/DO-254, Design Assurance Guidance for Airborne Electronic Hardware and MIL-SDT-704, Aircraft Electric Power Characteristics and they are compliant with the qualification requirements of MIL-SDT-810, MIL-SDT-461 and RTCA/DO-160.





Air Data Terminal (ADT) is the system which transmits the payload and telemetry information sent by the air vehicle avionics systems to Ground Data Terminal (GDT) over a required bandwith, than which the GDT receives the digital data package composed of air vehicle and payload command and control information via the Ground Control Terminal (GCT) and transmits it to the related Air Vehicle Avionics Systems in real time.

**AIR DATA TERMINAL** 







Sensors and the data they collect, the fundamental components of the Internet of Things (IoT) concept, are extensively used in Savronik's Smart Cities, Transportation Systems, Smart Wall and Simulation Systems solutions and integrated to various environments through the Savronik's ITMMIX IoT platform.

Some of the sensor clusters used in the Savronik Systems are as follows:

- Air Quality and Meteorological Data Processing
- Temperature and Humidity Measurement
- Dust Measurement
- Air Pressure Measurement
- Noise Level Measurement
- Vibration Level Measurement
- Traffic Density Measurement
- Customized Image Detection Software



#### **ITMMIX**





Savronik's ITMMIX solution developed with a Micro-service approach is a Cloud and AI based, modular IoT/SCADA Platform. Through its Device Operation Status Monitoring, Alarm Generation, Log Management, Power Management, Preventive Maintenance, Big Data Management and IoT Gateway capabilities, the Cloud-based Remote IoT and IT System Management provides the platform to get the basic components and data required for Industry solutions and applications to be developed. It has the capability of, in real-time, collecting, analyzing, storing the sensor data and automatically responding to them in many sectors such as Defense, Energy, Transportation, Smart Cities, Agriculture, Health and Manufacturing.



Savronik's Intervalometers are fire control units developed to get rockets from air platforms to fire at the ground targets. With their all electronically- built structures, they have higher reliability and longer service life when compared to electromechanic Intervalometers. Their usability on different air platforms, periodic power needs, compliance with LAU-51 adapters, capability of a salvo/single-shot firing 19 rockets and quality of choosing rocket tubes are their prominent features. Savronik's Intervalometers are compliant with the qualification requirements of MIL-SDT-810, MIL-SDT-461 and RTCA/DO-160.

#### **INTERVALOMETER**



# POWER DISTRIBUTION SYSTEMS FOR LAND AND SEA PLATFORMS



With its multiple inlets and outlets, it is configured according to the needs on the land and marine platforms. The AC Power Units with a three-phase power supply of 380 Volts have switching capability just like the ones with a single-phase power supply of 240 volts. The specific Power Units for the marine platforms produce an output of 115 vac/60Hz. The DC Power Units have the power distribution of 56 VDC as well as 28 VDC. Electromagnetic switching (relay/contactor) or semiconductor switching technology (Solid-State Power Controller (SSPC)) is used in line with the user needs. The PDUs are designed with the microprocessor-controlled capability and through the PDU-specific designed visual interface designs; the user can monitor and remotely control the information about the PDU. In accordance with the customer requirements, different communication protocols (RS422, CAN BUS, Ethernet etc.) are used to monitor and remotely control the PDU. The PDUs have the audit logging capability with retrospective date-time logs. The PDUs have reverse

voltage, high voltage, low voltage and short circuit protection and Built-in Test (BIT) capabilities.





#### CRITICAL INFORMATION INFRASTRUCTURE

Due to its expertise acquired in the Defense Industry, Savronik supplies the components of the Communication and Information (CIS) infrastructure, which are critically important for the concepts of Intelligent Transportation System (ITS) and Smart Cities. We integrate those related components into the Smart Wall and Smart Stop works and provide an alternative CIS infrastructure for cities to be used especially in case of emergency.

- Fibre-Optic Network
- Wireless (Mesh) Networks
- LTE GSM Technology
- WiFi/WiMax
- NB-IoT (Narrow Band LoT)
- LoRa (Long Range)
- Trunked Radio
- LTE Network Interfaces



### MOBILE MESH NETWORK RADIO





The Multiple-in, Multiple-Out (MIMO) defined Mobil Mesh Network Radio with IP-68 waterproof rating and MIL-STD 810G Certificate is a secure and reliable wireless communication solution to meet the fastchanging operational needs in a tactical area. Covering more distance than the like of it in difficult environments such as sea, urban, rural and forested areas and tunnels, it provides a decentralized communication infrastructure with its multi-hop band forms. With its capability of working in L-s and C band frequencies and internal encryption specification, Savronik's Mobil Mesh Network Radio provides a secure and reliable fast delivery of video, voice and of data. With its internal video and voice encryption capability, it does not need an external unit. Using GPS connectivity, it presents an integrated solution for the battlefield conditions needing situational awareness with its Mapped User Interface. Every unit in the network can act automatically as a relay. Therefore, the range can be extended independently of the operator in challenging environmental conditions. With its self-repair and renewal network structure, the relay lines are updated and the best connectivity between two points are achieved.





#### THE ROCKET INTERFACE UNIT



The Rocket Interface Unit (RIU) fires the rockets on helicopters and aircraft. With its two-redundancy architecture design which can manage 70 mm (2.75") MK 40 and MK66 HYDRA rocket systems, it communicates with the host by using the MIL-SDT 1553 digital data line. The RIU is designed in accordance with RTCA/DO-254, Design Assurance Guidance for Airborne Electronic Hardware, and MIL-STD-704, Aircraft Electrical Power Characteristics. The RIU meets the qualification requirements in accordance with the MIL-STD-810, MIL-STD-461 and RTCA/DO-160 standards.





Savronik's interoperatiliy system (Savrolink) is a gateway structure that establishes a bridge which provides voice and data transfer capabilities between HF, VHF, UHF radios, line-of-sight and beyond line-of-sight datalinks, mesh systems and IP based devices (IP telephones etc.) that operates different frequency bands, waveform and technologies.

**SAVRONIK INTEROPERABILITY** 



## SIGNAL SWITCHING UNITS



Signal Switching Units control video lines and RS232 lines. Savronik's Signal Switching Units' designs are created in accordance with RTCA/ DO-254, Design Assurance Guidance for Airborne Electronic Hardware and MIL-SDT-704, Aircraft Electric Power Characteristics and they are compliant with the qualification requirements of MIL-SDT-810, MIL-SDT-461 and RTCA/DO-160.





Savronik has acquired expertise in the related military standard compliant design, production and testing of the Electronic Safety Arming and Ignition Units (ESAIU) Safety Arming Mechanisms (SAM), Firing Modules (A-Mod) and Artillery Fuzes especially for old and new generation of missiles, rockets and ammunition. Our special team consisting of research and design experts make use of latest technological developments to design the most reliable, smaller/lighter and more cost-effective units to meet the needs of the newer and highly complex arms systems. Among our capabilities, there are on-board missile avionics systems, packaging technology conforming to hard target penetration environments and a series of qualified components and subsystems for new generation of smaller calibre ammunition class. The T-101 triggers the Arc-101 component safely by increasing the voltage, which is applied on the primary, on the secondary.



**T-101 TRIGGER TRANSFORMER** 



### THE MOBILE EARTH STATION

The Mobile Earth Station developed and produced for the Beyond Line of Sight (BLOS) battlefield satellite communication provides a reliable multiband (X or Ku Band) connectivity for the delivery of image, voice and data and with its trailer-mounted transportability, it allows the operational ease of use, remote control and command capabilities.



# DISTANCE LEARNING &

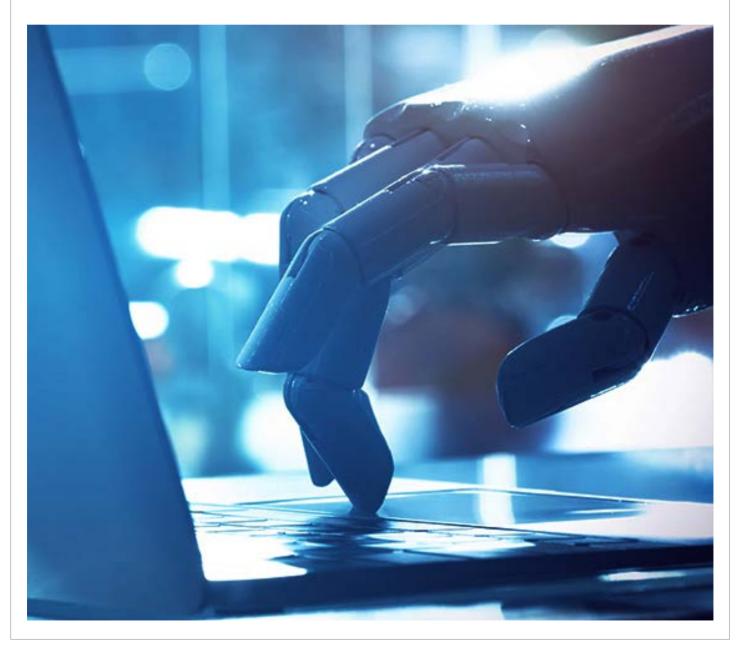




As Savronik, we have combined our first-hand experience of simulation solutions with the cloud-based distance learning technologies and introduced them to the concept of "TaaS-Training as a Service".

- Training Planning
- Operation
- Assessment
- Simulator
- Scenario Creation
- Infrastructure and Support
- Certification
- Interactive Trainer Feedback

We have eliminated the need for the trainee and trainer to come together through the mobile and immobile simulators.





#### **DATA LINK SYSTEMS**



The Data Link Systems (DLS) provide a high-speed point-to-point or point-to-multi-point Line of sight (LOS) and Beyond Line of sight (BLOS) data delivery in L/S, C and Ku bands. With the Air Data Terminal (ADT) and Mobile and Stationary Ground Data Terminal (GDT) operating in different geographical locations and in severe environmental conditions, The DLS meets the need of the real-time digital data delivery for the Unmanned Aerial Vehicle (UAV) and manned Aerial Vehicle (MAV) for Intelligence, Surveillance and Reconnaissance (ISR) purposes.





SDR is a flexible, modular multi-purpose communication unit compliant with the military standards, which can use be used for secure communication using necessary frequency waveforms among the satellite communication, radio link and different nods. The SDR can communicate two-way data until 274 Mbps using several different frequencies such as L/S, C and Ku Band and, with its internal video compression capability: it can be used on the Intelligence. Surveillance and Reconnaissance (ISR) platforms. The SDR architecture provides solutions realizing new and original waveforms in line with the technological developments. In addition, its flexible architecture lets the user add different encryption solutions. For the security of the data, Direct-Sequence Spread Spectrum (DSSS) or Frequency-Hopping Spread Spectrum transmission method can be used with the waveforms modulated over the unit. If required, it can be encrypted for secure electronic data using AES-256.

**SOFTWARE BASED RADIO (SDR)** 



### GROUND DATA TERMINAL









Company Short Name

SDT

Company Website

www.sdt.com.tr











### ACMI / POD

The SDT F 16 Combat Training Pod is mounted on F-16 and similar air platforms in an external pod, and ensures efficiency in exercises and in the provision of air-to-air and air-to-ground tactics training to pilots. SDT F - 16 Combat Training Pod features advanced air-to-air and air-to-ground combat training capabilities, such as real-time autonomous position generation, simulation and real-time notification, thanks to its long-range and high-speed RF data link and integrated processors. The system has mission planning, live monitoring, debriefing and analysis/evaluation features. The SDT F 16 Combat Training Pod enables training in real flight conditions and in multi-threat/target environments. Its high-speed data link and modular design mean that the System is also a Live-Virtual-Constructive (LVC) training infrastructure.



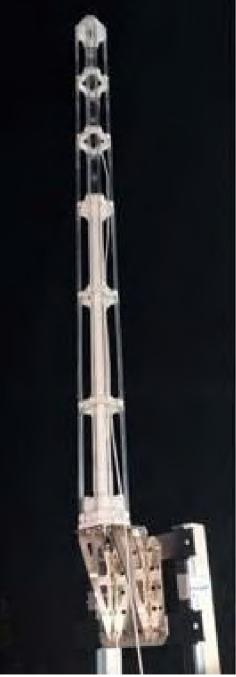
### **ACMI POD DATA LINK SYSTEM**





SDT develops data link solutions for such tasks as the transfer of simulation data between combat aircraft, sharing intraflight data etc., that require point-to-point or broadcast data transfer, and integrates these products into the platforms of both the Turkish Armed Forces and friendly and allied nations.









### **VEHICLE-TYPE RF JAMMER SYSTEMS**

Vehicle-type RF Jammer Systems provide protection to VIPs and convoys against remote-controlled explosives. These systems create a protective shield through RF broadcasting and neutralize threats activated by radio, mobile phones and wireless remote-controlled devices. Vehicle-type RF Jammer Systems can be easily integrated aboard all kinds of vehicles, and allows for reprogramming against changing situations.



#### **AVCI ANTI-DRONE SYSTEM**





The SDT AVCI Anti-Drone System is designed to detect, monitor and neutralize Mini/Micro Unmanned Aerial Vehicles in rural or urban areas.





## INFRARED (IR) GUIDED MISSILE (G/M) SIMULATOR SYSTEM FOR NAVAL PLATFORMS





Infrared (IR) Guided Missile (G/M) Simulator System for Naval Platforms



SDT has been developing data link systems for Drones/ UAVs based on the experience gained in the development of the data link system for the Air Combat Manoeuvring Instrumentation (ACMI) Pods and from the data link systems for the South Korean KF-21. The systems can be customized according to user requirements, and perform the following functions: Military Tactical Data Links, Control and coordination of UAVs, Receiving payload information from UAVs, Air platform telemetry applications, safety and security applications for aerial surveillance.

**DRONE DATA LINK SYSTEM** 







#### **ESM/ELINT SYSTEM**





The ESM/ELINT System is used for the automatic detection & tracking, identification, direction estimation and analysis of all types of radar signals. The system can detect various types of radar operating in all standard radar bands, from 0.5 to 18GHz, and from 18 to 40 GHz, and can capture and analyse complex signals, including fixed or agile PRI, pulsed Doppler signals and CW signals. It can also analyse specific signals, such as LPI signals, which can be difficult to capture and process. The system is thus capable of detecting almost all types of existing military and civilian radars, as well as advanced systems that may be developed in the future. The system incudes digital receivers, broadband, narrowband and IFM receivers, and working in conjunction with an antenna system, achieves a Probability of Intercept (POI) close to 100%. The multichannel digital receiver with an interferometer antenna array provides a pulse-based direction estimation capability, resulting in outstanding ESM performance.

Installed with a Freescale PPC P2041-based architecture, Missile Interface Unit is deemed suitable for all integration projects thanks to the MIL-SDT-1533 BC/BM/RT, GEthernet, discrete interfaces, current sources and serial ports that it comes with it.







**MISSILE INTERFACE UNIT** 



#### **MISSILE FIRE CONTROL UNIT**





Fire Control Unit is the electronic work package of the System, and has two different modes: tactical mode and simulation mode. Since it can simulate all control operations in tactical mode for training purposes, it allows the user to train without the need for an external device.

The Control Unit (MLCU) controls the other electronic unit, establishes the communication between the interface and the platform, provides the necessary electrical and communication interfaces for the maintenance, and performs the necessary power conversion and distribution functions for all such operations. The MLCU ensures that all operations are carried out safely, from the inventory report to the updating procedures.



**MISSILE LAUNCHER CONTROL UNIT (MLCU)** 







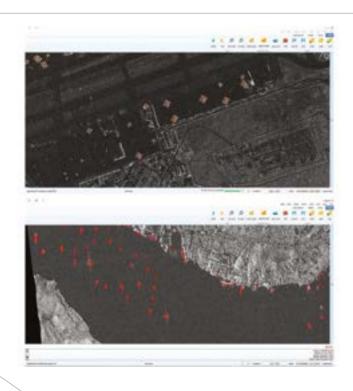
## EMBEDDED TRAINING SIMULATION DATA LINK SYSTEM



The developed data link products feature relay capabilities and can transmit data at high speeds in different bands (S-Band, L-Band), while providing for multiple accesses through a TDMA Structure, and complying with EMI/EMC and Environmental Conditions requirements.







GÖRGÜÇ is a domestic desktop software that has been developed entirely with SDT resources for the processing of different aerial and satellite images. GÖRGÜÇ software features toolboxes to support the import of different types of data, and for image pre-processing/improvement, as well as smart target recognition algorithms.



IMAGE EVALUATION AND TARGET DETECTION SOLUTIONS (GÖRGÜÇ)

### SMALL ARMS TRAINING SIMULATOR (SMART)





#### **AIRBORNE COMPUTER SYSTEM**



This is a portable modular education supervision system where users can be given first acquaintance with the gun or shooting reinforcement training, a single user or a different number of users can perform training at the same time, performance and development cards are kept.







Airborne Computer System is a mission computer with high data and video processing capabilities that is resistant to military conditions, and that features such interfaces as MIL-STD-1553, ARINC 429 and RS343, which are frequently used in avionic platforms. The AUC device can run 3D visual applications such as moving map software, and can record data, video and sound. The device has a structure that is suited to aerial, naval and land platforms and for different roles.



These are systems with simulation scenarios developed to measure the impact assessments of air defense systems against simulated attacks by different types of air threat elements and to provide personnel training.





AIR DEFENCE MISSILE TRAINING SIMULATOR







The Precision Guidance Kit (PUK) is a guidance kit that converts the existing 500lb Mk-82, 1000lb Mk-83 and 2000lb Mk-84 general purpose bombs into air-to-surface smart and precision strike capable ammunition with Global Positioning System and Inertial Navigation based guidance system. Designed by Tübitak SAGE, the Guidance Electronics Whole, Tail Whole and Front subassembly of the HGKs are produced by SDT A.Ş.

PRECISION GUIDANCE KIT ELECTRONICS (PUK)



## INTERACTIVE INFANTRY TACTICAL TRAINING SIMULATOR



#### WING ASSISTED GUIDANCE KIT KGK



Wing Assisted Guidance Kit KGK is a wing assisted guidance kit that converts the existing unguided 1000 lb MK83 and 500 lb MK82 general purpose bombs into air-to-surface long-range smart munitions. The kit provides precision strike capability at a distance of over 100 kilometres in all weather conditions. Designed by Tübitak SAGE, the Tail Subunit and Front Subunit belonging to the Guidance Electronics Subunit of the KGKs are produced and delivered by SDT A.S.









These are systems where personnel can receive tactical training individually or as a team, digitalize the combat environment in real parameters with different types of weapons, develop new tactics with simulation methods or conduct reinforcement training. There are shooting and shooter sensor systems in the simulators. These are advanced simulation systems in which there are more than 100 predefined scenarios and new scenarios can be added if desired.





The Remote Control System has been designed to integrate into platforms without the need for software upgrades to the mission computer of the platform. The system can communicate directly with the electronic unit, thanks to the error-protected user interface for the firing operator and through RS422/CAN/Ethernet data channels. Its integral features make it a highly effective solution for integration programmes in terms of cost and time.

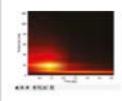
To reduce our country's foreign dependency related to oil and natural gas, a "National Seismic Data Processing Software" is being developed to replace the foreign sourced software that is currently used for the processing of seismic data gathered from land and sea. The activities carried out under the NATIONAL SEISMIC DATA PROCESSING SOFTWARE include:

Main Software Platform Activities

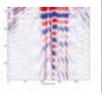
Seismic Data Processing and Filtering

Speed and Migration Analysis

Refraction Statics, 5D Interpolation, Surface Reflection Estimation, Deghosting.







THE REMOTE CONTROL SYSTEM



NATIONAL SEISMIC DATA PROCESSING SOFTWARE



#### **SIGINT**





SIGINT is a simulator system that broadcasts in the external environment through the generation of Radar Signals and Communication Signals in accordance with the parameters defined by the user and their subsequent amplification at desired centre frequencies. The system consists of two subsystems: a Radar Signal Simulator (RSS) operating between the 0.5 and 18 GHz frequency ranges, and the Communication Signal Simulator (CSS), operating between the 2 MHz and 6 GHz frequency ranges. The system is mounted, with its antennas, on a 4x4 pick-up type all terrain vehicle.

#### MANPACK RF JAMMER SYSTEMS





Manpack RF Jammer Systems provide protection to personnel against remote-controlled explosives. These systems create a protective shield through RF broadcasting and neutralize threats activated by radio, wireless telephones and wireless remote-controlled devices. Backpack-type RF Jammer Systems can be carried easily on the back and with the push-pull apparatus.





Tactical Mobile Anti Drone Rifle system offers directional and Omni-directional solutions (selected by the operator) for pilot-controlled or autonomous GNSS-guided (waypoint) drone threats. The field proven ergonomic, modular and light-weight solution of the legacy RF Jammer system is customized for drone threats within this system. The scope on the rifle is used to aim to the threat and neutralize it with directional antenna system. For multiple drone threats or area protection, Omni-directional antenna system is used.



These systems are of vital importance for pilot health and aircraft safety, ensuring aircraft are safely caught and arrested at a certain distance in cases of emergency landing and aborted take-offs at air bases.

The system can arrest different aircraft (F4, F16, F35, etc.) at flight speeds of up to 190 knots, and weights ranging from 10,000 lb to 100,000 lb. When the system is active, it automatically arrests the aircraft during entry. The system operates in all weather conditions, and in a temperature range of -40°C to +50°C. It has a capacity to arrest six aircraft in an hour.

There are three types of Aircraft Arrest Systems: Cable AAS, Net Barriers and Mobile AAS.

## TACTICAL MOBILE ANTI DRONE RIFLE SYSTEM





AIRCRAFT ARREST SYSTEMS (AAS)



#### SATELLITE GROUND STATION SOLUTIONS









SDT offers its customers Ground Stations of Reconnaissance and Surveillance Satellites for Civilian or Military applications on a turnkey basis. The interface software and hardware integration required for the development, integration and testing of the User Service Units of Satellite Ground Stations, and for cataloguing, archiving & dissemination, image processing & evaluation, receipt of image requests, pre-processing and feasibility analyses, and imaging workflow are all developed within SDT.

### DIGITAL DATA RECORDING SYSTEM (DDR)

DIGITAL DATA RECORDING SYSTEM (DDR) records the digital control data, video and audio signals produced by the platform. Examples of digital control data types are data received through MIL-STD-1553B. ARINC429. CAN and Ethernet data buses. PAL. NTSC, RS170, RS343, DVI, SDI or DisplayPort video interfaces are supported. Digital control data can be recorded by directly listening bus transactions on data communication lines, or by sending data directly to the recording system of the central control units. Video and audio data received by the DDR are recorded after being compressed using high-efficiency algorithms. Removable memory units used for recording provide access to data after the flight via connection to a ground support computer using standard industrial interfaces (USB. Ethernet, SATA, etc.), SDT has modified its Digital Data Recording System (DDR) product family developed for aerial platforms to satisfy the needs of the civilian sector. To this end, the needs of the transportation sector were evaluated, and the DDR products that were developed for military purposes were adapted to railway systems.





Developed for Land Vehicles on a customer basis, the Video Multiplexing Unit (VMU) can simultaneously switch the images from one, two or four different cameras on the vehicle on different analog monitors, depending on the information received from the interface.



VideoDecoding/Encoding Unit comprises two parts. First unit compresses the digital video data received from the onboard imaging source of the missile by using the JPEG 2000 algorithm, and transmits it to the Video Decoding Unit (VDU) via the RS485 UART data bus through a data link or the central link. The second part is the VDU. This unit processes the data sent by the VEU and provides a video image.

VIDEO MULTIPLEXING UNIT



**VIDEO DECODING UNIT** 



## **SEDEF SHIPYARD**

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Sedef Shipyard

Company Trade Name

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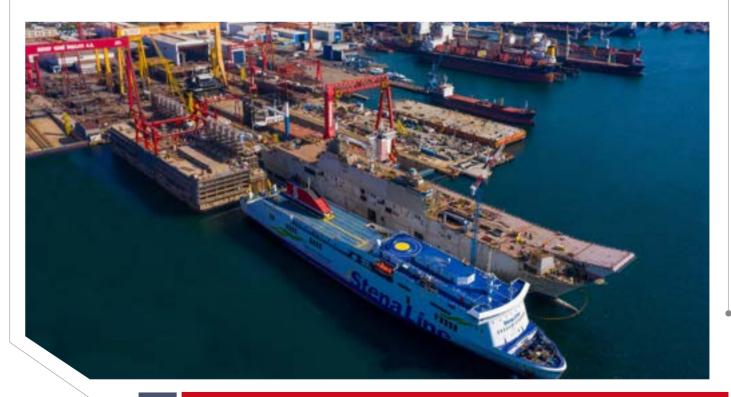
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**Company Website** 

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SEDEF Shipyard based on a site with a total area of 270.000 square meters, where it constructs all types of new building vessels, navy vessels, industrial projects and conducts repair and conversion works. In the heart of Türkiye's shipbuilding industry, in Tuzla, SEDEF is leading the shipbuilding industry in the region by using the best know-how and state of art technologies and the advantage of its location where it is surrounded by all major transportation facilities. SEDEF Shipyard is one of the biggest private shipyards in Türkiye, which constructed and delivered the TCG Anadolu in February 2023. TCG Anadolu is the biggest and one of its kind ship ever built in Türkiye. She is constructed for amphibious, helicopter, Unmanned Air Vehicle operations, and humanitarian aid for disasters. Steel cutting of the ship started in 2016 and today, Türkiye's Naval Forces are attending to the national and international exercises while representing and reinforcing our national rigid stand and defense power. This year 2023, Sedef Shipyard also started to build a new frigate TCG İzmit, for the following century celebrations of the Republic of Türkiye.



**SHIP AND SHIP MAINTENANCE AND REPAIR** 

SEDEF

# SEFINE TERSANESI

Company Short Name

SEFINE TERSANESI

Company Trade Name SEFİNE DENİZCİLİK TERSANECİLİK TURİZM SAN. VE TİC.A.Ş

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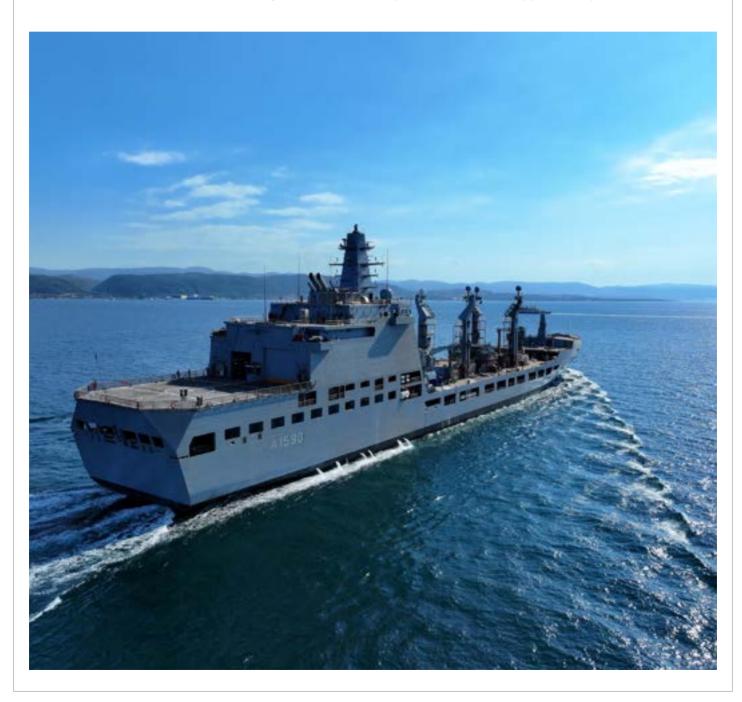








Fleet Replenishment and Combat Support Ship, within the scope of supporting operation and logistics elements of Turkish Navy; It will be able to meet the fuel replenishment and water needs of at least four ships in areas close to the operation area for a minimum of thirty days without shore support and will be able to replenish supplies by sea replenishment (RAS) method, including the use of helicopters, will serve as a "Command and Control Ship", and will be able to operate manned and unmanned surface and underwater vehicles and helicopters on ships. It is a sea replenishment combat support ship that will provide support in performing a certain level of maintenance/repair of ship-based unmanned aerial vehicles (UAV). The ship will also operate in sea weather of at least sea condition 5, will be capable of deploying containers that can be used within the scope of the execution of various tasks, utilizing the concept of "Modularity", and will be capable of deploying surface/underwater vehicles to be used by SAT, SAS and diver personnel that can support the operation.



#### MARLIN UNMANNED SURFACE VEHICLE (USV)





MARLIN Unmanned Surface Vehicle (USV) is a new generation USV basically developed for surface and electronic warfare purposes. Thanks to its modular design that allows to integrate different payload configurations, MARLIN can also perform different tasks, such as reconnaissance and surveillance, base/port/critical ship-facility security and amphibious operations. Equipped with advanced communication and positioning systems, MARLIN can operate uninterruptedly under signal jamming. She have Broadband/Narrowband Satellite, RF and 4G / LTE Communication systems. MARLIN has the ability of Autonomous Mission Planning and Task Distribution, Sensor Fusion, Fixed and Moving Obstacle Detection and Dynamic Path Planning, Day/Night Autonomous Operation and Joint Operation Execution with Other platforms. For Operation Capabilities transition to the mission area from the port or ships, autonomous or remote-control, integrated operation with combat management system, radar detection and identification, radar jamming and deceiving, medium and long-range missile attack with different SSM.



# SIMBT

Company Short Name

SimBT

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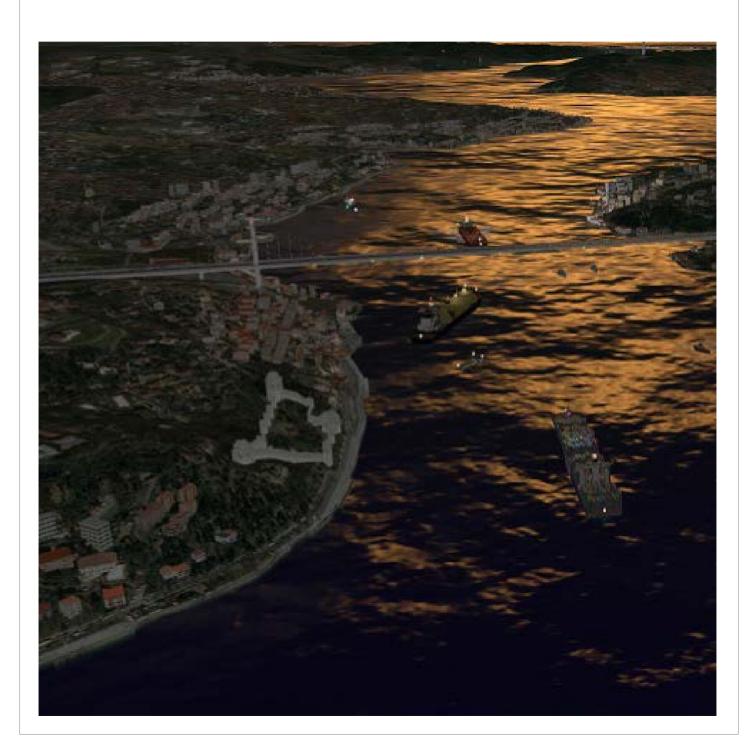






#### **IMAGE GENERATOR (SIMBT-SIMREALIZE)**

SimRealize is an original and national image generator compatible with CIGI 3.3 and HLA infrastructures, addressing 3D visualization and simulation needs from the simplest to the most complex. SimRealize provides highly realistic and high-quality 3D graphics, sound, and simulation infrastructure even with personal computers and graphics cards, thanks to its efficient use of CPU and memory. To date, SimRealize has been successfully utilized in the development of land, railway, sea, submarine, and air simulators and simulations, 3D topography analysis and holographic display, 3D virtual sandbox, and continues to be actively used in these fields.

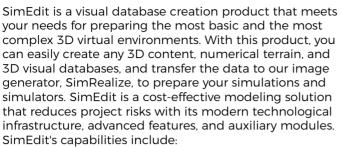


# VIRTUAL ENVIRONMENT DEVELOPMENT EDITOR (SIMBT-SIMEDIT)



## LAND VEHICLE SIMULATOR (SIMBT-ARSIM)





- \* Geographically accurate visual database
- \* User-friendly interface
- \* Surface texture editing
- \* Vegetation editing
- \* Terrain cover editing
- \* Detail editing (arrangement of objects)
- \* Advanced lighting and special effects





ArSim is a passenger vehicle simulator that provides a realistic driving experience and training in urban traffic. With this simulator, you can drive various vehicles such as cars, trucks, buses, and motorcycles under different weather conditions, traffic scenarios, surface conditions, and environments. You can view all your driving mistakes as warnings during the simulation and access measurement and evaluation reports at the end of your session.





HoloTable enables field commanders to plan and manage operational areas, enhances situational awareness, enables operational analysis, and provides engagement planning and management. HoloTable is available in both 2D and 3D versions. The HoloTable system supports raster and vector map display (Satellite Imagery, Military Raster Maps, DTED), military symbology, the creation of military plans with tactical graphics and symbols, the drawing of military, strategic, and security zones, sensor optimization and deployment, distance measurement, cross-section analysis, route planning, loading any terrain map, and more. Multiple HoloTable systems can be connected simultaneously and integrated with command and control systems.

VIRTUAL AND HOLOGRAPHIC SANDBOX (SIMBT-HOLOTABLE)





ARTS is an interactive computer-based forward observer training system that supports individual/group training. It provides training opportunities covering hundreds of aerial targets across a wide range of categories including fixed-wing aircraft, helicopters, unmanned aerial vehicles (UAVs), remotely piloted vehicles, and ballistic/cruise missiles. The visual system is supported by realistic 3D audio-visual effects, environmental conditions, and weather effects. Training scenarios can be prepared and executed in both generic and real-world environments, and are recorded for post-training analysis. ARTS consists of five system modules: Individual Aircraft Training Console, Instructor Console, Simulation Trainer Console, Test and Evaluation Console, and 3D Image Generator.

AIRCRAFT IDENTIFICATION
TRAINING SIMULATOR
(SIMBT-ARTS)



#### VIRTUAL AND AUGMENTED REALITY BASED OCCUPATIONAL HEALTH AND SAFETY TRAINING SYSTEM (SIMBT- EDSIS)

The Virtual and Augmented Reality-Based Occupational Health and Safety Training System (EDSIS) is a training system developed to provide a safe environment for experiencing potential risks and hazardous situations in the electricity distribution sector. It aims to enhance risk awareness among employees working in high-risk sectors and deliver technical training more effectively and permanently. Currently, the system offers training on 'working at heights with a bucket truck,' 'working with field distribution boxes and transformers,' and 'working with high-voltage disconnectors.

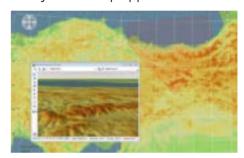




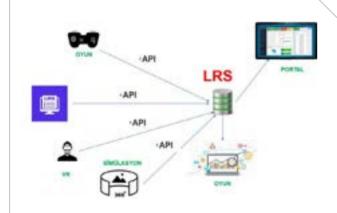
## GEOGRAPHIC INFORMATION SYSTEM SOFTWARE (SIMBT-SIMWORLD)



SimWorld is an advanced desktop geographic information system software development kit (SDK) that supports multiple operating systems (Windows, Linux), multiple programming languages (C#, Java, C++), multiple architectures (32/64-bit), and multiple projection types (Geographic, UTM, Mercator, Polar, etc.). This component offers advanced capabilities such as cartography infrastructures, raster and vector map display (including nautical charts), generic map generation, tactical symbology and graphics in compliance with military standards, and 2D/3D and globe map visualization. With its 64-bit architecture support, SimWorld removes memory limitations, providing more unlimited usage and high performance for your desktop applications.







SIMLMS is a learning management system that enables the display of course/lesson content developed in compliance with the xAPI standard. The system allows for course and term planning, the addition of courses, question banks, and exams, as well as tracking student attendance and analyzing their performance. Thanks to the Learning Recording System developed according to the xAPI standard, data can also be transferred to organizations' portals.

COMPUTER BASED LEARNING MANAGEMENT SYSTEM (SIMBT-LMS)





With ARBAKO, interactive on-the-job training, technical-level maintenance and repair training, simultaneous remote maintenance, and real-time periodic maintenance can be performed more quickly and flawlessly. ARBAKO can operate both online and offline. In the online solution, the person in the field connects to remote expert personnel, enabling real-time collaboration and performing complex maintenance and repair processes through instructions provided directly by the expert. In the offline solution, maintenance and repair instructions are carried out by following pre-defined steps in a prepared scenario. ARBAKO also allows for the creation of real-time complex animation scenarios without the need for modeling or animation knowledge.

AUGMENTED REALITY
SUPPORTED MAINTENANCE
AND REPAIR SYSTEM
DEVELOPMENT SYSTEM
(SIMBT-ARBAKO)



#### FULL MISSION BRIDGE SIMULATOR (MARSIM-FMBS)



### VIRTUAL BRIDGE SIMULATOR (MARSIM-VRBRIDGESIM)



MARSIM Full Mission Bridge Simulator (FMBS) is a simulator for maritime training and the professional development of ship captains/crew. This simulator realistically replicates all the functions of a ship's bridge. Developed IAW STCW requirements, MARSIM-FMBS has been certified as Class A by DNV, one of the world's leading certification bodies in the maritime field. MARSIM includes GMDSS, ECDIS, RADAR, GPS, AIS, NAVTEX, and Echo Sounder simulators. MARSIM-FMBS can simulate the dynamic models of ships with 6 degrees of freedom, and any sea conditions within the system. MarSim-FMBS also meets the requirements of IMO Model Course 1.22 (Bridge Resource Management).





The virtual bridge simulator, based on the MARSIM FMBS platform, operates without physical consoles and is used with VR headsets. With the MARSIM-VRBridge simulator, it is possible to integrate multiple bridge simulators for training purposes. This simulator is suitable for both commercial shipping and naval forces. Upon customer request, training can be conducted on a specific ship model created by our company and uploaded to the system, instead of a generic vessel type. The instructor can define any sea conditions, and the training sessions can be replayed and analyzed for student evaluation.





The MARSIM Global Maritime Distress and Safety System (GMDSS) simulator is developed based on STCW requirements to enable communication personnel on ships to obtain GOC (General Operator Course) and ROC (Radio Operator Course) certifications. It is certified by DNV, one of the world's leading classification societies. The GMDSS simulator simulates shipboard systems such as NAVTEX, Inmarsat C, Inmarsat Fleet-77, EPIRB, SART, VHF DSC Radio, MF/HF DSC Radio, Portable VHF Radio, and Radio Telex (NBDP).







This simulator is based on the MARSIM-FMBS platform and is designed to provide training for Tug Masters. In our DNV-certified simulator, training is available with three different types of tugboats: Voith Schneider, Azimuth Propeller, and Standard Tug. The simulator is designed with screens that can create a 360-degree 3D scene. Various training areas can be added to the simulator, enabling more realistic training scenarios.

FULL MISSION TUG SIMULATOR (MARSIM-TUGSIM)



## DESKTOP BRIDGE SIMULATOR (MARSIM-NAVSIM)



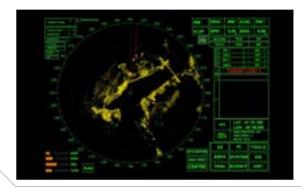
## RADAR/ARPA SIMULATOR (MARSIM-RADSIM)



The MARSIM-RadSim Simulator helps ship captains improve their skills in radar operation, collision avoidance, and voyage planning. This simulator simulates X/S band radars. Developed in accordance with STCW requirements, MARSIM-RadSim is certified by DNV, one of the world's leading certification bodies in the maritime field. The simulator provides realistic radar imagery and offers training in Collision Avoidance, Situational Awareness, Voyage Planning, various weather and sea conditions, Target Tracking, and Automatic Radar Plotting Aid (ARPA), along with radar limitations and error handling.



The MARSIM-NavSim simulator is the desktop version of the MARSIM-FMBS. This simulator aims to build navigational awareness before training on the MarSim-FMBS. Developed in accordance with STCW requirements, this simulator is certified by DNV, one of the world's leading certification bodies in the maritime field. The MARSIM-NavSim simulator provides training in ECDIS and RADAR systems.







The HORIZON ECDIS software is developed for civilian surface platforms in compliance with IMO and SOLAS regulations, adhering to IHO standards S-52, S-57, S-63, and S-64, and is certified by the international classification society RINA. SimBT is also an IHO-approved ECDIS software developer. HORIZON is a computer-based navigation system that supports up-to-date electronic charts in accordance with IHO standards. ECDIS continuously determines the vessel's position relative to land, navigation aids, and hidden dangers by utilizing real-time information from navigation systems, providing navigation personnel with safe route planning and route tracking capabilities.

ELECTRONIC MAP DISPLAY AND INFORMATION SYSTEM (MARSIM-HORIZON)





This simulator is a virtual reality-based ship fire training simulator equipped with cutting-edge technologies for effective firefighting. Ship fires pose a significant threat to the maritime industry, and it is crucial for ship personnel to respond promptly and correctly. Fire training, which is difficult to conduct in real environments, can be safely and realistically experienced, making it highly valuable for the safety of your ship and crew. Developed in accordance with DNV standards, this ship fire training simulator offers an opportunity to safely and effectively improve firefighting skills.

MARINE PLATFORM FIRE FIGHTING SIMULATOR (MARSIM-FIREFIGHTINGSIM)

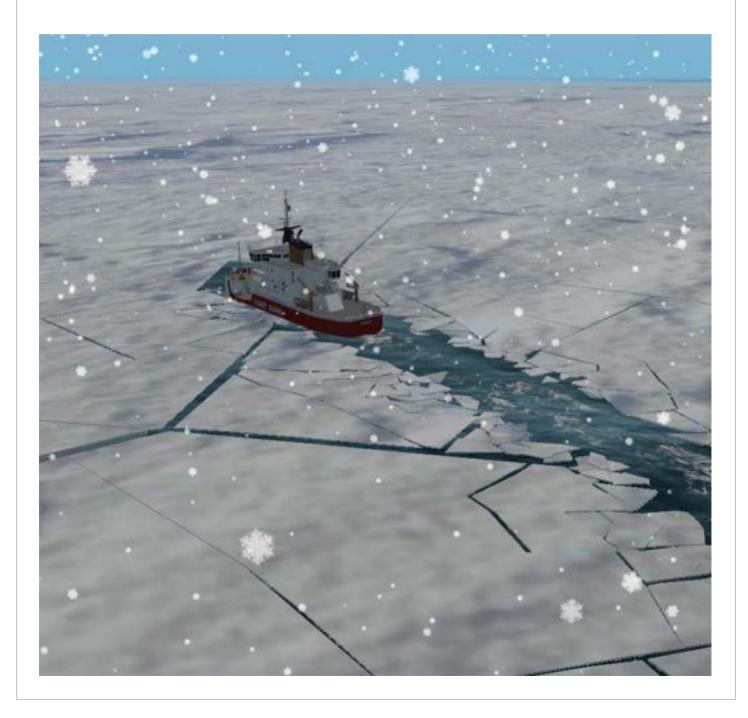


## NAVIGATION SIMULATOR IN ICY SEAS (MARSIM-ICENAVSIM)





The Ice Navigation simulator, integrated with the MARSIM-FMBS simulator, enables navigation training in icy waters, specifically in polar regions. This simulator provides training for icebreaker vessels and ships designed for polar navigation. Instructors can create different types of ice fields within the polar region. During navigation, broken ice disperses realistically, and the impact of colliding with ice is accurately simulated on the ship. Additionally, the simulator models the re-freezing of broken ice over time and the effect of water accumulating on the ship freezing due to cold weather, impacting the vessel's stability. This simulator is also certified by DNV.

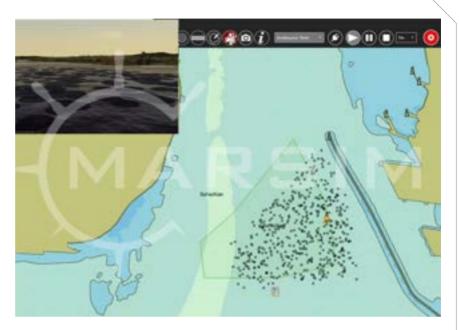


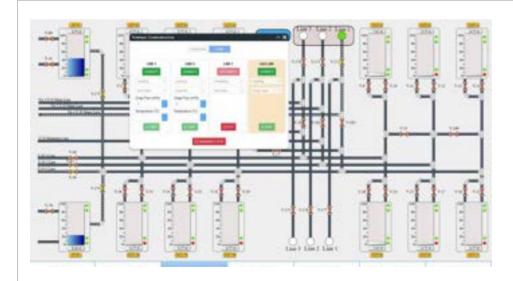


### MARSIM-MARINE POLLUTION SPREAD AND CLEANUP SIMULATION SYSTEM



The Marine Pollution Spread and Cleanup Simulation System, our Pollution Spill Response Simulator, provides training for ship crews and shore command centers on the use of emergency response equipment during potential spill response operations and the predicted spread of pollution. It has DNV Class A certified MARSIM FMBS platform. Marine pollution spread is modeled in four main categories: liquid (oil/fuel/oil), chemical, solid waste/ plastic. During training, various reports can be generated based on the type of pollution, including information on cleaning, evaporation, sinking, mixing, burning, and dissolving. The system operates in integration with the FMBS, Tug Simulator, and VTS Simulator.





The MARSIM-LCHSim simulator is used in maritime training to teach how to safely and efficiently transport liquid cargoes on tanker vessels. Developed in accordance with STCW requirements. LCHSim is certified by DNV. Through the simulator, mariners can practice and learn the operational processes of handling liquid cargoes, their impact on ship stability, and methods for managing hazardous situations. The training provided by our LCHSim product plays a critical role in preventing accidents during the transport of dangerous and environmentally harmful liquid cargoes by sea.

LOAD HANDLING SIMULATOR (MARSIM-LCHSIM)



# AUGMENTED REALITY INTEGRATED MARITIME NAVIGATION SYSTEM (MARSIM-ARWECDIS)

MARSIM-ArWECDIS is a navigation aid system that provides situational awareness for the Officer of the Watch (OOW) on ships. With ArWECDIS, mariners can use AR glasses to view AIS and radar data, safety zones, surrounding hazards, their own ship's route, speed, depth, and other relevant information, details about nearby vessels, the Neta line, and maritime charts. All this information is projected onto the water without the need to look at a screen or take their eyes off the sea. This enables faster and more effective decision-making with maximum situational awareness, especially when navigating





### PORTABLE BRIDGE SIMULATOR (MARSIM-PORTABLE-NAVSIM)





Our portable bridge simulator, MARSIM-Portable NavSim, is the portable version of our DNV Class A MARSIM-FMBS simulator. Due to its compact size and ease of transport, it is used for on-site navigation training in the maritime field. This simulator enables training in GMDSS, ECDIS, RADAR, and navigation.





It has been developed to train operators who will work in Vessel Traffic Services (VTS) systems. The simulator allows operators to learn the concepts needed for planning vessel traffic through the software. It can be integrated with FMBS and Marine Pollution Simulators.

It is a software that allows the addition of new ships and training areas to the FMBS simulator. This enables customers to integrate new ship types and terrains into the system.



SHIP, LAND AND PORT MODELING SOFTWARE (MARSIM-MODSW)



MARSIM-VESSEL TRAFFIC SERVICES SIMULATOR



# SPARK ÖLÇÜM TEKNOLOJİLERİ

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Spark Group companies, which are fully owned by Turkish capital, have been operating as the 'Sole Authorised Main Distributor' of Keysight Technologies (formerly Agilent Technologies) brand test, measurement devices and systems in Türkiye as of 2001, with a market leader position in the sector, by relying on 13 years of international working experience and know-how.





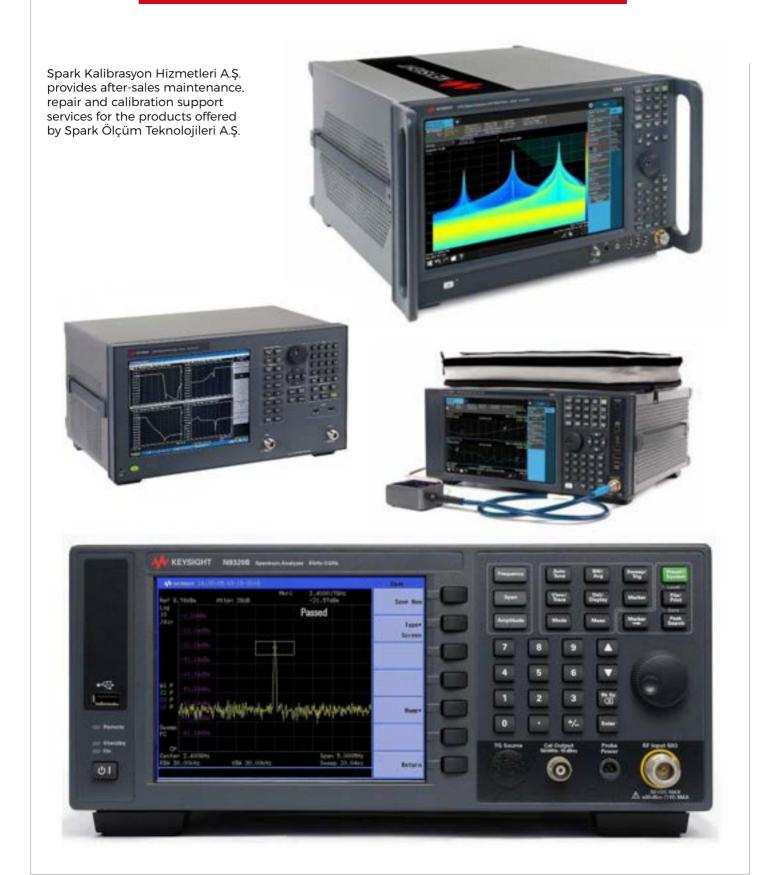




## CALIBRATION OF ELECTRONIC TEST AND MEASUREMENT INSTRUMENTS



SPARA



STM

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#### **OFFSHORE PATROL VESSEL OPV-1900 / OPV-2100**

OPV-1900 is a monohull vessel, designed based on proven design philosophies and classification society rules with an inverted ship bow which is used for increasing the fuel efficiency and safety of the vessel at sea. OPV can be tasked with maritime Patrol and Surveillance Operations, Critical Infrastructure Protection, border Protection, Confined and Shallow Water Operations, Helicopter Support and mission deck Operations, USV, UAV Operations. The OPV can be configured with the capability to deploy special forces and accommodate a range of commando equipment. The self-protection level can be upgraded from guns to missile systems.







AeroTab Electronic Flight Bag is a Paperless Integration of Cockpit and OCC.





ALPAGU Fixed-Wing Tactical Attack UAV is designed for both reconnaissance and surveillance and for striking targets outside the line of sight with high accuracy, can be carried by a single soldier, and can operate autonomously or with remote control. Precision strike mission is fully performed by the operator, in line with the Man-in-the-Loop principle. ALPAGU can be effectively used day and night against fixed or moving targets with the help of embedded and real-time image processing and deep learning algorithms that we have developed with national facilities. The system is comprised of "Fixed-Wing Smart Ammunition System", Launcher" and "Ground Control Station" components.



**ALPAGU - FIXED WING LOITERING MUNITION SYSTEM** 



## **ALPAGUT - SMART LOITERING MUNITION SYSTEM**



ALPAGUT is being developed in collaboration with STM and ROKETSAN. ALPAGUT, which can operated day or night, is effective against mobile or stationary land and sea targets, radar and communication systems, critical facilities, personnel and targets of opportunity. ALPAGUT can be used in single or swarm configurations with an operational radius of 60 kilometers, an operational time more than 60 minutes and different types of warheads. Once fired or released, the system will enter into target detection, tracking and evaluation mode, hovering in the air and the onboard TV/IIR seeker feeds the real time video image to the operator. ALPAGUT then attacks the identified target after obtaining user approval from the ground autonomously.



During the Modernisation Project of 2 AY-Class Submarines belonging to Turkish Naval Forces, modernisation of Electronic Support, Assault and Navigation Periscopes and Inertial Navigation Systems of TCG DOĞANAY (S-351) and TCG DOLUNAY (S-352) submarines have been successfully complete



TURKISH NAVY TYPE 209-1200 AY CLASS SUBMARINE MODERNIZATION PROJECT





The Information Systems Integration Core Solution is a flexible, adaptable and robust integration core that provides interoperability between existing and future heterogeneous information systems. It significantly supports situational awareness throughout the battlefield within the mission network. The Information Systems Integration Core Solution is used in NATO's strategic level air command control and missile defence information system, and NATO Afghanistan Mission Network Integration Core (AMN INT CORE) Project.





Combining STM's knowledge and expertise gained in identity systems, electronic identity verification infrastructure, web and mobile application development fields with the infrastructure, implementation, security and privacy analysis, and business models of blockchain technologies to develop products and solutions that can meet the needs of the Public and Private Sectors through R&D and Product Development activities.

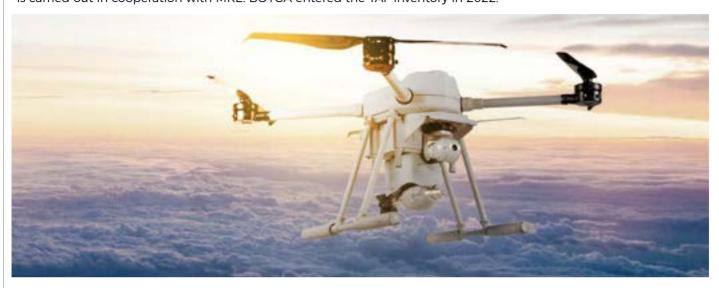


#### **ASTM**

## **BOYGA - AUTONOMOUS MULTI-ROTOR COMBAT UAS WITH MORTER PAYLOAD**



Ammunition Drop UAV is a UAV solution that can carry 81 mm and 60 mm mortar ammunition adapted to the mechanism that releases the safety system, and can carry out the planned task and drop the useful loads on the target or coordinate it chooses. It has an algorithm that helps target estimation of mortar ammunition. It performs a task at the level of "Manin-the-loop" (where the user is in the loop) by following the target selected by the user from the screen image with image processing algorithms. Munition system integration is carried out in cooperation with MKE. BOYGA entered the TAF inventory in 2022.





The BUKAN system is a tactical level command and control information system of hardware and software solutions for different operational uses and platforms. It can be used in the battlefield by a single tank/vehicle/soldier or by higher ranking headquarters-based military personnel.

The BUKAN system can be quickly adapted to different platforms, especially tracked and wheeled combat vehicles, with existing or new capabilities, thus providing a collaborative working environment.

**BUKAN** 







#### **CYTHREAT**



CyThreat provides its customers with cyber threat intelligence data which is enriched with subject and event-based reports compiled by STM analysts. CyThreat automatically collects data from various open and commercial sources (deep/dark web, social media, blogs, forums, etc.). This allows the the detection of the activities of the threat actors, proactive prevention of cyber-attacks before they occur and application the preventive measures. Thus, financial and reputational losses that may occur as a result of an attack can be prevented. Intelligence data (blacklisted IP addresses, domain names, malware hash values, vulnerability data) can be integrated with security devices.





STM ThinkTech continues to provide world-class consultancy services within the scope of projects it has carried out with domestic and foreign stakeholders. ThinkTech, which has organizational learning competence, continuously improves its service quality with its R&D works and provides "unique solutions to the complex problems" of its stakeholders.



**CONSULTANCY - STM THINKTECH** 







The Through The Wall Radar (DAR) is a radar system used to obtain 2D position information of the target stationary and moving elements, which are located in enclosed areas where there is no visual access, through ultrawideband (UWB) signals. Apart from various military operations, such as hostage rescue, counterterrorism and internal security operations, DAR can also be used for various civilian purposes, such as firefighting and postdisaster rescue operations (earthquake, avalanche, fire). DAR can also be used for migrant and human smuggling.

The STM500 is the first small-sized submarine that Türkiye's has designed with national resources and put into production locally. STM500 Submarine is a shallow water diesel-electric attack submarine design developed by STM. The platform is capable of enduring 22+8 (SF) personnel for 30 days at depths more than 200 meters, ready to fire its 4 tubes loaded with a variety of 8 modern heavy weight torpedoes and guided missiles & mine laying.

**SUBMARINE STM 500** 





STM realise the knowledge gained in radar technologies and complex software development areas with integration projects in different fields. In this context, STM has completed the establishment of complex distributed systems in critical facilities ranging from CCTV installations in approximately 5,000 Post Office (PTT) branches throughout Türkiye to self-sustaining Coastal Surveillance Stations (CSSs), including their infrastructures, superstructures, and renewable energy systems, on the Aegean and the Blacksea coasts such as Hopa, Çavuş Island and Enez.





Providing feasibility and analysis services to public institutions and organizations and the private sector that will be the basis for their subsequent studies and projects. In this context, we carry out studies such as sector analysis, needs analysis, detection and analysis of existing solutions, concept design for the solution that suits the need. We also offer consultancy services on defence systems domestically since 1991 and abroad since 2010.

**7.** *2* 

**FEASIBILTY AND PROCESS CONSULTANCY** 



#### **FOCUSFLITE AS**



FocusFlite AS (Airborne Segment) Airborne Digital Moving Map System, is a moving map-based auxiliary system used to increase the situational awareness of pilots during their tasks on aerial platforms. The system's advanced humanmachine interface, which has been created as a result of years of usability tests, dynamic content management and simplified user interface studies, maximizes effective use.





FocusFlite GS (Ground Station) One planning solution for all platform, helps pilots to review/prepare their mission plans with high precision and accuracy thanks to the 2D/3D planning capabilities it provides for different platforms. With its extensible and adaptable mission planning infrastructure, platformspecific capabilities such as performance calculations can be easily added. Intuitive, fast and responsive human-machine interface of the program has been developed and they are supported by usability tests. FocusFlite GS capabilities can be used on consoles, desktop stations and portable platforms.

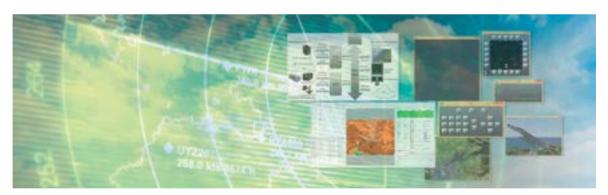
#### **FOCUSFLITE GS**







Warfare Effectiveness Analysis Model (GEMED) is an engineering level analysis simulation system in which combat activities of combat platforms can be measured in an integrated synthetic tactical environment. With the scenarios created, the model can be used for the purpose of decision support and tactical development for combat effectiveness assessment, ship design/modernisation and procurement. The GEMED model is based on the analysis of statistical data obtained from the interactions of high-fidelity models in multiple simulation runs with Multiple Criteria Decision Making Techniques. In this context, the Simulation Infrastructure, Weapon Systems and Electro-optic/RF sensor modelling competence and the Effectiveness Assessment approach we developed with the academy were used.



The Hybrid Avionics Emulator System (HAVESİS) is the pioneering next generation Generic Avionic System Integration Laboratory concept in Türkiye. Avionic System Integration Laboratories are widely developed by assuming a predefined target system and a common data bus protocol. This assumption requires a different configuration for each new target system, thus redesigning the existing infrastructure according to the new requirement. HAVESİS enables to combine the avionic equipment that provides integration over different protocols and interfaces with DDS-based integration architecture. Avionic equipment developed with different bus protocols can thus be easily integrated. In this way, the integration behavior of the related equipment defined in the HAVESİS configuration file is sufficient to be included in the rest of the system.







#### **MULTI PURPOSE ATTACK CRAFT (STM - MPAC)**

STM-MPAC is a monohull platform that is designed to perform anti surface and anti air warfare along with patrol duties in shallow waters and open seas under heavy sea conditions. STM-MPAC is also capable of operating at high speeds according to its optimized effective hull form and main propulsion system configuration.



#### **BUSINESS WARGAMING - STM THINKTECH**



Business Wargame is a "role-based simulation" developed especially for the companies. Business Wargame is played by the participants in person (company's employees) in a certain format and within a time schedule and has a structure, which is not restricted by the narrow framework of the simulation software. When the companies use Business Wargame in such processes and practices as strategy determination and road map forming, strategy testing and developing, crisis intervention, foresight acquisition and change management; they have the opportunity to understand dynamics of the real world, possible movements of their rivals and consistency of their assumptions about their rivals and obtain real info.



STM ThinkTech, Türkiye's first technology-based think tank, was launched on 2017. STM ThinkTech's mission is to develop unique solutions and technological insights in strategic areas related to Defense and Security, Science and Technology, Aerospace and Aviation, Transportation, Health, Education, and Energy sectors. STM ThinkTech, turning into a sustainable and adaptive structure in a short period with its genuine approaches, products, and services, continues to create distinct value to decisionmakers who are surrounded by a very complex environment. STM ThinkTech is moving confidently into the vision of making a difference in the consultancy area in cooperation with public institutes, academia, private companies, and other think tanks.



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**DECISION SUPPORT SYSTEMS - STM THINKTECH** 

#### **ASTM**

### KARGU - COMBAT PROVEN ROTARY WING LOITERING MUNITION SYSTEM







KARGU is a portable, rotary wing attack drone designed to provide tactical ISR and precision strike capabilies for ground troops. KARGU is capable of performing fully autonomous navigation via STM's unique flight control system. In addition, the platform is able to perform precision strike for low signature, beyond line of sight targets. Precision strike mission is fully performed by the operator, in line with the Man-in-the-Loop principle. The platform is capable of detecting and striking static or mobile targets with high precision during day and night conditions. The KARGU system is comprised of the Attack Drone Platform and the Mobile Ground Control Station. KARGU is included in the inventory of TAF and foreign countries.



The contract for KERKES - the Global Positioning System Independent Autonomous Navigation System Development Project - was signed between the SSB and STM on 23 August, 2019. With the completion of the KERKES Project, developed by STM engineers and involving sophisticated computer vision techniques and artificial intelligence algorithms, mini/micro class UAVs will now be able to perform missions under day or night conditions in environments where there is no GPS coverage. With the KERKES Project, which aims to support rotary-wing (multi-rotor) and fixed-wing UAVs in carrying out missions in environments where there is no GPS coverage, location estimation and the execution of missions can be achieved through navigation based on object recognition and deep learning capabilities. Using this system, the UAV begins its mission with a loaded map, compares the map with the data obtained from the field, and successfully completes its mission without needing to rely on GPS. KERKES will allow UAVs to carry out their missions without being affected by enemy electronic warfare threats such as GPS jammers.

#### **KERKES PROJECT**





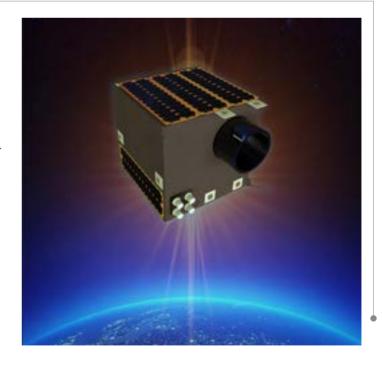
#### **PREDICTIVE MAINTENANCE**



Predictive Maintenance aims to predict potential failures on a platform by analyzing data collected from sensors. This enables taking preventive measures before the failures occur. Instead of performing maintenance at predetermined intervals, maintenance is carried out when necessary based on the monitoring of data, reducing lifecycle costs. The main advantages of this strategy, especially for platforms with high maintenance costs, are reducing maintenance expenses and increasing platform reliability. Our expertise in maritime, aviation, and land platforms is supported by big data, artificial intelligence, sensor development, the Internet of Things (IoT), and optimization techniques and technologies.



LAGARİ, High Resolution Earth Observation
Microsatellite is a micro class, high resolution Earth
observation satellite developed by STM that will be
placed to Low Earth Orbit (LEO). LAGARİ will be the
first satellite of a constellation to provide imagery to be
used for general mapping, forestry, agricultural, disaster
monitoring, near real-time tactical field applications.
LAGARİ satellite will be the first high resolution
earth observation microsatellite of Turkiye. Satellite
will be equipped with a new generation electrooptical camera system which has PAN and
multispectral spot/strip imaging capabilities.





LAGARI - HIGH RESOLUTION EARTH OBSERVATION MICROSATELLITE



#### **LOGISTICS SUPPORT SHIP PROJECT**





A contract was signed between the Presidency of Defence Industries (SSB) of the Presidency of the Republic of Türkiye and STM A.Ş. on 9 February, 2021 for the completion of the project for the construction and delivery of two Logistics Support Ships to the Turkish Naval Forces Command. Under the contract, STM is the main contractor in the project, responsible for programme management, procurement, assembly, ship outfitting, integration, testing and ILS. TCG YZB. GÜNGÖR DURMUŞ (A-574) – the first ship in the Project – was delivered to Turkish Naval Forces Command on 8 December, 2021. The second ship in the project, ÜTĞM. ARİF EKMEKÇİ (A-575), is scheduled for delivery in the first quarter of 2024. The ships, measuring 106.51 meters in length and a beam of 16.80 meters, will operate with a crew of 82, and are supplied with a helipad that can accommodate a 15-ton helicopter.



Logistics Support Ship is a double-hull vessel, designed for providing logistics support to the ships at sea in terms of dry and liquid cargo both during peace and war, equipped with conventional all dieasel-CPP propulsion system, conforming naval norms/standards and classification rules.

#### **LOGISTICS SUPPORT SHIP**



#### MILGEM ADA CLASS CORVETTE





Türkiye's first national corvette project Ada Class Corvette can perform the determination, location, classification, identification and destruction of air, surface and underwater targets and provide Naval Gunfire Support. In addition to avoiding any potential threats, Corvettes can perform maritime operations such as maritime surveillance and patrol, coastal and infrastructure protection, supervision and surveillance of Exclusive Economic Zone. TCG HEYBELİADA (F-511) has been put into service on September 27, 2011, TCG BÜYÜKADA (F-512) on September 27, 2013, TCG BURGAZADA (F-513) on November 4, 2018, and TCG KINALIADA (F-514) on September 29, 2019 and they started to work in TNFC.







#### **▲STM**



#### **MILGEM I CLASS FRIGATE**

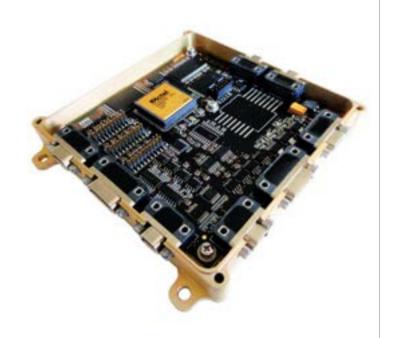
The MİLGEM I class frigate project, which is the continuation of the 2nd phase of the MİLGEM ADA CLASS corvettes, is Türkiye's first national frigate project. I Class Frigate has all sensors and weapons regarding mainly AAW and all principle warfare. It has the configuration in order to conduct detection, determination of position, classification, identification, destruction of the target and NGFS. Türkiye's first national frigate, TCG ISTANBUL, of which STM is the designer and main contractor, will enter the inventory of the TNFC in 2023. The 6th, 7th and 8th ships of the project will be built by STM-TAİS Joint Venture until 2026.





### MICROSATPRO - SPACE QUALIFIED PROCESSOR UNIT

Space Qualified Processor Unit (MICROSATPRO) is a high performance on-board computer (OBC) compatible with micro satellite platforms for advanced space missions. MICROSATPRO is a control unit that is resistant to harsh space conditions. It has a high fault tolerance, with a reliable and high processor power. LEO is targeted as the operational orbit and it is designed to stay in this orbit for at least five years. MICROSATPRO has an operating system running on FPGA (soft processor based). It is supported by interfaces frequently used in micro satellite platforms (RS485, RS422, CAN, Spacewire, SPI, I2C, etc.). Thanks to its modular design, integration into the target platform is possible.





The Nano Satellite Processor Unit (NANOSATPRO) is a high-performance on-board computer compatible with nano satellite platforms for advanced space missions. NANOSATPRO offers a solution that is resistant to harsh space conditions. It has a high fault tolerance, with reliable and high processor power. Low Earth Orbit (LEO) is targeted as the operational orbit and it is designed to stay in this orbit for at least two years.NANOSATPRO has a real time operating system running on FPGA (soft processor based). It is supported by the most frequently used interfaces (UART, RS485, CAN, SPI, I2C) in nano satellite platforms. Single Event Effects (SEE) protection is provided through the use of a Fault Tolerant (FT-LEON3) processor core, Triple Modular Redundancy (TMR) in FPGA, Error Detection and Correction (EDAC) in memory units, Watchdog on software, Latch-up Current Limiter (LCL) in power units.



NANOSATPRO - SPACE QUALIFIED PROCESSOR UNIT



### NATO AIR COMMAND CONTROL SERVICES (AIRC2IS)



The AirC2IS is NATO's strategic level Air Command and Control and Missile Defence Planning Information System. AirC2IS is a system that enables automation of all business processes for strategic analysis, planning, assignment, execution and monitoring activities of NATO's air operations and active ballistic missile defence plans, and offers integrated interoperable collaboration tools to users. The AirC2IS project is the largest defence informatics project Turkiye received from NATO.





As part of the NATO INT-CORE Operational & Maintenance Support Project, our company provides five years of maintenance and technical support for the Integration Core (INT) software, which is in the operational use of the NATO International Security Assistance Force (ISAF) at NATO's Afghanistan Mission Network Operations Centre.

NATO INT-CORE OPERATIONAL AND MAINTANENCE SUPPORT



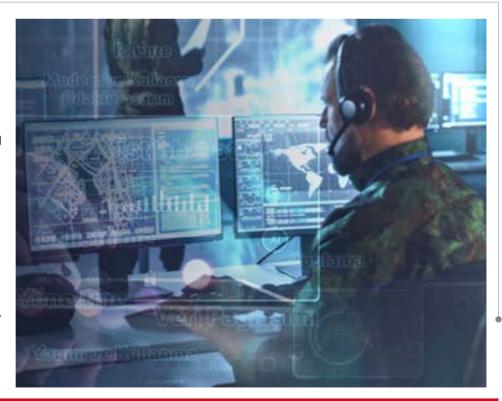
#### **NATO INTEGRATION CORE (INT-CORE)**





NATO Integration Core Solution is a flexible, adaptable and robust information systems integration core that provides interoperability between existing and future heterogeneous information systems. It significantly supports situational awareness throughout the battlefield within the mission network. INT-CORE, which provides the right information to the decision makers at the right time, supports command and control business processes to support the distribution of information related to command and control, joint picture, battlefield, mission, etc. It provides a dynamic integrated operability environment in a variable battlefield environment, allowing the configuration for new and different types of data in the system without changing the integration core infrastructure, which is a simple, flexible, adaptable and robust interlayer, and the need for a new coding, compilation, testing in the system.

The Intelligence Functional Services (INTEL-FS2) will provide an information management capability that will enable the NATO Commands to execute the Intelligence Support function effectively and efficiently, and to provide comprehensive and relevant intelligence in a timely and responsive manner in accordance with NATO policy, doctrine and guidance. The purpose of the Intelligence Functional System (INTEL-FS2) is to provide the NATO Intelligence community with an integrated, robust and flexible capability supporting a set of services available throughout the Bi-Strategic Command Automated Information System (Bi-SC AIS) for the direction, collection, processing, and dissemination of intelligence.



**WAR** 

**NATO INTEL-FS2 PROJECT** 

#### **NLPTOOLKIT**



NLP (Natural Language Processing) is a branch of artificial intelligence used by computers to understand and generate human language. The NLP Toolkit includes a series of software tools designed to facilitate the work of users in this field. The NLP Toolkit encompasses algorithms, data structures, and user interfaces developed to perform various NLP tasks. It also provides advanced functions for processing and analyzing text data to developers. It includes software tools such as text classification, abstractive summarization, text summarization, text similarity, language detection, event detection, PDF-to-Text conversion, Speech-to-Text conversion, sentiment analysis, keyword extraction, and named entity recognition. By providing a powerful solution for processing, analyzing, and comprehending text data, it enables easier and faster development of NLP projects.





OpsEye is a traffic tracking system for the apron area that supports flight operation control units and directly contributes to the decision support mechanism in tactical operation. The system provides instant information about airplanes such as door closing, push-back, airborne, approaching and live monitoring of ground traffic, and location identification. It operates in integration with the airline's internal operational systems.

#### **OPSEYE**





OpsMet Meteorological Analysis Dashboard is a web based meteorological analysis application with a specific database consisting of historical (about 20 years) METAR, TAF and SPECI reports for airports where the airlines perform flights or have a potential to perform flight.





The modernisation project of AGOSTA 90B class submarines belonging to Pakistan Naval Forces Command, which is Turkiye's first engineering export platform such as submarines, is carried out by STM as the main contractor. The agreement, which includes the modernisation of three definite submarines, one of which is determined, and two of which are optional for the half-life modernisation of the French-made AGOSTA 90 B class submarines was signed between Pakistan Ministry of Defence Production and STM in Rawalpindi/Pakistan on June 22, 2016. The scope of modernisation is the replacement of the Fire Control System, Sonar Suite, Electronic Warfare System, Radar and Periscope System (Navigation and Assault). Integration design, preparation of related documents, integration activities, tests and experiences along with Integrated Logistics Support services will be provided by STM as the main contractor. The project was expanded with the contract signed on February 27, 2018, covering the optional 2nd submarine.



PAKISTAN NAVY AGOSTA 90B CLASS SUBMARINE MODERNIZATION PROJEC





#### **PAKISTAN NAVY FLEET TANKER PROJECT**

The Pakistan Navy Fleet Tanker Project (PNFT) Agreement was signed on January 22, 2013 in Rawalpindi/Pakistan between the Pakistan Ministry of Defence Production and STM, which includes the design and construction of the Navy Fleet Tanker for the purpose of meeting the operational needs of Pakistan Navy. Designed in accordance with the rules of the classification society for replenishment/logistics support at sea as solid and liquid cargo, the ship has a weight of 15,600 tons, a length of 155 meters and a maximum speed of 20 knots. Pakistan Navy Fleet Tanker, one of the largest export projects of Turkiye on a platform basis, took the name PNS MOAWIN and delivered to the Pakistan Navy on October 16, 2018.

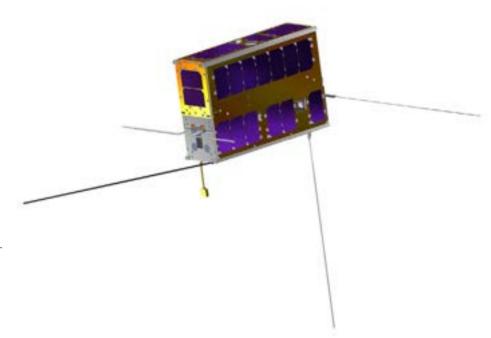




### PIRISAT - AUTOMATIC IDENTIFICATION SYSTEM APPLICATION ON NANO SATELLITE



PIRISAT Automatic Identification System Application on Nano Satellite is being developed as a satellite that will work in Low Earth Orbit to show that multiple satellite missions can be performed with a nano-satellite platform in 6U cube satellite standards. The main task of the PIRISAT satellite is the application of the Space-based Automatic Identification System (AIS), but it will also be a history acquisition model for the multi satellite missions we are developing.





Mid-life Modernisation Project of Preveze Class Submarines covers the modernisation of TCG Preveze (S-353), TCG Sakarya (S-354), TCG 18 Mart (S-355) and TCG Anafartalar (S-356) submarines in the inventory of the Naval Forces Command. Modernisation activities are carried out by STM-ASELSAN-HAVELSAN and ASFAT Partnership. In the modernisation process, it is planned to carry out the procurement activities of Inertial Navigation System, Salinity-Depth-Density Measurement System, Floating Antenna, Satellite Communication Mast, Assault and Navigation Periscope System, Emergency Underwater Communication System, Cooled Water System, Static Converter and Air Freshening System by us, as STM. In addition to procurement activities, platform integration activities of all products supplied by STM-ASELSAN-HAVELSAN and ASFAT Partnership are also carried out by STM.



TURKISH NAVY TYPE 209-1400 PREVEZE CLASS SUBMARINE

#### **ASTM**

#### **COAST GUARD SHIPS**









Coast Guard Ships can be tasked with search and rescue operations, Humanitarian Assistance and Disaster Relief (HADR) operations, maritime patrol and surveillance operations and protection of maritime jurisdiction areas. Coast Guard Ships can be configured with the capability of law enforcement special forces to conduct counter-drug, counterpiracy, and counter-terrorist operations. STM provides turnkey solutions for Coast Guard Ships to be configured in accordance with each country's maritime law enforcement agency requirements.

Synthetic Aperture Radar Satellite Payload Simulation Development Project (SARGUS) has been developed as a simulation tool for SAR satellites in low earth orbit missions. SARGUS software provides two main capabilities related to SAR payload simulation and satellite mission analysis. Furthermore, mission planning for SAR satellite missions, efective training of satellite operators, performance analysis for planned satellite missions and design support for SAR payloads are the primary usage areas of the SARGUS software. Mainly, the simulation software we have developed has the capabilities to do the modelling the SAR payload on a hardware basis, to calculate the instant location and speed information of the satellite platform where the payload is, to create the raw SAR data as a sample within the defined scenario (orbit, time, target region, etc.), and to obtain SAR images by processing raw data. In addition to the SAR payload, it has the capability to conduct electro-optical mission load analyzes.



**SARGUS** 







The fourth and final delivery of the "Section 50", the bow section of the submarine's torpedo tubes (main weapons), which was produced for the first time in Türkiye by Gürdesan Gemi Makinaları Sanayii Ticaret A.Ş. under the engineering and coordination of STM with domestic and national capabilities, has been successfully completed. One "Section 50", produced for Reis Class submarines, was delivered to Gölcük Shipyard Command by sea. The fourth and final Section 50 produced and delivered in Türkiye will be integrated into TCG SELMANREIS, the last submarine of the project. STM and Gürdesan delivered the first Section 50 to be integrated into TCG MURATREİS in September 2021, and the second and third deliveries to TCG AYDINREIS and TCG SEYDIALIREIS in July 2022.



The STM CFC is Türkiye's first cyber fusion center and started its activities in 2016. The STM Cyber Fusion Center (CFC), which includes proactive and preventive activities that protect critical technology and information assets, consists of 3 integrated main centers: Cyber Threat Intelligence Center, Cyber Operations Center and Malware Analysis Laboratory (Z-Lab).





**CYBER FUSION CENTRE** 



#### **SIMDES**



SIMDES is a simulation-based decision support software developed to design, run and analyze different scenarios for the evaluation of tactical and operational level combat effectiveness. SIMDES has a user flow and software modules that enable multiple runs of a main scenario defined by the user with different variations and analyze the data obtained with scientific methods.





STM Bugshield is the Continuous Penetration Testing and Bug Bounty platform, which investigates the vulnerabilities in the customer digital inventories with a "hackers" perspective and reports the found defects. It is a central platform where the vulnerabilities that can be detected in the web applications, mobile applications, operating systems and network infrastructures of public institutions and private companies are reported to the relevant institutions.

#### **STMBUGSHILED**





### **ELECTRONIC CHART DISPLAY AND INFORMATION SYSTEMS**





STMDENGIZ-ECDIS is an electronic chart display and information system that has been developed for surface and underwater platforms. When used with a backup, it eliminates the need for paper charts and provides safe navigation based on the information it receives from the electronic navigation devices on the bridge. STMDENGIZ-ECDIS operates in full compliance with the performance standards prescribed by IMO and SOLAS, thus ensuring operational safety and reliability. Its compact structure and shape allows easy installation aboard ships and submarines, as well as private yachts. Developed by STM engineers, STMDENGIZ-ECDIS and STMDENGIZ WECDIS are the first product to be produced with domestic and user-friendly software and to be accredited with a MED certificates in Türkiye. Both systems is used in STM's domestic and export naval projects.



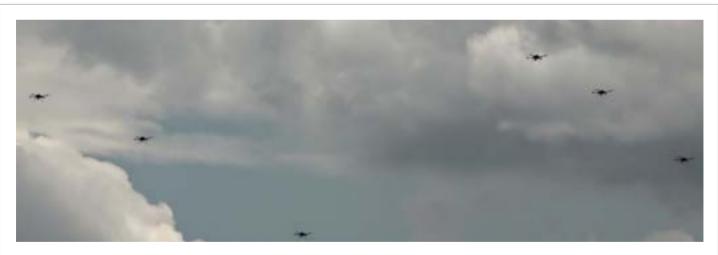


### UNDERWATER OPTICAL COMMUNICATION SYSTEM



University-Industry cooperation project, R&D studies continue according to the agreement signed between STM and Bahçeşehir University (BAU) in 2012. Within the scope of the project, it is aimed to provide a communication opportunity between the submarine-helicopter, submarine-diver and submarine-surface ships that cannot be optically listened, mixed and predicted to the defence industry. Currently, all systems in the field of underwater communication use RF technology. Communication systems with RF technology cannot be used, since they have the risk of being predicted by the hostile party when there is a transmission constraint. In this context, Underwater Optical Communication System is being developed as an alternative and hybrid model to communication systems with RF technology.





UAVs with swarm intelligence are systems that can act autonomously, learn, decide, and fulfill the mission given as a swarm within the scope of asymmetric warfare or anti-terrorism. These systems have advanced functions such as real-time object detection, identification and tracking with deep learning based computer vision techniques. In the Swarm Intelligence UAV Project that STM continue to develop, carry out R&D and productisation activities such as autonomous systems within STM company, rotary and fixed-wing platforms, studies on swarm intelligence, testing and adapting existing products and technologies, and developing new algorithms. BUMIN used successfully in Heydar Aliyev Exercise-2023.

SWARM INTELLIGENCE UAV PROJECT (BUMİN)





### TANKOM - TACTICAL FIELD COMMAND AND CONTROL INFORMATION SYSTEM



TANKOM software is a tactical level Command and Control Information System Software that provides continuous authorisation-based command and control functions, ranging from a single tank/vehicle/soldier to a Battalion Task Force up to the highest headquarters level, in accordance with Armored Unit Operations. It is in active use aboard the ALTAY Turkish Main Battle Tank and Anti-Tank Vehicles. It is also integrated into Leopard 1-T Tanks and Enhanced Armored Personnel Carrier (EAPC) Vehicles under the TKKBS R&D Project.



TerraFlite Terrain Aided
Navigation Solution, which is
a terrain- aided autonomous
navigation solution for airborne
platforms in GNSS-denied
environments, associates
terrain features with basic
avionic sensors' data and
provides GNSS-equal or more
accurate position information.
TerraFlite is a patented
product of our company.



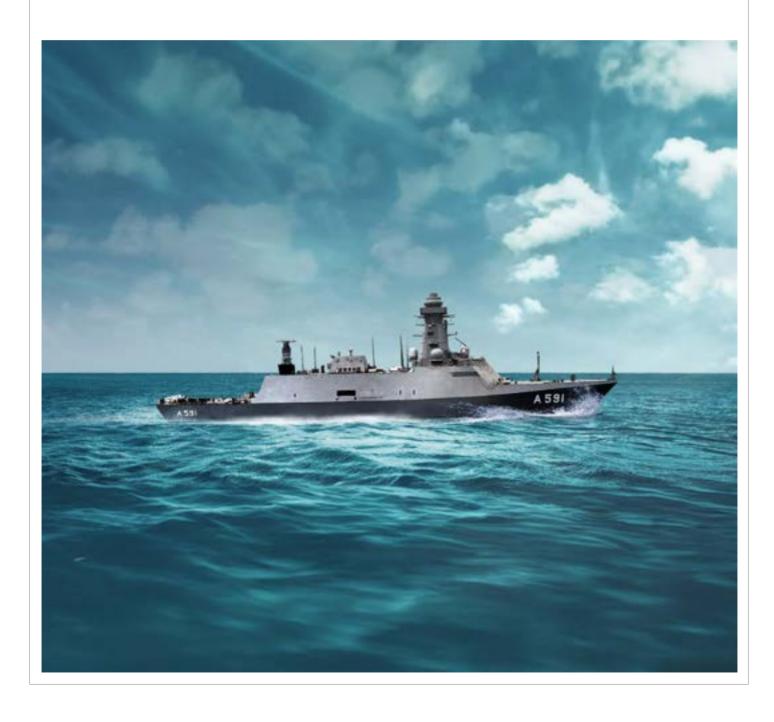


**TERRAFLITE** 



## TEST AND TRAINING SHIP PROJECT TCG UFUK (A-591)

With the contract signed between the Presidency of the Republic of Türkiye Presidency of Defence Industries and STM - the main contractor- the works on the Ship Project were started in March 2017. After the completion of the construction process in the Istanbul Naval Shipyard, TCG Ufuk was launched on February 9, 2019. The ship, designed using the hull form of MİLGEM Ada Class Corvette, can navigate for 60 days without interruption in harsh climatic and marine conditions, including international waters. The ship has 99.5 meters of overall length, 14.4 meters of maximum width, 2,250 tons of displacement and 3.6 meters of draft and the necessary platform for a 10-ton helicopter. TCG UFUK started to work on January 14, 2022.





ThinkTech, turning into a sustainable and adaptive structure in a short period with its genuine approaches, products, and services, continues to create distinct value to decision-makers who are surrounded by a very complex environment. ThinkTech is moving confidently into the vision of making a difference in the consultancy area in cooperation with public institutes, academia, private companies, and other think tanks.





TOGAN is a national autonomous multi-rotor reconnaissance UAS solution engineered for general-purpose reconnaissance and surveillance missions with indigenous mission planning software, autonomous intelligence, and operational capabilities. It can be controlled autonomously or via remote control, and be deployed and operated by a single personnel. TOGAN can be used effectively in tactical reconnaissance and surveillance missions, with its abilities to track fixed and moving targets, and to automatically switch mission supported by indigenous and real-time image processing and deep learning algorithms. The system is comprised of "Micro UAV Platform" and "Ground Control Station" components. TOGAN entered the TAF inventory in 2022.



TOGAN - MULTI-ROTOR UAS FOR TACTICAL SURVEILLANCE AND RECONNAISSANCE



#### **TUGPA - MISSION PLANNING SOFTWARE**







Mission Planning Software is a Web-Based tool that plans the mission of a satellite system having one or more satellites according to the constraints and resources, calculates the parameters required for the mission with high accuracy and get the maximum benefit from the satellite system.

Offering a broad range of services in the data center and information technologies fields, from requirements engineering and baseline analysis to designing and implementation activities, and from up-to-date IT applications to active-active data center solutions. Our experienced and internationally certified staff are ready to provide consultancy and training services in these fields.



**DATA CENTER AND INFORMATION TECHNOLOGIES** 





### TURKISH NAVY NEW TYPE SUBMARINE PROJECT (REIS CLASS)



A subcontracting agreement was signed on December 12, 2009 between tkMS Business Partnership and our company for the construction of six submarines of 214 class (Reis Class) with air-independent propulsion system, which will be constructed at the Naval Forces Command, Gölcük Shipyard Command In the ongoing project, STM is among the following tasks in this very important military project of Türkiye: Participation in design, engineering and system integration activities, Providing support to TNCF Gölcük Shipyard in line with the needs, Contributing to the localisation of materials, devices/systems to be used in shipbuilding, Increasing the domestic contribution in the project, Manufacturing non-resistant submarine boat blocks and some GRP units (Submarine Composite Superstructure) domestically.





Providing research and analysis services to public institutions and organizations and domestic and foreign companies to increase their domestic and national contributions in the projects they will carry out in Türkiye, in order to contribute to reducing Türkiye's dependency on foreign countries, increasing productivity in industrial production, and achieving a positive export-import balance. In this context, we carry out sector analysis of Türkiye, infrastructure identification and analysis studies, identification of new business areas, economic impact analysis, localisation and indigenisation analysis, and clustering and industry coordination activities.



**LOCALIZATION AND SECTOR ANALYSIS** 



Company Short Name

TAAC

Company Trade Name

TAAC Havacılık Teknolojileri A.Ş.

Marketing email Address

kurumsal@taac.com.tr

Telephone

(+90) 0216 375 82 22

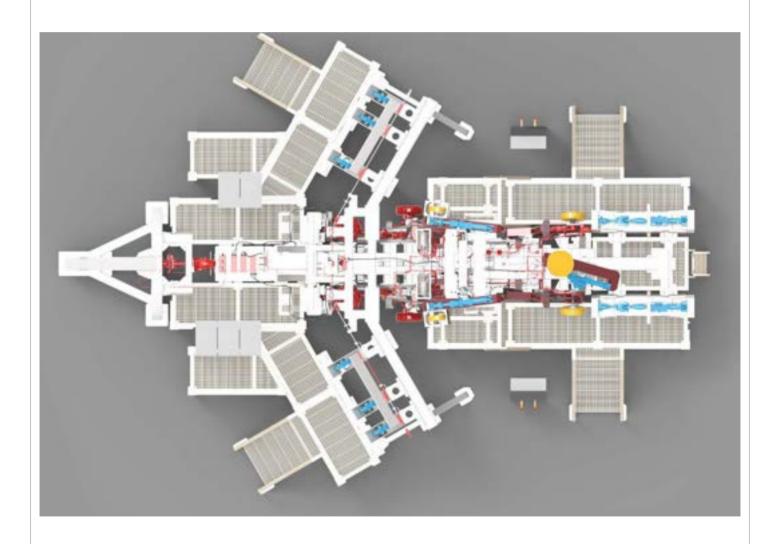
Company Website

www.taac.com.tr





The Iron Bird Test System, is the most sophisticated test system developed in Türkiye to date. It serves as a test platform where all critical systems and components of the aircraft, especially the flight control system, are tested. The Iron Bird Test System measures the adequacy of the flight control system in real-time and simulates aerodynamic loads and fault scenarios that the aircraft may encounter under various maneuver conditions. These tests are conducted in a laboratory environment to ensure the safety and reliability of the aircraft. TAAC Aerospace Technologies is developing the Iron Bird Test Systems for MMU KAAN and HÜRJET, which are visionary projects of Türkiye. The active use of this system in the HÜRJET project enables test flights to be conducted in a safer manner.





#### **LANDING GEAR ON-OFF ACTUATORS**



The Helicopter Landing Gear Actuators. developed and produced for the first time in Türkiye for GÖKBEY Helicopter, is safely used in landing-takeoff applications. The systems can be manufactured in desired open-closed lengths according to customer needs, and they have a functional locking mechanism to prevent potential user errors. With a specially developed design to withstand pressure changes during emergency situations, safe landings are ensured even in emergency landing scenarios. Designed for challenging environmental conditions, the Landing Gear Actuator can function fully between -45°C and +70°C.







The Landing Gear System, developed and produced for the first time in Türkiye for MMU KAAN, is a retractable type landing gear system with a nose landing gear in a tricycle configuration. It includes a nose landing gear steering system and a brake system. The main components of the Landing Gear System are struts and shock absorbers, tire wheels and brakes, actuators, upper locks, hydraulic manifolds, landing gear control panel, control units, position indicators, and warning systems. The purpose of developing the Landing Gear System is to provide a system that supports the weight of the aircraft, dampens the forces during landing impact, slows down, stops, and steers the aircraft on the ground, and allows the opening and closing of the landing gear during flight.

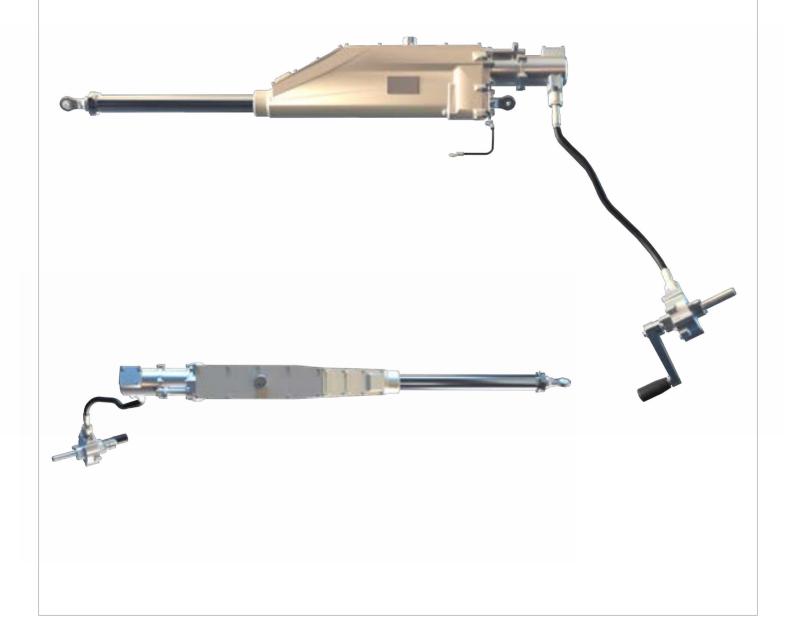


**LANDING GEAR SYSTEMS** 





The Utility System Actuators are electromechanical actuators that assist in positioning the hardware/equipment of auxiliary systems in an aircraft based on inputs from the pilot or the flight control system. They can also be manually operated without electrical power, depending on the requirement.

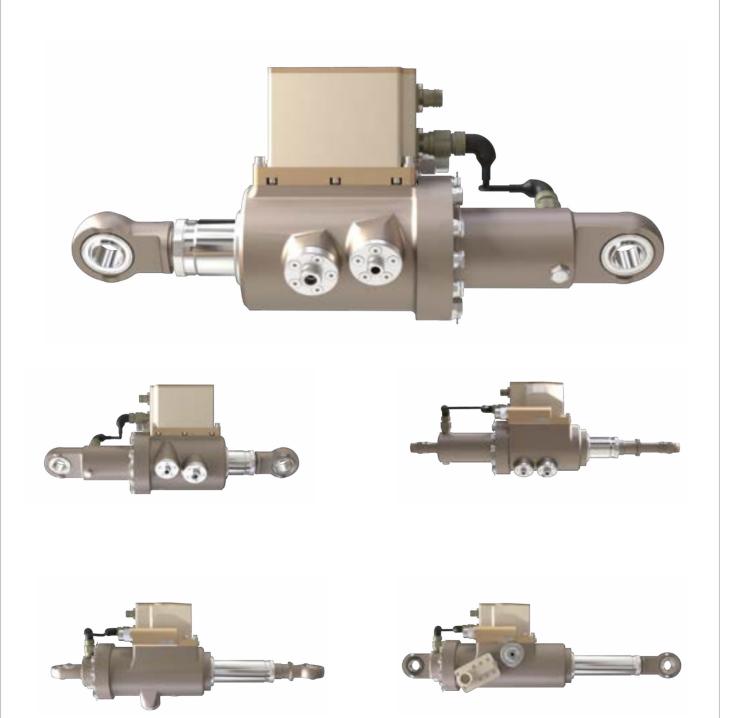


### FLIGHT CONTROL ACTUATORS





The Flight Control Actuators Subsystem is designed to control the aircraft's flight by moving the flight control surfaces and optimizing the wing profile for landing/takeoff performance. These actuators are designed to quickly respond to signals from the aircraft, moving the aerodynamic surfaces necessary to provide the aircraft with the required high maneuverability.



# TAIS SHIPYARDS

Company Short Name

TAIS SHIPYARDS

Company Trade Name

TAIS SAVUNMA SANAYİ VE İŞ GELİŞTİRME A.Ş.











The CG-68 is a Coast Guard Ship designed for search and rescue operations, ISR, and patrol duties in the Exclusive Economic Zone (EEZ), as well as ensuring maritime security. It is equipped with weapons and systems to conduct operations against asymmetric threats and can also be used as a training ship when needed. The ship features a helipad for helicopter operations.

The 100-meter-long Corvette is designed to serve various purposes simultaneously. Equipped with its weapons and systems, its primary missions include ASuW, ASW, AAW, ISR, maritime security, border patrol, and helicopter operations. The vessel features two hangars for helicopter and unmanned aerial vehicle (UAV) operations. This versatile platform is capable of fulfilling various roles in naval operations.



**CORVETTE-100** 







The CPV-56 is a Coastal Patrol Vessel designed for conducting effective and continuous intelligence, surveillance, and patrol missions, controlling maritime jurisdictional areas. establishing maritime security, preventing smuggling and piracy, safeguarding fishing and marine resources, preventing illegal fishing, and, when needed, providing humanitarian assistance and engaging in search and rescue operations during natural disasters. It is also designed to support Special Forces operations and engage in operations against asymmetric threats





The CTS-90 is a Cadet Training Ship specially designed and constructed to provide maritime training to cadets. Originally designed as an Offshore Patrol Vessel, the ship has been modified to include living and educational facilities for 76 students and 8 instructors in addition to the crew. It features two bridges, one of which is used by students. Besides student training, the ship can also be utilized for logistic support and patrol missions when needed. It also features a helipad for helicopter operations.

ستخسب

**CTS-90** 





The ERDSB-52 is a
Emergency Rescue
and Diver Support Boat
designed for providing
diving training for
trainees, diving operations,
emergency response
and also equipped with a
decompression chamber for
threating decompression
sickness. It features an
underwater telephone
system and is intended
to support submarine
rescue operations.





The ERDTB-35 is a Emergency Rescue and Diver Training Boat designed for providing diving training to trainees, conducting emergency interventions, and performing diving operations. It includes a decompression chamber for treating decompression sickness and is equipped with an underwater telephone system to support submarine rescue operations.

**ERDTB-35** 









The ERV-90 is a Emergency Response and Rescue Vessel designed and built for various purposes, including ship recovery, salvage and towage with a 200 tons bollard pull capacity, firefighting, oil pollution prevention, and serving as a diving platform vessel. It also features a helipad for helicopter operations.

The FAB-56 is a Fast Attack Boat primarily designed for ASuW and AAW. With a maximum speed of up to 53 knots, it is intended for ISR operations, and patrol duties in coastal waters, and to perform humanitarian assistance and search and rescue missions when required.





**FAB-56** 





The FAC-33 is a Fast Attack Craft designed for conducting effective and continuous ISR and patrol missions, controlling maritime jurisdictional areas, establishing maritime security, and preventing smuggling and piracy. With its weapons and systems, extensive radar coverage, and a maximum speed of over 32 knots, it is capable of efficiently performing patrol duties, search and rescue operations, providing support for Special Forces operations, and conducting operations against asymmetric threats.





The FAC-40 is a Fast Attack Craft primarily designed for ASuW, as well as ISR and patrol missions, including the protection of oil platforms. With its weapons and systems, along with a maximum speed of over 35 knots, it is capable of conducting patrol duties, operations against asymmetric threats, preventing smuggling and piracy, safeguarding fishing and marine resources, and preventing illegal fishing.

**FAC-40** 









The FAC-45 is a Fast Attack Craft designed primarily for ASuW, as well as ISR, and patrol duties. Its weapons and systems, along with its extensive radar coverage and a maximum speed of over 40 knots, enable it to efficiently conduct patrol tasks, support Special Forces operations, engage in operations against asymmetric threats and perform search and rescue operations even in nighttime and limited visibility conditions.

The FACM-70 is a Fast Attack Craft designed primarily for conducting ASuW, AAW, ISR, and patrol missions. Its weapons and systems, along with its extensive radar coverage and a maximum speed of over 40 knots, allow it to conduct patrol duties and, when necessary, perform search and rescue operations during nighttime and limited visibility conditions.

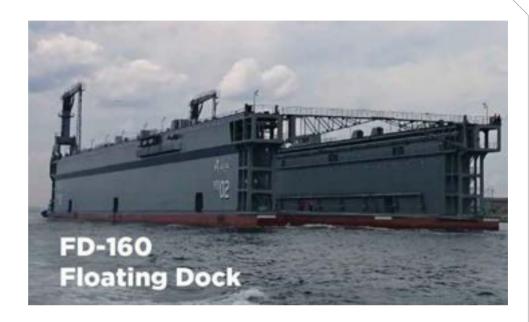




FACM-70



The FD-160 is a Floating Dock designed and built for the purpose of docking various types of surface or submarine vessels of up to 11,500 tons. It serves as a facility for ships to undergo maintenance, repairs, or inspections. These floating docks have been delivered to Canada, Saudi Arabia, and the United States in various quantities.





The FD-170 is a Floating Dock designed for the purpose of docking various types of surface or submarine vessels of up to 10,000 tons. It provides a facility for ships to undergo maintenance, repairs, or inspections.

**FD-170** 









The FPB-57 is a Fast Patrol Boat primarily designed for ASuW. It is intended for ISR operations, and patrol duties in littoral areas.

The FPB-68 is a Fast Patrol Boat designed for ASuW, AAW, ISR missions, as well as patrol duties in the Exclusive Economic Zone and open sea areas. Its weapons and systems, along with its extensive radar coverage and a maximum speed of up to 50 knots, allow it to swiftly carry out patrol tasks and, when necessary, perform search and rescue operations during nighttime and limited visibility conditions.



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**FPB-68** 





The 105-meter-long Frigate is designed to serve various purposes simultaneously. Equipped with its weapons and systems, its primary missions include ASuW, ASW, AAW, ISR, maritime security, border patrol, and helicopter operations. The vessel features two hangars for helicopter and unmanned aerial vehicle (UAV) operations. This versatile platform is capable of fulfilling various roles in naval operations.





The 115-meter-long Frigate is designed to serve various purposes simultaneously. Equipped with its weapons and systems, its primary missions include ASuW, ASW, AAW, ISR, maritime security, border patrol, and helicopter operations. The vessel features two hangars for helicopter and unmanned aerial vehicle (UAV) operations. This versatile platform is capable of fulfilling various roles in naval operations.

**FRIGATE-115** 









The 140-meter-long Frigate is designed to serve various purposes simultaneously. Equipped with its weapons and systems, its primary missions include ASuW, ASW, AAW, ISR, maritime security, border patrol, and helicopter operations. The vessel features two hangars for helicopter and unmanned aerial vehicle (UAV) operations. This versatile platform is capable of fulfilling various roles in naval operations.

The FRT-200 is a Fleet Replenishment Tanker designed and built to perform various functions. Its main tasks include simultaneously providing multiple ships with supplies such as fuel, water, medical materials, ammunition, and more during operations in times of war. It also serves as a command and control center during wartime. In addition, it supports the maintenance and repair of both manned and unmanned surface and underwater vehicles, as well as helicopters. In peacetime, it aids in humanitarian relief, counter-piracy operations, disaster relief and search and rescue. 1 FRT-200 (TCG Derya) has been delivered to the Turkish Navy.



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**FRT-200** 





The GMFPB-60 is a Guided Missile Fast Patrol Boat designed primarily for ASuW and AAW. With a maximum speed of 54 knots, it is intended for ISR operations, and patrol duties in coastal waters.





The GMFPB-67 is a Guided Missile Fast Patrol Boat designed primarily for conducting ASuW, ISR, and patrol duties, up to Sea State 5 conditions. Equipped with a wide range of weapons and systems, extensive radar coverage, and a high speed of up to 55 knots, it can efficiently perform patrol tasks and, when required, carry out search and rescue operations even in nighttime and limited visibility conditions.

**GMFPB-67** 









The KAAN-77 is an Offshore Patrol Vessel designed for operations in the Exclusive Economic Zone and open sea areas. It is intended to serve various purposes, including safeguarding sovereignty rights in compliance with national and international legal regulations, conducting effective and continuous intelligence, surveillance, and patrol missions, ship apprehension and seizure operations, controlling maritime jurisdictional areas, establishing maritime security, preventing smuggling and piracy. safeguarding fishing and marine resources, preventing illegal fishing, providing humanitarian assistance and search and rescue operations during natural disasters. It is equipped with a helipad for helicopter operations.

The LCM-26 is a Landing Craft Mechanized designed and built for transporting vehicles or troops ashore from the ship through the bow ramp by landing during amphibious operations. Additionally, with its maximum speed of 40 knots, they are used for personnel and vehicle transfers between military bases, ports, and various locations, including offshore platforms. 4 LCM-26s have been delivered to use with TCG ANADOLU (LHD).





**LCM-26** 





The LCM-30 is a Landing Craft Mechanized designed for transporting vehicles or troops ashore from the ship through the bow ramp by landing during amphibious operations. Additionally, in peacetime, they are used for personnel and vehicle transfers between military bases, ports, and various locations, including offshore platforms.





The LCM-40 is a Landing Craft Mechanized designed and built for transporting vehicles or troops ashore from the ship through the bow ramp by landing during amphibious operations. Additionally, in peacetime, they are used for personnel and vehicle transfers between military bases, ports, and various locations, including offshore platforms. 2 LCM-40s (QL41 ISHAT and QL40 BROOG) has been delievered to Qatar Navy.

**LCM-40** 









The LCT-53 is an Landing Craft Tank designed for transporting vehicles or troops ashore through the bow ramp by landing during amphibious operations. Additionally, in peacetime, it provides support for humanitarian aid and evacuation/rescue operations.

The LCT-70 is a Landing Craft Tank designed for transporting vehicles or troops ashore through the bow ramp by landing during amphibious operations. Additionally, in peacetime, it provides support for humanitarian aid and evacuation/rescue operations.





**LCT-70** 





The LCT-80 is a Landing Craft Tank designed and built for transporting vehicles or troops ashore through the bow ramp by landing during amphibious operations. Additionally, in peacetime, it provides support for humanitarian aid and evacuation/rescue operations. The Turkish Navy has received 8 LCT-80s (TCG Ç-151 to TCG Ç-158), and the Qatar Navy has received 1 LCT-80 (QL80 FUWAIRIT).





The LCVP-16 is a Landing Craft Vehicle Personnel designed and built for the purpose of landing vehicles or personnel ashore from the ship through the bow ramp during amphibious operations. Additionally, with its maximum speed of 40 knots, they are used for personnel and vehicle transfers between military bases, ports, and various locations, including offshore platforms. 10 LCVP-16s have been delivered to the Turkish Navy to use with TCG ANADOLU (LHD), TCG BAYRAKTAR, and TCG SANCAKTAR (LSTs). One LCVP-16 has been delivered to Qatar Navy.

LCVP-16





The LHD-230 is a 230.8-meter-long Landing Helicopter Dock designed and built to perform multiple tasks simultaneously. Its primary missions include conducting amphibious operations, force projection, presence in distant geographic regions, and providing logistical support to. The ship has a flight deck for up to 11 aircraft and hangar spaces for carrying 6 attack helicopters. In addition to its crew of 348 personnel, the vessel can transport approximately 13 heavy tanks, 4 landing craft, and around 1000 amphibious personnel. The LHD-230 is a versatile and powerful asset in naval operations. 1 LHD (TCG Anadolu) has been delivered to Turkish Navy.





The LPC-65 is a Large Patrol Craft designed with various design concepts to serve multiple purposes, including ASuW, ASW and AAW, along with activities in the Exclusive Economic Zone and open sea areas. It is intended to safeguard sovereignty rights in accordance with national and international legal regulations, conduct effective and continuous intelligence, surveillance, and patrol missions, control maritime jurisdictional areas, establish maritime security, prevent smuggling and piracy, safeguard fishing and marine resources, prevent illegal fishing, provide humanitarian assistance and engage in search and rescue operations during natural disasters.

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LPC-65

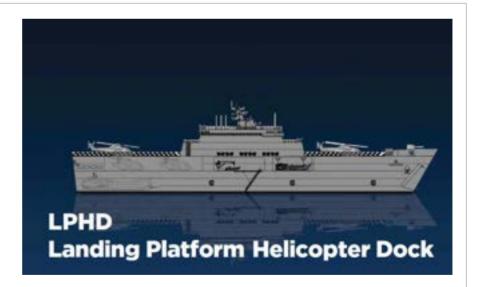






The LPD-150 is a 153-meter-long Landing Platform Dock designed to carry out multiple missions simultaneously. Its primary tasks include transporting tanks, vehicles, or troops ashore during amphibious operations, either through LCM/LCAC located in the well deck or by landing, providing medical support during naval operations, and offering support for humanitarian aid and evacuation/rescue operations during natural disasters. The ship has heavy helicopter transport capacity in hangars located on the flight deck and in interior spaces. In addition to its 183 regular crew members, the ship can carry 22 helicopter personnel and 388 amphibious personnel.

The LPHD-160 is a 161-meter-long Landing Platform Helicopter Dock designed to perform multiple missions simultaneously. Its primary tasks include transporting tanks, vehicles, or troops ashore during amphibious operations, either through LCM/LCAC located in the well deck or by landing, providing medical support during naval operations, and offering support for humanitarian aid and evacuation/rescue operations during natural disasters. The ship has capacity to carry heavy helicopters in hangars located on the flight deck and in interior spaces. In addition to its 184 crew, the ship can acommodate 22 helicopter personnel and 354 amphibious personnel.



**LPHD-160** 



#### **LSM-90**





The LSM-90 is a Landing Ship Medium designed for transporting vehicles or troops ashore through the bow ramp by landing during amphibious operations. Additionally, in peacetime, it provides support for humanitarian assistance and evacuation/rescue operations.

#### **LST-100**



The LST-100 is a Landing Ship Tank designed to serve as a command and control center for joint task force operations. Its primary mission is to transport tanks, vehicles, or troops ashore during amphibious operations, primarily through the main ramp by landing. Additionally, it provides medical support during naval operations and offers support for humanitarian aid and evacuation/rescue operations during natural disasters. The ship features a helipad for helicopter operations.



### TAIS SHIPYARDS

The LST-120 is a Landing Ship Tank designed to serve as a command and control center for joint task force operations. Its primary mission is to transport tanks, vehicles, or troops ashore during amphibious operations, either through the main ramp by landing or using the onboard LCVPs. Additionally, it provides medical support during naval and evacuation/rescue operations during natural disasters. The ship has helicopter transport capacity in hangars located on the flight deck and in interior spaces. In addition to its 164 regular crew members, the ship can carry 8 helicopter personnel and 306 amphibious personnel.



**LST-120** 





The LST-140 is a Landing Ship Tank designed and built to transport tanks, vehicles, or troops ashore during amphibious operations, either through main ramp by landing or using the onboard LCVPs and serve as a command center for joint task force operations. Additionally, it provides medical support for naval and evacuation/rescue operations during natural disasters. The ship has helicopter carrying capability in hangars located on the flight deck and interior spaces. In addition to its 129 regular crew members, it can carry 370 amphibious personnel and 13 heavy tanks. 2 LST-140 (TCG-Bayraktar-TCG Sancaktar) have been delivered to the Turkish Navy.

LST-140







The MPSRS-95 is a Multi Purpose Support and Rescue Ship, equipped with a rescue system, and designed primarily for submarine rescue operations with transfer under pressure capabilities, as well as other surface and underwater rescue missions. It is equipped with a multi-beam sonar and side-scan sonar for searching and locating objects at sea, and it has the capability to recover them with diving operations. Additionally, it features a decompressure chamber for threating decompression sickness. The ship is DPS (Class-2) and offers a 400-square-meter aft deck suitable for ROVs and ADS. It also has a helipad for helicopter operations.





The MPT-70 is a Multi Purpose Tug designed for a variety of missions, primarily to support submarine rescue operations and other surface and underwater rescue missions. It is equipped with multi-beam sonar and side-scan sonar for searching and locating objects lost at sea, as well as the capability to recover them through diving operations. The ship also includes a decompression chamber for threating decompressure sickness and is designed for firefighting. With a Dynamic Positioning System (Class-1), it is suitable for ROV and ADS operations.

**MPT-70** 









The NOTC-28 is a Naval Offshore Troop Carrier designed for transferring personnel between the shore and ships, or shore-to-shore.

OPV-75 is an Offshore Patrol Vessel designed with various design concepts. It is intended to serve different purposes, including ASuW, Air Warfare AAW, safeguarding sovereignty rights within the Exclusive Economic Zone (EEZ) and open sea areas in accordance with national and international legal principles, ensuring effective and continuous ISR, and patrol missions, controlling maritime jurisdictional areas, establishing maritime security, preventing smuggling and piracy, safeguarding fishing and marine resources, preventing illegal fishing, providing humanitarian aid and search and rescue operations during natural disasters. It features a helipad for helicopter operations.





**OPV-75** 

#### **OPV-85**



#### **OPV-90**



The "OPV-85" is designed with different design concepts. It is an Offshore Patrol Vessel that is intended to serve various purposes, including ASuW, AAW, safeguarding sovereignty rights within the Exclusive Economic Zone (EEZ) and open sea areas in accordance with national and international legal principles, ensuring effective and continuous ISR, observation, and patrol missions, controlling maritime jurisdictional areas, establishing maritime security, preventing smuggling and piracy, safeguarding fishing and marine resources, preventing illegal fishing, providing humanitarian assistance and search and rescue operations during natural disasters. It features a helipad for helicopter operations.

The "OPV-90" is designed with different design concepts. It is an Offshore Patrol Vessel that is intended to serve various purposes, ASW, AAW, safeguarding sovereignty rights within the Exclusive Economic Zone (EEZ) and open sea areas in accordance with national and international legal principles, ensuring effective and continuous ISR, and patrol missions, controlling maritime jurisdictional areas, establishing maritime security, preventing smuggling and piracy, safeguarding fishing and marine resources, preventing illegal fishing, providing humanitarian aid and search and rescue operations during natural disasters. It features a helipad for helicopter operations.









The "OPV-95" is designed with different design concepts. It is an Offshore Patrol Vessel that is intended to serve various purposes, including ASuW, AAW, ISR, safeguarding sovereignty rights within the Exclusive Economic Zone (EEZ) and open sea areas in accordance with national and international legal principles, ensuring effective and continuous ISR and patrol missions, controlling maritime jurisdictional areas, establishing maritime security, preventing smuggling and piracy, safeguarding fishing and marine resources, preventing illegal fishing, providing humanitarian aid and search and rescue operations during natural disasters. It features two hangars for heavy helicopters and unmanned aerial vehicles for operations.



The RPV-42 is a Riverine Patrol Vessel designed for conducting effective and continuous ISR opertions, controlling maritime jurisdictional areas, establishing maritime security, preventing smuggling and piracy, safeguarding fishing and marine resources, preventing illegal fishing, and, when necessary, engaging in search and rescue operations. It is also designed for conducting operations against asymmetric threats.

**OPV-95** 



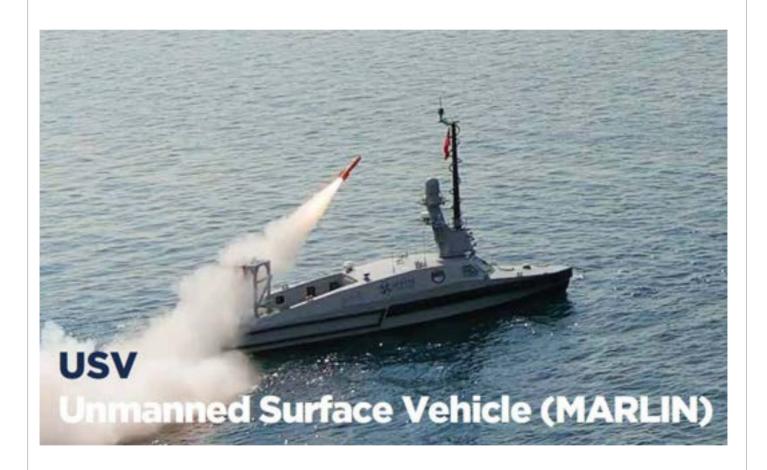
**RPV-42** 







The USV is an Unmanned Surface Vessel designed and built with the capability to perform various missions based on the weapon or system it is equipped with, which could include ASuW, ASW, or Electronic Countermeasures. It is also designed to support amphibious operations, conduct patrol duties, and engage in operations against asymmetric threats. With a speed of up to 45 knots, it can operate in up to Sea State 5. One USV, named Marlin has been delivered to the Turkish Navy.



# **TDU SAVUNMA**

Company Short Name

TDU SAVUNMA

**Company Trade Name** 

TDU SAVUNMA SİSTEMLERİ TEKNİK TEKS.SAN ve TİC. A.Ş.

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Company Website

www.tdusavunma.com.tr







#### **SURVEILLANCE BALLOON**





Surveillance Balloon is a mobile aerostat system inflated by helium. It allows day and night observation/surveillance operations at 300-500 m altitude. It can perform a wide range of missions such as homeland security, border security, traffic control and environmental surveillance, and also wildfire early warning.



Metal Frame Tents are portable tents with aluminum or iron frames used for disaster response and survival missions. They are easy to set up. These tents, produced in different sizes, provide comfortable living spaces in all weather conditions with rooms made of insulated material.

**METAL FRAME TENT** 

#### **MOBILE CAMOUFLAGE SYSTEM**





Mobile Camouflage System; does not allow any known reconnaissance and surveillance sensors to detect military systems such as tanks, armored vehicles and weapons systems. It has modularity, easy assembling and disassembling, solar effect resistance, vehicle-specific design and production advantages. It can be produced in various colors and patterns suitable for the landscape. The Mobile Camouflage System of TDU Savunma Sistemleri A.Ş., with the coatings that can be easily integrated onto it, can comply with environmental characteristics and seasonal color changes.







#### **MULTISPEKTRAL CAMOUFLAGE NET**

Multispectral Camouflage Net; does not allow any known reconnaissance and surveillance sensors to detect military systems and facilities, such as tanks, armored vehicles, weapon systems, and mobile command centers. The two-dimensional (2D) camouflage nets of the TDU Savunma Sistemleri A.Ş have advantages such as a static structure, lightweight, easy and quick installation, accessible storage, and production in various colors and patterns, which can be configurated suitable to the operation area. It can be used on all vehicles and systems with its interconnectable network design.



## STEALTH CLOAK - SHAPABLE PERSONAL PROTECTIVE COVER





Stealth Cloak - Shapable Personal Protective Cover; is a product that a soldier can conceal under the product by covering himself or shaping the cover like a rock. It provides visual camouflage, near-infrared protection and thermal protection. It is produced in any required size, reversible in various colors and patterns. Its weight is 650 g/m2. It has low water absorption and anti-bacterial features. Package roll dimensions of the Shapable Personal Protective Cover are 30cm x 50cm.



Inflatable Decoys are inflatable dummy targets (decoys) resembling land, aerial and naval vehicles/platforms, command posts and military facilities, designed and produced in actual dimensions. They can be used for training and tactical military deception. The Inflatable Decoys of TDU Savunma Sistemleri A.Ş. can produce realistic thermal and radar signatures to deceive all known reconnaissance and surveillance sensors. They can be operated with the unmanned ground platform and do not require reinflating for at least four days. They have easy installation and deflation/ folding features. They can be produced in the required colors and patterns.





The tents have the features of quick installation, Waterproof, Flame retardant, UV resistance and snow and wind load resistance and they are used as Staff Tent, Command Post Tent, Warehouse Tent, Maintenance and Repair Tent, and Mobile Hospital.

**INFLATABLE AIRBEAM TENTS** 



Inflatable Mobile Hangar is used for the execution of storage and maintenance/ repair activities for air and land vehicles/platforms, critical materials and ammunition. It can also serve as a mobile shelter, crisis management center, and construction or social event tent. The high-strength Inflatable Mobile Hangar does not require a forklift or crane for installation thanks to its modular structure that can be carried by personnel. It is waterproofing, flame retardant, and UV resistant. The Inflatable Mobile Hangar has high snow and wind load strength. Its skeletal structure provides high thermal insulation. It is produced by military standards.





Inflatable Wall Tents are military-purpose personnel tents with high snow load and wind resistance. They can be installed and disassembled quickly.



**INFLATABLE WALL TENTS** 



Company Short Name

TEI

Company Trade Name

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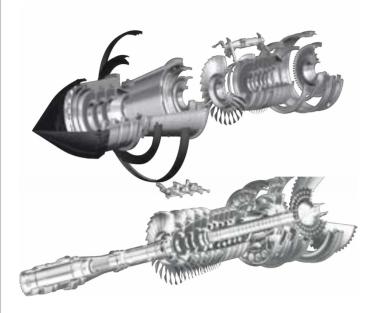




### ENGINE PARTS AND MODULE PRODUCTION







With all the technical capabilities and nearly 40 years of experience, TEI produces more than 2,000 parts and modules for more than 50 international military and civil aviation engines. TEI is the world's largest supplier for LEAP and GEnx engines, which are considered as the next generation engine programs. TEI is one of the few aviation companies with the required technological capabilities and know-how for "blisk" parts, which is one of the high-tech components produced for these engines. In addition to its advanced manufacturing technologies, Nadcap approved special processes and non-destructive testing methods are among TEI's areas of expertise. TEI applies lean production methods and 6 Sigma approach in all manufacturing processes.

T700-TEI-701 D is Türkiye's first domestically produced helicopter engine. Within the scope of the Turkish Utility Helicopter Program, the 2000 SHP powered T700 engine is produced by TEI under license from GE with the T700-TEI-701D nameplate. By the end of 2022, a total of 84 engines have been delivered to TUSAS, and T70 Turkish Utility Helicopters powered by T700-TEI-701D engines have started to enter the inventory.



T700-TEI-701D









#### **TEI-PD170**





TEI-PD170 is a piston turbodiesel aviation engine developed within the scope of the Operative UAV Engine Development Project initiated by the Defence Industry Agency to develop Türkiye's first indigenous aviation engine. TEI-PD170 engine made its maiden flights on ANKA on December 27, 2018 and AKSUNGUR on October 4, 2021. TEI-PD170 broke the altitude record with AKSUNGUR by exceeding 30 thousand feet altitude. In addition to the serial production and deliveries for TUSAS platforms, three engines were delivered to Baykar for integration and ground tests on platforms produced by Baykar. TEI-PD170 is the only turbodiesel aviation engine in its class that can reach a critical altitude of 20,000 feet without losing any power, and produces 34% more power than its nearest foreign competitor, the imported engine. The TEI-PD170 engine has a localization rate above 95% in terms of production and hardware.

With the experience and know-how gained with the TEI-PD170 engine, TEI-PD222 is a turbodiesel aviation engine that provides 225 horsepower take-off power with a specially designed single turbo system.







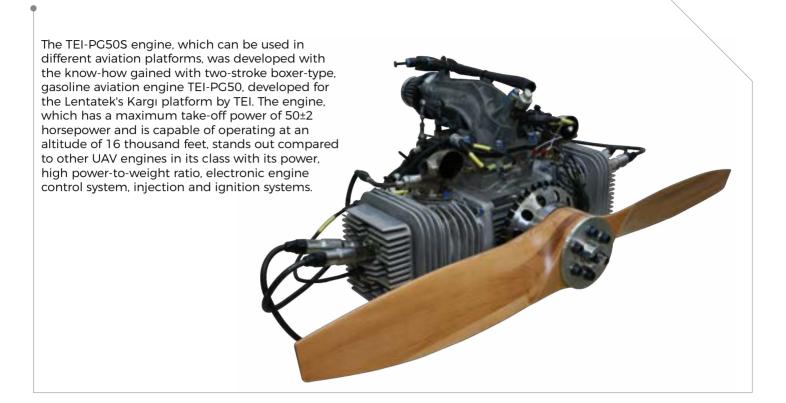
TEI-PD222



#### **TEI-PG50S**







TEI-TF10000 is a military turbofan engine that can produce 10 thousand pounds of thrust with the afterburner module added to the TEI-TF6000 engine. Sharing the same core with TEI-TF6000, the engine is an important technology acquisition and demonstration project for Türkiye on the way to the engine of the Turkish Fighter KAAN. The TEI-TF10000 engine can be used in unmanned combat systems such as Kızılelma, while different models that can be derived from its core can be used in national helicopters such as ATAK-2, jet, training and light attack aircraft, regional aircraft, maritime applications and industrial areas.



**TEI-TF10000** 









### **TEI-TF6000**



TEI-TF6000 is Türkiye's first indigenous turbofan engine with 6000 pounds of dry thrust. The first design cycle of the project was completed in May 2022, and parts manufacturing for the first prototype engine production continues. The first ignition of the engine is planned to occur in 2023.



TEI-TJ30 is a micro turbojet engine that produces 125 Newton thrust with a diameter of 108 mm and a weight of 1.45 kilograms and can be used for different purposes such as missiles, target aircraft, RC aircraft and sports aviation. The engine can run on Jet A1, diesel, kerosene, JP8 or JP10 fuels.







TEI-TJ30











Türkiye's first medium-range anti-ship missile engine capable of providing enough thrust to meet the needs of missiles weighing over 300 kilograms, with a limited diameter of 224 mm. The engine capable of operating at 5,000 feet altitude at high speed up to 90% of the speed of sound, holds the world record in its class with 1,342 Newton thrust.

TEI-TJ60 is a micro turbojet engine that produces 250 Newton thrust with a diameter of 120 mm and a weight of 1.98 kilograms which can be used for different purposes such as missiles, target aircraft, RC aircraft and sports aviation. The engine can operate on Jet A1, diesel, kerosene, JP8 or JP10 fuels. The engine offers a web-based userfriendly engine control interface with tablet option.



TEI-TJ60









### TEI-TJ90U



TEI-TJ90U is a micro turbojet engine with a diameter of 150 mm and a weight of 3.6 kilograms, producing 400 Newton thrust. The engine can operate on Jet A1 can run on diesel, kerosene, JP8 or JP10 fuel.





TEI-TS1400 was developed within the scope of the "Turboshaft Engine Development Project" initiated by the Defence Industry Agency to develop a 1400 horsepower turboshaft engine that will power the General Purpose Helicopter GÖKBEY. The first prototype engine was delivered to TUSAS on December 5, 2020. The TEI-TS1400 engine has a maximum continuous power of 1411 horsepower and 1470 horsepower take-off power. In 2022, 1572 horsepower was reached during ground tests. The TEI-TS1400 engine made its maiden flight on GÖKBEY in April 2023.





**TEI-TS1400** 

# **TEKNO**



**TEKNO** 



TEKNO KAUÇUK SANAYİİ A.Ş.

Marketing email Address

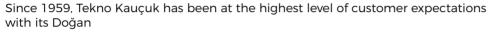
satis@tekno-stop.com

**Telephone** 

+90 262 999 21 00

Company Website

www.tekno-stop.com



Lastik branded various products. Tekno Kauçuk aims to become "the leading company producing new

products and technologies" by providing "creativity, speed and flexibility" in parallel to the restructuring

process in 2001. The factory is located in Gebze Organized

Industrial Zone. Besides, the company has three factories in TAYSAD Organized Industrial Zone, Manisa and Düzce; and three more facilities in Mexico and India. These plants produce rubber-metal antivibration parts, membranes for the air brake bellows and wiring harness grommets for the automotive sector. The company also manufactures vibration and impact dampers with the Tekno-Stop brand for the Railway, Aviation and Defense Industries.



Tekno-Stop









**TEKNO KAUCUK** 

# **TEKNOKAR**

Company Short Name

TEKNOKAR

Company Trade Name

TEKNOKAR SAVUNMA VE HAVACILIK A.Ş.

Marketing email Address

isgelistirme@teknokar.com

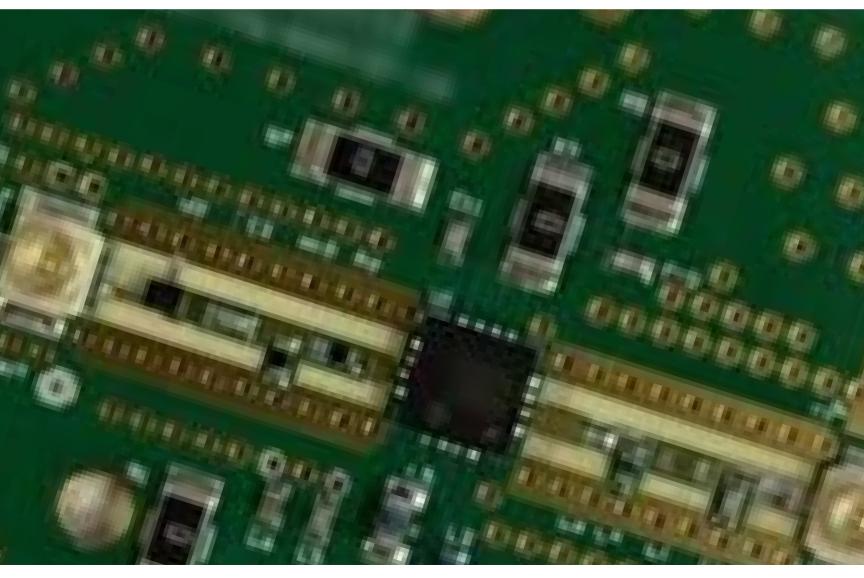
Telephone

(+90) 312 251 13 25

Company Website

www.teknokar.com





#### **HARNESS**



#### **S BAND BLADE ANTENNA**



Cabling design, production, testing, integration

This antenna is versatile and suitable for a variety of applications. It can be mounted on missiles to ensure precise and reliable communication. In aircraft, it provides continuous and secure data transmission during flights. It is ideal for data link systems, offering high-speed and uninterrupted data transfer. Additionally, it excels in telemetry applications, efficiently performing remote monitoring and datacollection tasks.



TEKNOKAR



This antenna is highly versatile and suitable for a wide range of applications. In flight termination systems, it ensures precise and reliable command and control capabilities, critical for mission safety. Additionally, it excels in telemetry applications, providing efficient and accurate remote monitoring and data collection, essential for real-time analysis and decision-making.

FLIGHT TERMINATION ANTENNA





This antenna is highly adaptable, making it suitable for various critical applications. It is ideal for use in air-to-air missiles, providing reliable communication and guidance. In land-to-air missiles, it ensures accurate targeting and command functions. For flight termination systems, it delivers precise and dependable command and control capabilities, crucial for mission safety. Additionally, it is perfect for telemetry applications, facilitating seamless data transmission and remote monitoring essential for real-time tracking and performance analysis.

DUAL BAND CONFORMAL ANTENNA (TELEMETRY & FLIGHT TERMINATION)



#### **DATA LINK CONFORMAL ANTENNA**



#### S BAND PATCH ANTENNA



This antenna is designed for use across a variety of platforms, including air, land, and sea, ensuring versatile and reliable performance in diverse environments. It supports high-speed and continuous data transfer, maintaining robust communication channels. Additionally, it is ideal for telemetry applications. enabling effective remote monitoring and precise data collection for thorough performance analysis.





This antenna is highly versatile and suitable for various critical uses. It ensures reliable communication and guidance for air-to-air missiles. For land-to-air missiles, it provides accurate command and targeting capabilities. In data link systems, it supports high-speed, continuous data transfer. Additionally, it is ideal for telemetry applications, enabling effective remote monitoring and precise data collection for performance analysis.





This GPS antenna is expertly designed for a variety of critical applications. It can be mounted on missiles to provide precise and reliable navigation and location finding. In aircraft and UAVs, it delivers continuous and dependable positioning data, enhancing flight safety and operational efficiency. Additionally, it is ideal for general navigation and location-finding purposes, offering robust performance and high accuracy in diverse environments.



This GPS antenna is expertly designed for a variety of critical applications. It can be mounted on missiles to provide precise and reliable navigation and location finding. In aircraft and UAVs, it delivers continuous and dependable positioning data, enhancing flight safety and operational efficiency. Additionally, it is ideal for general navigation and locationfinding purposes, offering robust performance and high accuracy in diverse environments.



**PASSIVE GNSS ANTENNA** 



#### **IFF BLADE ANTENNA**



#### **TCAS II ANTEN**



This TCAS (Traffic Alert and Collision Avoidance System) antenna is engineered for precise and reliable identification and communication. In aircraft and UAVs, it delivers continuous and dependable collision avoidance capabilities, enhancing flight safety and operational efficiency. Additionally, it serves as an effective communication antenna in various UAV and aircraft applications, offering robust performance and high accuracy in diverse environments.





This IFF antenna is engineered for a critical application. It can be mounted on missiles to provide precise and reliable communication for identification. In aircraft and UAVs, it delivers continuous and dependable IFF capabilities, enhancing flight safety and operational efficiency. Additionally, it serves robust performance and high accuracy in UAV and aircraft applications.





This VHF/UHF blade antenna is designed for robust performance in VHF/UHF band communications. It ensures reliable and continuous communication for various applications, including aircraft and UAVs. Its high accuracy and dependable signal quality make it ideal for maintaining effective communication in diverse environments.



Base Stations
Radar Systems
RF Transceiver Systems
MIMO Systems
Air/Land/Sea Platforms

2-WAY RF POWER DIVIDER



**VHF/UHF BLADE ANTENNA** 

#### **3-WAY RF POWER DIVIDER**



#### **4-WAY RF POWER DIVIDER**





Base Stations Radar Systems RF Transceiver Systems MIMO Systems Air/Land/Sea Platforms Base Stations
Radar Systems
RF Transceiver Systems
MIMO Systems
Air/Land/Sea Platforms



TEKNOKAR



Base Stations
Radar Systems
RF Transceiver Systems
MIMO Systems
Air/Land/Sea Platforms

**300 W RF LOAD** 



RF Transmitters Base Stations Radar Systems



1.8 GHZ - 2.8 GHZ RF POWER AMPLIFIER



## 2.3 GHZ - 2.7 GHZ RF POWER AMPLIFIER

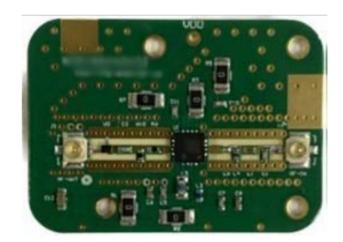


#### 1 GHZ - 5 GHZ RF LOW NOISE AMPLIFIER(LNA)



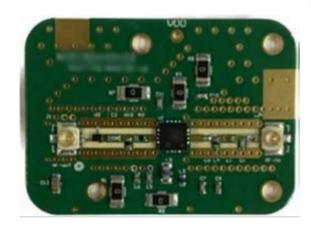


RF Transmitters Base Stations Radar Systems



RF Transmitters Base Stations Radar Systems





RF Transmitters Base Stations Radar Systems

2.3 GHZ - 2.4 GHZ RF FRONT-END





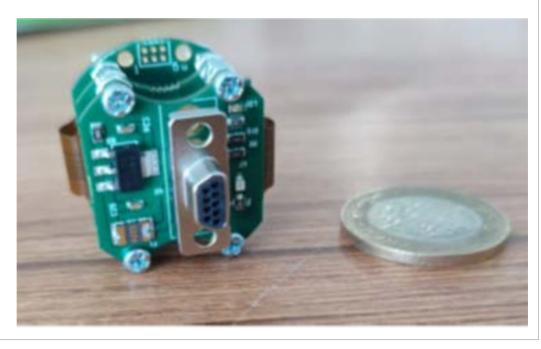
This telemetry system is designed for a variety of critical applications. It is ideal for use on airborne platforms, providing reliable data transmission and monitoring capabilities. UAVs and aircrafts benefits from its continuous and accurate telemetry data, enhancing operational efficiency and safety. Additionally, it is well-suited for munitions, ensuring precise and dependable telemetry information for effective mission execution.

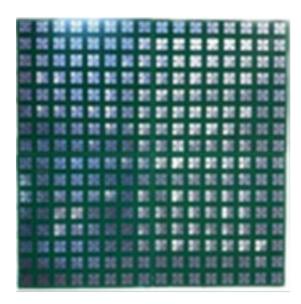
**TELEMETRY SYSTEM** 





This telemetry system is designed for a variety of critical applications. It is ideal for use on airborne platforms, providing reliable data transmission and monitoring capabilities. UAVs and aircrafts benefits from its continuous and accurate telemetry data, enhancing operational efficiency and safety. Additionally, it is well-suited for munitions, ensuring precise and dependable telemetry information for effective mission execution.





Flat panel antennas are ideal for modern communication systems requiring high data rates and reliable connections. They are used across various platforms. On Air, Land, and Sea Platforms FPA ensures continuous, secure communication with a satellite systems and vehicles, even in motion.



**FLAT PANEL ANTENNA SYSTEM (SATCOM)** 



Company Short Name

TEKOM

Company Website

www.tekom.com.tr









#### **ARMORED VEHICLE LIGHTING**

TEKOM Military lighting lamps are produced due to military forced conditions. They are being preferred oftenly because of their robust construction, easy installation and safety working conditions. Military lamps are produced in two catagories, led and flament types accordance with NATO standards. They give successful results in internal and external military application. They also ensure IP68 sealing, MIL-STD-810F Environmental tests and MIL-STD 461E EMI tests due to NATO standarts.





Tekom Limit switches are produced in 2 categories, LS1 and LS2. They are used in Military Land,sea and air vehicles in forced conditions. In addition to standart sizes Tekom limit switches can be also specially produced in different measures, actuator types and spring forces according to customer needs





TEKOM manufactures
Relays&Contactors in various
power and features. Those parts
operate safely in fixed voltage
in all application of military
vehicles. The body materials of
convertors are aluminum and
ensure shock and vibration tests
according to MIL-STD-810F.
TEKOM relays&contactors are
produced in different power ranges
according to customer needs
and ensure EMC/EMI standarts
according to MIL-STD-461E
and MIL-STD-462E standarts.



**ROLES-CONTACTORS** 

#### **MILITARY VEHICLE ROOF LIGHTS**





**TEKOM Military lighting lamps** are produced due to military forced conditions. They are being preferred oftenly because of their robust construction, easy installation and safety working conditions. Military lamps are produced in two catagories, led and flament types accordance with NATO standards. They give successful results in internal and external military application. They also ensure IP68 sealing, MIL-STD-810F Environmental tests and MIL-STD 461E EMI tests due to NATO standarts.



TEKOM Military lighting lamps are produced due to military forced conditions. They are being preferred oftenly because of their robust construction, easy installation and safety working conditions. Military lamps are produced in two catagories, led and flament types accordance with NATO standards. They give successful results in internal and external military application. They also ensure IP68 sealing, MIL-STD-810F Environmental tests and MIL-STD 461E EMI tests due to NATO standards.

#### **BLACKOUT LAMPS**







TEKOM power distribution boxes are manufactured to suit the harsh operating conditions of electric vehicles. They are frequently preferred in vehicle applications due to their robust structure, ease of use, installation and reliable operation. TEKOM power distribution boxes are manufactured in accordance with customer requirements.





TEKOM sensors are manufactured to suit the harsh operating conditions of military and civilian vehicles. They are frequently preferred in vehicle applications due to their robust structure, ease of use, installation and reliable operation. TEKOM sensors are manufactured in accordance with customer requirements.



**POWER DISTRIBUTION BOXES** 



Company Short Name

TİSAŞ

Company Trade Name

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With its modern design and high reliability, the PX-9 GEN3 DUTY is indispensable for military personnel and civilian users. This 9x19MM caliber pistol is lightweight and durable with its polymer frame, while its forged slide and cold forged barrel provide superior performance. The grip structure, which can be adjusted in 27 different configurations with interchangeable side and rear grip covers, offers a personalized user experience.





With its compact and lightweight design the PX-9 CARRY offers excellent portability Featuring a 9x19MM caliber cold forged barrel, the pistol's ergonomic pistol grip provides ease of grip. With its interchangeable side and rear grip covers, it offers 27 different configurations for a personalized user experience. The Carry model is an ideal choice for daily carry.





The PX-5.7 model, which is the beginning of a new era in the Turkish Defense Industry with its 5.7x28MM caliber, was developed in line with the needs and demands of the Special Forces during the R&D phase and presented to the users. It stands out as the most advanced product in its class by bringing together many innovations such as forged slide, cold forged barrel, chassis system, THUMBREST and MAGWELL integrated into the body.



PX-5.7



### **ZIG 14 SPORT**





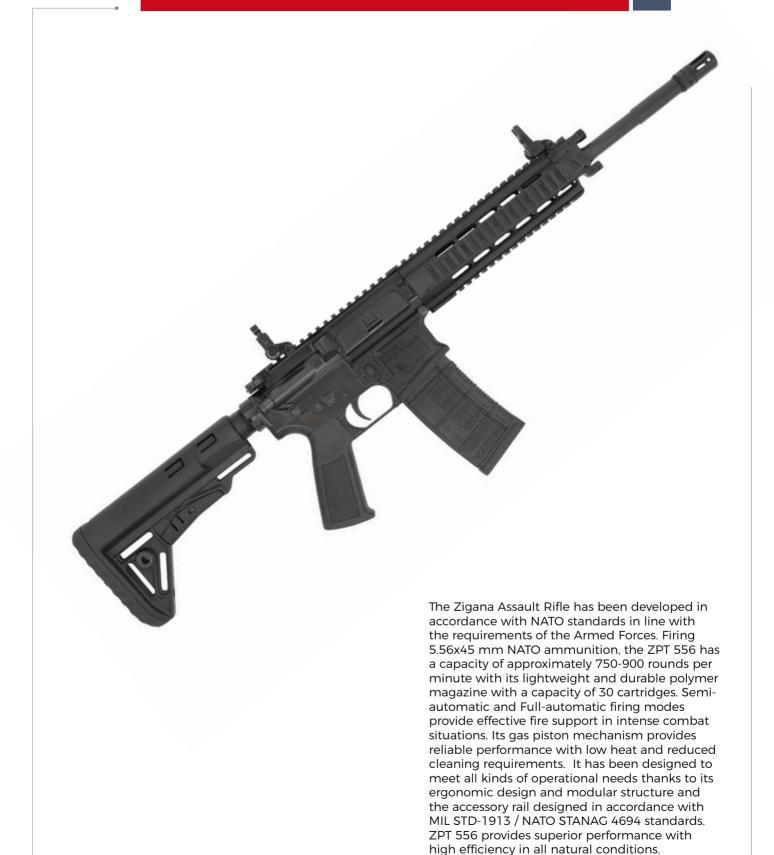
This model, which combines modern and classic design, is one of the most preferred pistols with steel frame and slide in Türkiye. With its 9x19mm caliber and cold forged polygonal barrel, it offers superior precision and durability. The LPA Fiber optic front and rear sight provides excellent visibility, while the sporty slide stop and thumb safety provide an aesthetic stance.



It is a pistol where classic and aesthetic design is perfected with modern technology. The ZIG M1911 model offers high firepower with its .45ACP caliber, while offering strong and durable performance with its forged slide, frame and barrel produced with cold forging technology. With its classic design, it is indispensable for users.

**ZİG M1911** 





# **TRANSVARO**

Company Short Name

Transvaro

Company Trade Name

Transvaro Elektron Aletleri San. Tic. Aş.

Marketing email Address

ayse.kahraman@transvaro.com

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Company Website

www.transvaro.com







#### **FUSION PRODUCTS**



Fusion Products is a part of fusion binocular family which is designed for surveillance and reconnaissance at short and mid-range distances. The products in this category: QEYE 007-B18X Fusion Binocular, QEYE F27 Fusion Weapon Sight

Night Vision Products designed specifically for pilots to work with maximum performance in low-light environments, under moonlight, starlight and challenging conditions. Night vision products can be used by connecting to hand, headband, helmet or if desired directly on to the gun, with its wide range of accessories. The products in this category: TV/RPG-7 Night Vision Attachment, TV/BIN-3 Binocular Night Vision Goggle, TV/MON-3/7 Monocular Night Vision Device, TV/NVA-13 Night Vision Attachment, TV/NWS 3-4-6 Sniper Rifle Image Intensified Sight, TV/PNVG-40 Pilot Night Vision Goggle











#### **NIGHT VISION PRODUCT**

**©** 





Gimbal Products Stable Electro Optical System that has Cooled Thermal/Day-Night Cameras. Designed for UAV and helicopter platforms. The products in this category: TRVG-18 FALCON TRACER High Performance E/O Surveillance System, TRVG-28 FALCON TRACER High Performance E/O Surveillance System, TV/GT-3 Thermal/Day And Night Vision Long Range Gimbal Camera





Day Vision Systems is designed for use up to infantry rifles and hand-held usage. Products in this category: TV/KND 3-12x50 Sniper Weapon Sight, TV/KND 5-25x56 Sniper Weapon Sight, TV/MTRS-1 Mini Sight And Accessories, TV/HS-10 Holographic Sight, TV/8x32 Optical Binocular, TV/10x50 Optical Binocular, TV/BiN-20x120 Binocular, TV/15-45x60 Tactical Spotting Scop



**DAY VISION SYSTEMS** 



#### **SNIPER DETECTION SYSTEM**





Sniper detection system can detect the locations of trajectory weapons such as infantry rifles, sniper rifles and machine guns in terms of distance and direction. Products in this category: TV-SD 500 Acoustic Sniper Detection System, TV-SD 1000 Stationary Vehicle Acoustic Sniper Detection System





Laser Products is a light and powerful, easy-to-use laser distance measuring device designed to meet the needs of the armed forces, security forces and special forces. The products in this category: TV/LTD-01 Laser Target Designator, TV/MCAD-2 Multi-Channel Aiming Device, TV/MCAD-1 Multi-Channel Aiming Device, TV/LRF 2500E-3500E Laser Range Finder, TV/LZP-1 Laser Zeroing Pointer, TV/MPL Multi-Purpose Laser Pointer

**LASER PRODUCTS** 



### **MULTI-SENSOR SYSTEMS**





Multi-Sensor Systems are multi-purpose electro-optic systems that can be used for surveillance, target, direction and position determination. Products in this category: TV/GUARD Optical Day / Night Observation System, ENGEREK 9 Cooled Thermal Multi Purpose Tactical Binocular, QEYE MMS-1 Thermal Monocular, QEYE MMS-2 Thermal Monocular





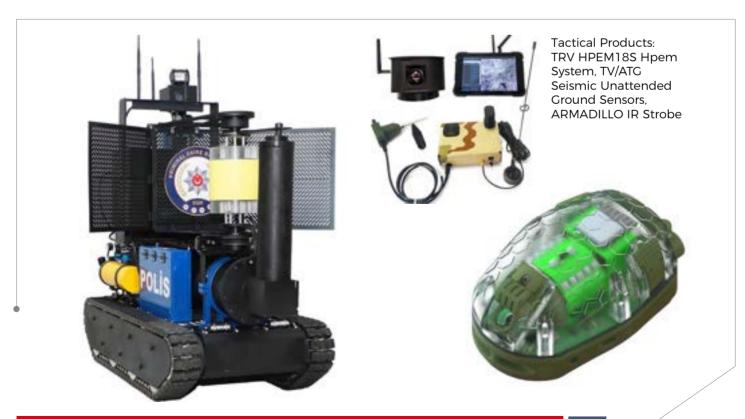
#### **RADAR & JAMMER PRODUCT**





Radar & Jammer Products is mainly used to monitor close targets in the process of near-field operations. Under the complex environment with strong ground clutter, it can detect and extract target information to provide information support for operators. The products in this category: TRADJ-02 UAV Jammer, TV-904 3D Anti UAV Radar, TVSR-C101 Perimeter Surveillance Radar, TRSA-U360 Radio Frequency Detector





**TACTICAL PRODUCTS** 

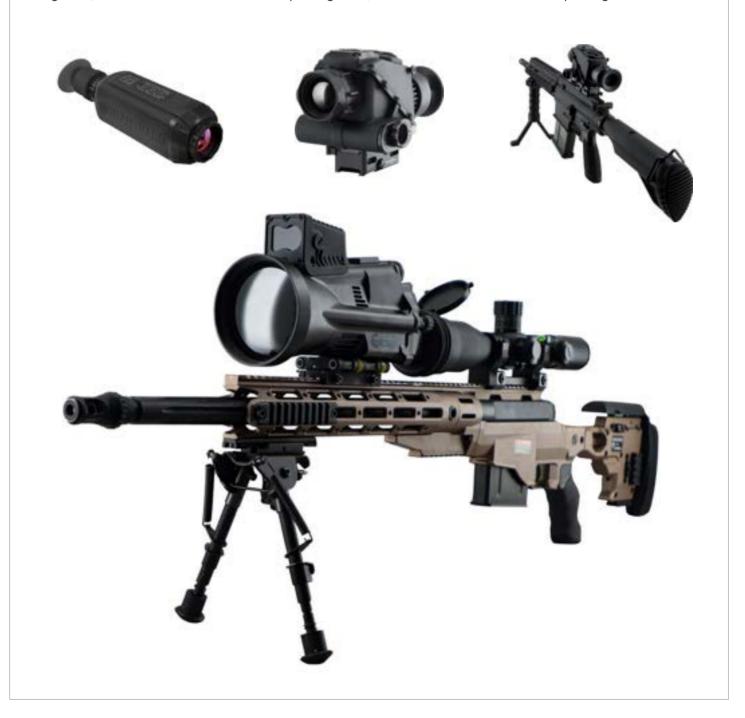


#### **THERMAL WEAPON SIGHTS**





Thermal Weapon Sights is designed according to the multiple using options one of them is with the daytime optical sight on sniper rifles and the other is stand alone. It has the ability to detect people and vehicles continuously for 24 hours even in poor visibility conditions, and unlike night vision devices, it can easily detect targets in complete darkness and combat environment. The products in this category: TV/TMG Barrel Eye Hand Held Thermal Camera, TV/ENGEREK S21 Thermal Weapon Sight, TV/ENGEREK C27 Thermal Weapon Sight, TV/ENGEREK S27 Thermal Weapon Sight, TV/ENGEREK C37 Thermal Weapon Sight, TV/ENGEREK S48 Thermal Weapon Sight, TV/ENGEREK C48 Thermal Weapon Sight, TV/ENGEREK S48 Thermal Weapon Sight, TV/ENGEREK C56 Thermal Weapon Sight, TV/ENGEREK C70 Thermal Weapon Sight, TV/ENGEREK S70 Thermal Weapon Sight, TV/ENGEREK C120 Thermal Weapon Sight, TV/ENGEREK S120 Thermal Weapon Sight, TV/ENGEREK C120 Thermal Weapon Sight,



# **TRMOTOR**

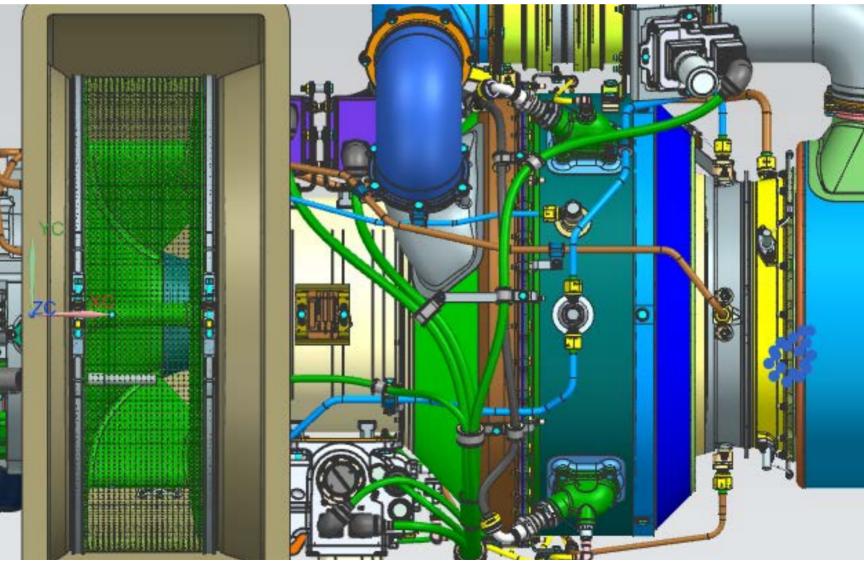
Company Short Name

TRMOTOR

Company Website

www.trmotor.com.tr

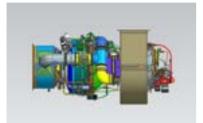




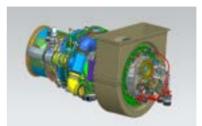
#### APU60

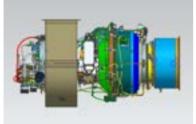


APU60 is a high-performance Auxiliary Power Unit (APU) developed for KAAN and designed to meet the power requirements of 5th generation fighter jets. In the event of engine failure, APU60 will provide the necessary power to critical systems. It will also supply the required air pressure or electrical power for engine startup, ventilate the cabin when the engines are off on the ground, and provide electrical energy in case of generator failure during flight. The system features a 4-stage axial compressor, 2-stage turbine, autonomous lubrication, electronic control unit, and reverse-flow combustion chamber. TRMOTOR is also developing the ESS141 engine starter system.

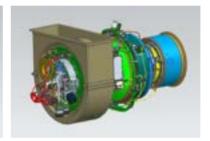




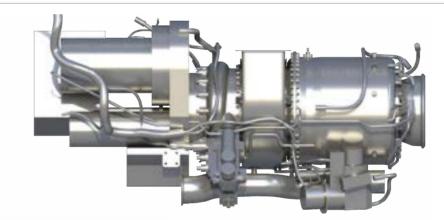








The APU40 is a compact, high-performance Auxiliary Power Unit (APU) designed for jet training and light combat aircraft. It provides the necessary power for critical systems in the event of main engine failure. Additionally, APU40 supplies pressurized air or electrical power for engine startup, ventilates the cabin when the engines are off on the ground, and generates electricity if the main generators fail during flight. TRMOTOR is also developing the ESS404 engine starter system alongside APU40, both designed in a radial configuration to support these aircraft systems.







APU40



ESS404 engine start system in radial configuration in combination with APU40.





ESS141 engine start system in radial configuration in combination with APU60.



**ESS141** 

# TRON ELEKTRONIK

Company Short Name

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## TRDB-L-1-8 RF DISTRIBUTION UNIT, 1 INPUT 8 OUTPUT



The TRDB-L-1-8 is a RF distribution unit that includes power supply, microprocessor and RF boards, which are isolated from each other in a single-block 19" 1U aluminium chassis. Equipped with 1 RF input and 8 RF outputs, the distribution unit provides high gain and low noise level, addressing a wide range of applications by offering effective signal amplification in the 950-1450 MHz frequency range. With its user-friendly interface, gain settings can be precisely adjusted and customized according to performance requirements. The unit offers operational flexibility with the ability to be remotely controlled via Ethernet and RJ45 ports.



The TRBB-L-8-1 is a RF distribution unit that includes power supply, microprocessor and RF boards, which are isolated from each other in a single-block 19" 1U aluminium chassis. Equipped with 8 RF input and 1 RF outputs, the distribution unit provides flexibility in different application scenarios with precisely adjustable gain with 1 dB step interval and noise factor that varies depending on the channel used. With its user-friendly interface, gain settings can be precisely adjusted and customized according to performance requirements. The unit offers operational flexibility with the ability to be remotely controlled via Ethernet and RJ45 ports.



TRBB-L-8-1 RF COMBINER UNIT, 8 INPUTS 1 OUTPUT





## SGÜB-3000-0504 RF SİGNAL GENERATORS (30-3000MHZ)

tron

The SGÜB-3000-0504 is an antenna distribution unit that includes power supply, microprocessor and RF boards, which are isolated from each other in a single-block 19" 1U aluminium chassis. Equipped with 5 RF input, 4 RF outputs, the distribution unit provides the signal given from the inputs to be received from the outputs in dual or triple signal combinations. Low Noise levels help the device ensure clean and distortion-free signal transmission. High dynamic range and low distortion performance optimize signal quality. With its user-friendly interface, gain settings can be precisely adjusted and customized according to performance requirements.



The TRDFAero-3000-16-6 is an antenna distribution unit that includes within a single block aluminum enclosure conforming to the 3/8 ATR rack standard, equipped with an RF board. The unit is supported by 16 RF inputs and 6 RF outputs in the frequency range of 20-3000 MHz, 14 RF inputs and 4 RF outputs are used for the DF channel, 2 RF inputs, 2 RF outputs are used for the monitor channel. The withstand level that protects against signal overloads ensures reliable operation of the device. It also allows flexibility with the ability to be controlled remotely via TTL connection.





TRDFAERO-3000-16-6 ANKA ANTENNA SWITCHING UNIT

## TRFMC-6000-16-3 VHF-UHF RF DISTRIBUTION UNIT



## TRFMC-30-16-2A HF RF DISTRIBUTION UNIT



The TRFMC-6000-16-3 is an antenna distribution unit that includes power supply, microprocessor and RF boards, which are isolated from each other in a single-block 19" 2U aluminium chassis. Operating within a frequency range of 20-6000 MHz, this combining unit is equipped with 3 RF inputs and 16 RF outputs, enabling high-capacity signal distribution. Designed to meet military standards, it provides reliable performance and durability under demanding operational conditions. The unit includes an Ethernet port and LED status indicators to facilitate monitoring of operational status. It allows operational flexibility through remote control via an RS232 interface.

The TRFMC-30-16-2A is an antenna distribution unit housed in a single-block aluminum enclosure conforming to the 19" 2U standard, featuring isolated power supply, microprocessor, and RF boards. Operating within a frequency range of 1-30 MHz, this distribution unit is equipped with 2 RF inputs and 16 RF outputs. It allows each output to independently forward signals from either the first or second input, catering to various signal routing needs. Limiters on the RF inputs and outputs protect against excessive signal levels and enhance signal quality. The unit offers operational flexibility through remote control via an RS232 interface.







The TRDF-6000-29-22 is an antenna switching unit housed in a single-block aluminum enclosure conforming to the 19" 4U standard. It features isolated power supply and RF boards. Operating across a frequency range of 1- 6000 MHz, this switching unit is equipped with 22 RF inputs and 29 RF outputs, with dedicated inputs and outputs for 4 different frequency bands. The unit's isolation characteristics prevent signal mixing between inputs, channels, and outputs, thereby preserving signal integrity. Its design allows for easy mounting in rack systems, ensuring compatibility with various RF systems and simplifying installation.



The TRDF-30-16-8 is an antenna distribution unit featuring isolated power supply, microprocessor, and RF boards. Operating within a frequency range of 1-30 MHz, this distribution unit is equipped with 16 RF inputs and 8 RF outputs. It is compatible with Crossed Loop and Monopole antennas. The unit includes gain adjustment controlled by preamplifiers, allowing it to adapt to various signal conditions. It provides 12 VDC power and switching data to Crossed-Loop antennas via 8 military-grade connectors. Operational flexibility is offered through remote control via an RS232 interface. The unit supports BIT (Built-In Test) operations.

TRDF-6000-29-22 VHF-HF RF DISTRIBUTION UNIT



TRDF-30-16-8 ANTENNA SWITCHING UNIT

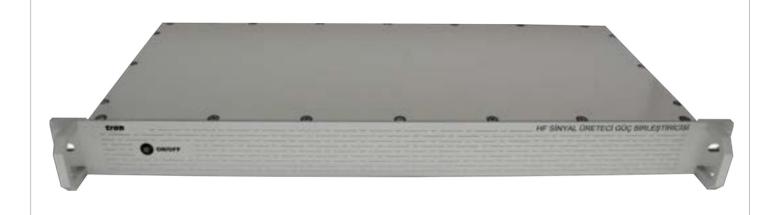


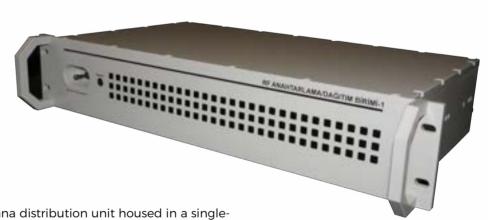


## SUGB-30-0402 RF SIGNAL GENERATOR POWER BIRL. (1-30MHZ)



The SÜGB-30-0402 is an RF power combiner housed in a single-block aluminum enclosure conforming to the 19" 1U standard. It features isolated power supply, microprocessor, and RF boards. Operating within a frequency range of 1-30 MHz, this power combiner is equipped with 4 RF inputs and 2 RF outputs, allowing for the combination of signals from the RF inputs and their output as a single combined signal. Its compact design ensures ease of installation and space savings. The unit offers operational flexibility through remote control via an RS232 interface.





The RFAB-512-0110 is an antenna distribution unit housed in a single-block aluminum enclosure conforming to the 19" 2U standard. It features isolated power supply, microprocessor, and RF boards. Operating within a frequency range of 30-512 MHz, this distribution unit is equipped with 1 RF input and 10 RF outputs. It includes independently selectable 88 MHz Notch filters, a preamplifier, and power splitter modes of 1/2, 1/3, and 1/4, and 1/8. Designed to protect against high signal levels, it provides adequate isolation between RF outputs. The unit offers operational flexibility through remote control via an RS232 interface.



RFAB-512-0110 RF SWITCHING/DISTRIBUTI ON (30-512MHZ)

#### **TRDF-6000-7-28 ANTENNA SWITCHING UNIT**





The TRDF-6000-7-28 is an antenna switching unit housed in a single-block aluminum enclosure featuring isolated RF boards. Operating within a frequency range of 30-6000 MHz, this switching unit is equipped with 28 RF inputs and 7 RF outputs. It includes a military-grade connector for control and power connections. Designed to military standards, the unit offers reliable performance and durability in challenging operational conditions. It provides operational flexibility through remote control via an Ethernet interface. With its robust and dependable performance, this switching unit is the right choice for professional RF applications.

The TRAK-3000-2-2 is an antenna preamplifier housed in a single-block aluminum enclosure featuring isolated power supply, microprocessor, and RF-boards. Operating within a frequency range of 20-3000 MHz, this preamplifier is equipped with 2 RF inputs and 2 RF outputs. The unit includes switchable bandpass and notch filters, and is designed to accommodate additional filters. It offers operational flexibility through remote control via an Ethernet interface. The unit is powered through the passive antenna line it is connected to, with active antenna power supplied through the RF path. With its reliable performance, it is the right choice for professional RF applications.



TRAK-3000-2-2 LISTENING SYSTEM ON BOOSTER



## TRFMC-8000-20-5 RF DISTRIBUTION UNIT



TRFMC-3000-4-2 TRON 4
MULTICOUPLER



The TRFMC-8000-20-5 is an RF distribution unit housed in a single-block aluminum enclosure featuring isolated power supply, microprocessor, and RF boards. Operating within a frequency range of 20-8000 MHz, this distribution unit is equipped with 5 RF inputs and 20 RF outputs, and includes two distinct input/output groups with separate functionalities. The first group allows switching of 4 inputs to 16 outputs. In the second input/output group, the signal can either be split into four outputs or routed directly without splitting. The unit provides operational flexibility through remote control via RS232 interfaces.

The TRFMC-3000-4-2 is an antenna distribution unit housed in a single-block aluminum enclosure conforming to the 19" 1U standard, featuring isolated power supply and RF boards. Operating within a frequency range of 20-3000 MHz, this distribution unit is equipped with 2 RF inputs and 4 RF outputs, providing high-capacity signal distribution. Effective isolation prevents signal interference and enhances system reliability. The unit offers operational flexibility through remote control via RS232 interfaces. Its design allows for easy mounting in rack systems, ensuring compatibility with various RF systems and facilitating installation.









TRPALONG S

The RFAB-3000-0210 is an antenna distribution unit housed in a single-block aluminum enclosure conforming to the 19" 2U standard, featuring isolated power supply, microprocessor, and RF boards. Operating within a frequency range of 500-3000 MHz, this distribution unit is equipped with 2 RF inputs and 10 RF outputs. It offers selectable options including independent preamplifiers and power divider modes of 1/2, 1/3, 1/4, and 1/8. Designed to protect against high signal levels, it provides sufficient isolation between RF outputs. The unit offers operational flexibility through remote control via RS232 interfaces.

The TRPA-L-015C is an RF power amplifier housed in a single-block aluminum enclosure, consisting of RF and power sections on a single board. Operating within frequency ranges of 1164-1255 MHz and 1559-1610 MHz, this amplifier unit is equipped with 1 RF input and 1 RF output. It amplifies the signal applied at the input and transmits it to the output. The unit features a Mini D-Sub type DC power connector and provides robust and reliable connections through SMA female connectors used at the RF ports. Its compact design offers various mounting and integration options.

RFAB-3000-0210 RF SWITCHING/ DISTRIBUTION(500-3000MHZ)



TRPA-L-015C L-BAND POWER AMPLIFIER





#### **TRDF-1000-4-17 SUBBAND SWITCHING UNIT**





The TRDF-1000-4-17 is a sub-band switching unit housed in a single-block aluminum enclosure conforming to the 19" 3U standard, incorporating isolated power supply, microprocessor, and RF boards. Operating within a frequency range of 100-1000 MHz, this switching unit is equipped with 17 RF inputs and 4 RF outputs, including 9 VHF band antenna inputs and 8 UHF band antenna inputs. The unit includes necessary gain and attenuation lines, as well as filtering lines to enhance signal quality. It offers operational flexibility with remote control via RS232 interfaces.



The TRDF-3000-7-14 is a switchable antenna switching unit housed in a single-block aluminum enclosure, featuring isolated RF boards. Operating within a frequency range of 20-3000 MHz, this unit is equipped with 14 RF inputs and 7 RF outputs, and is designed to withstand high input power levels. It offers operational flexibility with remote control via TTL and RS422 interfaces. With its robust and reliable performance, this switching unit is the right choice for professional RF applications.

TRDF-3000-7-14 SHORTCUT ANTENNA SWITCHING UNIT



### TRDFMOB-3000-12-2 ANTENNA SWITCHING

TRDFAERO-8000-11-24
ANTENNA SWITCHING UNIT



The TRDFMOB-3000-12-2 is an RF antenna switching unit housed in a single-block aluminum enclosure, incorporating isolated RF boards. Operating within a frequency range of 20-3000 MHz, this switching unit features 12 RF inputs and 2 RF outputs and is designed as a critical component for mobile ground DF (Direction Finding) systems. It provides broad gain adjustment capabilities, enabling the unit to adapt to various signal conditions. The unit offers operational flexibility with remote control via Ethernet interfaces. Its lightweight and compact design facilitates compatibility with mobile RF systems and ease of transport.



The TRDF-8000-14-28 is an antenna switching unit housed in a single-block aluminum enclosure, featuring isolated RF boards. With a frequency range of 20-8000 MHz, this switching unit is equipped with 28 RF inputs and 14 RF outputs and includes a MIL-DTL-38999 Type TV07RW-23-14S military-grade input connector. Its mechanical design ensures compactness and lightweight construction. The unit provides operational flexibility with remote control via TTL interfaces. Operating with a 28 VDC power supply and consuming a maximum of 5W, it supports energy efficiency. With its robust and reliable performance, this switching unit is the right choice for professional RF applications.







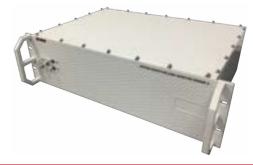
The TRDF-30-8-8 is an antenna switching unit housed in a 19" 4U standard single-block aluminum chassis, featuring isolated power supply, microprocessor and RF boards. Operating within a frequency range of 2-30 MHz, this distribution unit is equipped with 8 RF inputs, 8 RF outputs and is compatible with Crossed Loop and Monopole antennas. The unit offers gain adjustment controlled by pre-amplifiers, allowing it to adapt to various signal conditions. It provides operational flexibility with remote control via both Ethernet and RS232 interfaces. Its design facilitates easy integration into rack systems, ensuring compatibility

TRDF-30-8-8 ANTENNA SWITCHING UNIT

with various RF systems and ease of installation.



The TRFMC-6000-12-8 is an antenna distribution unit housed in a single block aluminum enclosure conforming to the 19" 3U standard. This unit contains an isolated power supply, microprocessor, and RF cards. It operates within a frequency range of 30-6000 MHz and is equipped with 8 RF inputs and 12 RF outputs. Each RF input channel features a switchable preamplifier and band-pass filters, with switchable feed options for the 30-1300 MHz inputs. The unit offers operational flexibility with remote control capabilities via RS232 connection.



TRFMC-6000-12-8 ANTENNA SWITCHING DISTRIBUTION UNIT



#### TRFMC-30-8-3 ANTENNA SWITCHING AND DISTRIBUTION UNIT



## TRFMC-3000-24-5 RF DISTRIBUTION UNIT



he TRFMC-30-8-3 is an antenna distribution unit housed in a single block aluminum enclosure conforming to the 19" 2U standard. This unit contains an isolated power supply, microprocessor, and RF cards. It operates within a frequency range of 2-30 MHz and is equipped with 3 RF inputs and 8 RF outputs. The distribution unit allows for independent selection of antennas connected to its inputs. The unit offers operational flexibility with remote control capabilities via RS232 connection. Its design facilitates easy mounting in rack systems, ensuring compatibility with various RF systems and simplifying installation.

The TRFMC-3000-24-5 is a 19" 3U standard RF distribution unit that includes power supply, microprocessor and RF cards isolated from each other in a single block aluminum case. Equipped with 5 RF inputs and 24 RF outputs in the frequency range of 30-3000 MHz, the distribution unit has different inputs for different frequency bands, and the input signals can be filtered and amplified according to the needs and directed to all outputs simultaneously. The unit offers operational flexibility with the ability to be remotely controlled via RS232 connection.







TRPA-18-40-001R is a compact microwave RF amplifier with connectors. Operating within a frequency range of 18-40 GHz, the amplifier is equipped with 1 RF input and 1 RF output, providing high gain and low in-band ripple. It offers low noise and return loss across a broad frequency range. The unit does not require a negative bias voltage and is powered from a single source. It is an effective and ideal choice for applications needing reliable signal amplification at high frequencies.

TRPA-18-40-001R RF POWER AMPLIFIER



TPD-1040-2-1 is a connectorized microwave RF power divider with an ultrawide bandwidth.



TPD-1040-2-1 POWER SPLITTER



## PROXIMITY SWITCH (TPS-I-3SNNOM3TX)



TDF-V-7-KA DIGITAL ADJUSTABLE FILTER



A proximity switch is a device detecting, without any physical link, a metallic part that enters a predefined space in front of it.

TPS series Proximity Sensors are developed for the landing gears and/or detection of moving parts on the aircrafts.





The TDF-V-7-KA Digital Tunable Filter, which can be used in both transmit and receive situations, is a bandpass filter that adapts to changing frequency values. By shifting the centre frequency, it aims to reduce interaction with ambient electromagnetic conditions and to provide band cleaning by suppressing signals at other frequencies.





The TRPA-V-100R amplifier uses GaN technology

to provide 100 watts output power. It controls the operating temperature with its internal temperature sensor and sends a shutdown signal to protect the system in unexpected situations.

TRPA-V-100R POWER AMPLIFIER



The TSFB-V-6-60 switched filter bank is tailored for specific applications within the frequency range of 30 to 512 MHz and can accommodate up to 6 channels. It utilizes low pass filters with minimal insertion loss and excellent rejection properties.



TSFB-V-6-60 SWITCHABLE FILTER BANK



## **TRTEST**

Company Short Name

**TRTEST** 

Company Trade Name

TRTEST TEST VE DEĞERLENDİRME A.Ş

Marketing email Address

edemirac@tr-test.com.tr

**Telephone** 

(+90) 312 923 99 99

**Company Website** 

www.trtest.com.tr



TRTEST Test and Evaluation Inc is a company established as subsidiary of SSB, TSE, TUBITAK, TSKGV, STM. TRTEST; through its existing test and evaluation infrastructure inventory in Türkiye, provides coordination services for testing critical systems and platforms, especially for the defense industry. Moreover TRTEST is providing test services at two test facilities which are being operated by TRTEST that are; TRTEST UAV Test and Evaluation Center located at Kalecik and Türkiye's first "Large Cavitation Tunnel" facility located at İstanbul Technical University. In addition, the Engine Test Center established within BMC Power operates under the coordination of TRTEST for third part test needs. Apart from this coordination service, TRTEST also provides services in the field of product certification and Cyber Hygiene. Certification. She carries out determination of criterias that the domestic cyber security products must comply with, developing technical specifications and test procedures, and certifying via testing, In addition, Third Party Conformity Assessment & Inspection Services are also carried out successfully.

Environmental, Ballistic, EMI, EMC, Fungus and

**Cyber Security Test Activities** 

Third Party Inspection and Surveillance Activity

**UAV Test Center Activities** 

ITU Cavitation Tunnel Test Activities BMC Engine Test Center Test Activities

Cyber Hygiene Certification

Cyber Product Certification

**Turqum Certification** 

**Training Activities** 



**SERVICES AND CAPABILITIES** 



## TURKISH TECHNIC

Company Short Name

Turkish Technic

Company Trade Name

Türk Hava Yolları Teknik A.Ş.

Marketing email Address

info@thy.com

Telephone

(+90) 216 585 98 00

Company Website

www.turkishtechnic.com







#### A330/340 MAIN LANDING GEAR TROLLEY







This Trolley is suitable for the installation and installation of degassed Main Landing Gear of A330 and A340 aircraft variants.

It is designed and manufactured to be held, lifted, lowered and positioned during dismantling activities.

AirCare Stretcher improves the ergonomics of patients while optimizing the position with its innovative design.

ACS is a tool-free installed stretcher with height adjustability where there is no need for removing the seats for maximum comfort, reliability and safety.



**AIR TRANSPORT STRETCHER** 





## AIRCRAFT ENGINE WASHING SYSTEM





#### APU STARTER TESTER





This is a testbench designed to conduct comprehensive electrical and mechanical testing of "APU" units found in the tail section of both Boeing and Airbus aircraft. A centralized display provides real-time monitoring of all test parameters and generates a definitive pass/fail result for each component.



It is an aircraft engine washing system designed to perform periodic jet engine washing tasks defined by the manufacturers' CMMs for various types of jet engines.





It is a multi-channel portable signal generator and encodes all ARINC429 labels and adds functionality to them.

ARINC 429 SIGNAL GENERATOR MOBILE (PHASE-2)





It is used to analyse ARINC429 signals during the maintenance of control panels such as VOR, ILS, ADF, VHF...



ARINC429 SIGNAL ANALYZER





#### **AVIONIC TRAY**





#### **BAGS**





- · Compliant with FAR/CS 25.853 (Seal, air plug and metal parts)
- · Compliant with FAR/CS 25.561, Qualified for 9G for four directions
- · Stainless steel hold down mechanism
- · Plastic extrusion seal and air plug
- · Suitable for Boeing and Airbus



















- $\cdot$  Various bag for different cabin interior equipment
- · Durable ultra leather material,
- · Zipper or Velcro opening,
- · Compliant with FAR/CS 25.853



The floor panels inside the cabin must be removed for maintenance. This dismantling process cannot be carried out with the dismantling processes specified in the current procedures. A tool has been designed and produced for the convenient and easy removal of floor panels.



**BOSTIKOFF** 





- · Compliant with FAR/CS 25.853 (webbing, metal case and paint)
- · Compatible painting with aviation standards (qualified flammability, toxicity, heat release and smoke density characteristics)













**BRACKETS** 

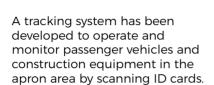








#### CAR ON TRACK









It is to safely store and transport fan blades and other critical components removed during CFM56-7B engine maintenance processes. This project is designed with a compact and durable structure to prevent part losses in workshop or field environments, save space, and accelerate maintenance procedures. Its ease of portability aims to enhance operational efficiency, providing both cost advantages and longterm support for safety and operational continuity.





CFM56-7B FAN BLADE CONTAINER



## CNA DISMANTLING/TEAM SUPPORT EQUIPMENT (A320)







Occupational safety and operational safety when using the original tool during maintenance operations.

It was designed to create a new tool that would solve the problems experienced.

- · Light weight composite honeycomb structure
- · Compatible painting with aviation standards (qualified flammability, toxicity, heat release and smoke density characteristics)
- · Rigid edge fill and edge potting
- · Compliant with FAR/CS 25.853 (panel, paint and edge fill)



**COMPOSITE PANEL** 



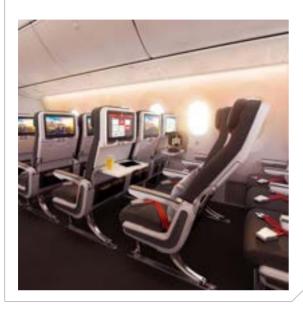


#### CONNECTIVITY SOLUTION





In today's world where internet connection on board has become more important and an indispensable part of global competition, Turkish Technic offers turnkey solutions for the integration of internet connection systems on board aircraft.



# PROVIDING ENGINE ON-WING SUPPORT SERVICES TO OTHER AIRLINES,







Engine On Wing Support, disassembly tool, maintenance fault diagnosis, QEC removal installation services are provided.







- · Low weight aluminum material
- Compatible painting with aviation standards
- · Compliant with FAR/CS25.853
- · Installation with insert and screw

For Dorsal Fin Removal/Installation on BOEING B737 600/700/800/900 aircraft A special set of P/N is not defined in AMM to be used in this process.

That's why Sling was designed.



**DOCUMENT HOLDERS** 





DORSAL FIN REMOVAL TOOL (B737)







#### **DUMMY WEIGHT (A320)**





The loading and unloading processes of ballast weights used to ensure the stability conditions of Airbus A320 family aircraft caused significant time loss and potential damage risk in maintenance processes. The special tool developed as a solution to this problem significantly shortens maintenance processes by allowing dummy weights to be safely and quickly mounted on the engine pylons of the aircraft. The vehicle, which stands out with its flexible structure that can adapt to different engine types, has started a new era in maintenance operations in the aviation sector. In this way, both maintenance costs are reduced and aircraft availability is increased.





The loading and unloading processes of ballast weights used to ensure the stability conditions of Airbus A330 aircraft caused significant time loss and potential damage risk in maintenance processes. The special tool developed as a solution to this problem significantly shortens maintenance processes by allowing dummy weights to be safely and quickly mounted on the engine pylons of the aircraft. The vehicle, which stands out with its flexible structure that can adapt to different engine types, has started a new era in maintenance operations in the aviation sector. In this way, both maintenance costs are reduced and aircraft availability is increased.

**DUMMY WEIGHT A330** 





#### **ENGINE POSITIONER NB**



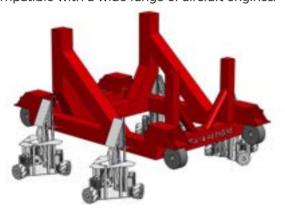


#### **ENGINE TURNING TOOL**





Instead of using "Bootstrap Engine Change", an Engine Positioner (NB) would be a versatile and efficient engine changing system for narrowbody aircraft. It is designed to reduce time and costs associated with AOG operations while also increasing operational flexibility and safety. The Engine Positioner will easy to use and can be operated by two people. Additionally, it will compatible with a wide range of aircraft engines.





Engine Turning Tool (ETT) is used in borescope inspection operations on aircraft engines. It is designed to facilitate position control of turbine stages using servo motor and operator panel.



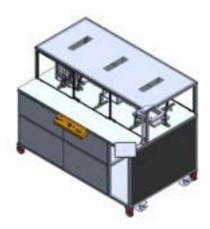


The current tester software is not stable and the device frequently malfunctions and Since its maintenance was done abroad, there was a need to manufacture it locally.

**EPSU TESTER** 







The primary objective of the test bench is to enhance the electrical testing capacity of Air Conditioning group components. The new test bench is compatible with various fixtures thanks to its universal fixture connection system, and its modular clamp structure, which can be assembled with one hand, offers ease of use. It provides effective testing capabilities for a total of 22 different parts on A319, A320, A321, A330, A340, B737-800, B737-900, B737-8MAX, B737-9MAX, and B777 aircraft models. The bench's design offers high flexibility and adaptability, allowing for use with a wide range of components.

**FAN TEST BENCH** 









#### **FLASH COUNTER LIGHT BOX**



The Flash Counter Light Box system is a manufacturer's product for aircraft strobe lights.

It is designed to count the number of flashes in the time interval determined by their CMM.





#### **FLIGHT MANUEL BOX**



- · Compliant with FAR/CS 25.853 (metal case and paint)
- · Compatible painting with aviation standards (qualified flammability, toxicity, heat release and smoke density characteristics)
- · Lightweight aluminum alloy case
- · Special latch mechanism





#### **FLOCAR**

A vehicle has been designed to meet the transfer and storage needs of floor and dummy panels.

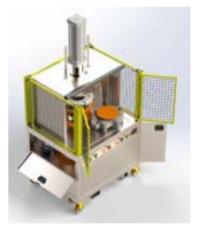






#### **BRAKE HOUSING PISTON** PRESSING MACHINE

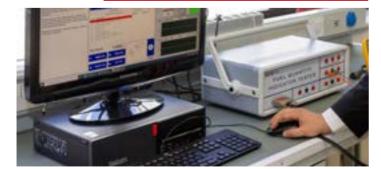
This workbench is used for oil dischargement of brake pistons.







#### **FUEL QUANTITY INDICATOR TESTER**



It handles the various avionic tests of FQI component.





#### **FULL AIRCRAFT INTERIOR REFURBISHMENT**

Turkish Technic offers turnkey solutions for the refurbishment and modification of worn out cabins on VVIP, business jets, Airline or ambulance aircraft.







#### GENX-1B FAN BLADE CONTAİNER

The Tool aims to safely store and transport fan blades and other critical components removed during GEnX-1B engine maintenance. Designed with a compact and durable structure, it prevents part losses in both workshop and field environments, optimizes space, and accelerates maintenance procedures. Its portable design enhances operational efficiency, offering cost savings while supporting long-term safety and continuity. The solution ensures components are well-protected, streamlining maintenance workflows and minimizing downtime, making it an effective tool for improving overall engine service processes.



Bostik is applied to the lower parts and screw parts of the girt bars to ensure their tightness. Special masking stickers have been produced to prevent bostic from infecting places outside the relevant area.









**GIRT BAR MASKING** 



#### **GRINDING TOOL (B777)**





This tool is used to grinding the inlet cowl of GE90 engines to the required tolerance after structural repairs have been made.





We perfectly meet our customers' foreseeable or unexpected aircraft accommodation/ hangar needs, with our 11 modern hangars on two continents, with a total indoor area of 647,000 m<sup>2</sup>.

**HANGAR RENTAL SERVICE** 





#### **AVIATION TRAININGS,**







- · Category A task training
- · Engine run-up training
- · Emergency situation training
- · OJT training
- · NDT and borescope training
- · Category A1 & B1.1 & B2 basic training courses
- · Category A1 & B1.1 & B2 module exams
- · Category addition exams (For example; A1 to B1, B1 to B2... etc.)
- · License conversion restrictions removal exams
- · Engine difference courses

B1, B2, B1&B2 and C category type ratings:

- · Airbus A318/A319/A320/A321 (CFM56, IAE V2500) (CEO)
- · Airbus A319/A320/A321 (PW1100G, CFM LEAP-1A) (NEO)
- · Airbus A330 (GE, RR, PW)
- · Airbus A350 (RR Trent XWB)
- · Boeing 737-600/700/800/900 (CFM56)
- · Boeing 737-7/8/9 (CFM LEAP-1B) (MAX)
- · Boeing 777-200/300 (GE 90)
- · Boeing 787-8/9/10 (GEnx)



## HEAT EXCHANGER AUTOMATIC TESTER





#### **IDG ROTOR TEST SYSTEM**







It has been developed to automatically perform leak and flow tests of heat exchangers in the air conditioning systems of B737 family, A320 family, A330, A340, and B777 aircraft.



It is used to perform the "overspeed" procedure after the repair/ maintenance of IDG rotors.





- · DO160G Qualified
- · Modern Design
- · Light weight
- · Economic power consumption
- · Multi-Touch screen
- · Fast response
- · ARINC 600 Form Factor, 4 MCU
- · 8/4 Arinc 429 i/o
- · 2/2 Arinc 717 i/o
- 6 x 1000 Base-T, 1x100 Base-T quadrax ethernet output



**IFE PRODUCTS** 









It's a tool designed to safeguard stationary aircraft engines outdoors against foreign object damage (FOD), precipitation, and humidity.

INFLATABLE EXHAUST & INLET COWL PLUGS (NB)





#### **CALIBRATION SERVICES**





#### **ANTI-SLIP DUMMY PANEL**







- · Avionic calibration
- · Mass/Scale calibration
- · Optical calibration
- · Force calibration
- · Temperature, humidity and infrared calibrations
- · Torque calibration
- · Pressure calibration
- · Dimensional calibration
- · Time and frequency calibration
- · Electrical calibration





Dummy panels, which replaced the floor panels removed for maintenance, slide when the personnel walks on them. As a solution to this problem, panels containing vacuum rubber shoes that trap air inside have been produced.





When the landing gear of aircraft coming for maintenance needs to be replaced, transportation and protection of the removed component poses a problem since there is no dolly for the removed landing gear.

In order to solve this problem, it also enables the common use of the landing gear of B737, A320 and A321 aircraft as two separate groups, nose and main.

**LANDING GEAR DOLLY B737** 





After structural repair, to perform maintenance on the Lower Bifurcation It has been localized to be equivalent to the OEM tool.



LOWER BIFURCATION ASSY TOOL (GENX)







#### **MIRRORS**





#### Compliant with FAR/CS 25.853



Modifications in our capabilities: IFE, GCS, CDSS, ACARS, SatCom, EFB, ATC Mode S, TCAS, T2CAS, T3CAS, EGPWS, cockpit door, RIB 5/6, SSIP, T/R etc. modification.



**MODIFICATION CAPABILITY** 





## ENGINE AND APU REPAIR, REPLACEMENT AND MAINTENANCE SERVICES





We have capabilities for engine types:

- · CFM56-5C/ 7B and V2500
- · CFM56-7B engine top casing & VSV bushing operations, AGB/TGB replacements, QEC/LRU replacements
- · V2500 engine QEC/LRU replacements
- · GE90 engine QEC/LRU replacements
- · GE90 fan stator module removal / assembly operations
- · GE90 Stg 6 LPT blade replacement
- · CF6-80E1 QEC/LRU replacements
- · TRENT 700 QEC/LRU replacements
- · CFM56-3/5/7 and V2500 engine test capabilities

We perform over 120 APU maintenance and repairs annually as Pratt&Whitney's "Authorized Repair Station" and Honeywell's "Licensed Repair Station" performs with EASA and FAA authorization. Related APU Services:

- · APU maintenance and repair
- · LRU and LLP repair and replacement
- · 7/24 AOG support
- · Technical and operational consultancy services

APU Type: GTCP131-9B - Aircraft Type: 737-600/700/800/900

APU Type: APS3200 - Aircraft Type: A319-320-321





#### **NLG ELECTRONIC TEST BOX (AIRBUS)**







It performs the electrical and functional tests of the front landing gears of A320 and A330 aircraft.

#### **OIL LEVEL** TRANSMITTER TESTER





It is a testbench developed to automate the testing and maintenance processes of the "Hydraulic Oil Quantity Transmitter" component used in B737 type aircraft. In this way, by significantly reducing the manpower and time spent on testing processes, both cost savings and increased work efficiency have been achieved. The new system, with its user-friendly interface, facilitates testing processes while also allowing for the testing of similar components in the future.







It has been designed to perform tests on the PDU motors located on the cargo compartment floor.





Designed specifically for PW1100 fan blades, this container ensures the safe storage and transportation of components removed during engine maintenance. Its compact and durable design prevents part loss, optimizes space utilization, and accelerates the maintenance process. Its easy portability enhances operational efficiency, leading to cost savings.

**PW1100 FAN BLADE CONTAINER** 





## RADOME HANDLING TOOL (A320)





## ROD & ACTUATOR LOAD TEST SYSTEM





Radom container used to transport the A320 Aircraft Radom,

It does not fit in the front cargo section of the same aircraft and causes additional costs in the operation.



A new test bench was requested for Hold Open Rod components that did not have the capability. A common test bench was designed for Hold Open Rod and capable End Actuators.



TR Dollys used in existing aircraft have difficulties in use.

It is being withdrawn and existing TR Dollys are difficult to use because they do not meet the conditions specified in CMM and do not have valid documents.



**ROTATABLE TR DOLLY** 





It is used for eliminating the risk of falling from the cabin during maintenance on Aircraft.

**SAFETY BARRIER** 





#### SAFETY VALVE TEST SYSTEM 🔅 👡





#### **SEAT PARTS**







There are difficulties in testing the Safety Valves currently used in aircraft, and the current tank has difficulty in using it because it does not meet the conditions specified in the CMM.

Design is made in accordance with CMM in line with KAB request.

- · Low weight, rigid chemical resistant, fire retardant plastics
- · Thermoform shaping
- · Injection molding
- · Compliant with FAR/CS 25.853











- · Injection moulded, durable polycarbonate plastic
- · Rigid design, good stiffness
- · 10 kg capacity
- · Durable and sealable latch
- · Compliant with FAR/CS 25.853
- · Compliant with FAR/CS 25.561, qualified for 9G for Six directions (120 kg)
- · Suitable for any A/C
- · Provided with installation bracket set



It performs the electrical and functional tests of the smoke detectors used in the aircraft cabin and cargo compartments.

**SECURITY BOX** 





**SMOKE DETECTOR TESTER** 





# SPECIAL OPERATIONS AND SERVICES REQUIRING EXPERIENCE AND AUTHORIZATION





All kinds of maintenance services related to aircraft/components, Engine/APU replacement, landing gear replacement, flight control surfaces disassembly kit, high power engine operation, cabin pressurization, engine washing, weighing, fuel leakage elimination, cable and pipe manufacturing, etc. operations that require special equipment/tools and training, Non-Destructive Testing (NDT) Service





# **TEST SERVICES**











Temperature and Altitude, Temperature Variation, Humidity, Operational Shocks and Crash Safety, Vibration, Power Input, Voltage Spike, Tensile Compression tests in accordince with RTCA DO 160G, MIL-STD-810G and MIL-STD-704





- · All materials are compliant with FAR/CS 25.853
- · Durable zipper opening

# **TEXTILE PARTS**





# THRUST REVERSER DOLLY(WB)

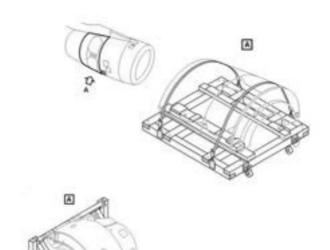






There are difficulties in transporting WB TRs used in existing aircraft and

There is difficulty in using the tools and equipment used, as the WB TR Dollys do not meet the conditions specified in the CMM.







# TRANSFORMER-RECTIFIER POWER SUPPLY TEST BENCH







This is a test bench that will be used during the electrical maintenance and testing of the 'Transformer Rectifier Power Supply' component found in B373 aircraft.

Conversion of green aircraft or aircraft of different configurations into VVIP, business jet, ambulance or special mission aircraft is carried out on a turnkey basis.



**AIRCRAFT & CABIN CONVERSIONS** 





# AIRCRAFT MAINTENANCE







A, B, C and D maintenance of all aircraft in the capability are carried out in house with a total of 11 hangars located on 2 continents and international maintenance certificates (EASA, FAA) Line Maintenance:

·Airbus: A310 A320 Family A320neo Family A321neo A330 A340 A350 A380

- · Boeing: 737 NG 737 MAX 747 757 767 777 787
- · Cessna: 172 ve 510
- · Gulfstream: G-IV, GV-SP ve G-IV-X
- Bombardier: CL-600-2B19
- · Diamond Aircraft: DA42

### Base Maintenance:

- · Airbus A300, A310, A320 Family, A330, A340
- · Boeing 737 NG, 767 ve 777
- · Cessna 172/ F127 ve 510
- · Bombardier CL600; Gulfstream IV ve SP
- · DA40 ve DA42



# IN-FLIGHT EQUIPMENT AND COMPONENT INTEGRATIONS





# AIRCRAFT LIVERY APPLICATIONS









# BIO

Turkish Technic offers solutions for livery design and certification of aircraft, prioritizing quality and safety with its competent personnel.





V2500 Fan Blade Container provides safe storage and transportation of fan blades and critical components removed during engine maintenance. With its compact and durable structure, it prevents part losses, saves space and speeds up operations. It offers operational efficiency and cost advantages with its easy portability.

V2500 FAN BLADE CONTAINER





The bench developed for the testing of vacuum toilets in aircraft is capable of performing all electrical and functional tests.

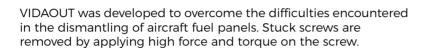
VACUUM TOILET TEST STAND













The tester has been designed to overcome the problems of wiring complexity when functional testing the WQT (Water Quantity Transmitter) device and the inaccuracy of the values.







WATER QUANTITY TRANSMITTER TESTER

# TÜBİTAK SAGE

Company Short Name

TÜBİTAK SAGE

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Company Website

www.sage.tubitak.gov.tr







# **NETWORK SWITCH BOARD**





Network Switch Board is a 25 port rugged OpenVPX (ANSI/VITA 65 ) 3U form factor Ethernet switch board with Layer-2 forwarding with basic VLAN and QoS features. It is designed for various applications in harsh environments.

Anti-Jam GNSS CRPA System was developed specifically for mission critical applications. It ensures mission continuity by suppressing jamming signals present at different GNSS signal frequencies. Due to its integrated 4- or 8-antenna structure, it supports normal GNSS operation in environments with multiple jamming sources.



**ANTI-JAM ANTENNA** 









ATLAS IMU is a high performance high accuracy IMU. It's electronic hardware designs, software designs, mechanical designs, algorithm and calibration designs were done by TÜBİTAK SAGE. ATLAS IMU is designed to meet the needs of navigation, guidance and control applications. It provides a very high input range and excellent long-term repeatability. ATLAS IMU can be successfully used on a wide range of weaponry, military, aerospace, marine and land applications such as stabilized platforms, mission critical platforms, guided missile systems, unmanned aerial vehicles (UAVs).



**ATLAS** 



# **BOZDOĞAN**





It is high manevrability, advance electronic countercounter measure, within visual range air to air missile system. It has solid propellant rocket engine, 65+ km range, active radar seeker, preassure and fragment explosive and proximity fuze.



BOZOK Laser Guided Miniature Munition provides effective defense without jeopardizing friendly elements in asymmetric warfare by giving attack capability to unmanned air vehicles. Due to the lightweight and compact design, it brings operational conformability in UAV where weight is critical.

**BOZOK** 







CAMGÖZ is a longrange, high-angle of sight laser seeker head which is designed for being able to increase the strike accuracy of general purpose bombs with guidance kits and enabling them for being launched against moving targets.













GÖZDE is a weapon system that converts the MK-82 general purpose bombs into smart weapon systems with INS, GPS, and laser seeker guided kit which has the capability of destroying fast moving targets.



HGK-82 is a GPS/INS guidance kit that turns existing 500 lb Mk-82 general purpose bombs into air to ground smart weapons which can be released multiple by using BRU 57 ejector rack.



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**HGK-82** 



# **HGK-83**





HGK-83 is a GPS/INS guidance kit that turns existing 1000 lb Mk-83 general purpose bombs into air to ground smart weapons which can be released multiple by using BRU 57 ejector rack.

HGK-84 is a GPS/INS guidance kit that turns existing 2000 lb Mk-84 general purpose bombs and penetrator bombs into air to ground smart bombs.



**HGK-84** 

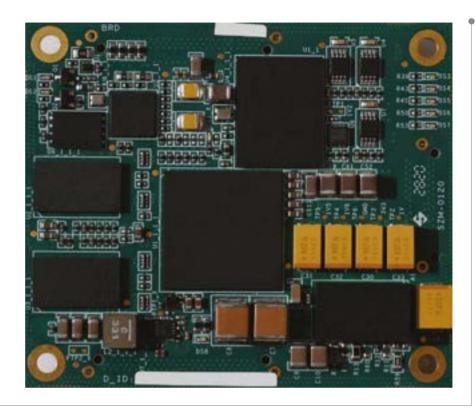




# **IFM-0120 PROCESSOR AND FPGA MODULE**



IFM System on Module (IFM-0120) is a XILINX ZYNQ-7020 SoC based system on module board with 1GB DDR3 RAM, 10/100/1000 Mbps Ethernet PHY, 256 Mbit QSPI Flash configuration memory and 32GB eMMC flash memory. All voltage requirements for module components are produced internally on board from a single input voltage.



Thermal batteries are the ideal energy source to supply the instant and high levels of electrical power requirement of advanced systems. They are widely used as primary power sources in various military and aerospace applications, due to their reliable, maintenance-free and durable structure, as well as their capability of meeting long shelf life requirements. They are for single use (non-rechargeable) and custom designed according to the system's specifications.



**THERMAL BATTERIES** 





KÂŞİF is a military grade GNSS receiver which is developed by TÜBİTAK SAGE. Its RF, electronic hardware, software and algorithm were designed by TÜBİTAK SAGE. The receiver has a front-end which supports the usage of GPS L1/L2, GLONASS L1/L2, GALILEO E1 and BEIDOU B1 signals. The up-todate firmware and FPGA produces navigation solution with GPS L1 and GLONASS L1 signals' tracking.



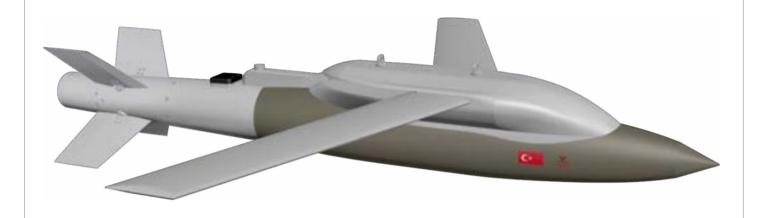








KGK-82 is a wing-assisted guidance kit that converts existing unguided 500 lb Mk-82 general purpose bombs into long-range, air to ground smart weapons. With KGK, the bombs have the capability of precision hitting of target from 100 km range, in all weather conditions, providing aircraft to complete the mission safely without entering into enemy air defense zone.



KGK-83 is a wing-assisted guidance kit that converts existing unguided 1000 lb Mk-83 general purpose bombs into long-range, air to ground smart weapons. With KGK, the bombs have the capability of precision hitting of target from 100 km range, in all weather conditions, providing aircraft to complete the mission safely without entering into enemy air defense zone.



**KGK-83** 

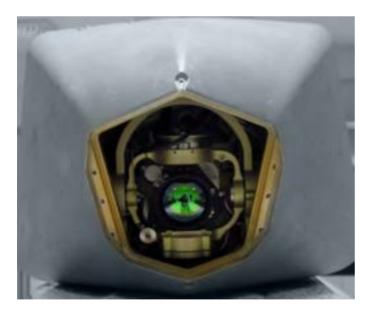


# **KONUM-01 L1/L2 - KKS ANTENNA**



The antenna provides The Global Positioning System (GPS) signal reception in the GPS L1/ L2-GLONASS G1 or GPS L1/L5-GLONASS G1 frequency band with M-Code support. The rugged enclosure can withstand harsh environmental conditions seen in military, aerospace and other applications. The antenna has dual feed ceramic technology which provides truly circular response over entire antenna bandwidth. Dual feed provides superior rejection of cross polarized signals (multipath). Additional projection from near band signals is provided by integrated band pass filters used in low noise amplifier (LNA).





Imaging Infrared Seeker (KOGAB) is an electro-optical system which includes a long detection range, high resolution infrared imaging system, a high field-of-regard gimbal and state-of-the-art detection and tracking algorithms. KOGAB can be integrated into highly maneuvering missiles to provide precise terminal phase guidance as well as support to navigation systems with an integrated IMU.



KÖGAB

## **KUZGUN-KY**



# **KUZGUN-SS**







It is a new generation product family in order to fulfill the guided munition need; modular in terms of warhead, range and guidance method, costeffective, suitable for multiple attack, high precision strike with minimal collateral damage. KUZGUN KY, which it effective against both mobile and immobile targets, have INS/GPS guidance, can use laser or IIR seeker for final phase, is a member of this family uses solid propellant to reach its target.

It is a new generation product family in order to fulfill the guided munition need; modular in terms of warhead, range and guidance method, cost-effective, suitable for multiple attack, high precision strike with minimal collateral damage. KUZGUN SS. which it effective against both mobile and immobile targets, have INS/GPS guidance. can use laser or IIR seeker for final phase, is a member of this family that does not have any propulsion system but glide to reach its target.









It is a new generation product family in order to fulfill the guided munition need; modular in terms of warhead, range and guidance method, costeffective, suitable for multiple attack, high precision strike with minimal collateral damage. KUZGUN TJ, which it effective against both mobile and immobile targets, have INS/GPS guidance, can use laser or IIR seeker for final phase, is a member of this family uses turbojet engine to reach its target.

LHGK-84 is GPS/INS and laser guidance kit that turns existing 2000 lb Mk-84 general purpose bombs and penetrator bombs into air to ground smart bombs against both stationary and moving targets.

## **KUZGUN-TJ**



# LHGK-84







Laser Target Detection is completely indigenously design solution used for target detection in missile systems.



MILKON offers military and aerospace connector and accessory solutions that are qualified according to military standards.



**MİLKON PRODUCT FAMILY** 



# **MOTOR CONTROL AND DRIVER CARD**



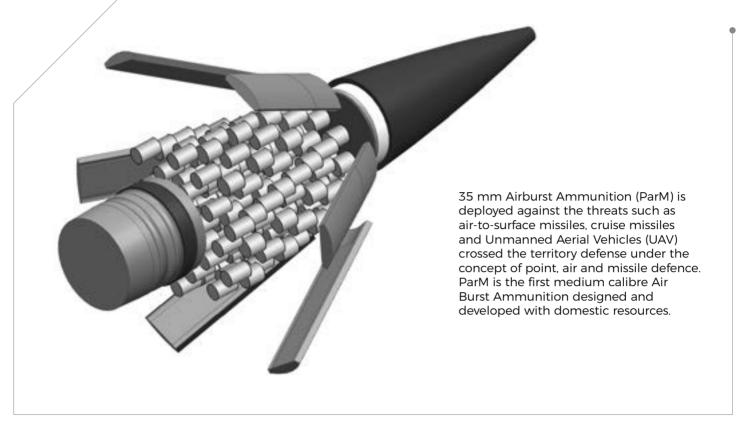


MKSK is compliant with OpenVPX (ANSI/VITA 65) 3U standards and designed by using System On Chip (SoC). It is designed for motor control requirements. Position data could be obtained as either digital or analog format. For digital position data, MKSK offers different kinds of digital interfaces.









Pyrotechnic systems offer highly reliable solutions to meet ignition, pressure and mechanical effect requirements of subsytems belonging to military weapon systems, space launch vehicles and manned/unmanned military or civil vehicles&platforms. Design, manufacture and qualification activities of pyrotechnic systems are accomplished according to military standards and customer requirements.



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**PYROTECHNIC SYSTEMS** 





SARB-83 is a penetrator bomb, which is designed to be used against surface and underground targets. SARB-83 contains Multiple Warhead Systems (MWS) technology. SARB-83 has identical external geometry, guidance unit interfaces, mass, center of mass and intertia properties with Mk-83 GPB.





SERT-82 has identical external geometry, guidance unit interfaces, mass, center of mass and intertia properties with Mk-82 GPB.

**SERT-82** 









SGN-150D is a navigation-grade Inertial Navigation System that is designed for use on Naval Platforms. The SGN-150D includes an embedded GNSS receiver and can function as both a primary and secondary navigation system. ITAR-free Fiber Optic Gyro (FOG) technology, navigationgrade quartz accelerometers and related electronic and optical designs are all included in the SGN-150D which is enclosed in a tough-environment-proof structure. Electronic hardware designs, mechanical designs, software and algorithms are all developed by TÜBİTAK SAGE.







SGN-33P is a tactical grade high performance GNSS aided navigation system. Incorporating a MEMS based inertial measurement unit and GNSS receiver combined with advanced sensor fusion algorithms, SGN-33P delivers high accuracy position, velocity and attitude under static and dynamic conditions. Comprising features like autonomous and dynamic navigation filter initialization, the system has been designed to operate under severe environmental conditions.





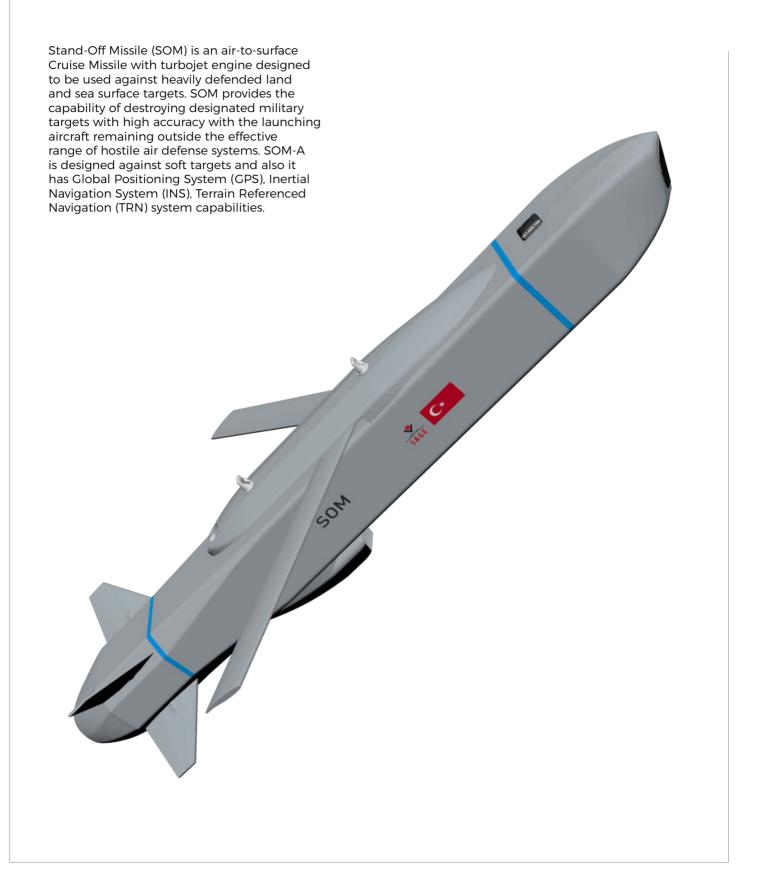
Signal Processing Board OpenVPX (ANSI/VITA 65) 3U format, compatible with OpenVPX standard, based on System On Chip (SoC) Single Board Computer. It is designed for signal processing needs.

# **SIGNAL PROCESSING BOARD**









# SOM B1



SOM B2



SOM-B1 is designed against soft targets similar to SOM-A. In addition, it has Imaging Infra-Red (IIR) seeker. Also it has a High Explosive Blast-Fragmentation Warhead like SOM-A.





SOM-B2 is designed against hard targets. It has capabilities of SOM-B1 and a Dual Stage Tandem Penetrating Warhead.



SAGE



SOM-C1 is a variant of the SOM Missile System Family which has capabilities of SOM-B1, ASuW and Datalink capabilities.

SOM-C2 is a variant of the SOM Missile System Family which has capabilities of SOM-B2, ASuW and Datalink capabilities.



SOM CI



SOM C2







SOM-J is a variant of the SOM Missile System Family specially designed for F-35 Joint Strike Fighter (JSF) internal carriage, F-16, Unmanned Combat Aerial Vehicles (UCAVs), TAI TF-X and used against heavily defended high value stationary ground and moving maritime targets.



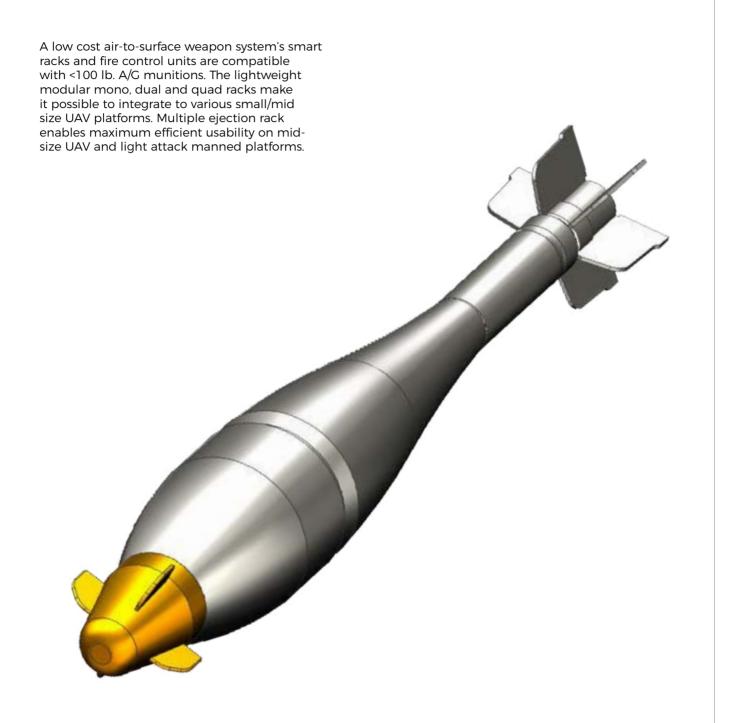
Single Board Computer is based on FPGA and processor in OpenVPX (ANSI/VITA 65) 3U format suitable for military use. The QorlQ P4080 processor it has on is provides concurrent handling of control-plane, data-plane and application layer processing tasks.



**SINGLE BOARD COMPUTER** 







## **TOROS**



## **TST-201 FUZE**



TOROS-230 with a range of 65 km and TOROS-260 with a range of 110 km were developed by TÜBİTAK SAGE. TOROS has a conventional warhead and solid propellant rocket engine.

TST-201 Fuze is an in-line fuzing system compliant with STANAG 4187 which has been developed for munitions with rocket propulsion systems. The fuze can be triggered internally by impact switch and externally by crush switch or firing signal from missile computer. Firing interface of the fuze with mechanical and electronic interfaces can be tailored for specific use.









PBP-102 is a powder thermobaric explosive that contains more than 30% by weight metal powder. The blast wave formed upon detonation creates more impulse and higher quasi-static pressure in indoor targets (caves, tunnels, bunkers etc.). However, thanks to its high energetic charge, it has a much higher explosion rate and fragment effect than castable thermobaric explosives. The additional amount of heat generated by burning of metallic powder increases the temperature of the flame and extends total time duration of the flame which enhance the thermal effectiveness of the explosive on targets.



TST-202 is a fully electronic in-line rocket motor safety and ignition unit that has been developed for use in air-to-air missiles, surface-to-air missiles, air-to-ground missiles and surface-to-surface missiles. Arming and firing circuit was optimized for demanding applications which require fastest possible reaction time. It meets the safety design requirements of STANAG 4368. TST-202 has advanced error detection and reporting ability. It can communicate with the platform via TIA/ EIA-422-B interface. TST-202 has service life of 10 years.

**TST-202** 



**VOLKAN** 



# TÜBİTAK UME

Company Short Name

TÜBİTAK UME

Company Trade Name

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# ATOMÍK SPÍN JÍROSKOP



Atomic Spin Gyroscope is a quantum sensor designed to be used on all moving platforms where necessary and can provide inertial rotation data during navigation.







Our domestically developed Pitot-Static Tube is a critical system designed to accurately measure airspeed, altitude, and airflow information for both military and civil aviation applications. It is manufactured using modern engineering and production techniques, ensuring reliable performance and durability under harsh environmental conditions. The system is designed to integrate into air data systems, and it complies with training, testing, and certification processes, offering flexibility across platforms. The Pitot-Static Tube is certified to meet both domestic and international standards, ensuring its suitability for a wide range of applications.

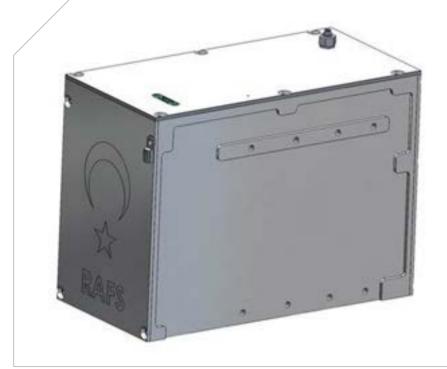
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# RUBIDIUM ATOMIC FREQUENCY STANDARD (RAFS)





The Rubidium Atomic Frequency Standard (RAFS) is an oscillator designed for use in applications requiring high frequency accuracy and stability. It has many application areas such as banking, stock exchange, and precise location determination systems.

Our pressure gauges, developed domestically, are designed to precisely measure pressure obtained from pitot-static tubes. These gauges are critical for aviation and defense applications and are manufactured using advanced technology, offering accuracy, reliability, and durability under challenging conditions. Compliant with international standards, these pressure gauges ensure seamless integration into air data systems and provide flexibility across platforms. With their advanced functionality, they meet critical measurement needs, contributing to the efficiency and safety of operations.









**UB-12 AND UB-25 PRESSURE GAUGE UB05-D PRESSURE GAUGE** 



Company Short Name

TÜMOSAN

Company Trade Name TÜMOSAN MOTOR VE TRAKTÖR SANAYİ ANONİM ŞİRKETİ

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## **ALP 1 POWER PACK**



## **ALP 2 POWER PACK**



Power pack consisting of TMSN X 5.4 model engine and TMSN 1308 AMT model transmission, with 5.2 lt engine volume and 310 HP Rated Power at 2400 rpm.





Power pack consisting of TMSN X 7.5 model engine and TMSN 2506 AT model transmission, with 7.8 lt engine volume and 530 HP Rated Power at 2400 rpm.



TÜMOSAN

Power pack consisting of TMSN X 5.5 model engine and Allison X200-4C model transmission, with 5.2 It engine volume and 310 HP Rated Power at 2800 rpm.





Power pack consisting of TMSN X 7.4 model engine and TMSN 1308 MT model transmission, with 7.8 lt engine volume and 450 HP Rated Power at 2400 rpm.

**ALP 3 POWER PACK** 

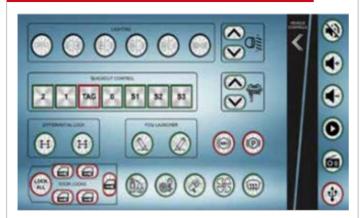


**ALP 4 POWER PACK** 



# **MILITARY VEHICLE DISPLAY PANEL**





High efficiency is achieved for to project-specific CAN messages, flexible I/O support and vehicle control interfaces.

# **INDEPENDENT SUSPENSION SYSTEM**



It consists of the axle system, which includes the wheel hub and differential system. There is an independent suspension system integrated on the axle.





**TÜMOSAN** 



Tümosan Differential with a maximum torque of 3523 rpm and 6017 Nm, a ratio of 1.53 and a pneumatic locking mechanism.

Diesel Engine Electonic Control Unit (DECU) is a unit that can control diesel engines using common rail injection with high efficiency. DECU also enables to meet exhaust emission standards up to EURO 6. Reduces calibration times with XCP protocol support.



**DIESEL ENGINE CONTROL UNIT (DECU)** 



# HYBRID VEHICLE CONTROL UNIT



The Hybrid Vehicle Control Unit manages the electric and electronic units according to gas/brake pedals and the hybrid mode selection. It collects information about the vehicle system via CAN communication and transmits the information as J1939 standard. The diesel engine can be stopped and operated according to the Hybrid mode selection. It ensures the battery to switch charge/discharge modes. It specifies the working speed of the diesel engine according to the energy requirements of electric motors. It can be customizable to communicate with body control unit.



# THE HYBRID POWER DISTRIBUTION UNIT





The Hybrid Power Distribution Unit ensures to be transmitted energy from the rectifier or battery to the motor drives as high DC voltage according to the commands from the Hybrid Vehicle Control Unit. It also ensures the transmission of the charge-discharge energy of the battery according to the hybrid operating mode. It is also the duty of the Hybrid Power Distribution Unit to provide uninterrupted supply for low DC voltage systems.



**TÜMOSAN** 

High efficiency is achieved for to projectspecific CAN messages, flexible I/O support and vehicle control interfaces.



WORK MACHINE DISPLAY PANEL





High efficiency is achieved for to projectspecific CAN messages, flexible I/O support and vehicle control interfaces.

**MARIN DISPLAY PANEL** 



# MARINE POWERTRAIN ELECTRONIC **CONTROL AND COMMAND SYSTEM**





Marine Powertrain Electronic Control and Command System is the command control system of diesel engines suitable for military or industrial marine vehicles. It provides the opportunity to control and diagnose diesel engines from two different points, the wheel hause and the engine room.





# MARINE POWERTRAIN REMOTE MANAGEMENT SYSTEM





Marine Powertrain Remote Management System is an electronic management system that enables military or industrial marine engine systems to be controlled remotely or locally. Marine Powertrain Remote Management System has a modular connection structure with diesel engine and transmission, water jet and remote connection and diagnostic system. It has advanced control software for remote or local control methods.

A fuel-based Auxiliary Power Unit that charges an electric vehicle's batterypack using a small internal combustion engine as a generator, increasing its range.



**RANGE EXTENDER SYSTEM** 



# PUSAT



PUSAT, Türkiye's first tactical wheeled armored vehicle with a nearly 100% localization rate, has been developed to best meet the needs of today's and future battlefields, as well as having a high localization rate, and has been put at the service of our defense industry.



PUSAT Hybrid is being developed to meet the hybrid power system needs planned to be used in future combat conditions. The vehicle, which is being developed with series hybrid technology, charges the batteries by getting power from the Tümosan diesel engine. It can be used in battery mode with a range of up to 30 km according to different modes.





**PUSAT HYBRID** 

## **WHEEL HUB**



# **TMSN 1308 MT/AMT**



Tümosan Wheel Hub with a maximum torque of 2169 rpm and 4444 Nm, a final drive ratio of 3.5, and a central tire inflation and deflation system(CTIS).





TÜMOSAN Synchromesh Automatic Transmission with 8 forward and 1 reverse gears, with a maximum of 360 HP and a maximum torque of 1300 Nm. (Electro-Hydraulic Control)



TÜMOSAN

TÜMOSAN Fully Automatic Transmission with Torque Converter, 6 forward and 1 reverse gears, with a maximum of 650 HP and a maximum torque of 2500 Nm.



**TMSN 2506 AT** 





TÜMOSAN Fully Automatic Transmission with Torque Converter, 7 forward and 1 reverse gears, with a maximum of 700 HP and a maximum torque of 3000 Nm.

**TMSN 3007 ATR** 



## **TMSN 5.4 MARIN ENGINE**



The TMSN 5.4 Marin engine is a motor with a 5.2-liter displacement, 4-cylinder inline configuration, turbocharged aspiration, and a common rail injection system. This engine can generate 232 kW of power at 2400 RPM, providing 1000 Nm of torque in the range of 1400-2000 RPM. TMSN 5.4 Marin offers its users high performance, efficiency, and fuel economy.



# TMSN S8000 COMMON RAIL ENGINE



It features a 3.9-liter displacement and a four-cylinder inline configuration. With turbocharged aspiration, it achieves high performance while efficiently utilizing fuel through its common rail injection system. This engine produces 125 HP power at 2200 RPM and provides 530 Nm of torque in the range of 1400-1600 RPM. Meeting the Stage 5 emission standard, the \$8000 offers an

environmentally friendly option.





TÜMOSAN



S8000 Marin is an engine with an engine volume of 3.9 liters, 4-cylinder in-line configuration, turbocharger aspiration and mechanical injection system. This engine, which can produce 105 HP at 2300 rpm, provides 350 Nm of torque at 1500 rpm. S8000 Marine is designed to provide powerful and stable performance in the marine industry.







It is a member of the S8000 engine family, with a volume of 3.9 liters, in-line 4-cylinder, mechanical injection. It features turbocharged aspiration and provides 115 HP nominal power at 2300 RPM and 530 Nm of torque at 1500 RPM. This engine, which has a Stage 3A emission certificate, is environmentally friendly. Designed for industrial and generator applications, the S8000 offers users a stable and efficient operating experience.

TMSN S8000 MECHANICAL ENGINE



#### **TMSN X5.4 ENGINE**



### **TMSN X5.5 ENGINE**



TMSN X5.4 is an inline four-cylinder engine with a displacement of 5.2 liters. It features turbocharged aspiration and a common rail injection system. This engine can generate 232 kW of power at 2400 RPM and provides 1000 Nm of torque in the range of 1400-2000 RPM. The high torque enhances the engine's ability to handle heavy loads, while the common rail injection system optimizes fuel efficiency. TMSN X5.4 engine is a well-known choice for its durability and reliable performance, specifically designed for industrial applications.





TMSN X5.5 is an industrial engine with a displacement of 5.2 liters and a 4-cylinder inline configuration. It is equipped with turbocharged aspiration and a common rail injection system. This engine can generate 232 kW of power at 2800 RPM and provides 1000 Nm of torque in the range of 1600-2100 RPM. With its low fuel consumption and high performance, it is a preferred choice for industrial applications.



**TÜMOSAN** 

It is Tümosan's 7.8 liter, inline-6 cylinder engine. It produces a nominal power of 352 kW at 2400 RPM and an impressive nominal torque of 1450 Nm between 2000-2200 RPM. Equipped with turbocharged aspiration and a common rail injection system, this engine offers high performance, low fuel consumption, and environmentally friendly usage. TMSN X7.4 MARIN engine is an ideal choice for those seeking reliability and efficiency in the maritime industry.



TMSN X7.4 MARIN ENGINE





It is Tümosan's 7.8-liter inline 6-cylinder, water-cooled industrial engine. This engine, which has a turbocharger aspiration and common rail injection system, produces 336 kW nominal power at 2400 rpm and provides 1600 Nm of torque between 1300-1900 rpm. The high-performance TMSN X7.4 motor stands out for its low fuel consumption and is a reliable choice for military and industrial applications.

TMSN X7.4 ENGINE



# **TRANSFER CASE**



Transfer Case with 2 speed ratios (1.00, 1.77), pneumatic Hi-Low control and locking mechanism, with a maximum torque of 3250 rpm and 9000 Nm.



# TUMOSAN ELECTRONIC CONTROL CONTROL UNIT (TECU)



Tümosan Electronic Control Unit (TECU) is an easily programmable and highly reliable vehicle control unit that designed to manage the independent systems in vehicles from a single central unit. The unit which is ready for ISO 26262 ASIL D reduces development times with the support of the MATLAB Simulink® libraries developled by Tumosan engineering capabilities.





**TÜMOSAN** 



Highly local generators that produce electrical energy by being powered by Tümosan diesel engines are developed and produced to meet the requirements and standards needed by the defense industry.







Aircraft Arrest System; It is a system that catches and stops military aircraft at Military Airports with a hook while landing on the runway and stops the aircraft by opening the ropes. Rewind Engine: It is the engine that rewinds the opened ropes and makes the system usable again.

AIRCRAFT ARREST SYSTEM, REWIND ENGINE



# TÜRK HAVACILIK UZAY SANAYİ

Company Short Name

Türk Havacılık Uzay Sanayii

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## **AKSUNGUR**





AKSUNGUR High Payload Capacity UAS, capable to perform day and night Intelligence, surveillance and reconnaissance (ISR) and strike missions with EO/IR and SAR payloads, and a variety of air to ground weapons. With 750 kg payload capacity and 50 hours of endurance, AKSUNGUR UAV System is a multi-sensor, multi-mission system for ISR (intelligence, surveillance and reconnaissance), targeting, air-to-ground strike, maritime surveillance, border and coastal protection, communication relay and electronic warfare & signal intelligence. AKSUNGUR is powered by two twin-turbocharged diesel engines enabling long endurance operations.

ANKA, advanced medium altitude long endurance (MALE) class combat proven unmanned aerial system, with 350 kg payload capacity, performs day and night, has an endurance of 30 hours, all-weather reconnaissance. target detection / identification and intelligence missions with its EO/IR and SAR payloads, featuring autonomous flight capability including automatic takeoff and landing. ANKA UAV System is a multi-sensor, multi-mission system for ISR (intelligence, surveillance and reconnaissance), targeting, air-toground strike, maritime surveillance, border and coastal protection. communication relay and electronic warfare & signal intelligence.



**ANKA** 





ANKA III is a high speed and low observable multirole unmanned combat aerial system. With high carrying capacity for various types of sensors and munitions, ANKA III has air-to-air and air-to-ground strike capability. ANKA III has various roles of strike/deep strike, suppression and destruction of enemy air defenses (SEAD/DEAD), close air support (CAS), offensive counter air (OCA), surface and anti-surface warfare (SUW/ASUW), interior security operations, combat search and rescue, surface-to-air / air-to-air and sea surface-to-air training.



GÖKTÜRK-1 provides Very High Resolution (VHR) images from any location in the world for both military and civilian purposes. As the main local subcontractor, Turkish Aerospace Space Systems directly participates in several space and ground segment work packages including design, manufacturing and test activities of GÖKTÜRK-1 Satellite System and subsystems. Turkish Aerospace manufactured, qualified and exported equipped flight panels of GÖKTÜRK-1 Satellite Mission Module. Henceforth, Turkish Aerospace Space Systems has become the first and only Turkish company, which has manufactured and exported spacequalified product. GÖKTÜRK-1 was launched on December 5th, 2016 and successfully operating in orbit.



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**GÖKTÜRK-1** 

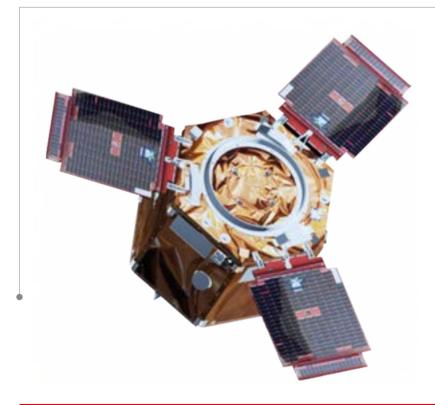


# **GÖKTÜRK 1-R**

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With the objective of sustaining very high resolution (VHR) satellite imaging capability of Turkish Armed Forces, a new satellite development program, called GÖKTÜRK-Y is initiated by the Defence Industry Agency (SSB) to replace GÖKTÜRK-1 Satellite System by the end of its design lifetime. Owing to expertise on space system design, manufacture, integration and verification gained with various satellite programs, and in-depth knowledge on the space industry and key players, Turkish Aerospace has been awarded with the "Approval to Proceed" (ATP) and conducted primary design activities including trade-off design and mission analysis for alternative electro-optical payload subsystems.





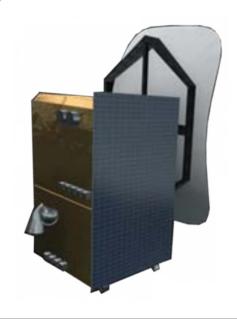
Türkiye's First High Resolution Electro-Optical (EO) Satellite GÖKTÜRK-2 has been GÖKTÜRK-2, which was designed and developed by Turkish Aerospace and TÜBİTAK Space, is the first High Resolution (HR) electro-optical satellite of Türkiye. Besides the indigenous design and analysis activities, GÖKTÜRK-2 platform assembly and integration, payload integration, mass properties measurement, system level functional tests and thermal vacuum tests were performed at Turkish Aerospace AIT facilities. GÖKTÜRK-2 was launched on December 18th, 2012 and successfully operating in orbit.

**GÖKTÜRK-2** 









Türkiye's first indigenous Synthetic Aperture Radar (SAR) Satellite GÖKTÜRK-3 is to provide very high resolution (VHR) radar images from anywhere in the world in day/night, all-weather conditions without territorial land, sea and aerial zone restrictions for military and civil applications. Being the prime contractor of Phase-I, Turkish Aerospace with its local main subcontractors have successfully performed the preliminary design of GÖKTÜRK-3 Satellite System that consists of satellite with SAR Payload based on reflector antenna, fixed and mobile ground stations.

HÜRKUŞ advanced trainer aircraft is purpose designed as per contemporary global military trainer aircraft requirements. Featuring next generation glass cockpit, unique high tandem seating configuration, best in class pilot view, on board oxygen generating system and a high-performance engine, HÜRKUŞ provides a cost effective solution for the requirements of trainings. HÜRKUŞ Mission Aircraft provides a cost effective flexible solution against asymmetric threats of the contemporary world's warfare theatres. HÜRKUŞ provides its operators an extensive payload capacity up-to 650 kg, which can be utilized to perform demanding missions, during day&night conditions in high altitudes and harsh geographies.







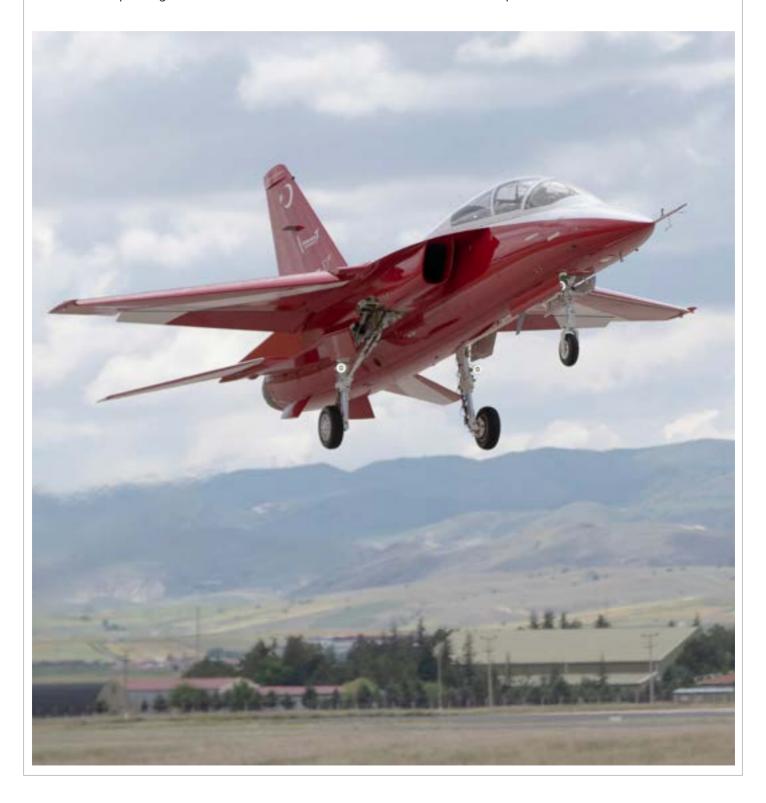


HÜRKUŞ





Purpose designed single engine, tandem-seat advanced Jet Trainer Aircraf HÜRJET, fulfills a critical role in modern combat aircraft training through its superior performance characteristics. Combat Variant of HÜRJET provides a battlefield force multiplier through a wide range of mission capabilities and its extensive payload. HÜRJET's various roles are advanced jet trainer, lead-in fighter trainer, light combat aircraft / light attack armed reconnaissance (LCA/LAAR), red aircraft, armed/unarmed air policing, acrobatic demonstration aircraft and aircraft carrier compatible aircraft.







KAAN, the 5+ Generation Multirole Fighter Aircraft is an indigenous product developed using national technologies and inhouse capabilities. In a network centric warfare with secure data sharing between allied forces and using smart weapons, KAAN provides strategic missions for both air to air and air to surface targets. Not only low observable under radar, KAAN has internal weapon bay and is capable of supercruise. KAAN delivers air dominance through precise and accurate strike capability at a high speed, high performance of radar, electronic warfare, electro-optic, communication, navigation and identification, and air superiority with support of Artificial Intelligence and multi sensor data fusion.



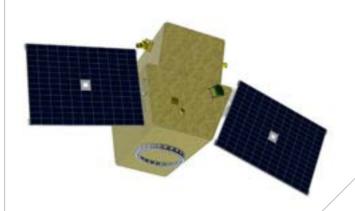
### **MICRO SATELLITE SYSTEM**



### **MODERNIZATION**



As a response to the current market trend of small satellite utilization, Turkish Aerospace embarked on the design and development of a micro satellite that is envisioned to operate in Low Earth Orbit (LEO) between altitudes of 500 km to 700 km and will be able to support various payloads. Modular and expandable satellite bus design with a mass of less than 150 kg and a compact volume offers shared launch opportunities to minimize launch cost.



Turkish Aerospace provides turnkey avionic modernization, system integration solutions, structural upgrade and modification to increase the technological level of aerial platforms, enhance the pilot-vehicle interface, and diversify mission capabilities. The avionics suites designed and developed by Turkish Aerospace are advanced platform independent technology solutions with modern and flexible avionics architecture, multiple operating system capability and inherent growth potential in line with the current requirements.

TÜRKHAVACILIK UZAYSANAYİİ

Vertical takeoff and landing. Rotary Wing Cargo UAV system is a multirole, multipurpose system for cargo transport and reconnaissance missions. Rotary Wing Cargo UAV System's fully autonomous take off, operation and landing capabilities allow the easy of cargo transportation above link coverage. Rotary Wing Cargo UAV System's capabilities are cargo transportation, ISR (Intelligent, Surveillance and Reconnaissance), and maritime surveillance.



**RİHA-VTOL UAV** 





It is the telecommunication satellite platform which is capable of accommodating a wide range of commercial payloads and missions from TV broadcasting to multimedia applications, data communication and mobile or fixed services in a wide range of frequency bands. Small Size GEO Communication Satellite has new, modular and flexible design. The satellite has a small sized platform which employs telecommunication payloads for such as; Ka, Ku, X, C, S, L, UHF and other various frequency bands according to the end user requirements. Within this scope, a joint venture called GSATCOM was made between Turkish Aerospace Industries and Argentinian company INVAP S.E.

**SMALL-GEO** 







SUPER ŞIMŞEK is a modular system that can be configured with different payloads for maximum mission flexibility. SUPER ŞİMŞEK, as an aerial target, is used to represent threads posed by UAVs, fighter aircrafts and aerial weapons. Alternative features are available and easily equipped so that decoy variant diverts, enemy threats and long-range cruise missiles. These include active and passive radar enhancement, chaff and flare and hot nose infrared augmentation device. SUPER ŞİMŞEK is also an affordable air-to-air and air-to-ground long range missile by equipped with up to high explosive warhead and seeker and also capable of electronic warfare, search & rescue and ISR to increase the operational effectiveness that single UAS cannot handle by itself.



ŞİMŞEK Target Drone, with its wide variety of payloads and effective flight envelope, can be configured to simulate different type of aircraft and missiles. ŞİMŞEK can be both used as test drone and plays the attacking hostile air platform role during the air defense trainings and tests. It can be integrated to Turkish Aerospace' UAV Systems and has a modular structure that can be configured to meet the customer requirements.







## **T129 ATAK**



T129 ATAK is a world class combat proven attack and tactical reconnaissance helicopter. T129 ATAK has state of the art avionics and mission equipment package, precision strike weapon systems and inherent survivability features. It can show hot & high performance and operate day & night with accurate navigation & targeting features with low life-cycle cost. attack, armed reconnaissance, precision strike, fire support, armed escort, suppression of enemy air defense, deep strike and security/urban warfare are the roles that T129 ATAK can perform.



T625 GÖKBEY is a multirole utility helicopter that is designed and optimized to meet and exceed the multi-mission requirements for hot & high geographical environments and for adverse weather conditions. The helicopter incorporates several new technology features to provide the highest levels of safety and operational benefits for operators with large cabin space, comfortable glass cockpit with advanced avionics, retractable landing gear, easy maintenance, sustainable and cost-effective life cycle support. T625 GÖKBEY can be configured according to the civil and military needs of end-users including transportation, cargo, VIP, off-shore, air ambulance, search & rescue and firefighting.



**T625 GÖKBEY** 









Within the scope of the "TUHP-Turkish Utility Helicopter Program", T70 helicopters are developed based on the S70i Helicopter of Sikorsky Aircraft. Turkish Aerospace Industries Inc. leads the program as a prime contractor of this program with other subcontractor companies; Sikorsky Aircraft, Aselsan, TEI and Alp Aviation. With T70, Türkiye's utility helicopter requirements are met and Turkish industry plays a significant role in fulfilling domestic needs in military and civilian areas.



T925 is a multirole utility helicopter with a large cabin area with a ramp door which can be configured for transportation, cargo, search & rescue, firefighting, air ambulance and specialized mission capabilities. Cabin area and the ramp is designed to carry 19 military personnel and support equipment. T925 has two Motorsich TV3-117VMA-SBM1V Series1 turboshaft engines with dual channel FADEC system, providing high performance in hot, high and maritime conditions. T925 military version will be equipped with IR suppression exhaust for protection against IR seeking threats.

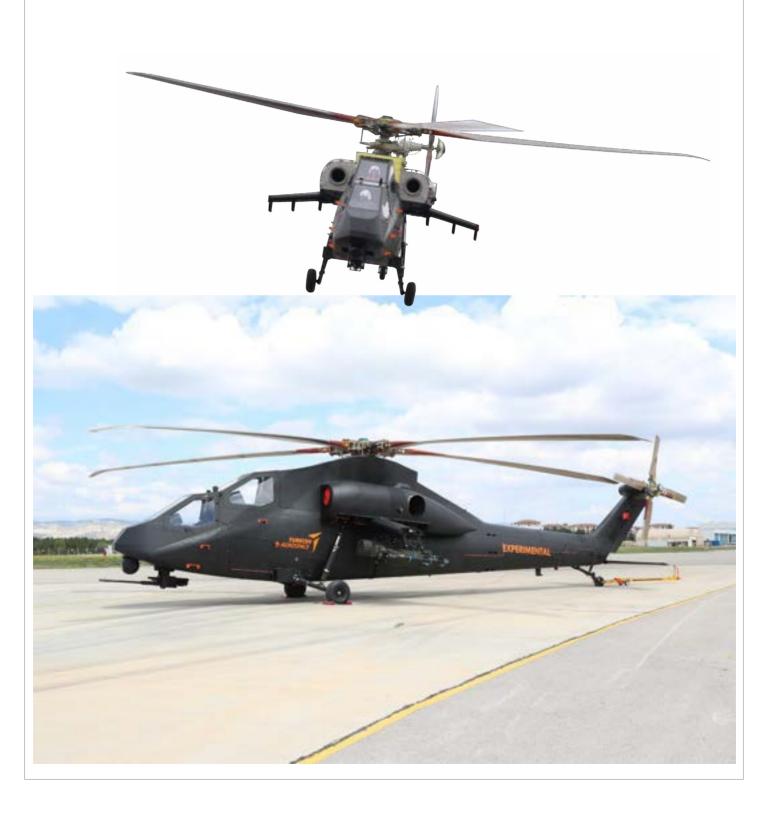


T925





T929 ATAK II is a multirole heavy combat helicopter that can meet hot & high performance requirements of harsh environmental conditions with an exceptional ammunition payload capacity. T929 ATAK II can perform attack, armed reconnaissance and observation, armed escort, closed air support, joint air attack team (JAAT) operation and precision strike roles.



# **TÜRKSAT 6A**



### **FLIGHT ACADEMY**





Türkiye has initiated the process of developing own telecommunication satellites. With this perspective TÜRKSAT 6A is the first indigenous telecommunication satellite that is being designed and manufactured by the Turkish Space Industries and Institutes. Turkish Aerospace Space Systems holds essential responsibilities on national telecommunication satellite program with design, analysis, assembly, integration and test infrastructure and capabilities. With a solar array span of 17 meters, the satellite will have a launch mass around 4.5 tons. The system is designed to provide commercial services for at least 15 years. TÜRKSAT 6A will bring extended capabilities and additional capacity for high and secure data transfer applications with 20 Ku-Band transponders having a broad coverage area (Asia, Europe, North and Mid-Africa).

Turkish Aerospace Flight Academy operates under Turkish Aerospace and aims to meet military and civilian helicopter training needs in the region complying with DGCA and international standards. Flight Academy offers military/ paramilitary training programs, private pilot license course (PPL-H), helicopter flight examiner course, commercial helicopter pilot license course (CPL-H), military/police pilot training, helicopter flight instructor course (FI-H), type rating and refresher course and night flight authorization.



TÜRKHAVACILIK UZAYSANAYİİ



Türkiye's full grade state-of-the-art Space Systems Assembly Integration and Test (AIT) Center is fully operational at Turkish Aerospace. AIT Center is designed to serve assembly & integration activities, functional, environmental, performance testing and measurement processes for earth observation, communication and similar featured space systems until they are ready for launch activities. Turkish Aerospace provides its customers with extensive range of services within the AIT Center that includes manufacturing workshops. All test facilities are under one roof to perform the activities with minimum risk, easy accessibility, time management and cost saving. AIT Center provides assembly, integrations and test services for space systems.



Turkish Aerospace Aerostructures is a house of excellence in engineering and manufacturing of metallic and composite assembly structures, focused on its supreme technologies and processes to deliver the most challenging aerostructures. Having DOA and POA approvals, Turkish Aerospace has built its worldwide success on the excellence of its products and services, participating in international military and civil aerospace programs such as A320 Family, B737 Family, B787, A350 XWB and A400M.

**AIT** 



**AEROSTRUCTURES** 







Company

Website

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Our company conducts R&D studies to develop sub-systems for UAV's and their systems. Our company has competent experience in the development and design of systems with its professional team. In all the processes from identifying the needs, which will require a new product, to the delivery of the product, we conduct our research within the company. In addition to production, our company also provides flight services, if deemed necessary, to use the products in the field. UAV2 Pilot Trainings are provided by UAVERA's flight experts. **UAVERA AVIATION SYSTEMS COMPANY** 



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# **32T32R REMOTE RADIO UNIT**

One of the key components of 5G is the 32T 32R RRU (Remote Radio Unit), which has an RF output power of > 200 W. The RRU, which has Massive MIMO 32T32R features design, compliant with 3GPP and ORAN standards. It consists of 48 dual pole antennas (96 antennas) in 2V8H topology and supports digital beamforming. The RRU operates in 3400-3800MHz (5G band for Türkiye) with an instantaneous bandwidth of 200MHz in the entire band (400MHz OBW/200MHz IBW) and has 8/4 Layer DL/UL mu-MIMO capability. The launch demonstration took place at the MWC 2023 Expo.

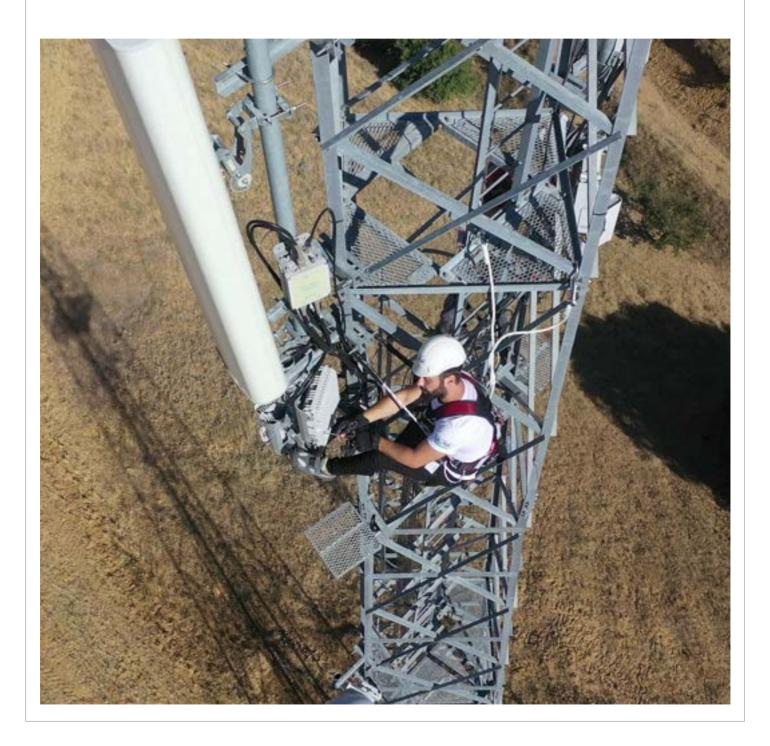


# 4.5G/5G BASE STATION





Through 4.5G connectivity technologies; it is aimed to ensure the security and emergency communication services needed by the public in a fast and uninterrupted way through mobile phone operators. To this end, ULAK has established universal and commercial fields everywhere in Türkiye. More than 2.5 million citizens are served with uninterrupted and secure communication with ULAK 4.5G base stations. The BBU (Baseband Unit) is one of the main unit of the 4.5G base station, where all software configurations run, including LTE Layer 1-2-3 middleware. RRU (Remote Radio Unit), also known as the Remote Radio Head, performs operations required for the propagation of high frequency signals. It has options such as 2x2 and 4x4 configurations depending on the number of receivers and transmiters.





## **4T4R REMOTE RADIO UNIT**



The operating frequency of the 4T4R RRU is between 3400-3800 MHz. Output power per channel can be 250 mW or 5W. 4T4R RRU will comply with 3GPP TS 38.104 document. RRU will be able to operate 24/7 without interruption.





ULAK provides solutions that use 5G technology to connect a large number of machines/robots, ensure the necessary capacity for the transfer of image data of AGV/AMR/AMRs (Autonomous Mobile Robots and Autonomous Ground Vehicles) in the industrial facility, provide necessary capacity to create a reliable network infrastructure to manage and control connected devices (machines, robots, AGV/AMRs, AMRs, etc.) continuously.ULAK's private LTE solutions allow for the establishment of a mobile communication infrastructure in the factory environment, enabling the deployment of many technologies that prioritize production efficiency, such as IoT, digital twins, and video analytics.

#### **SMART FACTORY SOLUTIONS**







# **SMART CITY SOLUTIONS**



ULAK aims to provide city-specific cyber security through smart city solutions and create a mobile communication infrastructure that can be easily managed from a single center (private LTE) in order to offer infrastructure and services that support technological, economic, and social development in transportation, energy, and life verticals, making life easier and more cost-effective. ULAK's smart city solutions are designed in anticipation of the increasing importance of information and communication technologies. Advanced smart city solutions include traffic management, energy efficiency, smart lighting systems, building efficiency systems, smart parking, and smart agriculture services.





The POD design fixed on the ANKA UAV platform and the servers where the ULAK 4.5G Base Station components, such as BBU, RRU, EPC, and OAM systems are installed within the designed POD, along with fixed and mobile antennas, relevant cables, connectors, have been redesigned and produced according to flight standards. With the project, it is aimed to enable communication among the personnel in the field and provide communication capabilities between personnel and remote centers by using a closed-loop communication network. With the implementation of this project, coordination can be achieved with communication-deprived areas in emergency situations, allowing for swift action. In addition to intelligence, surveillance, and reconnaissance services, the ULAK 4.5G solution will also be used as a base station. The UAV 4.5G system has the ability to serve not only one operator but also up to 3 operators at the same time with a single base station, just like in the Universal Project.





**IHA POD** 



## **PUBLIC SECURITY SOLUTIONS**

ULAK Communications aims to achieve Türkiye's technological independence by producing national communication solutions through producing related technologies and continues its efforts to provide and enable all public institutions and organizations to use an end-to-end national, secure, and manageable communication network. ULAK products have been integrated with narrowband and crypto technologies with current systems. In order to keep up with international technology developments and to be a pioneer, 5G and 6G development studies are being carried out. With ULAK end-to-end systems, communication can be made seamlessly in case of terrorism, crisis, and natural disasters, and the intervention time can be reduced. Also fast, reliable, flexible, mobile, and economical communication can be achieved. The effectiveness of video-based incident tracking and response can be enhanced through wideband video, improving on-site monitoring and intervention capabilities.





In addition to the base stations, ULAK portable base station is a solution developed with national resources specifically for disasters and emergencies, with the features of being able to be deployed quickly and delivered to the desired location in a short time. With the ULAK 4.5G base station, mobile communication is provided with broadband communication capabilities to users in areas without mobile coverage, whether within or beyond the borders. The ULAK portable base station provides service to users by accessing operator networks from the closest point. By integrating the base station with different vehicles, which is normally installed on fixed lattice towers, it is made portable and allows for rapid installation in areas where it is needed. It has modules such as cage type and container type configurations.

**PORTABLE BASE STATION** 





#### **NMS (NETWORK MANAGEMENT SYSTEM)**



The NMS server software offers a structure that enables configurations of eNodeB to be made easily via the xml file and user screens requested by customers and user interfaces. It initiates or terminates a new performance tasks on the device. It also collects metric data related to these performance tasks from devices and facilitates the transition to the NBI layers. There is also a batch management functionality. It performs the task of installing new software on the card and RRU devices.





ULAK Private LTE solutions stand out with its features such as being national and providing 24/7 field support. Building upon its experience in 4.5G Private networks, ULAK Communications will continue to develop solutions and systems with the national ULAK 5G technology.



**PRIVATE NETWORK SOLUTIONS** 



## SOLAR SYSTEM INFRASTRUCTURE AND COMMUNICATION SOLUTIONS





Recently, communication solutions that are designed to be grid-independent have been preferred by organizations. In these solutions, energy is supplied from solar panels, and the energy is stored in gel batteries according to the desired duration. In addition to capturing the region's image with a camera system, uninterrupted communication is provided through integrated solutions such as LTE, satellite, and Wi-Fi. These types of solutions aim to achieve communication through Private LTE applications by providing energy, Core, and RAN networks in a single cabin, enabling self-sustained energy supply.



ULAK CLOUD encompasses services related data center establishment, virtualization and system management. Named "ULAK BULUT" in both national and international arena, patent and trademark applications have already been filed.

**ULAK CLOUD** 



#### **UMAYA SD-DC**





UMAYA SD-DC, enables the provision of corporate services to public institutions and organizations, as well as SMEs, through a cloud platform. A centralized management is offered by combining all physical hardware resources with developed softwaredefined network and virtualization systems. This allows maximum efficiency and performance in IT infrastructures Thanks to the SD-DC establishment and management of telecommunication infrastructures that require high performance, stability, and efficiency is enabled. By adopting a serviceoriented approach, microservices are provided by making data centers in microservice architecture instead of monolithic layered data centers. With the Next Generation Data Center solution. cabinets, power supply and distribution, cabling, cooling, management and other subsystems operate as integrated structures.

#### **UMAYA SD-WAN**







Türkiye's first and only national network solution uMAYA SD-WAN, developed with a software-defined approach to make wide area network infrastructures more secure, easily manageable and cost-effective, designed as an innovative solution including functions that directly affect the end-users, such as centralized management, network abstraction, network automation, and enhanced cybersecurity. The central control and access enabled by the simple and quick deployment of endpoints, network abstraction, and advanced NFV provided at endpoints aim to establish a comprehensive cyber security infrastructure in the network. Technological advancements such as infrastructure support for hybrid communication and the secure transmission of critical data through high-security and national encryption algorithms are targeted in the networks.





ULAK Communications network infrastructure includes key technologies defined by 5G standards such as Software Defined Network (SDN), Virtualization of Network Functions (NFV), Self-Organizing Networks (SON), and Green Communications. These key technologies for 5G infrastructures are being implemented with national resources along with the "MiLAT" and ULAK Projects, as well as other planned projects, contributing to our country's technological and economic growth.

**UNI 1.0 SDN/NFV** 





ULAK Communication uses its 4.5G and 5G communication capabilities to develop Vehicle-to-Everything (V2X) communication systems for safe and autonomous driving within the framework of Intelligent Transportation Systems (ITS). ULAK Communication is developing On-Board Units (OBU), Smart Roadside Units (smart-RSU), and Mobile Edge Computing Systems (MEC) as part of its V2X efforts. ULAK Communication integrates its low latency and high data properties with machine learning and deep learning technologies to make transportation systems smarter. Continuous and consistent data collection from surrounding vehicles, roadside units, traffic signs and signals, central traffic management systems, cameras, and sensors by vehicles is critical for situational awareness. Comprehensive analysis made with the information obtained from cameras and various sensors enables the identification of elements that may pose a danger to vehicles.

V2X



# **UNIFO GIDA**

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Unifo Gida is the pioneer ready to eat meal and ration pack manufacturer with the highest capacity in Europe and the Middle East. Thanks to unifo R&D recipe and supply capabilities, Unifo can prepare menus suitable for the cultures of Turkish and other world countries in terms of macro and micro nutritional values. It can completely cover the nutritional needs of individuals or organizations in situations such as War, Disaster and Camp. In addition, the heater, powdered foods and other by-products needed in the ration package are produced in appropriate specifications with its wide supplier network. Products: MRE, Ration Pack, Flameless Heater, Solid Fuel Tablet, Canned Foods, Instant Soup.





PAKETLİ GIDALAR VE KONSERVELER

# **UNIROBOTICS**

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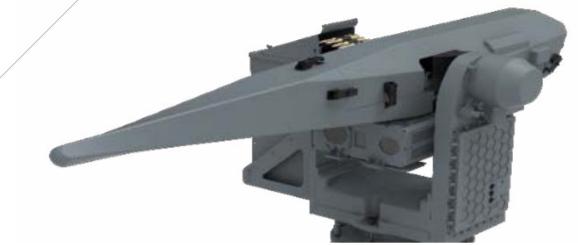
TRAKON is designed to be a cost-effective force multiplier weapon system for all types of land and naval platforms, as it can be fitted with 12.7x99mm HMG, 40mm automatic grenade launcher (MK-19), 20 X 102mm automatic cannon, 25 x 137 automatic cannon and 30 x 113 low recoil automatic cannon. TRAKON transforms the platform on which it is mounted into a multi-purpose platform that would easily adapt to different combat scenarios and operational requirements. Thereby, TRAKON turns the symmetrical combat into an asymmetrical one, by providing fire superiority over the opponent.

TRAKON CREW is designed as a cooperative system to assist the gunner in keeping the gun's balistic projectile on target by prevailing over the disruptive effects of high seas or rough terrain.TRAKON CREW is not a remotely operated weapon system. It is a manually operated (CREW-operated) gun mount whose gun pedestal is stabilised by servo-actuators,tactical grade gyroscopes and special control algorithms developed by UNIROBOTICS. It is specifically designed for open cupolas of light tactical vehicles, rapid intervention boats (rib boats) or patrol vessels where space limitations prevent theinstallation of stabilised RCWS and their consoles, TRAKON CREW accomodates 12.7x99mm HMG or 40mm automatic grenade launcher (MK-19).



**TRAKON CREW** 





TRAKON LITE is designed to be a low-profile, lightweight, cost-effective and versatile weapon station. It essentially carries a 12.7x99mm HMG or 40mm automatic grenade launcher (MK-19). Its compact size allows the TRAKON LITE to be easily installed on a wide range of land vehicles, from unmanned ground vehicles to wheeled tactical vehicles as well as Main Battle Tanks. It is also suitable for small, fast and agile interdiction/patrol boats, assault and special operations craft and unmanned surface ships. It can be optionally armoured to protect its critical components in high-intensity conflict conditions. TRAKON LITE can also carry 5.56mm LMG and 7.62mm MMG for law enforcement and counter-insurgency operations.



TRAKON TARGAN is specifically designed and developed for naval vessels as a close-in defence weapon system against air and surface targets. TRAKON TARGAN is mounted with a 12.7x99mm HMG or 40mm automatic grenade launcher (MK-19). TRAKON TARGAN detects, recognizes, identifies and tracks any fixed or moving surface/air target that poses a clear or potential threat in the combat zone. TRAKON TARGAN has excellent surveillance, reconnaissance and target tracking capabilities without aiming the gun axis at the tracked object, via a hightech electrooptical suit integrated on an independently stabilised gimbal. The Turkish Ministry of Defence has selected TRAKON TARGAN as the close-in weapon system for the HISAR class Off-Shore Patrol Vessel (OPV) project being built for the Turkish Naval Forces. TRAKON TARGAN is fully compatible with HAVELSAN's new generation combat management system.



**TRAKON TARGAN** 

**3E** 

Company Short Name

3E

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3E ELEKTRO OPTİK SİSTEMLER SAN. VE TİC. LTD. ŞTİ.

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#### MULTI-SENSOR SURVEILLANCE BINOCULARS



## NEXT-GENERATION LASER UNIT





Multi-Sensor Surveillance Binoculars



**Next-Generation Laser Unit** 



The ARS Gen I is engineered to enable rapid target acquisition, enhancing situational awareness and enables swift target engagement, particularly from non-standard shooting positions.

Its design is a careful balance of ruggedness and minimalism, offering an impressively lightweight and compact form without compromising its robustness. It has been designed to withstand the toughest physical impacts and considering the requirements demanded by the end-users. The optical clarity it provides is unparalleled, contributing to the effective functionality of the device.

Benefitting from a power-efficient LED design, the ARS Gen I is built for longevity, boasting an impressive operational time of 50,000 hours.





The AVCI 1.5x-6x integrates a dual-purpose optical design, enabling a swift and effortless transition between different magnification levels. This feature allows the user to proficiently handle both Close Quarters Battle and longer-range situations, balancing speed and precision.

The AVCI 1.5x-6x's wide field of view in 1.5x mode delivers clear imaging for urban combat, while the 6x mode ensures superior accuracy in mid-to-long range shooting. An ultra-bright illuminated reticle augments hit precision, even in dim environments. It is engineered with reticle variations, meticulously designed to be compatible with both 5.56mm and 7.62mm calibers.

**REFLEX SIGHT** 



COMBAT OPTICAL SIGHT



#### **COMBAT OPTICAL SIGHT**



The AVCI 1x-4x integrates a dual-purpose optical design, enabling a swift and effortless transition between different magnification levels. This feature allows the user to proficiently handle both Close Quarters Battle and longer-range situations, balancing speed and precision. The AVCI 1x-4x's wide field of view in 1x mode delivers clear imaging for urban combat, while the 4x mode ensures superior accuracy in mid-to-long range shooting. An ultra-bright illuminated reticle augments hit precision, even in dim environments. It is engineered with reticle variations, meticulously designed to be compatible with both 5.56mm and 7.62mm calibers.



#### **COMBAT OPTICAL SIGHT**





Combat Optical Sight





#### UNLIMITED EYE RELIEF

Non-critical eye relief for rapid target acquisition

FAST ACQUISITION TO THE TARGETS

Increase your accuracy and speed while engaging with the targets

SHARP AND CLEAR IMAGES EDGE-TO-EDGE

The performance-optimized optical design provides sharp and clear images edge-to-edge

**ULTRA-BRIGHT RETICLE ILLUMINATION** 

Comfortable and precise focusing with ultra-bright reticle illumination

ROBUST AND RELIABLE BODY DESIGN

Robust and reliable design to maintain functionality, usability, ergonomics and performance in harsh conditions

MINI REFLEX SIGHT



000



The B31 Binocular Night Vision enhances nighttime operational effectiveness with its dual-tube design. It excels in low-light conditions, offering superior image resolution for target detection, recognition, and identification.

Independent dual-tube housings allow seamless switching between binocular and monocular configurations. In binocular mode, it enhances depth perception for navigation and control. Monocular mode adapts to changing lighting conditions.

The B31 runs on an onboard AA battery or an external battery pack with dual infrared strobe lights for ground personnel identification. This rugged device elevates operational efficiency and control in darkness, making you a master of the night.

**BINOCULAR NIGHT VISION** 



## BINOCULAR LASER RANGE FINDER



#### **BLUETOOTH REMOTE CONTROL**



The second second

BLRF is designed to improve your vision and provide the power of binoculars in a laser rangefinder. It is a rugged and modern laser rangefinder monocular integrated with premium glass optics ranging up to 3000+ m on reflective targets with a CLASS I eye-safe laser and optimized beam divergence for maximum reliability on small targets. Operating with one-button is easy to learn. Reinforced and rubberized protection on its housing provides solid protection from harshest

environmental conditions. It combines range finding phenomena with the in-built Applied Ballistics Ultralite® and externally connected Kestrel® Connect to 3E devices via Bluetooth and control all the properties of the device wireless. Achieve maximum control with minimum action. BRC operates with one easily attainable CR2450 battery. With its extremely low battery usage, BRC can operate for months without the need to change the battery. BRC is compatible with PARS series.







The CRS offers a wide field of view and reliable accuracy to conquer every CQB situation. It allows fast target engagement under harsh environmental conditions. The wide glass both provides fast aiming with a wider vision and gives faster maneuverability.

The CRS is also compatible with night vision systems with dedicated night vision compatible brightness settings. It has a rugged and lightweight construction to survive extreme conditions with peak performance. Tested for MIL-STD-810 and with a waterproof design, the CRS is durable and reliable with its all-aluminium construction for maximum structural rigidity.

[Compatible with M3X and M5X magnifiers]





Designed to facilitate rapid target acquisition, the CRS Gen II allows for quick target engagement from non-standard shooting positions, significantly enhancing situational awareness. Born from the sophisticated enhancements made on the CRS Gen I, the CRS Gen II stands poised to become an indispensable optical choice. Taking advantage of an energy-efficient LED design, the CRS Gen II is built for longevity and can withstand up to an impressive operation time of 50.000 hours.

#### **CLOSED REFLEX SIGHT**



**CLOSED REFLEX SIGHT** 





## DUAL LASER POINTER AND ILLUMINATOR

DLIRIL MR combines four unique functionalities in a single body: visible green laser, infrared (IR) laser, infrared (IR) illuminator, and visible tactical flashlight with illumination capability of 500 Lumens. DLIRIL MR comes with high or low power modes. It can be used as an accurate target pointer



to assist auxiliary weapons in wide-range operations. It offers additional IR pointer and illuminator support for night vision systems during night conditions. It can also be used as a visible laser pointer and a tactical flashlight for tactical shoots in CQB. The integrated weapon mount is compatible with MIL-STD 1913 and STANAG 4694.



## DUAL LASER POINTER AND ILLUMINATOR

DLIRIL MR combines four unique functionalities in a single body: visible green laser, infrared (IR) laser, infrared (IR) illuminator, and visible tactical flashlight with illumination capability of 500 Lumens. DLIRIL MR comes with high or low power modes. It can be used as an accurate target pointer to assist auxiliary weapons in wide-range



operations. It offers additional IR pointer and illuminator support for night vision systems during night conditions. It can also be used as a visible laser pointer and a tactical flashlight for tactical shoots in CQB. The integrated weapon mount is compatible with MIL-STD 1913 and STANAG 4694.



## CLIP-ON NIGHT VISION WEAPON SIGHT

The ENES 4X is a versatile and dependable clip-on night vision weapon sight that excels in accuracy, durability, and target acquisition capabilities. Its robust construction ensures it can withstand harsh environments and extreme weather conditions. It offers excellent target acquisition and identification capabilities, making it ideal for military operations and law enforcement applications. Its user-friendly design allows for quick and easy adjustments, ensuring optimal performance in any situation. It is equipped with advanced image intensifier technology, offering crisp and clear images even in low-light conditions. The ENES 4X can be quickly mounted on any MIL-STD-1913 rail interface.



#### **NIGHT VISION WEAPON SIGHT**

The ENES 4XN is a versatile and dependable night vision weapon sight that excels in accuracy, durability, and target acquisition capabilities.

Its robust construction ensures it

can withstand harsh environments



and extreme weather conditions. It offers excellent target acquisition and identification capabilities, making it ideal for military operations and law enforcement applications. Its user-friendly design allows for quick and easy adjustments, ensuring optimal performance in any situation. It is equipped with advanced image intensifier technology, offering crisp and clear images even in low-light conditions. The ENES 4XN can be quickly mounted on any MIL-STD-1913 rail interface.



## CLIP-ON NIGHT VISION WEAPON SIGHT

The ENES 6X is a versatile and dependable clip-on night vision weapon sight that excels in accuracy, durability, and target acquisition capabilities. Its robust construction ensures it can withstand harsh environments and extreme weather conditions. It offers excellent target acquisition and identification capabilities, making it ideal for militar law enforcement applications. Its user



capabilities, making it ideal for military operations and law enforcement applications. Its user-friendly design allows for quick and easy adjustments, ensuring optimal performance in any situation. It is equipped with advanced image intensifier technology, offering crisp and clear images even in low-light conditions. The ENES 6X can be quickly mounted on any MIL-STD-1913 rail interface.



#### NIGHT VISION WEAPON SIGHT

The ENES 6XN is a versatile and dependable night vision weapon sight that excels in accuracy, durability, and target acquisition capabilities. Its robust construction ensures it can withstand harsh environments



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## THERMAL HAND-HELD CAMERA



#### **HMD GEN I**



The HMD Gen I is lightweight, adjustable and comfortable. It brings the live video from your 3E device in front of your eyes seamlessly. It allows aiming and firing around obstacles and corners, without putting the user in the line of fire. It is designed to deepen your imaging experience.





FELIS H35 Thermal Handheld Camera excels in delivering high-definition images with exceptional clarity, both day and night. Its robust construction ensures durability and reliability. Powered by innovative image processing algorithms, it maximizes image sharpness, rendering exceptional quality for targets and backgrounds. With a cutting-edge 12 µm high-sensitivity sensor and an F1.0 fast premium germanium lens, it captures minute details effortlessly. Furthermore, efficient software and electrical design minimize battery consumption, providing over 8 hours of continuous operation on a single charge. The FELIS H35 sets the standard for superior thermal surveillance, combining performance and usability in one device.







IZCI 15-45x60 tactical spotting scope with the MIL reticle provides an effective magnification range in a compact and rugged enclosure. It is designed for detailed target identification in any conditions with high resolution premium lenses. It has a rugged and lightweight construction to survive extreme conditions with peak performance. Tested for MIL-STD-810 and with a waterproof design, IZCI 15-45x60 is durable and reliable with its all-metal construction for maximum structural rigidity. Reinforced and rubberized protection on its housing provides solid protection from harshest environmental conditions.





IZCI 20-60X80 tactical spotting scope with the MIL reticle provides an effective magnification range in a compact and rugged enclosure. It is designed for detailed target identification in any conditions with high resolution premium lenses. It has a rugged and lightweight construction to survive extreme conditions with peak performance. Tested for MIL-STD-810 and with a waterproof design, IZCI 20-60X80 is durable and reliable with its all-metal construction for maximum structural rigidity. Reinforced and rubberized protection on its housing provides solid protection from harshest environmental conditions.

TACTICAL SPOTTING SCOPE



TACTICAL SPOTTING SCOPE



## LOW POWERED VARIABLE OPTIC (LVPO)



#### **SNIPER RIFLE SCOPE**



The KESKIN 1-8x30 represents a versatile riflescope that excels in competitive, tactical, and sporting applications. Offering true 1x magnification with an impressive 8x optical zoom and a first focal plane reticle, this scope ensures swift target acquisition and precise long-range shots. Boasting a seamless transition between a 1x reflex sight reticle and an 8x sniper reticle, this exceptional optic confers unmatched versatility and operational advantages to the user. Employing fully multi-coated broadband anti-reflective glass, the 34 mm tube and 30 mm objective lens combination deliver exceptional optical clarity and brightness, ensuring a clear and crisp view in various lighting conditions.

KESKIN 3-12x50 provides unmatched edge-to-edge clarity and precise shooting experience that extends your range beyond 1000+ m. The 50 mm lens and low dispersion glass with anti-reflective coated lenses provides efficient light transmission and color accuracy. It is built with aircraft grade aluminum and single-piece construction with anodized finish for extreme durability so the elite users can count on it. Its ruggedized design prevents damage from heavy recoil and rough handling. Equipped with all the features required for precise long-range shooting. The precision-machined turrets with zero stop feature provide users with precise and accurate control to make the necessary adjustments.





KESKIN 5-25x56 provides unmatched edge-to-edge clarity and precise shooting experience that extends your range beyond 1500+ m. The 56 mm lens and low dispersion glass with anti-reflective coated lenses provides efficient light transmission and color accuracy. It is built with aircraft grade aluminum and single-piece construction with anodized finish for extreme durability so the elite users can count on it. Its ruggedized design prevents damage from heavy recoil and rough handling. Equipped with all the features required for precise long-range shooting. The precision-machined turrets with zero stop feature provide users with precise and accurate control to make the necessary adjustments.



KESKIN 5-25x56 ULTRA SHORT provides unmatched edge-to-edge clarity and precise shooting experience that extends your range beyond 1500+ m. This sleeker form factor provides additional space on the picatinny rail, thereby facilitating enhanced adaptability to cater to a broader range of user needs. The 56 mm lens and low dispersion glass with anti-reflective coated lenses provides efficient light transmission and color accuracy. It is built with aircraft grade aluminum and single-piece construction with anodized finish for extreme durability so the elite users can count on it. Its ruggedized design prevents damage from heavy recoil and rough handling.

#### **SNIPER RIFLE SCOPE**



#### SNIPER RIFLE SCOPE



#### **TACTICAL PERISCOPE**



## MULTI-PURPOSE THERMAL MONOCULAR





Experience enhanced situational awareness with the cutting-edge KNP Gen II surveillance periscope, designed to provide safe, effortless, and cost-effective visibility over walls or around corners. It is designed for law enforcement and military use. Built with high-quality CNC-machined aluminum, the KNP Gen II is durable and reliable. Its optical system boasts AR coated prisms and lenses for clear and precise vision. With its extendable slide bar, you gain a 57 cm height advantage, and the 4-9x lens enables seamless switching between wide and close-up views for accurate targeting. Elevate your surveillance capabilities with the KNP Gen II.



Multi-Purpose Thermal Monocular





The LRB provides a precise and accurate alignment in the field without firing a single round of ammo to prevent the use of extra ammunition. The LRB includes arbors for these calibers: 5.56mm, 7.62mm, 8.59mm and 12.7mm. It utilizes windage and elevation adjustments to ensure precise and accurate zeroing. It has a rugged and lightweight construction to survive extreme conditions with peak performance. Tested for MIL-STD-810 and with a waterproof design, the LRB is durable and reliable with its all-aluminium construction for maximum structural rigidity.







Powered by advanced image processing algorithms, LYNX delivers exceptional performance in low light conditions. This unique efficiency is achieved with a state-of-the-art 2.3-megapixel DI2 image sensor. This cutting-edge sensor is a result of the innovative technology developed by 3E. At the heart of LYNX, the DI2 sensor converts digital signals into a fully viewable image. This transformative process yields ultra-clear images, bringing even the smallest details into focus with edge-to-edge super sharpness. LYNX offers flexible configuration, designed to be mounted on both helmets and weapons, providing users with remarkable operational flexibility and adaptation to a wide range of tactical situations.

DI2 MONOCULAR COLOR NIGHT VISION



## DI2 MONOCULAR NIGHT VISION



#### **MONOCULAR NIGHT VISION**





The M14 Monocular Night Vision sets the standard for professional nighttime operations, meeting strict PVS-14 standards used by military and law enforcement, including NATO. This versatile optic offers unique advantages, allowing users to maintain night-adapted vision in one eye while surveying the environment with the illuminated eyepiece. It also excels as a weapon-mounted device, fitting behind most daylight aimers and reflex sights. This dualmode functionality enhances mobility and tactical awareness, serving as both monocular night vision and a short-range weapon sight. The M14 is the top choice for professionals seeking exceptional performance and adaptability in the field.

DI2 Monocular Night Vision









Everything can change in an instant and it may be necessary to quickly switch from CQB to midrange when situations change. In these situations, the M3X allows you to quickly switch between two distances without compromising the accuracy. The M3X is compact and lightweight. The flip-up mount provides fast transitioning from 1X to 3X. The M3X offers a larger field-of-view and an adjustable diopter for improved and precise focusing. The M3X is compatible to use together with the CRS.

Everything can change in an instant and it may be necessary to quickly switch from CQB to midrange/long-range when situations change. In these situations, the M5X allows you to quickly switch between two distances without compromising the accuracy. The M5X is compact and lightweight. The flip-up mount provides fast transitioning from 1X to 5X. The M5X offers a larger field-of-view and an adjustable diopter for improved and precise focusing. The M5X is compatible to use together with the CRS.

**MAGNIFIER 3X** 



**MAGNIFIER 5X** 



## MONOCULAR LASER RANGE FINDER







000



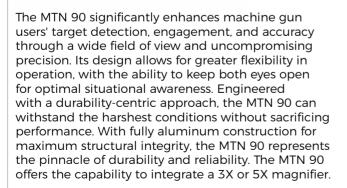
MLRF-M is designed to improve your vision and provide the power of a monocular in a laser rangefinder. It is a rugged and modern laser rangefinder monocular integrated with premium glass optics ranging up to 2500+ m on reflective targets with a CLASS I eye-safe laser and optimized beam divergence for maximum reliability on small targets. It allows one-handed operation with its ergonomic design. Operating with one-button is easy to learn. Reinforced and rubberized protection on its housing provides solid protection from harshest environmental conditions. It combines range finding phenomena with the in-built Applied Ballistics Ultralite® and externally connected Kestrel®

MLRF-S is designed to improve your vision and provide the power of a monocular in a laser rangefinder. It is a rugged and modern laser rangefinder monocular integrated with premium glass optics. It ranges up to 2500+ m on reflective targets with a CLASS I eye-safe laser and optimized beam divergence for maximum reliability on small targets. It allows one-handed usage with its ergonomic design. Operating with one-button is easy to learn. Reinforced and rubberized protection on its housing provides solid protection from harshest environmental conditions.











The MTN 90i significantly enhances machine gun users' target detection, engagement, and accuracy through a wide field of view and uncompromising precision. Its design allows for greater flexibility in operation, with the ability to keep both eyes open for optimal situational awareness. Engineered with a durability-centric approach, it can withstand the harshest conditions without sacrificing performance. With fully aluminum construction for maximum structural integrity, it represents the pinnacle of durability and reliability. The MTN 90i offers the capability to integrate a 3X or 5X magnifier and equipped with a built-in laser rangefinder, to measure the targets up to 2 km.

**MACHINE GUN REFLEX SIGHT** 



MACHINE GUN REFLEX SIGHT W/LRF





#### **CLIP-ON THERMAL WEAPON BINOCULAR**

PARS 635 is the top-of-the-range dual use clip-on thermal weapon sight to deliver world-leading performance on image processing. It offers optical performance via 17-micron LWIR technology and a 640x512 thermal sensor. In addition to this, the advanced image processing leads to excellent image clarity and provides better detection and recognition, allowing conquering the night with its exceptional visual quality. PARS 635 delivers the most efficient and feasible user experience with its user-friendly interface. It includes many advanced features such as wireless video transfer to various platforms, wireless remote control, picture in picture (PiP) mode, internal video and image recording.





#### CLIP-ON THERMAL WEAPON **BINOCULAR**

PARS 660 is the top-of-therange dual use clip-on thermal weapon sight to deliver world-leading performance on image processing. It offers optical performance via 17-micron LWIR technology



and a 640x512 thermal sensor. In addition to this, the advanced image processing leads to excellent image clarity and provides better detection and recognition. allowing conquering the night with its exceptional visual quality. PARS 660 delivers the most efficient and feasible user experience with its user-friendly interface. It includes many advanced features such as wireless video transfer to various platforms, wireless remote control, picture in picture (PiP) mode, internal video and image recording.



#### **CLIP-ON THERMAL WEAPON BINOCULAR**

PARS 675H is the top-of-the-range dual use clip-on thermal weapon sight to deliver world-leading performance on image processing. It offers optical performance via 17-micron LWIR



technology and a 640x512 thermal sensor. In addition to this, the advanced image processing leads to excellent image clarity and provides better detection and recognition, allowing conquering the night with its exceptional visual quality. PARS 675H delivers the most efficient and feasible user experience with its user-friendly interface. It includes many advanced features such as wireless video transfer to various platforms, wireless remote control, picture in picture (PiP) mode, internal video and image recording.

12.7 mm (.50) NATO recoil compatibility is available with 675NH version.



#### THERMAL WEAPON **BINOCULAR**

The PARS 635N is the top-of-therange thermal weapon sight to deliver world-leading performance on image processing. It offers optical performance via 17-micron LWIR technology and a 640x512 thermal sensor. In addition to this. the advanced image processing leads to excellent image clarity



and provides better detection and recognition, allowing conquering the night with its exceptional visual quality. PARS 635N delivers the most efficient and feasible user experience with its user-friendly interface. It includes many advanced features such as wireless video transfer to various platforms, wireless remote control, picture in picture (PiP) mode, internal video and image recording.



#### THERMAL WEAPON **BINOCULAR**

The PARS 660N is the top-of-the-range thermal weapon sight to deliver world-leading performance on image processing. It offers optical performance via 17-micron LWIR technology and a 640x512



thermal sensor. In addition to this, the advanced image processing leads to excellent image clarity and provides better detection and recognition, allowing conquering the night with its exceptional visual quality. PARS 660N delivers the most efficient and feasible user experience with its user-friendly interface. It includes many advanced features such as wireless video transfer to various platforms, wireless remote control, picture in picture (PiP) mode, internal video and image recording.



#### THERMAL WEAPON **BINOCULAR**

The PARS 675N is the top-of-therange thermal weapon sight to deliver world-leading performance on image processing. It offers optical performance via 17-micron LWIR technology and a



640x512 thermal sensor. In addition to this, the advanced image processing leads to excellent image clarity and provides better detection and recognition, allowing conquering the night with its exceptional visual quality. PARS 675N delivers the most efficient and feasible user experience with its user-friendly interface. It includes many advanced features such as wireless video transfer to various platforms, wireless remote control, picture in picture (PiP) mode, internal video and image recording.

12.7 mm (.50) NATO recoil compatibility is available with 675NH version.

#### PRECISION ENHANCED AIMING RANGEFINDER



#### **FUSION WEAPON BINOCULAR**



3E leveraged advanced technology and customer insights to create the most advanced fusion weapon sight, PARTAN NZ. PARTAN NZ delivers crispy and intelligent image performance. It is designed for functionality and superior performance by taking into account the demands of most elite users. It offers unrivaled optical performance via industry leading 12-micron LWIR technology with a resolution of 640x480 and DI2 low light sensor with superior image quality. The advanced image processing leads to excellent fusion images by combining the two sensors into one and provides better detection and recognition whenever needed.



Precision Enhanced Aiming Rangefinder







The PLF was designed as a low profile with a functional design in line with the demands of the most elite users. Features white LED technology with 500 Lumens, visible red laser and infrared laser. It is one of the most compact devices in its class, combining these three technologies. It can securely attach to a wide range of handguns. According to the user's operational requirements, infrared laser on the invisible side and flashlight / red laser on the visible side can be easily operated independently or simultaneously. It utilizes windage and elevation adjustments to ensure precise and accurate zeroing.









The Recon DN represents the cutting edge in tactical target camera technology, seamlessly integrating with riflescopes and spotting scopes. It allows capturing photos and videos without disturbing the functionality and handling of your optics and saves these files on an SD card In addition to these features, it enhances user experience by offering live streaming capabilities via Wi-Fi, enabling seamless connectivity to a PC or mobile device. A wired connection for image streaming to your PC is also available, providing an array of options for users. Seize every moment with the Recon DN and never miss your most critical scene.

**TACTICAL TARGET CAMERA** 



#### **AVIATION NIGHT VISION**



### TACTICAL TRIPOD







SERHAT aviation night vision goggles deliver outstanding performance even in the most challenging low-light conditions with its premium fast objective lens design. It provides sufficient vision for a pilot to complete nighttime missions down to starlight and extreme low light conditions. It is an elite dual tube night vision goggle, offering the user total depth perception. SERHAT is adaptable to varying mission demands and can be customized with an F0.95 or F1.2 objective lens as per the user's requirements. We provide an assortment of image intensifier tube options, enabling an additional layer of customization that aligns with diverse operational needs.

**Tactical Tripod** 







Featured with the intelligent fusion-imaging algorithm, TUFAN multi-sensor surveillance binoculars combine most critical properties essential for surveillance, target acquisition and distance determination in one unit, providing solutions to mission needs with its ergonomic, compact structure and smart features. In addition to the High-sensitive thermal imager with a 640x512 cooled detector, TUFAN has unique performance with its low light capable high definition color TV camera, 1550 nm eye-safe laser range finder, infrared laser pointer, integrated geolocation sensitive GPS and digital magnetic compass.

**TACTICAL TRIPOD** 



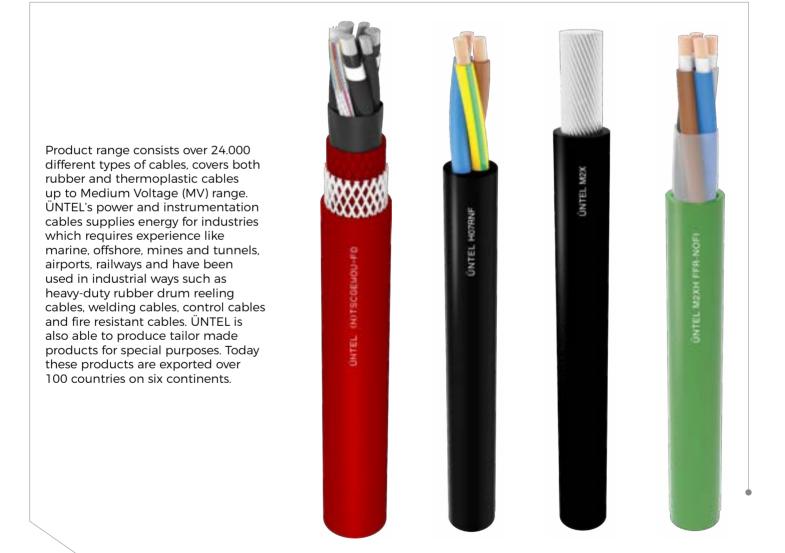
MULTI-SENSOR SURVEILLANCE BINOCULARS



# ÜNTEL KABLO









CABLES UP TO MEDIUM VOLTAGE (MV) CABLE GROUPS

# **VANEDA**

Company Short Name

Vaneda

Company Trade Name

Vaneda Ayakkabı San. Ve Tic.A.Ş.

Marketing email Address

aykut.verim@vaneda.com

Telephone

(+90) 212 472 55 55

Company Website

www.vaneda.com





#### **MILITARY BOOTS**

1191 Model Tactical Military Boots (Nubuck Leather, Polyamid 6.6 Cordura, Waterproof Dytex Membrane Technology, YKK Zipper, High Terrain Grip, Antislip, Oil Resistance Rubber /PU Injection Sole)



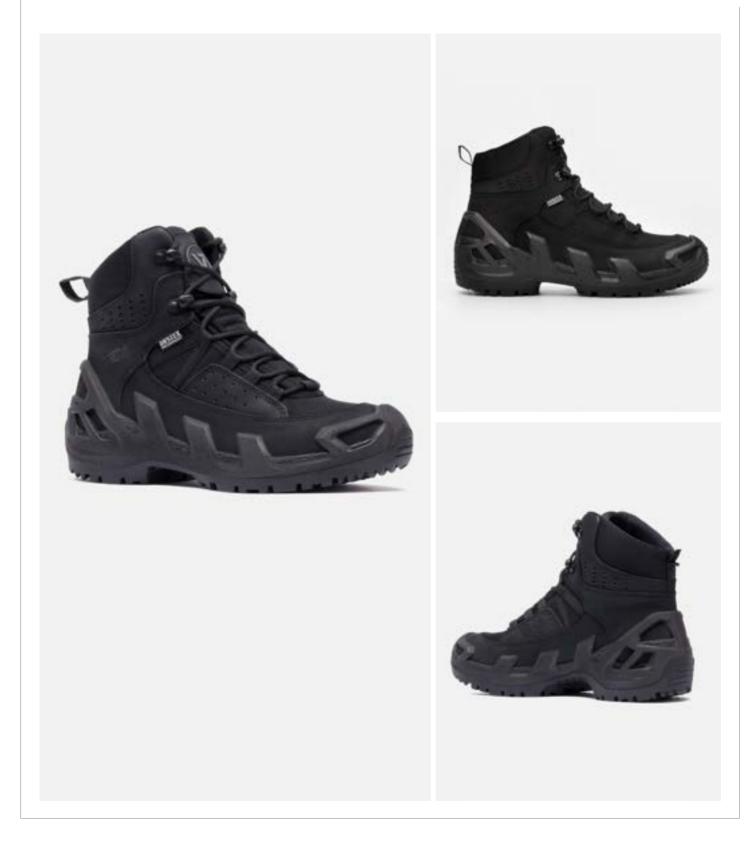








1192 Mid Model Tactical Military Boots (Nubuck Leather, Polyamid 6.6 Cordura, Waterproof Dytex Membrane Technology, High Terrain Grip, Antislip, Oil Resistance Rubber /PU Injection Sole)



## YAVUZ FIREARMS

Company **Short Name** 

YAVUZ FIREARMS

GİRSAN MAKİNA VE HAFİF SİLAH SAN. TİC. A.Ş.

Company Website

www.yavuzfirearms.com



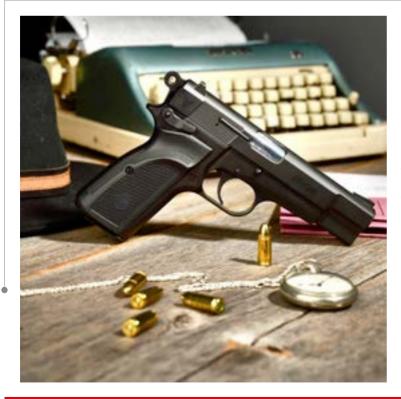


YMVUZ



12 GA calibre semi-automatic shotgun whose body is made of metal alloy material. It can use 5 different magazines of 1+1, 2+1, 4+1, 5+1 and 7+1 types and the cartridge bed is 3" in size. Safety system is manual safety.





It is a 9x19 mm semi-automatic pistol with short recoil. The magazine has a capacity of 15 rounds and has a barrel with 6 grooves to the right. The safety system consists of a single trigger, safety catch, magazine safety, cocking safety and needle safety block.

**YAVUZ 14 CLASSIC** 





It is a 9x19 mm semiautomatic pistol with short recoil. The magazine has a capacity of 18 rounds and has a barrel with 6 grooves to the right. The safety system consists of a single trigger, safety catch, magazine safety, cocking safety, needle safety block.





It is a 9x19 mm semi-automatic pistol with short recoil. The magazine has a capacity of 17 rounds and has a barrel with 6 grooves to the right. The safety system consists of a single trigger, safety catch, magazine safety, cocking safety, needle safety block.



**YAVUZ 9 PRO** 



Company Short Name

YDS

Company Trade Name

YAKUPOĞLU TEKSTİL VE DERİ SANAYİ TICARET A.Ş.

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(+90) 312 399 22 22

Company Website

www.ydsgroup.com.tr



YDSGROUP.COM.TR





#### **YDS TEXTILE AND OUTDOOR**

YDS is a leading supplier for Armed and Security Forces in Türkiye who is producing tactical and technical footwear (boots / shoes), garments (head to toe clothing for different environmental and terrain conditions) and field equipment (tents, bags, sleeping bags, etc.). YDS is always following the European and NATO standards. YDS has a 100,000 square meter closed production area in Ankara using the latest technologies and has the largest production capacity for technical boots with over 6 million pairs production every year. YDS is in the top 500 companies in Türkiye, and is unique in its sector. YDS exports its products to 55 countries, primarily United Kingdom, Denmark, Oman, Jordan, Saudi Arabia, Qatar, France, Italy, Spain, Portugal, Mongolia, Kyrgyzstan, Kazakhstan, Georgia, Azerbaijan, United Arab Emirates, and Lebanon.



## YDS TECHNICAL TEXTILE ...





YDS expanded its product range in the recent years with its innovative outlook, and offers new solutions for Armed Forces, Security Forces, or civilians that are outdoors hobbyists. The company aims to meet the worldwide demands by constantly developing its textile products including uniforms, cold climate parka and trousers, backpacks, ammunition and ballistic vests, sleeping bags, ponchos, and tents, which have been experienced by end users since long time.









# YOL BAK

Company Short Name

YOL BAK

Company Trade Name YOL BAK YOL BAKIM VE KAR MÜCADELE ARAÇLARI SAN.TİC.A.Ş.

Marketing email Address

satis@yolbak.com.tr

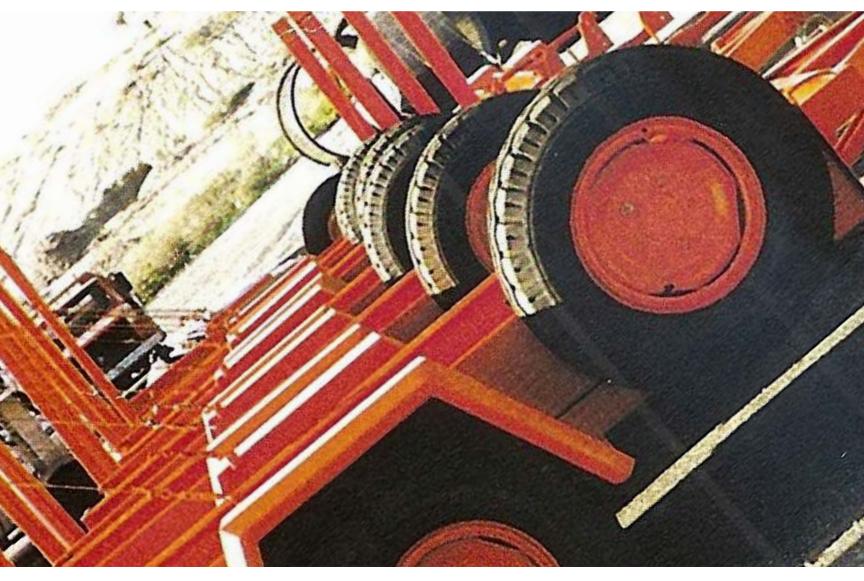
**Telephone** 

(+90) 312 841 6395

Company Website

www.yolbak.com.tr





PTO Driven, Galvanized sheet metal structure, wooden floor, wide interior bench, cabin lighting, truck wheel fixing equipment, integrated generator and compressor, exterior wall louver systems, hidden staircase mounted under the floor, ventilation system, vibration and sound isolation, water tanks mounted on the sides of the vehicle, suspended crane option, embedded metal cabinets, fire extinguisher, first aid kit, boom crane attachment, construction with stainless steel or aluminum.







Stabilization system, 0°- 90°C vertical movement within 45 seconds, vertical direction positioning accuracy: 50', didraulic locks, balanced load distribution, high pressure - low speed levels, mechanical locks for parking position, supported by high pressure hydraulic system, integrated encoder for platform positioning, integration with 3D radar system, different interface support for different types of missile canisters Fire control unit (optional)





"Carrying Capacity: 2.000 Kg. Width: 1825 mm. Length: 3970 mm. Tires: 700x16 (2 pcs)

Ramp Length: 2000 mm. Ramp Angle: 18°, Drawbar Height from the Ground: 900-1020 mm.

Towing Arrow Hook Diameter: Ø 50 mm., Carrying Capacity: 2.000 Kg., Width: 1825 mm., Length: 3970 mm., Tires: 700x16 (2 pcs), Ramp Length: 2000 mm., Ramp Angle: 18°

Ground Clearance of the Drawing Arrow: 900-1020 mm. Draw Arrow Hook Diameter: Ø 50 mm.

Carrying Capacity: 2.000 Kg. Width: 1825 mm, Length: 3970 mm, Tires: 700x16 (2 pcs)

Ramp Length: 2000 mm., Ramp Angle: 18°, Drawing Arrow Ground Clearance: 900-1020 mm.

Towing Arrow Hook Diameter: Ø 50 mm., Carrying Capacity: 2.000 Kg., Width: 1825 mm., Length: 3970 mm., Tires: 700x16 (2 pcs), Ramp Length: 2000 mm., Ramp Angle: 18°, Drawbar Height from Ground: 900-1020 mm., Drawbar Hook Diameter: Ø 50 mm."



**TRAILER** 



2.5-35 tons capacity single drum type, 2x35 tons capacity double drum type, Compact and durable design, Different diameter and length steel rope options, Drum with automatic brake discharge, Drum separation arm, Gear type pump, High quality roller bearings, Gear groups made of semantation steel, Remote control and level control options, Operating temperature between -50° +50°, Easy installation and easy operation, Load sensing valve system.



## **ARMORED CABIN**





Roof cladding, Ceiling cladding, Wall components, Special painting, Load bearing components, Floor cladding, Doors that cannot be opened from the outside, Windows with armored glass, Firing embrasures, Air conditioning unit for heating and cooling, Exterior lighting projector Insulation against heat and sound, Additional dry type heater (optional)



## YONCA SHIPYARD

Company Short Name Yonca Shipyard Company Yonca Teknik Yatırım Turizm Sanayi ve Ticaret A.Ş. Trade Name Marketing email Address

ilker.akin@yoncashipyard.com

(+90) 216 392 99 70 **Telephone** 

Company Website www.yoncashipyard.com





#### **MRTP 34 FPB**



Mrtp34 fpb is a longer version of mrtp33 as a sister ship, which has similar tactical specifications. It is made of advanced composite materials and is designed to carry out naval missions in coastal waters and on the high seas. The Mrtp34 fpb is equipped with a 30 mm stabized turret at the front and entry/exit systems for patrol, surveillance and intervention missions. It can also be equipped with middle size surface to surface missile (ssm) systems like mbda's marte or ROKETSAN's CAKIR gm withith a dedicated combat management system and data link system for surface warfare missions. The Mrtp34 is powered by 2 diesel engines and is equipped with a water-jet system, enabling it to reach a speed of 42 knots. Range at economical speed is around 750 nm. To date, 3 units of mrtp33 fpb have been built and delivered to the Qatar Navy. Loa. 36.80m, beam: 6.70m.



Mrtp12 fast patrol boat (sdb) has been specially designed for the Turkish Navy for the protection of highvalue units in bases and ports. It is equipped with 12.7 mm stabilized turret. The wheelhouse is ballistic protected. With 2 diesel engines and water jet propulsion system, the speed can reach up to 45kts. There are currently 8 of them in the inventory of the Turkish Navy. Length: 12,65m, width: 3,45m



**MRTP12 FPC** 



The mrtp15 fast intervention boat (fic), made of advanced composite material, has been specially designed for interception and intervention missions in coastal waters under the jurisdiction of the Turkish Coast Guard Command. Equipped with 12.7mm stabilized turret. It is propelled by 2 diesel engines and waterjet/surface drive systems and the speed of the boat can reach up to 61 kts. A total of 25 mrtp15 fic boats have been produced, most of which are currently in active service in the Turkish Coast Guard, as well as in Cyprus, Pakistan and the Turkish General Directorate of Customs Enforcement. Length: 16,94m, width: 4,04m



The mrtp16 fast intervention boat (fic), built from advanced composite materials, is built for interception, intervention and deterrence missions in coastal waters. Mrtp16fic is designed to reach very high speed with high machine capacity. The boat is propelled by 2 diesel-machinery and surface drive. The speed can reach up to 65kts. The very high speed interceptor (sfi) version of the boat designed for the Omani coast guard command reaches a speed of 75kts. The boat is equipped with a 1ad. 12.7mm stabilized turret. The helm is ballistic protected. A total of 59 mrtp16s have been produced, which are currently in active service in uae, malaysia, qatar, oman, ukraine, general directorate of customs enforcement and ministry of health. Within the scope of technology transfer (co-production), 6 of 11 boats were produced in Malaysia at Boustead Shipyard and 22 of 34 boats were produced in UAE at Abudabi Shipyard: 4,19m





**MRTP16 FIC** 

#### **MRTP20 FIC**





The mrtp20 enhanced speed intervention boat (fic), which is made of advanced composite material, has been developed based on the design, construction and intensive use experience of mrtp15, mrtp29/mrtp33 class boats and in the light of the latest main engine technologies in the world. It is equipped with a 12.7mm stabilized turret for intervention, deterrence and surveillance missions and with e/o systems upon request. The boat is propelled by 2 diesel engines and water jet/arnesson surface drive systems and has a speed up to 60+ kts. A total of 37 mrtp20s have been produced and are currently in service with the Turkish Coast Guard. Turkish Navy, Qatar, Egypt and Georgia. Within the scope of technology transfer (co-production), 3 of the 6 boats were produced in iskenderiye shipyard in Egypt. Length: 22,55m, width: 4,76m

Mrtp24/u special operations craft (soc) is built from advanced composite material and designed according to the needs of the Turkish Navy's ordnance teams. The boat can be equipped with a 12.7mm or 25mm stabilized turret above the wheelhouse for 360-degree clear engagement coverage and e/o systems for surveillance and awareness. The boat can also carry 4 inflatable boats and 16 navy seals loaded with missiles. Mrtp24/u mk2 soc is powered by 2 diesel engines and water jet system and the boat can reach speeds up to 54 kts. Its range at economic speed is approximately 500 nm. Currently, there are 8 of these boats in total, 4 of which are serving in the Turkish Navy and 4 of which are serving in the Qatar Emiri Joint Special Forces. Loa. 27,30m, beam: 5,53m



MRTP24/U SOC



The Mrtp29 coastguard craft is built from advanced composite materials and designed to meet the long-term patrol, escort and inspection missions of the Turkish Coastguard Command, both in coastal waters and on the high seas. It can be fitted with a 12.7 mm or 25 mm stabilized turret and entry/exit systems for intervention and surveillance. The coastguard boat Mrtp29 is powered by 2 diesel engines and is equipped with a water jet system. The boat can reach speeds of up to 47 kts. Range at economical speed is around 750 nm. To date, 9 units of mrtp29 have been built and delivered to the Turkish Coast Guard. Loa. 31.20m, beam: 6.70m



#### **MRTP33 FPB**







Manufactured from advanced composite materials, the mrtp33 patrol boat (fpb) is designed for long-term patrol missions on the high seas. The boat can be equipped with 12.7mm/25mm/30mm stabilized turret and e/o systems. With its seaworthiness, carrying capacity, advanced logistics and living quarters standards, mrtp33 fpb can perform patrol/surveillance missions for up to 3 days. Mrtp33 is propelled by 2x diesel engine and waterjet system and has a speed of 43 kts. Its range at economic speed is 750 nautical miles. To date, 16 mrtp33s have been built and are currently serving in the coast guard command, Pakistan and Georgia. Length: 35,60 meters, width: 6,70 meters.

The Mrtp51 guided missile boat (fmb) was designed to be manufactured from advanced composite materials as part of the Turkish Naval Forces' Turkish type assault boat project. The mission of the Mrtp51 fmb is to meet the surface operations requirements of naval forces in open sea and coastal waters. The boat is equipped with a combat management system, data link system, 76mm cannon, ROKETSAN ATMACA ssm g/m system, e/h and chaff system, 12.7mm turret system. Mrtp51 is propelled by fmb, 4x diesel engine and 4x waterjet system. The ship's speed reaches up to 54 kts. The cruising range at economic speed is 1100 nautical miles. Mrtp51 fmb can operate in high seas up to intensity 6. Length: 54, width: 9 meters



#### **MRTP51 FMB**







Sancar Armed Unmanned Naval Vehicle (SİDA) was produced from advanced composite materials by YONCA Shipyard and HAVELSAN. The boat was manufactured and equipped by Yonca Shipyard, and its mission/navigation software/ hardware was realized by HAVELSAN. Sancar sida will be able to perform port/ base protection, reconnaissance/surveillance/post, surface warfare and support to CCT operations. The boat can be controlled from a ground control station via rf/gsm/satellite. It also has autonomous navigation/operation capability. The boat is equipped with a 12.7mm stabilized turret and SSM g/m. Sancar's g/m system mkt mission boat is propelled by 2x diesel engine and waterjet. Its speed reaches up to 40 kts. Its range is 450 miles at economic speed and it can operate for 70 hours at this speed. Currently, one Sancar Sida has been delivered to the Ministry of National Defense. Length: 12,7m, width: 3,3m.





Company Short Name

ZSR

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## 12.7X99 MM





ZSR 12.7X99 Ammunition Technical specifications It is produced for military use. (Besides production with metal link will be available.)





There are 2 types available: ZSR 5.56X45 M193 and ZSR 5.56X45 M855. (Besides production with metal link is available.)
M193 is common in civilian use and sports shooting.
M855 is suitable for military use in terms of technical specifications.

5.56X45 MM (M193, M855, M856)







ZSR 7.62X39 Ammunition Technical specifications The casing is made of steel. It is produced for military use. (Besides production with metal link will be available.)



ZSR 7.62X51 M80 Ammunition Technical specifications

It is produced for military use. . (Besides production with metal link is available.)





7.62X51 MM (M80)



## **9X19 MM LUGER VE PARABELLUM**









There are two types available: ZSR 9x19 Luger and Parabellum. The Luger is common for civilian use and sports shooting. Its production has been made with 115 and 124 grains. On the other hand, Parabellum is suitable for military use in terms of technical features.



Production is proceeded with various calibers such as 12-16-20-28-36 Cal. The cartridges are common in civilian use and sports shooting. Cartridges' weights differs regarding seasonal necessities and climate conditions.

### **HUNTING SHOTGUNS**





## **EXPLOSIVES AND EXPLOSIVES**







Those are produced in various weights. For explosives regarding requirements water resistance models are also available to be produced. Those are mainly used for construction and mining operations.















The production is available for 9 and 12 mm calibres. These are common for civilian use.





**SOUND AND PLASTIC BULLETS** 



ACTASARM         28         120 MM TANK AMMUNITION TRACKING (TRAINING)         668           0.45 CAL S WI STOLL CARTRIDGE         660         120 MM TANK AMMUNITION         668           0.45 CAL AUTOMATIC PISTOL CARTRIDGE         680         120 MM RODEGD SET MORTAR         289           0.02 SG GHZ CASWIE AMPURIER MODULE         770         122 MM SPEAR ROCKET FIRER         689           0.02 SG ORT FLAU FIRER CHAN JOINE AMPURIER LINA         1084         122 MM SPEAR ROCKET FIRER         669           1°F LASP         680         122 MM ARTILLER FIGURET         669           1°F LAGS         680         155 MM ARTILLER FIGURET         670           1.5°F LAGS         680         155 MM 32 CAL LOYME SYSTEM         670           1.5°F LAGS         680         155 MM 32 CAL LOYME SYSTEM         671           1.5°F LAGS         680         155 MM 32 CAL LOYME SYSTEM         672           1.5°F LAGS         680         155 MM 1000 LE GHAPON SYSTEM         671           1.5°F LAGS         386         155 MM 1000 LE GHAPON SYSTEM         672           1.0°C HA PASSE LOCKED DIELECTRIC OSCILLATOR         771         101 LINIS MULTIPURPOSE ROLLING CHASSIS         386           1.0°C HA PASSE LOCKED DIELECTRIC OSCILLATOR         771         101 LINIS MULTIPURPOSE ROLLING CHASSIS         860 </th <th>ABRAMAK</th> <th>26</th> <th>120 MM HY1-12 MORTAR</th> <th>667</th>	ABRAMAK	26	120 MM HY1-12 MORTAR	667
0.45 CAL AUTOMATIC PISTOL CARTRIDGE         660         120 MM ROOFED-SET MORTAR         288           0.5-6 GHZ 0.5W RF AMPLIFIER MODULE         770         122 MM CANRA ROCKET         289           0.5-6 GHZ 0.5W RF AMPLIFIER MODULE         770         122 MM SPEAR ROCKET FIRER         689           0.7-5 GHZ 7-5 DIZ RELOW NOISE AMPLIFIER LINA)         1084         122 MM SPEAR ROCKET BUSTER         669           1° PARACHUTE LIGHTING CARTRIDGE         660         122 MM ARTILLERY ROCKET         669           1° PARACHUTE LIGHTING CARTRIDGE         660         155 MM 39 CAL L-139 WEAPON SYSTEM         670           1.5° FLAGS         660         155 MM 39 CAL L-139 WEAPON SYSTEM         670           1.6 GHZ - 28 GHZ RE POWER AMPLIFIER         1083         155 MM SCRAL SAIP WEAPON SYSTEM         670           1.6 GHZ PASE LOCKED DELECTRIC OSCILLATOR         770         155 MM MOULE GUNPOWDER SYSTEM         671           10 TOND MULTIPURPOSE ROLLING CHASSIS         396         155 MM HOWITZER AMMUNITION         672           10 TOND MULTIPURPOSE ROLLING CHASSIS         396         155 MM HOWITZER AMMUNITION         773           1000 LB. MK 83 GP AIRCRAFT BOMB         660         17 TONS MULTIPURPOSE ROLLING CHASSIS         385           100-10 LB. MK 83 GP AIRCRAFT BOMB         660         17 TONS MULTIPURPOSE ROLLING CHASSIS         78	ACTASARM	28	120 MM TANK AMMUNITION TRACKING (TRAINING)	668
128 MM CANRA ROCKET   288	0.40 CAL. SW PISTOL CARTRIDGE	660	120 MM TANK AMMUNITION	668
00-250 OPTICAL IFF FLASHER 490 122 MM SPEAR ROCKET FIRER 669 GHZ - 5 GHZ RF LOW NOISE AMPLIFIER(INA) 1084 122 MM SPEAR ROCKET BUSTER 669 GHZ - 5 GHZ RF LOW NOISE AMPLIFIER(INA) 1084 122 MM SPEAR ROCKET BUSTER 669 GHZ - 5 GHZ RF LOW NOISE AMPLIFIER 669 122 MM ARTILLERY ROCKET 669 122 MM ARTILLERY ROCKET 669 125 MM ARTILLERY ROCKET 669 126 MM ARTILLERY ROCKET 669 127 MM ARTILLERY ROCKET 669 12	0.45 CAL. AUTOMATIC PISTOL CARTRIDGE	660	120 MM ROOFED-SET MORTAR	288
GHZ - 5 GHZ FFLOW NOISE AMPLIFIER(ILNA) 1084 122 MM SPEAR ROCKET BUSTER 669 1" FLASP 660 132 MM ARTILLERY ROCKET 669 1" FARACHUTE LIGHTING CARTRIDGE 660 130 MM ARTIONAL CHAFF LAUNCHER SYSTEM 670 1.5" FLAGS 660 130 MM ARTIONAL CHAFF LAUNCHER SYSTEM 670 1.5" FLAGS 660 135 MM 39 CALL 139 WEAPON SYSTEM 671 10 GHZ PHASE LOCKED DIELECTRIC OSCILLATOR 700 155 MM 39 CALL 139 WEAPON SYSTEM 671 10 GHZ PHASE LOCKED DIELECTRIC OSCILLATOR 770 155 MM INCREASED RANGE HOWITZER AMMUNITION 671 MOUNTE 155 MM MOUNTER AMMUNITION 671 MOUNTE 155 MM HOWITZER AMMUNITION 671 MOUNTE 155 MM HOWITZER AMMUNITION 672 PLAFFORM 17 TONS MULTIPURPOSE ROLLING CHASSIS 386 105 MM MATIONAL SIGNAL MATCHING UNIT 771 110 INDUSTRIAL POWER DISTRIBUTION MANAGEMENT 17 TONS MULTIPURPOSE ROLLING CHASSIS 985 PLAFFORM 17 TONS MULTIPURP	0.5-6 GHZ 0.5W RF AMPLIFIER MODULE	770	122 MM CANRA ROCKET	289
Fig.   1988   122 MM ARTILLERY ROCKET   688   122 MM ARTILLERY ROCKET   689   17 PARACHUTE LIGHTING CARTRIDGE   680   130 MM NATIONAL CHAFF LAUNCHER SYSTEM   670   1.5" FLAGS   660   155 MM 32 CALL 139 WEAPON SYSTEM   670   16 GHZ - 28 GHZ RF POWER AMPLIFIER   1083   155 MM 52 CALL DIVINE SYSTEM   671   16 GHZ - 28 GHZ RF POWER AMPLIFIER   1083   155 MM S2 CALL DIVINE SYSTEM   672   155 MM MICREASED RANGE HOWITZER AMMUNITION   671   10 GHZ PHASE LOCKED DILECTRIC OSCILLATOR   770   155 MM HOWITZER AMMUNITION   672   167 MM HOUTER AMMUNITION   672   167 MM HOWITZER AMMUNITION   672   17 TONS MULTIPURPOSE ROLLING CHASSIS   385   17 TONS MULTIPURPOSE ROLLING CHASSIS   185 MM HOWITZER AMMUNITION   672   17 TONS MULTIPURPOSE ROLLING CHASSIS   185 MM HOWITZER AMMUNITION   672   17 TONS MULTIPURPOSE ROLLING CHASSIS   185 MM HOWITZER AMMUNITION   674 MM BORAN AIR-PORTABLE LIGHT TOWED   661   21 KG FOG BOX   673   385   100 MM BORAN AIR-PORTABLE LIGHT TOWED   661   22 KG FOG BOX   673   385   100 MM BORAN AIR-PORTABLE LIGHT TOWED   662   2.75 INC ROCKET ENGINE ASSEMBLY (FFAR)   673   105 MM TANK/HOWITZER AMMUNITION   662   2.3 GHZ - 2.4 GHZ RF FRONT-END   1084   105/155 MM HOWITZER AMMUNITION DISTANCE   894   2.3 GHZ - 2.4 GHZ RF FRONT-END   1084   1	OD-250 OPTICAL IFF FLASHER	490	122 MM SPEAR ROCKET FIRER	669
17-PARACHUTE LIGHTING CARTRIDGE 660 130 MM NATIONAL CHAFF LAUNCHER SYSTEM 670  1.5 "FLAGS 660 155 MM 39 CAL. L-39 WEAPON SYSTEM 670  1.8 GHZ - 2.8 GHZ RF POWER AMPLIFIER 1083 155 MM S2 CAL. DIVINE SYSTEM 671  10 GHZ PHASE LOCKED DIELECTRIC OSCILLATOR 770 155 MM MODILE GUNPOWER SYSTEM 672  10 TONS MULTIPURPOSE ROLLING CHASSIS 366 155 MM HOWITZER AMMUNITION 672  10 TONS MULTIPURPOSE ROLLING CHASSIS 366 155 MM HOWITZER AMMUNITION 672  10 TONS MULTIPURPOSE ROLLING CHASSIS 771 10 HOUSE RATE AND HOWITZER AMMUNITION 672  10 TONS MULTIPURPOSE ROLLING CHASSIS 772 10 HOUSE RATE AND HOWITZER AMMUNITION 771 10 HOUSE RAIL POWER DISTRIBUTION MANAGEMENT 771 10 HOUSE RAIL POWER DISTRIBUTION MANAGEMENT 771 10 HOUSE RAIL POWER DISTRIBUTION MANAGEMENT 771 10 HOUSE RAIL POWER DISTRIBUTION MANAGEMENT 771 10 HOUSE RAIL POWER DISTRIBUTION MANAGEMENT 771 10 HOUSE RAIL POWER DISTRIBUTION MANAGEMENT 772 10 HOUSE RAIL POWER DISTRIBUTION MANAGEMENT 773 10 HOUSE RAIL POWER DISTRIBUTION MANAGEMENT 774 10 HOUSE RAIL POWER DISTRIBUTION MANAGEMENT 774 10 HOUSE RAIL POWER AMPLIFIER 773 10 HOUSE RAIL POWER AMPLIFIER 10 HOUSE RAIL POWER AMPLIFIER 10 HOUSE RAIL POWER AMPLIFIER 10 HOUSE RAIL POWER AMPLIFIER 10 HOUSE RAIL POWER AMPLIFIER 10 HOUSE RAIL POWER AMPLIFIER 10 HOUSE RAIL POWER AMPLIFIER 10 HOUSE RAIL POWER AMPLIFIER 10 HOUSE RAIL POWER AMPLIFIER 10 HOUSE RAIL POWER AMPLIFI	GHZ – 5 GHZ RF LOW NOISE AMPLIFIER(LNA)	1084	122 MM SPEAR ROCKET BUSTER	669
1.5" FLAGS 660 155 MM 39 CAL. L-39 WEAPON SYSTEM 670 1.8 GHZ - 2.8 GHZ RF POWER AMPLIFIER 1093 155 MM 52 CAL. DIVINE SYSTEM 671 1.0 GHZ - 2.8 GHZ RF POWER AMPLIFIER 1093 155 MM S2 CAL. DIVINE SYSTEM 671 1.0 GHZ PHASE LOCKED DIELECTRIC OSCILLATOR 770 155 MM MODULE GUINPOWDER SYSTEM 672 110 TONS MULTIPURPOSE ROLLING CHASSIS 386 155 MM HOWITZER AMMUNITION 672 PLATFORM 1000 LB. MK 83 GP AIRCRAFT BOMB 660 177 TONS MULTIPURPOSE ROLLING CHASSIS 710 LOO LB. MK 83 GP AIRCRAFT BOMB 660 177 TONS MULTIPURPOSE ROLLING CHASSIS 710 LOO HAY SIGNAL MATCHING UNIT 171 10 LINDUSTRIAL POWER DISTRIBUTION MANAGEMENT 710 MM BODAW AIR-PORTABLE LIGHT TOWED 661 10 LINT (GDYB) 10 LINT	1" FLASP	660	122 MM ARTILLERY ROCKET	669
18 GHZ - 28 GHZ RF POWER AMPLIFIER         1083         155 MM 52 CAL DIVINE SYSTEM         671           10 GHZ PHASE LOCKED DIELECTRIC DSCILLATOR MODULE         770         155 MM MODULE GUNPOWDER SYSTEM         672           10 TONS MULTIPURPOSE ROLLING CHASSIS PLATFORM         386         155 MM HOWITZER AMMUNITION         672           100 LB. MK 83 GP AIRCRAFT BOMB         660         17 TONS MULTIPURPOSE ROLLING CHASSIS PLATFORM         385           100 - 3000 MHZ SIGNAL MATCHING UNIT         771         101 MODUSTRIAL POWER DISTRIBUTION MANAGEMENT VINT (GPY)         940           105 MM BORAN AIR-PORTABLE LIGHT TOWED HOWITZER         661         2 KG FOG BOX         673           105 MM M68 T1 TANK GUN WEAPON SYSTEM         662         2.75 INC ROCKET ENGINE ASSEMBLY (FFAR)         673           105 MM TANK/HOWITZER AMMUNITION DISTANCE CORRECTION (TIVE)         894         2.3GHZ - 2.4 GHZ RF FRONT-END         1084           105 /155 MM HOWITZER AMMUNITION DISTANCE CORRECTION (TIVE)         894         2.3GHZ - 2.7GHZ RF POWER AMPLIFIER         1084           107 MM ANATOLIAN ROCKET FERDING CAPSULE         663         2.75 INCH ROCKET REAR FRONT-END         665           107 MM ARTILLERY ROCKET         663         2.75 INCH ROCKET WARHEAD         673           107/122 MM ROCKET FIRING CAPSULE         663         2.75 INCH ROCKET DIELECTRIC OSCILLATOR         771	1" PARACHUTE LIGHTING CARTRIDGE	660	130 MM NATIONAL CHAFF LAUNCHER SYSTEM	670
155 MM INCREASE LOCKED DIELECTRIC OSCILLATOR   770   155 MM INCREASED RANGE HOWITZER AMMUNITION   672	1.5" FLAGS	660	155 MM 39 CAL. L-39 WEAPON SYSTEM	670
MODULE         155 MM MODULE GUNPOWDER SYSTEM         672           10 TONS MULTIPURPOSE ROLLING CHASSIS         386         155 MM HOWITZER AMMUNITION         672           PLATFORM         17 TONS MULTIPURPOSE ROLLING CHASSIS         385           1000 LB. MR 83 GP AIRCRAFT BOMB         660         PLATFORM         385           100-3000 MHZ SIGNAL MATCHING UNIT         771         11 INDUSTRIAL POWER DISTRIBUTION MANAGEMENT UNIT (GDYB)         940           105 MM BORAN AIR-PORTABLE LIGHT TOWED HOWITZER         661         2 KG FGG BOX         673           105 MM BORAN AIR-PORTABLE LIGHT TOWED HOWITZER AMMUNITION         662         2.75 INCR COCKET ENGINE ASSEMBLY (FFAR)         673           105 MM TANK /HOWITZER AMMUNITION DISTANCE CORRECTION KIT         894         2.3 GHZ - 2.4 GHZ RF FRONT-END         1064           105 MM TANATOLIAN ROCKET REAR FIRER         663         2.5 KW MILTIARY FIBER LASER POWER SOURCES         450           107 MM ANATOLIAN ROCKET FEEDING CAPSULE         663         2.75 INCH ROCKET WARHEAD         673           107 MM ANATOLIAN ROCKET FEIRING CAPSULE         663         2.75 INCH ROCKET WARHEAD         673           107/122 MM ROCKET FIRING CAPSULE         663         2.75 INCH ROCKET WARHEAD         771           12.7 MM X 99 API SPECIAL CARTRIDGE         664         SYSTEM (IONS)         416	1.8 GHZ - 2.8 GHZ RF POWER AMPLIFIER	1083	155 MM 52 CAL. DIVINE SYSTEM	671
10TONS MULTIPURPOSE ROLLING CHASSIS PLATFORM 1000 LB. MK 83 GP AIRCRAFT BOMB 660 100-3000 MHZ SIGNAL MATCHING UNIT 771 1010 MB BORAN AIR-PORTABLE LIGHT TOWED 105 MM BORAN AIR-PORTABLE LIGHT TOWED 105 MM BORAN AIR-PORTABLE LIGHT TOWED 105 MM M68 T1 TANK GUN WEAPON SYSTEM 662 2.75 INC ROCKET ENGINE ASSEMBLY (FFAR) 105 MM M68 T1 TANK GUN WEAPON SYSTEM 662 2.3 GHZ - 2.4 GHZ RF FRONT-END 1084 105-/155 MM HOWITZER AMMUNITION 662 2.3 GHZ - 2.4 GHZ RF FRONT-END 1084 105-/155 MM HOWITZER AMMUNITION DISTANCE 00RRECTION NIT 107 MM ANATOLIAN ROCKET REAR FIRER 663 2.5 KW MILITARY FIBER LASER POWER SOURCES 450 107 MM ANATOLIAN ROCKET FEEDING CAPSULE 663 2.7 MM X99 SOLID SNIFER CARTRIDGE 663 2.7 SN ROCKET LAUNCHER 673 107/122 MM ROCKET FIRING CAPSULE 663 2.7 SN ROCKET LAUNCHER 674 107/122 MM ROCKET FIRING CAPSULE 675 107 MM X99 AP OR ARTRIDGE 676 107 MM X99 AP OR ARTRIDGE 677 107 MM X99 AP OR ARTRIDGE 677 107 MM X99 AP OR ARTRIDGE 677 107 MM X99 MAD POR ARTRIDGE 677 107 MM X99 MAD POR ARTRIDGE 677 107 MM X99 MAD POR ARTRIDGE 677 107 MM X99 MAD POR ARTRIDGE 677 107 MM X99 MAD POR ARTRIDGE 677 107 MM X99 MAD POR ARTRIDGE 677 107 MM X99 MAD POR ARTRIDGE 677 107 MM X99 MAD CARTRIDGE 678 107 MM X99 MAD CARTRIDGE 679 107 MM X99 MAD CARTRIDGE 679 107 MM X99 MAD CARTRIDGE 679 107 MM X99 MAD CARTRIDGE 679 107 MM X99 MAD CARTRIDGE 679 107 MM X99 MAD CARTRIDGE 679 107 MM X99 MAD CARTRIDGE 679 107 MM X99 MAD CARTRIDGE 679 107 MM X99 MAD CARTRIDGE 670 107 MM X99 MAD CARTRIDGE 670 107 MM X99 MAD CARTRIDGE 671 107 MM X99 MAD CARTRIDGE 672 107 MM X99 MAD CARTRIDGE 673 107 MM X99 MAD CARTRIDGE 674 107 MM X99 MAD CARTRIDGE 675 107 MM X99 MAD CARTRIDGE 676 107 MM X99 MAD CARTRIDGE 677 107 MM X99 MAD CARTRIDGE 678 107 MM X99 MAD CARTRIDGE 679 107 MM X99 MAD CARTRIDGE 679 107 MM X99 MAD CARTRIDGE 670 107 MM X99 MAD CARTRIDGE 670 107 MM X99 MAD CARTRIDGE 671 107 MM X99 MAD CARTRIDGE 672 107 MM X99 MAD CARTRIDGE 673 107 MM X99 MAD CARTRIDGE 674 107 MM X99 MAD CARTRIDGE 675 107 MM X99 MAD CARTRIDGE 676 107 MM X99 MAD CARTRIDGE 677 107 MM X99 MAD CAR		770	155 MM INCREASED RANGE HOWITZER AMMUNITION	671
PLATFORM			155 MM MODULE GUNPOWDER SYSTEM	672
1001 LB, MK 89 GP AIRCRAFT BOMB         660         PLATFORM         388           100-3000 MHZ SIGNAL MATCHING UNIT         771         10 INDUSTRIAL POWER DISTRIBUTION MANAGEMENT UNIT (GDVB)         940           105 MM BORAN AIR-PORTABLE LIGHT TOWED HOWITZER         661         2 KG FGG BDX         673           105 MM M6B T1 TANK GUN WEAPON SYSTEM         662         2.75 INC ROCKET ENGINE ASSEMBLY (FFAR)         673           105 MM TANK/HOWITZER AMMUNITION         662         2.3 GHZ - 2.4 GHZ RF FRONT-END         1084           105 JSS MM HOWITZER AMMUNITION DISTANCE CORRECTION KIT         894         2.3 GHZ - 2.4 GHZ RF POWER AMPLIFIER         1084           107 MM ANATOLIAN ROCKET REAR FIRER         663         2.5 KW MILITARY FIBER LASER POWER SOURCES         450           107 MM ANATOLIAN ROCKET FEEDING CAPSULE         663         2.75 INCH ROCKET WARHEAD         673           107 MM ARTILLERY ROCKET         663         2.75 INCH ROCKET LAUNCHER         673           107 MM ARCKET FIRING CAPSULE         663         2.0 GHZ PHASE LOCKED DIELECTRIC OSCILLATOR         771           107.122 MM ROCKET FIRING CAPSULE         663         20 MM GEBARREL) ROTARY BARREL WEAPON         416           12.7 MM X 99 PAIS PECIAL CARTRIDGE         664         20 MM CIWS         416           12.7 MM X 99 PAIS PECIAL CARTRIDGE         665         20 MM		386	155 MM HOWITZER AMMUNITION	672
10 MUST REPORTABLE LIGHT TOWED   661   UNIT (GBYB)   2 KG FOG BOX   673   105 MM M6BT 1 TANK GUN WEAPON SYSTEM   662   2.75 INC ROCKET ENGINE ASSEMBLY (FFAR)   673   105 MM TANK/HOWITZER AMMUNITION   662   2.3 GHZ - 2.4 GHZ RF FRONT-END   1084   105/155 MM HOWITZER AMMUNITION   1084   105/155 MM HOWITZER AMMUNITION DISTANCE   894   2.3 GHZ - 2.7 GHZ RF FOWER AMPLIFIER   1084   105 MM ANATOLIAN ROCKET REAR FIRER   663   2.5 kW MILITARY FIBER LASER POWER SOURCES   450   107 MM ANATOLIAN ROCKET FEEDING CAPSULE   663   2.75 INCH ROCKET WARHEAD   673   107 MM ARTILLERY ROCKET   663   2.75 INCH ROCKET WARHEAD   673   107 MM ARTILLERY ROCKET FIRING CAPSULE   663   2.75 INCH ROCKET WARHEAD   673   107/122 MM ROCKET FIRING CAPSULE   663   2.0 GHZ PHASE LOCKED DIELECTRIC OSCILLATOR   771   107/122 MM ROCKET FIRING CAPSULE   663   20 GHZ PHASE LOCKED DIELECTRIC OSCILLATOR   771   107/122 MM ROCKET FIRING CAPSULE   663   20 MM (6 BARREL) ROTARY BARREL WEAPON   416   12.7 MM X 99 API SPECIAL CARTRIDGE   664   5 YSTEM (DNSS)   416   12.7 MM X 99 PLASE LOCKED DIELECTRIC OSCILLATOR   418   12.7 MM X 99 MA PI CARTRIDGE   665   20 MM CIWS SEA PLATFORM   418   12.7 MM X 99 MA PI CARTRIDGE   664   20 MM CIWS SEA PLATFORM   419   12.7 MM X 99 MA PI CARTRIDGE   664   20 MM CIWS (YHSS) DNSS 6 BARREL TOWED CANNON   419   12.7 MM X 99 API CARTRIDGE   664   20 MM ROTATING BARREL WEAPON SYSTEM   667   12.7 MM X 99 CARTRIDGE   664   20 MM ROTATING BARREL WEAPON SYSTEM   667   12.7 MM X 99 MA TOARTRIDGE   664   20 MM ROTATING BARREL WEAPON SYSTEM   667   12.7 MM X 99 MA TOARTRIDGE   667   20 MM X 102 API CARTRIDGE   667   12.7 MM X 99 MA TOARTRIDGE   667   12.7 MM X 99 MA TOARTRIDGE   667   12.7 MM X 99 MA TOARTRIDGE   667   12.7 MM X 99 MA TOARTRIDGE   667   12.7 MM X 99 MA TOARTRIDGE   667   12.7 MM X 99 MA TOARTRIDGE   667   12.7 MM X 99 MA TOARTRIDGE   667   12.7 MM X 99 MA TOARTRIDGE   667   12.7 MM X 99 MA TOARTRIDGE   667   12.7 MM X 99 MA TOARTRIDGE   667   12.7 MM X 99 MA TOARTRIDGE   667   12.7 MM X 99 MA TOARTRIDGE   667   12.	1000 LB. MK 83 GP AIRCRAFT BOMB	660		385
105 MM BORAN AIR-PORTABLE LIGHT TOWED         661         UNIT (GDYB)           HOWITZER         2 KG FOG BOX         673           105 MM MGB T1 TANK GUN WEAPON SYSTEM         662         2.75 INC ROCKET ENGINE ASSEMBLY (FFAR)         673           105 MM TANK/HOWITZER AMMUNITION         662         2.3 GHZ - 2.4 GHZ RF FRONT-END         1008           105/155 MM HOWITZER AMMUNITION DISTANCE         894         2.3 GHZ - 2.4 GHZ RF FRONT-END         1008           107 MM ANATOLIAN ROCKET REAR FIRER         663         2.5 KW MILITARY FIBER LASER POWER SOURCES         450           107 MM ANATOLIAN ROCKET FEEDING CAPSULE         663         2.75 INCH ROCKET WARHEAD         673           107/122 MM ROCKET FIRING CAPSULE         663         2.75 INCH ROCKET WARHEAD         673           107/122 MM ROCKET FIRING CAPSULE         663         20 GHZ PHASE LOCKED DIELECTRIC OSCILLATOR         771           107/122 MM ROCKET FIRING CAPSULE         663         20 GHZ PHASE LOCKED DIELECTRIC OSCILLATOR         772           12.7 MM AACHINE GUN (MT12-QCB)         663         20 MM (G BARREL) ROTARY BARREL WEAPON         416           12.7 MM X 99 API SPECIAL CARTRIDGE         664         SYSTEM (DINS)         416           12.7 MM X 99 MAD (ARTRIDGE BLANK         664         20 MM CIWS SEA PLATFORM         418           12.7 MM X 99 MAD (AR	100-3000 MHZ SIGNAL MATCHING UNIT	771	1U INDUSTRIAL POWER DISTRIBUTION MANAGEMENT	940
105 MM MBB T1 TANK GUN WEAPON SYSTEM   662   2.75 INC ROCKET ENGINE ASSEMBLY (FFAR)   673     105 MM TANK/HOWITZER AMMUNITION   662   2.3 GHZ - 2.4 GHZ RF FRONT-END   1084     105/155 MM HOWITZER AMMUNITION DISTANCE   894   2.3 GHZ - 2.7 GHZ RF POWER AMPLIFIER   1084     107 MM ANATOLIAN ROCKET REAR FIRER   663   2.5 KW MILITARY FIBER LASER POWER SOURCES   450     107 MM ANATOLIAN ROCKET FEEDING CAPSULE   663   2.75 INCH ROCKET WARHEAD   673     107/122 MM ROCKET FIRING CAPSULE   663   2.75 INCH ROCKET WARHEAD   673     107/122 MM ROCKET FIRING CAPSULE   663   2.0 GHZ PHASE LOCKED DIELECTRIC OSCILLATOR   673     107/122 MM ROCKET FIRING CAPSULE   663   20 GHZ PHASE LOCKED DIELECTRIC OSCILLATOR   673     107/122 MM ROCKET FIRING CAPSULE   663   20 MM (6 BARREL) ROTARY BARREL WEAPON   416     12.7 MM X 99 API SPECIAL CARTRIDGE   664   SYSTEM (IDNS)   416     12.7 MM X 99 API SPECIAL CARTRIDGE   665   20 MM CIWS SEA PLATFORM   418     12.7 MM X 99 M3 API CARTRIDGE   665   20 MM CIWS SEA PLATFORM   419     12.7 MM X 99 M3 API CARTRIDGE   664   20 MM CIWS (YHSS) DINS 6 BARREL TOWED CANNON   419     12.7 MM X 99 NATO ANTI-MATERIAL SNIPER RIFLE   664   20 MM CIWS LAND PLATFORM   419     12.7 MM X 99 API CARTRIDGE   664   20 MM CIWS LAND PLATFORM   419     12.7 MM X 99 API CARTRIDGE   664   20 MM CIWS LAND PLATFORM   669     12.7 MM X 99 M3 API CARTRIDGE   664   20 MM CIWS LAND PLATFORM   619     12.7 MM X 99 API CARTRIDGE   664   20 MM CIWS LAND PLATFORM   669     12.7 MM X 99 M3 API CARTRIDGE   664   20 MM CIWS LAND PLATFORM   669     12.7 MM X 99 M3 API CARTRIDGE   664   20 MM CIWS LAND PLATFORM   669     12.7 MM X 99 M3 API CARTRIDGE   667   20 MM X 104 CARTRIDGE   674     12.7 MM X 99 M3 API CARTRIDGE   674   20 MM X 104 CARTRIDGE   674     12.7 MM X 99 M3 API CARTRIDGE   675   20 MM X 104 CARTRIDGE   676     12.7 MM X 99 M3 API CARTRIDGE   676   676   676   676     12.7 MM X 99 M3 API CARTRIDGE   676   676   676   676   676   676   676   676   676   676   676   676   676   676   676   676   676   676   676   67		661	UNIT (GDYB)	340
105 MM TANK/HOWITZER AMMUNITION   662   2.3 GHZ - 2.4 GHZ RF FRONT-END   1084		662	2 KG FOG BOX	673
105/155 MM HOWITZER AMMUNITION DISTANCE   894   2.3 GHZ - 2.7 GHZ RF POWER AMPLIFIER   1084			2.75 INC ROCKET ENGINE ASSEMBLY (FFAR)	673
CORRECTION KIT         894         2.3 GRZ - 2.7 GHZ RF POWER AMPLIFIER         108           107 MM ANATOLIAN ROCKET REAR FIRER         663         2.5 KW MILITARY FIBER LASER POWER SOURCES         450           107 MM ANATOLIAN ROCKET FEEDING CAPSULE         663         2.7 MM X99 SOLID SNIPER CARTRIDGE         665           107 MM ARTILLERY ROCKET         663         2.75 "ROCKET LAUNCHER         673           107/122 MM ROCKET FIRING CAPSULE         663         20 GHZ PHASE LOCKED DIELECTRIC OSCILLATOR MODULE         771           12.7 MM ACHINE GUN (MT12-QCB)         663         20 MM (6 BARREL) ROTARY BARREL WEAPON SYSTEM (DNSS)         416           12.7 MM X 99 CARTRIDGE         664         SYSTEM (DNSS)         416           12.7 MM X 99 M20 CARTRIDGE         665         20 MM CIWS SEA PLATFORM         418           12.7 MM X 99 M3 PI CARTRIDGE         665         20 MM CIWS (YHSS) DNSS 6 BARREL TOWEO CANNON         419           12.7 MM X 99 NATO ANTI-MATERIAL SNIPER RIFLE         664         20 MM CIWS LAND PLATFORM         419           12.7 MM X 99 AP CARTRIDGE         664         20 MM ROTATING BARREL WEAPON SYSTEM         674           12.7 MM X 99 M17 CARTRIDGE         664         20 MM ROTATING BARREL WEAPON SYSTEM         674           12.7 MM X 99 AP CARTRIDGE         664         20 MM ROTAR AMMUNITION TRACE (DESTRUCTION)		002	2.3 GHZ – 2.4 GHZ RF FRONT-END	1084
107 MM ANATOLIAN ROCKET REAR FIRER       663       2.7 MM X99 SOLID SNIPER CARTRIDGE       665         107 MM ARTILLERY ROCKET       663       2.75 INCH ROCKET WARHEAD       673         107/122 MM ROCKET FIRING CAPSULE       663       2.75 "ROCKET LAUNCHER       673         107/122 MM ROCKET FIRING CAPSULE       663       20 GHZ PHASE LOCKED DIELECTRIC OSCILLATOR MODULE       771         12.7 MM MACHINE GUN (MT12-QCB)       663       20 MM (6 BARREL) ROTARY BARREL WEAPON MODULE       416         12.7 MM X 99 API SPECIAL CARTRIDGE       664       SYSTEM (DNSS)       416         12.7 MM X 99 M20 CARTRIDGE BLANK       664       20MM CIWS       416         12.7 MM X 99 M20 CARTRIDGE       665       20 MM CIWS SEA PLATFORM       418         12.7 MM X 99 M8 API CARTRIDGE       665       20 MM CIWS (YHSS) DNSS 6 BARREL TOWED CANNON       419         12.7 MM X 99 NATO ANTI-MATERIAL SNIPER RIFLE       664       20 MM CIWS (LAND PLATFORM       419         12.7 MM X 99 AP CARTRIDGE       664       20 MM ROTATING BARREL WAPON SYSTEM       674         12.7 MM X 99 M17 CARTRIDGE       664       20 MM ROTATING BARREL WAPON SYSTEM       674         12.7 MM X 99 M17 CARTRIDGE       664       20 MMX102 CARTRIDGE       674         12.7 MM X 99 M17 CARTRIDGE       665       20 MMX102 CARTRIDGE <t< td=""><td></td><td>894</td><td>2.3GHZ - 2.7GHZ RF POWER AMPLIFIER</td><td>1084</td></t<>		894	2.3GHZ - 2.7GHZ RF POWER AMPLIFIER	1084
107 MM ANATOLIAN ROCKET FEEDING CAPSULE         663         2.75 INCH ROCKET WARHEAD         673           107 MM ARTILLERY ROCKET         663         2.75" ROCKET LAUNCHER         673           107/122 MM ROCKET FIRING CAPSULE         663         20 GHZ PHASE LOCKED DIELECTRIC OSCILLATOR MODULE         771           12.7 MM MACHINE GUN (MT12-QCB)         663         20 MM (6 BARREL) ROTARY BARREL WEAPON SYSTEM (DNSS)         416           12.7 MM X 99 API SPECIAL CARTRIDGE         664         SYSTEM (DNSS)         416           12.7 MM X 99 CARTRIDGE BLANK         664         20 MM CIWS         418           12.7 MM X 99 M20 CARTRIDGE         665         20 MM CIWS (YHSS) DNSS 6 BARREL TOWED CANNON         419           12.7 MM X 99 NATO ANTI-MATERIAL SNIPER RIFLE         664         20 MM CIWS LAND PLATFORM         419           12.7 MM X 99 CARTRIDGE         664         20 MM CIWS LAND PLATFORM         419           12.7 MM X 99 CARTRIDGE         664         20 MM ROTATING BARREL WEAPON SYSTEM         674           12.7 MM X 99 M17 CARTRIDGE         664         20 MM TANK AMMUNITION TRACE (DESTRUCTION)         669           12.7 MM X 99 M17 CARTRIDGE         664         20 MMX102 CARTRIDGE         674           12.7 MM X 99 M17 CARTRIDGE         665         20 MMX102 CARTRIDGE         674           120 MM 44 C	107 MM ANATOLIAN ROCKET REAR FIRER	663	2.5 KW MILITARY FIBER LASER POWER SOURCES	450
107 MM ARTILLERY ROCKET   663   2.75" ROCKET LAUNCHER   673   107/122 MM ROCKET FIRING CAPSULE   663   20 GMZ PHASE LOCKED DIELECTRIC OSCILLATOR   771   12.7 MM ACHINE GUN (MT12-QCB)   663   20 MM (6 BARREL) ROTARY BARREL WEAPON   416   12.7 MM X 99 API SPECIAL CARTRIDGE   664   SYSTEM (DNSS)   416   12.7 MM X 99 CARTRIDGE BLANK   664   20MM CIWS   416   12.7 MM X 99 M20 CARTRIDGE   665   20 MM CIWS SEA PLATFORM   419   12.7 MM X 99 M30 ANTI-MATERIAL SNIPER RIFLE   664   20 MM CIWS LAND PLATFORM   419   12.7 MM X 99 NATO ANTI-MATERIAL SNIPER RIFLE   664   20 MM ROTATING BARREL WEAPON SYSTEM   674   12.7 MM X 99 M17 CARTRIDGE   664   20 MM ROTATING BARREL WEAPON SYSTEM   674   12.7 MM X 99 M17 CARTRIDGE   664   20 MM XI02 API CARTRIDGE   674   12.7 MM X 99 M17 CARTRIDGE   664   20 MM XI02 API CARTRIDGE   674   12.7 MM X 99 M17 CARTRIDGE   665   20 MM XI02 CARTRIDGE   674   12.7 MM X 99 M17 CARTRIDGE   666   20 MM XI02 CARTRIDGE   674   120 MM 44 CAL. M60 TANK WEAPON SYSTEM   666   20 MM XI02 CARTRIDGE   675   120 MM MORTAR AMMUNITION   666   20 MM XI10 CARTRIDGE   675   120 MM MORTAR AMMUNITION   666   20 MM XI10 CARTRIDGE   675   120 MM MORTAR SYSTEM   667   667   667   667   667   120 MM MORTAR SYSTEM   666   20 MM XI10 CARTRIDGE   675   120 MM MORTAR SYSTEM   667   667   667   667   667   120 MM MORTAR SYSTEM   667	107 MM ANATOLIAN ROCKET FEEDING CAPSULE	663	2.7 MM X99 SOLID SNIPER CARTRIDGE	665
107/122 MM ROCKET FIRING CAPSULE       663       20 GHZ PHASE LOCKED DIELECTRIC OSCILLATOR MODULE       771         12.7 MM MACHINE GUN (MT12-QCB)       663       20 MM (6 BARREL) ROTARY BARREL WEAPON SYSTEM (DNSS)       416         12.7 MM X 99 API SPECIAL CARTRIDGE       664       SYSTEM (DNSS)       416         12.7 MM X 99 CARTRIDGE BLANK       664       20 MM CIWS       416         12.7 MM X 99 M20 CARTRIDGE       665       20 MM CIWS SEA PLATFORM       418         12.7 MM X 99 M8 API CARTRIDGE       665       20 MM CIWS (YHSS) DNSS 6 BARREL TOWED CANNON       419         12.7 MM X 99 NATO ANTI-MATERIAL SNIPER RIFLE       664       20 MM CIWS LAND PLATFORM       419         12.7 MM X 99 AP CARTRIDGE       664       20 MM ROTATING BARREL WEAPON SYSTEM       674         12.7 MM X 99 M17 CARTRIDGE       664       20 MM TANK AMMUNITION TRACE (DESTRUCTION)       669         12.7 MM X 99 M17 CARTRIDGE       664       20 MMX102 CARTRIDGE       674         12.7 X 99 MM       1270       20 MMX102 CARTRIDGE       674         120 MM 44 CAL. M60 TANK WEAPON SYSTEM       665       20 MMX102 CARTRIDGE       675         120 MM MORTAR AMMUNITION       666       20 MMX110 CARTRIDGE       675         120 MM MORTAR SYSTEM       667       20 MMX110 CARTRIDGE       675	107 MM ARTILLERY ROCKET	663		
107/122 MM ROCKET FIRING CAPSULE       663       MODULE       771         12.7 MM MACHINE GUN (MT12-QCB)       663       20 MM (6 BARREL) ROTARY BARREL WEAPON SYSTEM (DNSS)       416         12.7 MM X 99 API SPECIAL CARTRIDGE       664       SYSTEM (DNSS)       416         12.7 MM X 99 CARTRIDGE BLANK       664       20 MM CIWS       416         12.7 MM X 99 M20 CARTRIDGE       665       20 MM CIWS SEA PLATFORM       418         12.7 MM X 99 M3 API CARTRIDGE       665       20 MM CIWS (YHSS) DNSS 6 BARREL TOWED CANNON       419         12.7 MM X 99 NATO ANTI-MATERIAL SNIPER RIFLE       664       20 MM CIWS LAND PLATFORM       419         12.7 MM X 99 AP CARTRIDGE       664       20 MM ROTATING BARREL WEAPON SYSTEM       674         12.7 MM X 99 M17 CARTRIDGE       664       20 MM X102 API CARTRIDGE       674         12.7 X99MM       1270       20 MMX102 API CARTRIDGE       674         120 MM 44 CAL. M60 TANK WEAPON SYSTEM       665       20 MMX102 CARTRIDGE       674         120 MM 55 CAL. ALTAY TANK WEAPON SYSTEM       666       20 MMX110 CARTRIDGE       675         120 MM MORTAR SYSTEM       666       20 MMX110 CARTRIDGE       675         120 MM MORTAR SYSTEM       667       20 MMX110 CARTRIDGE       675	107/122 MM ROCKET FIRING CAPSULE	663		673
12.7 MM X 99 API SPECIAL CARTRIDGE   664   SYSTEM (DNSS)   416     12.7 MM X 99 CARTRIDGE BLANK   664   20MM CIWS   416     12.7 MM X 99 M20 CARTRIDGE   665   20 MM CIWS (YHSS) DNSS 6 BARREL TOWED CANNON   419     12.7 MM X 99 M8 API CARTRIDGE   665   20 MM CIWS (YHSS) DNSS 6 BARREL TOWED CANNON   419     12.7 MM X 99 M8 API CARTRIDGE   664   20 MM CIWS LAND PLATFORM   419     12.7 MM X 99 AP CARTRIDGE   664   20 MM ROTATING BARREL WEAPON SYSTEM   674     12.7 MM X 99 CARTRIDGE   664   20 MM TANK AMMUNITION TRACE (DESTRUCTION)   669     12.7 MM X 99 M17 CARTRIDGE   664   20 MMX102 API CARTRIDGE   674     12.7 MM X 99 M17 CARTRIDGE   665   20 MMX102 CARTRIDGE   674     12.7 MM X 99 M17 CARTRIDGE   665   20 MMX102 CARTRIDGE   675     120 MM 44 CAL. M60 TANK WEAPON SYSTEM   666   20 MMX102 CARTRIDGE   675     120 MM MORTAR AMMUNITION   666   20 MMX110 CARTRIDGE   675     120 MM MORTAR SYSTEM   667   20 MMX110 CARTRIDGE   675     120 MM MORTAR SYSTEM   667   20 MMX110 CARTRIDGE   675     120 MM MORTAR SYSTEM   667   20 MMX110 CARTRIDGE   675     120 MM MORTAR SYSTEM   667   20 MMX110 CARTRIDGE   675     120 MM MORTAR SYSTEM   667   20 MMX110 CARTRIDGE   675     120 MM MORTAR SYSTEM   667   20 MMX110 CARTRIDGE   675     120 MM MORTAR SYSTEM   667   20 MMX110 CARTRIDGE   675     120 MM MORTAR SYSTEM   667   20 MMX110 CARTRIDGE   675     120 MM MORTAR SYSTEM   667   20 MMX110 CARTRIDGE   675     120 MM MORTAR SYSTEM   667   20 MMX110 CARTRIDGE   675     120 MM MORTAR SYSTEM   667   20 MMX110 CARTRIDGE   675     120 MM MORTAR SYSTEM   667   20 MMX110 CARTRIDGE   675     120 MM MORTAR SYSTEM   667   20 MMX110 CARTRIDGE   675     120 MM MORTAR SYSTEM   667   20 MMX110 CARTRIDGE   675     120 MM MORTAR SYSTEM   667   20 MMX110 CARTRIDGE   675     120 MM MORTAR SYSTEM   667   20 MMX110 CARTRIDGE   675     120 MM MORTAR SYSTEM   667   20 MMX110 CARTRIDGE   675     120 MM MORTAR SYSTEM   667   20 MMX110 CARTRIDGE   675     120 MM MORTAR SYSTEM   675   20 MMX110 CARTRIDGE   675     120 MM MORTAR SYSTEM   675   20 MMX110 CAR	107/122 MM ROCKET FIRING CAPSULE	663		771
12.7 MM X 99 API SPECIAL CARTRIDGE       664       SYSTEM (DNSS)         12.7 MM X 99 CARTRIDGE BLANK       664       20MM CIWS       416         12.7 MM X 99 M20 CARTRIDGE       665       20 MM CIWS SEA PLATFORM       418         12.7 MM X 99 M8 API CARTRIDGE       665       20 MM CIWS (YHSS) DNSS 6 BARREL TOWED CANNON       419         12.7 MM X 99 NATO ANTI-MATERIAL SNIPER RIFLE       664       20 MM CIWS LAND PLATFORM       419         12.7 MM X 99 AP CARTRIDGE       664       20 MM ROTATING BARREL WEAPON SYSTEM       674         12.7 MM X 99 CARTRIDGE M33       664       20 MM TANK AMMUNITION TRACE (DESTRUCTION)       669         12.7 MM X 99 M17 CARTRIDGE       664       20 MMX102 API CARTRIDGE       674         12.7 X99MM       1270       20 MMX102 CARTRIDGE       674         120 MM 44 CAL. M60 TANK WEAPON SYSTEM       665       20 MMX102 CARTRIDGE       674         120 MM 55 CAL. ALTAY TANK WEAPON SYSTEM       666       20 MMX110 CARTRIDGE       675         120 MM MORTAR AMMUNITION       666       20 MMX110 CARTRIDGE       675         120 MM MORTAR SYSTEM       667       20 MMX110 CARTRIDGE       675	12.7 MM MACHINE GUN (MT12-QCB)	663	20 MM (6 BARREL) ROTARY BARREL WEAPON	43.0
12.7 MM X 99 M20 CARTRIDGE       665       20 MM CIWS SEA PLATFORM       418         12.7 MM X 99 M8 API CARTRIDGE       665       20 MM CIWS (YHSS) DNSS 6 BARREL TOWED CANNON       419         12.7 MM X 99 NATO ANTI-MATERIAL SNIPER RIFLE       664       20 MM CIWS LAND PLATFORM       419         12.7 MM X99 AP CARTRIDGE       664       20 MM ROTATING BARREL WEAPON SYSTEM       674         12.7 MM X99 CARTRIDGE M33       664       20 MM TANK AMMUNITION TRACE (DESTRUCTION)       669         12.7 MM X99 M17 CARTRIDGE       664       20 MMX102 API CARTRIDGE       674         12.7X99MM       1270       20 MMX102 CARTRIDGE       674         120 MM 44 CAL. M60 TANK WEAPON SYSTEM       665       20 MMX102 MK149 GFI APDS CARTRIDGE       674         120 MM 55 CAL. ALTAY TANK WEAPON SYSTEM       666       20 MMX110 CARTRIDGE       675         120 MM MORTAR AMMUNITION       666       20 MMX110 CARTRIDGE       675         120 MM MORTAR SYSTEM       667       20 MMX110 CARTRIDGE       675	12.7 MM X 99 API SPECIAL CARTRIDGE	664	SYSTEM (DNSS)	416
12.7 MM X 99 M8 API CARTRIDGE       665       20 MM CIWS (YHSS) DNSS 6 BARREL TOWED CANNON       419         12.7 MM X 99 NATO ANTI-MATERIAL SNIPER RIFLE       664       20 MM CIWS LAND PLATFORM       419         12.7 MM X99 AP CARTRIDGE       664       20 MM ROTATING BARREL WEAPON SYSTEM       674         12.7 MM X99 CARTRIDGE M33       664       20 MM TANK AMMUNITION TRACE (DESTRUCTION)       669         12.7 MM X99 M17 CARTRIDGE       664       20 MMX102 API CARTRIDGE       674         12.7 X99MM       1270       20 MMX102 CARTRIDGE       674         120 MM 44 CAL. M60 TANK WEAPON SYSTEM       665       20 MMX102 MK149 GFI APDS CARTRIDGE       674         120 MM 55 CAL. ALTAY TANK WEAPON SYSTEM       666       20 MMX110 CARTRIDGE       675         120 MM MORTAR AMMUNITION       666       20 MMX110 CARTRIDGE       675         120 MM MORTAR SYSTEM       667       20 MMX110 CARTRIDGE       675	12.7 MM X 99 CARTRIDGE BLANK	664	20MM CIWS	416
12.7 MM X 99 NATO ANTI-MATERIAL SNIPER RIFLE       664       20 MM CIWS LAND PLATFORM       419         12.7 MM X99 AP CARTRIDGE       664       20 MM ROTATING BARREL WEAPON SYSTEM       674         12.7 MM X99 CARTRIDGE M33       664       20 MM TANK AMMUNITION TRACE (DESTRUCTION)       669         12.7 MM X99 M17 CARTRIDGE       664       20 MMX102 API CARTRIDGE       674         12.7X99MM       1270       20 MMX102 CARTRIDGE       674         120 MM 44 CAL. M60 TANK WEAPON SYSTEM       665       20 MMX102 MK149 GFI APDS CARTRIDGE       674         120 MM 55 CAL. ALTAY TANK WEAPON SYSTEM       666       20 MMX110 CARTRIDGE       675         120 MM MORTAR AMMUNITION       666       20 MMX110 CARTRIDGE       675         120 MM MORTAR SYSTEM       667       20 MMX110 CARTRIDGE       675	12.7 MM X 99 M20 CARTRIDGE	665	20 MM CIWS SEA PLATFORM	418
12.7 MM X99 AP CARTRIDGE   664   20 MM ROTATING BARREL WEAPON SYSTEM   674     12.7 MM X99 CARTRIDGE M33   664   20 MM TANK AMMUNITION TRACE (DESTRUCTION)   669     12.7 MM X99 M17 CARTRIDGE   664   20 MMX102 API CARTRIDGE   674     12.7 X99MM   1270   20 MMX102 CARTRIDGE   674     120 MM 44 CAL. M60 TANK WEAPON SYSTEM   665   20 MMX102 MK149 GFI APDS CARTRIDGE   674     120 MM 55 CAL. ALTAY TANK WEAPON SYSTEM   666   20 MMX110 CARTRIDGE   675     120 MM MORTAR AMMUNITION   666   20 MMX110 CARTRIDGE   675     120 MM MORTAR SYSTEM   667   667	12.7 MM X 99 M8 API CARTRIDGE	665	20 MM CIWS (YHSS) DNSS 6 BARREL TOWED CANNON	419
12.7 MM X99 AP CARTRIDGE       664       20 MM ROTATING BARREL WEAPON SYSTEM       674         12.7 MM X99 CARTRIDGE M33       664       20 MM TANK AMMUNITION TRACE (DESTRUCTION)       669         12.7 MM X99 M17 CARTRIDGE       664       20 MMX102 API CARTRIDGE       674         12.7X99MM       1270       20 MMX102 CARTRIDGE       674         120 MM 44 CAL. M60 TANK WEAPON SYSTEM       665       20 MMX102 MK149 GFI APDS CARTRIDGE       674         120 MM 55 CAL. ALTAY TANK WEAPON SYSTEM       666       20 MMX110 CARTRIDGE       675         120 MM MORTAR AMMUNITION       666       20 MMX110 CARTRIDGE       675         120 MM MORTAR SYSTEM       667       20 MMX110 CARTRIDGE       675	12.7 MM X 99 NATO ANTI-MATERIAL SNIPER RIFLE	664	20 MM CIWS LAND PLATFORM	419
12.7 MM X99 CARTRIDGE M33       664       20 MM TANK AMMUNITION TRACE (DESTRUCTION)       669         12.7 MM X99 M17 CARTRIDGE       664       20 MMX102 API CARTRIDGE       674         12.7X99MM       1270       20 MMX102 CARTRIDGE       674         120 MM 44 CAL. M60 TANK WEAPON SYSTEM       665       20 MMX102 MK149 GFI APDS CARTRIDGE       674         120 MM 55 CAL. ALTAY TANK WEAPON SYSTEM       666       20 MMX110 CARTRIDGE       675         120 MM MORTAR AMMUNITION       666       20 MMX110 CARTRIDGE       675         120 MM MORTAR SYSTEM       667       20 MMX110 CARTRIDGE       675	12.7 MM X99 AP CARTRIDGE	664		
12.7 MM X99 M17 CARTRIDGE       664       20 MMX102 API CARTRIDGE       674         12.7X99MM       1270       20 MMX102 CARTRIDGE       674         120 MM 44 CAL. M60 TANK WEAPON SYSTEM       665       20 MMX102 MK149 GFI APDS CARTRIDGE       674         120 MM 55 CAL. ALTAY TANK WEAPON SYSTEM       666       20 MMX110 CARTRIDGE       675         120 MM MORTAR AMMUNITION       666       20 MMX110 CARTRIDGE       675         120 MM MORTAR SYSTEM       667	12.7 MM X99 CARTRIDGE M33	664		
20 MMX102 CARTRIDGE 674  120 MM 44 CAL. M60 TANK WEAPON SYSTEM 665  120 MM 55 CAL. ALTAY TANK WEAPON SYSTEM 666  120 MM MORTAR AMMUNITION 666  120 MM MORTAR SYSTEM 667	12.7 MM X99 M17 CARTRIDGE	664		
20 MMX102 MK149 GFI APDS CARTRIDGE 674  120 MM 55 CAL. ALTAY TANK WEAPON SYSTEM 666  120 MM MORTAR AMMUNITION 666  120 MM MORTAR SYSTEM 667	12.7X99MM	1270	20 MMX102 CARTRIDGE	674
120 MM 55 CAL. ALTAY TANK WEAPON SYSTEM       666       20 MMX110 CARTRIDGE       675         120 MM MORTAR AMMUNITION       666       20 MMX110 CARTRIDGE       675         120 MM MORTAR SYSTEM       667	120 MM 44 CAL. M60 TANK WEAPON SYSTEM	665	20 MMX102 MK149 GFI APDS CARTRIDGE	674
120 MM MORTAR AMMUNITION 666 20 MMX110 CARTRIDGE 675	120 MM 55 CAL. ALTAY TANK WEAPON SYSTEM	666		
120 MM MORTAR SYSTEM 667	120 MM MORTAR AMMUNITION	666		
	120 MM MORTAR SYSTEM	667		

2034 DKC-E DEVICE	151	40 MM X 53 HIGH SPEED GRENADE LAUNCHER AMMUNITION	680
20MM DOUBLE BARREL ANTI-AIRCRAFT AND INFANTRY SUPPORT GUN	675	4400-4411 BATTERIES	278
21 MM CLASS FIRING ROCKET	676	4T4R RADIO PRODUCT	1214
2-18 GHZ SP3T RF SWITCH MODULE	772	4-WAY RF POWER DIVIDER	1083
2-18 GHZ SPDT RF SWITCH MODULE	772	4X4 14 TONS MULTIPURPOSE ROLLING CHASSIS	
2-18 GHZ SPDT RF SWITCH MODULE	772	PLATFORM	384
2-20 GHZ 0.5W RF AMPLIFIER MODULE	772	4X4 8/9 TONS MULTIPURPOSE ROLLING CHASSIS PLATFORM	385
25 MM AMMUNITION	676	4X4 ARMORED AMBULANCE	618
250 LB. MK 81 GP AIRCRAFT BOMB	677	5 KW MILITARY FIBER LASER POWER SOURCES	451
25MM AUTOMATIC CANNON	677	5 TON 4×4 TTA & 10 TON 6×6 TTA TACTICAL WHEELED	337
2-WAY RF POWER DIVIDER	1082	VEHICLE	337
300W RF LOAD	1083	5.56 MM X 45 NATO HK33E A2/A3 AUTOMATIC INFANTRY RIFLE	680
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35 MM PM ELECTRIC IGNITER	677	RIFLE	682
35 MM PM ROTOR	678	5.56 MMX45 CARTRIDGE (SHRINKED)	683
35 MM ANTI-AIRCRAFT AMMUNITION	678	5.56 MMX45 CARTRIDGE (TRACER) (L110)	683
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3E	1226	5.56 MMX45 CARTRIDGE M193	684
3U VPX MODULE: BITFLEX-VPX3-MZQ1	430	5.56X45MM (M193, M855, M856)	1270
3U VPX MODULE: BITFLEX-VPX3-MZQU	430	5.70 MMX28 CARTRIDGE (POLYMER TYPE)	684
3U VPX MODULE: BITFLEX-VPX3-MZQU	431	500 LB. MK 82 GP AIRCRAFT BOMB	684
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3X MAGNIFICATION OPTICS	244	EXPLOSIVE	COF
3X MAGNIFICATION OPTICS	244	500LBS. MK 82-T THERMOBARIC AIRCRAFT BOMB 530 BOOSTER	685
4.5 LB. & 25 LB. AIRCRAFT TRAINING AND PRACTICE BOMBS	678	57 MM RECOIL-LESS GUN	56 289
4.5G/5G BASE STATION	1213	60 MM MORTAR AMMUNITION	686
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40 GHZ PHASE LOCKED DIELECTRIC OSCILLATOR		60 MM COMMANDO MORTAR	685
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40 MM AUTOMATIC GRENADE LAUNCHER	678	60MM/81MM/120MM MORTAR MODERNIZATION	
40 MM LONG DRUM GRENADE LAUNCHER	679	SOLUTIONS	151
40 MM X 46 LOW VELOCITY GRENADE LAUNCHER	679	66 MM AP ROCKET	686
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RIFLE	C00	9 MM X 19 MP5 A2 SUBMACHINE GUN	697
7.62 MM X 51 NATO SNIPER RIFLE JMK BORA-12	688	9 MM X 19 MP5 A3 SUBMACHINE GUN	697
7.62 MM X 51 NATO MKE T-41 SEMI-AUTOMATIC RIFLE	688	9 MM X 19 MP5 K SUBMACHINE GUN	697
7.62 MM X 51 NATO MMT MODERN MACHINE GUN	688	MM X 19 MP5 MTS A2 SILENCER SUBMACHINE GUN	697
7.62 MM X 51 NATO MPT-76MH AUTOMATIC INFANTRY RIFLE	688	9 MM X 19 MP5 MTS A3 SILENCER SUBMACHINE GUN	698
7.62 MM X 51 NATO AUTOMATIC INFANTRY RIFLE	689	9 MMX17 SHORT PISTOL CARTRIDGE	698
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7.62 MMX39 STEEL CORE CARTRIDGE	689	9 MMX19 DRAWN PISTOL CARTRIDGE	698
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7.62 MMX51 NORMAL CARTRIDGE (M80)	690	9X19 MM LUGER AND PARABELLUM	1272
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7.62 MMX54 NORMAL CARTRIDGE	691	A330/340 MAIN LANDING GEAR TROLLEY	1126
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8.59 MMX70 NORMAL CARTRIDGE	693	AC-4200 META-ARAMID BRAIDED SLEEVING	31
8.59 MMX70 SOLID CARTRIDGE	693	AC-4400 METAL BODY EMI CABLE SHIELDING	32
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