CATALOGUE

2026

Koç Bilgi ve Savunma Teknolojileri A.Ş.

KoçSavunma

Koç | KoçSavunma

Koç Bilgi ve Savunma Teknolojileri A.Ş.

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/ Introduction

Background

Koç Bilgi ve Savunma Teknolojileri A.Ş. (KoçSavunma) was established in METU-Teknokent on December 27, 2006, with its corporate headquarters located in Istanbul and operational activities hub in Ankara, with the mission of producing information technologies and marine systems technologies by employing national and inventive solutions. KoçSavunma is a subsidiary of KoçSistem, which operates within Koç Holding, the only Turkish company in the Fortune Global 500 ranking. Since its establishment, KoçSavunma has focused on becoming a technology-oriented establishment that develops electronic systems for naval platforms, especially underwater acoustic solutions, with an R&D-based approach and has built its strategic goals on these principles. TÜBİTAK-supported and product-oriented R&D projects are the basis of R&D activities, especially the Embedded Acoustic Detection and Analysis System (GATAS), Underwater Surveillance Network Project (SAGAP) and Smart Mine (MALAMAN) projects. KoçSavunma's motto surrounding its activities is "Expansion by Taking Integral of Technology and Derivative of Products", and thanks to its experience and know-how gained from R&D projects, the company has continuously expanded its product family and managed to develop, produce and offer the extensive cutting-edge technological product range in our catalogue to the defense sector. In accordance with its sustainable growth strategy, KoçSavunma has established its entire company headquarters and plant infrastructure in a private building in the Bağlıca district of Ankara since October 6, 2023.

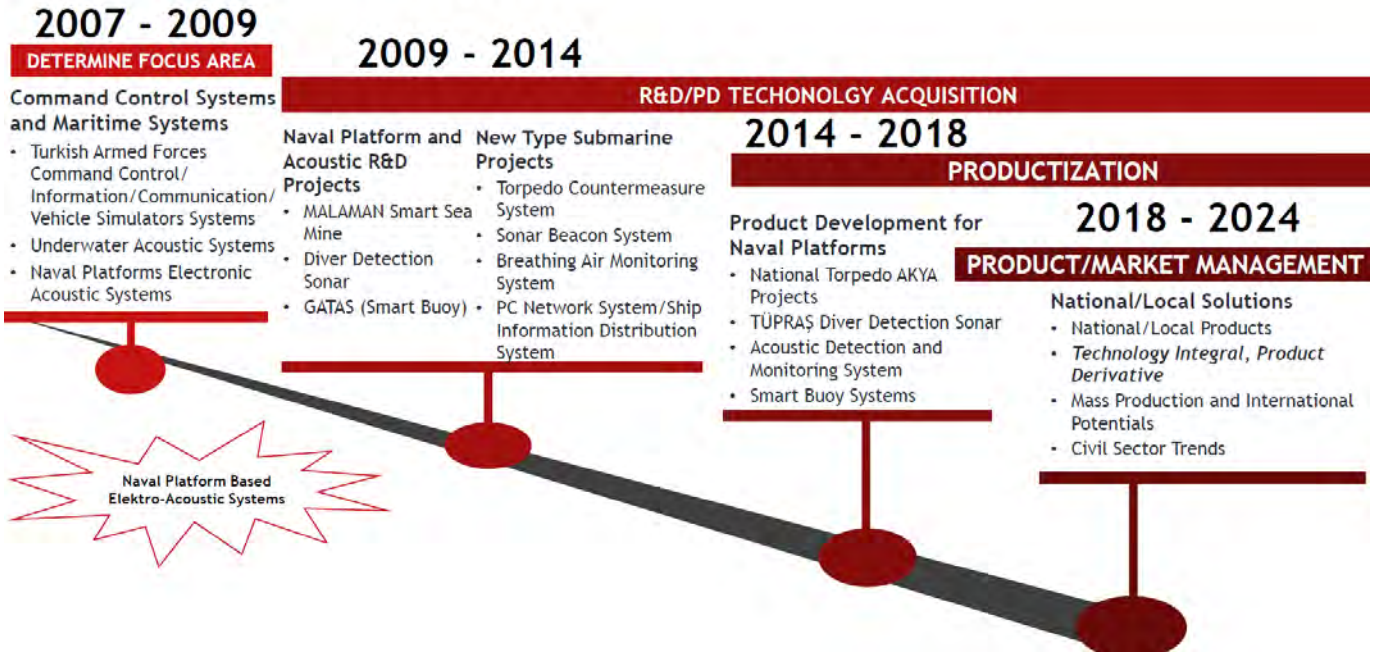
Vision

To be an innovative, environmentally conscious, and reliable company that has established itself as a recognized brand and value in its mission areas, both nationally and globally, and that can achieve sustainable growth through innovation-driven product development and mass production.

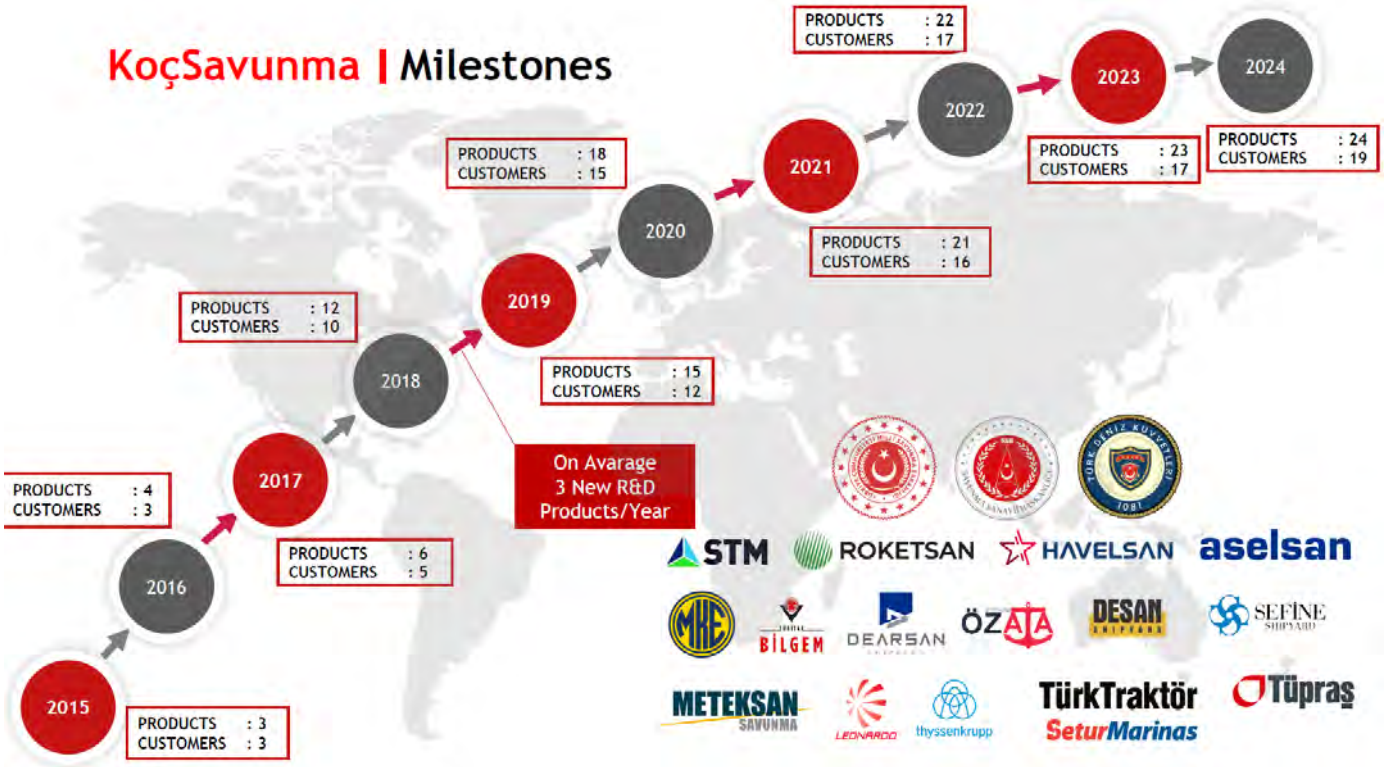
Mission

To develop original products and solutions focused on underwater acoustics for the defense sector at the national level; to expand beyond the defense sector into the environmental and agricultural sectors; and to meet national needs in these areas and export our products.

KoçSavunma | Milestones



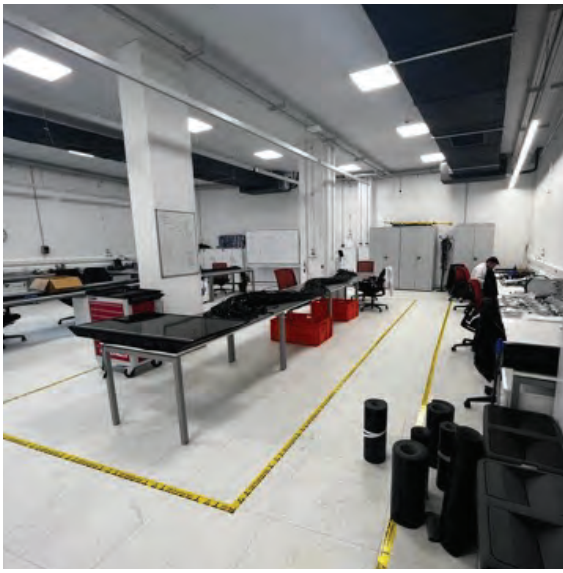
KoçSavunma | Milestones



/ Facility and Infrastructure

Facility

- Indoor Area: 2500 m^2
- Outdoor Area: 500 m^2



Laboratory

R&D Design Center

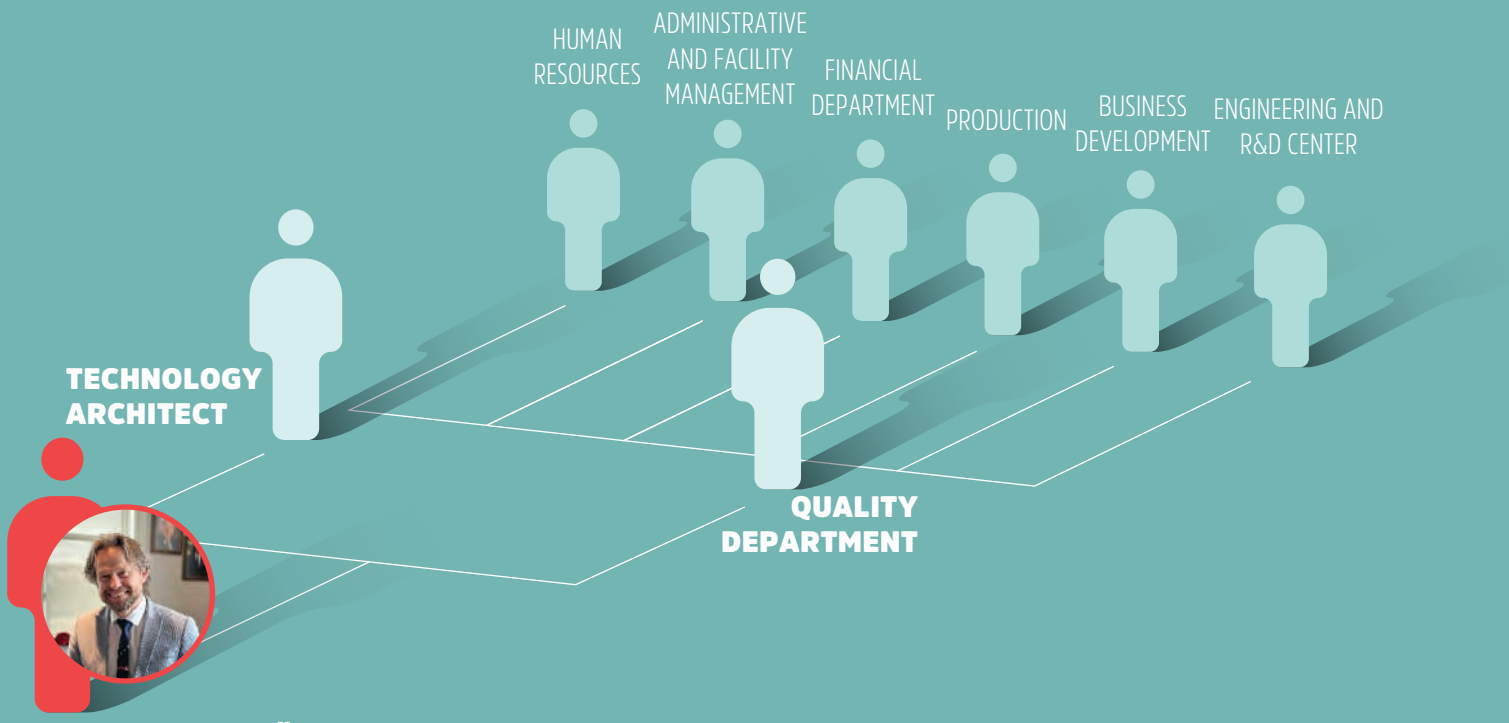
Total Area: 842 m^2
- Office: 577 m^2
- Laboratory: 265 m^2

Pressure Tank

Climatization Cabinet

Acoustic Test Pool

Organization and Distribution of the Employees

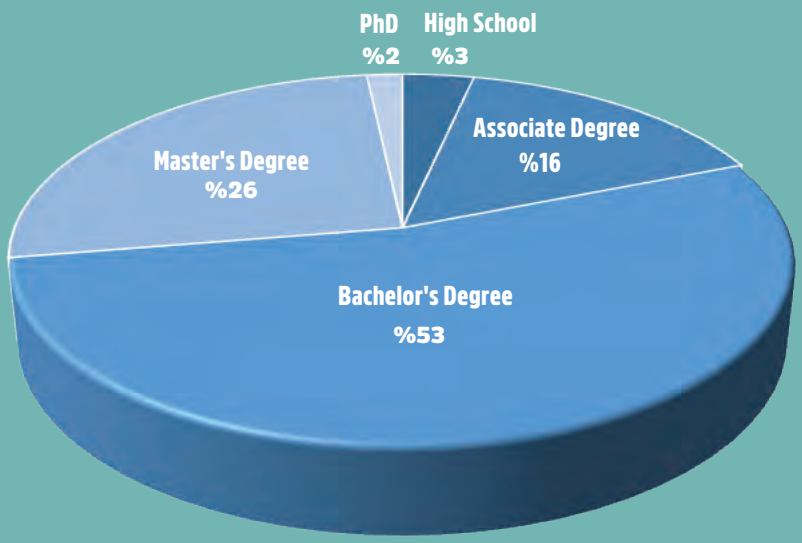


Mehmet Hakan ÖKTEM
DEFENSE TECHNOLOGIES DIRECTOR

Employees By Units

Administrative	18
Financial	2
Technical	42
TOTAL	62

Employee Education Degree



/ Product Family

Submarine Systems

Torpedo Countermeasure System
Sonar Beacon System
Breathing Air Monitoring System

Sonar Systems

ECHORIUM Diver Detection Sonar
Acoustic Wake Detector
Underwater Detection and Classification System
SENSIUM Acoustic Detection and Monitoring System
Sonar Fish Test and Measurement System
SuGA Underwater Surveillance System

Naval Mine System

MALAMAN Smart Sea Mine

IT Systems

Ship Integrated Information System

Underwater Communication Systems

UWaT D-1 Digital Underwater Telephone
TB-SH 05 Underwater Telephone
Emergency Underwater Telephone
Software-Based Underwater Telephone

Underwater Detection and Positioning Systems

Underwater Detection and Positioning System
Offshore and Inshore Weapon Scoring System

Software-Based Products

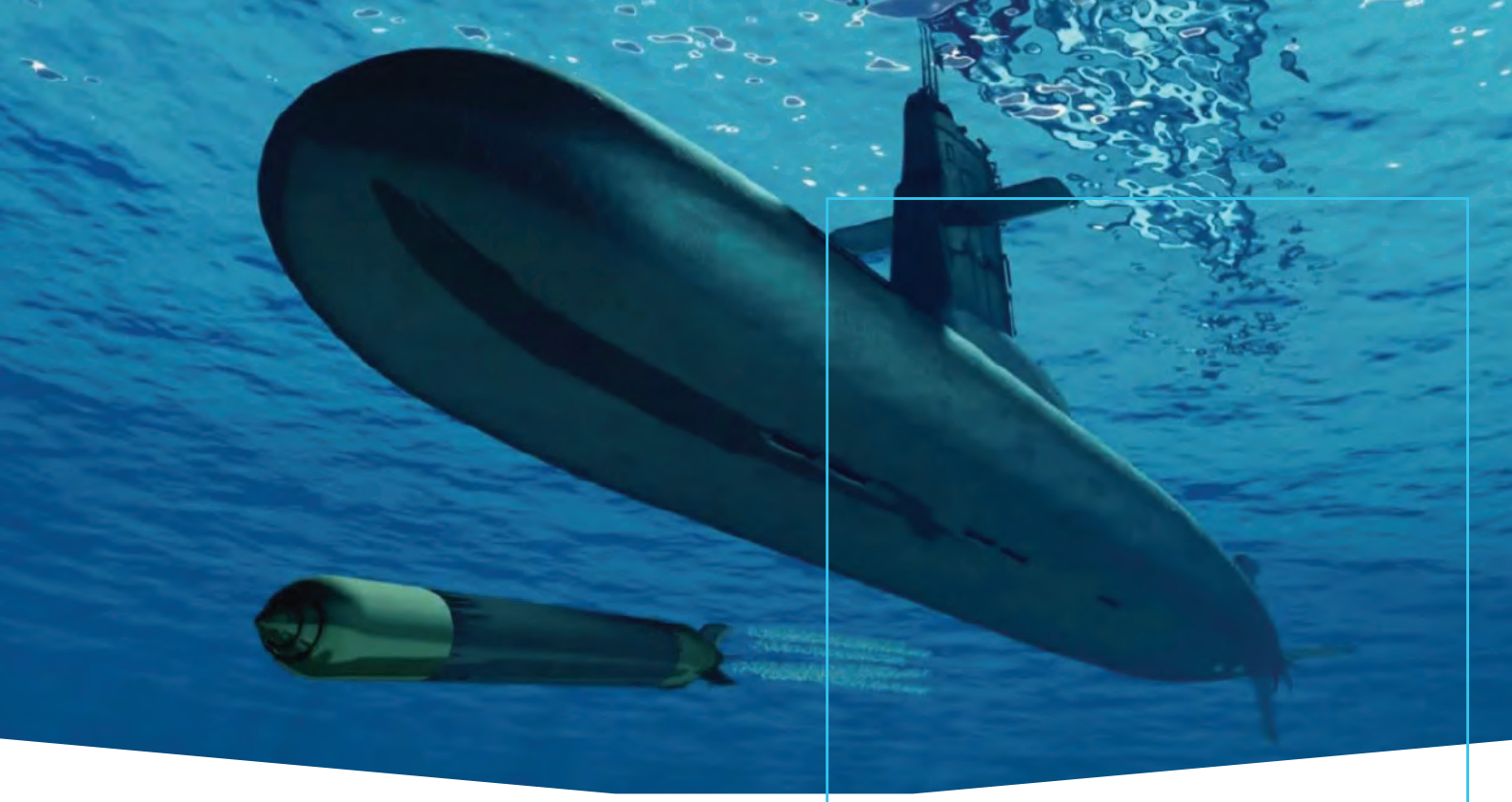
Mine Warfare Data Center Software
SORTAM Sonar Performance Modelling Software
Self-Noise Measurement Software
Acoustic Signal Generator Software

Civil Sector Products

SMARTIUM FARM Manual Guidance System for Tractors
SMARTIUM ALGEA Algea Preventive

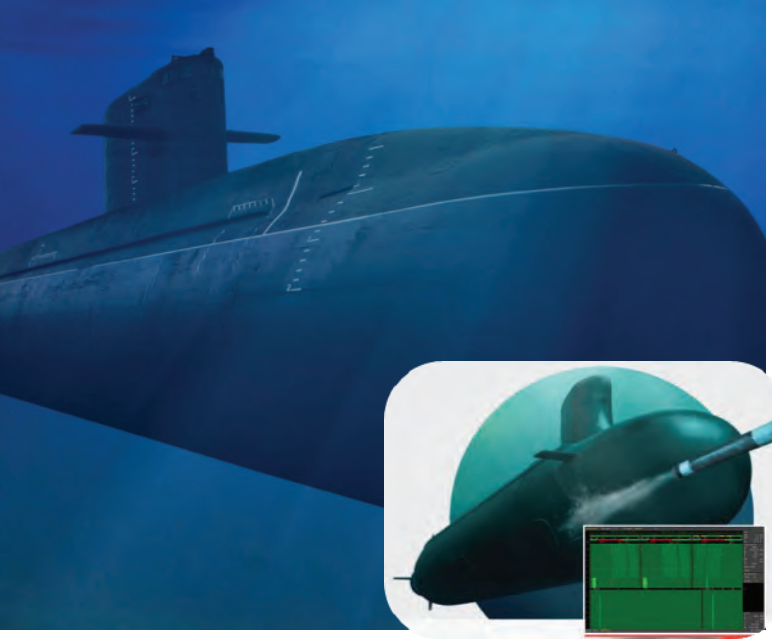
R&D Projects

SMARTIUM FARM Automatic Guidance System for Tractors
Doppler Velocity Log (DVL)



Submarine Systems

Submarine Systems



Submarine Systems

Torpedo Countermeasure System

General Features

The Torpedo Countermeasure System is a subsystem of a combat management system used to detect, classify and position torpedoes when a submarine is under torpedo threat, and to decide on the countermeasures and tactical maneuver plans to be employed. This solution incorporates all end-user processes, including training and testing, in the ground support system and on the submarine.

One component of the system runs in the submarine and performs detection, classification, location / DCL, and decision support functions. This component also provides a human-machine interface compatible with the submarine's command and control consoles. A major difference from its counterparts is that this system detects, classifies, and locates the torpedo attacking the submarine through its DCL function, in addition to its countermeasure function against torpedo threats.

The ground support components of the Torpedo Countermeasure System are used to counter the torpedoes with the most effective tactics and to determine the optimal jammer/decoy deployment configuration. For this purpose, it provides a medium for the development of acoustic environment simulation and engagement models. Necessary parameters are entered into the decision support software and appropriate tactics are uploaded to the system via ground support components. In addition, the Torpedo Countermeasure System includes countermeasure interface simulators used for command and control, launcher testing, and training.

Technical Specifications

- Tailored to fit and integrate with the end user's preferred submarine command and control system
- Advanced and effective torpedo detection, classification and localization capability
- Determination of countermeasures and ship maneuvers as part of the decision support function
- Ability to operate with expandable, static and mobile acoustic jammers and decoys
- Advanced and user-friendly operator interface
- Simulation and modelling tools for torpedo detection and countermeasure planning
- Acoustic environment modelling and simulation
- Modelling and simulation of torpedo countermeasure jammer/decoy units, and submarines
- Torpedo countermeasure planning and effectiveness analysis
- Test and training modules
- Secure and expandable system architecture with back-up function

Reference / User

Naval Forces Command (6 x Reis Class Submarine)

Submarine Systems

Sonar
Beacon System

General Features

The Sonar Beacon System enables the location of a submarine in an emergency during search and rescue operations. Developed by KoçSavunma in full compliance with NATO standards, this system transmits automatic or manual emergency sonar signals to detect and locate the current position of a submarine via nearby rescue platforms.

Technical Specifications

- Activated automatically by contact with water
- Activated manually by operator
- Operates at incident depth and under torpedo impact
- Complies with STANAG 1298 & STANAG 1382 standards
- Transmits sonar signals at 9 kHz and 37.5 kHz or both frequencies simultaneously
- Operates for more than 850 hours while transmitting on both frequencies
- Shows transmitting frequency/ frequencies on the screen
- Built-In-Test (BIT) mechanism for testing batteries and system operability
- 5 year maintenance-free battery, depending on usage
- Military-grade design for high reliability

Reference / User

Naval Forces Command (6 x Reis Class Submarine)

Submarine Systems

Breathing Air **Monitoring System**

General Features

The Breathing Air Monitoring System is equipped with a sensor that detects and analyzes the gases in the submarine's living spaces during surface cruising, snorkeling, underwater cruising, or while in port. The system automatically alerts the crew when airborne gases reach levels that threaten their health.

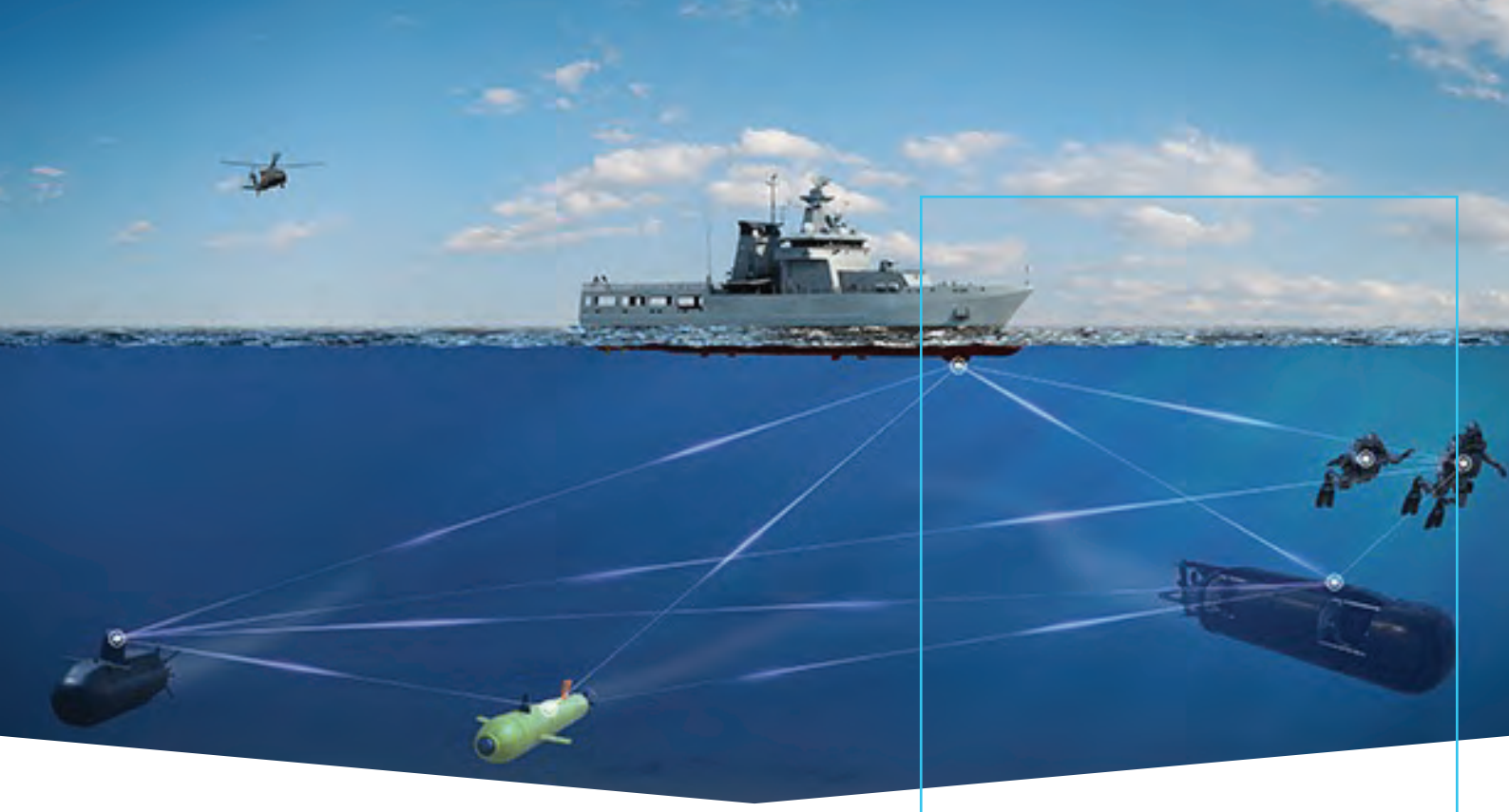
The Breathing Air Monitoring System can be used on military naval platforms and in all enclosed military and civilian areas where gas measurement is required. It is possible to set the gases to be monitored and customize the screenshots according to the user's needs.

Technical Specifications

- The sensor subsystem provides continuous measurement
- The analysis subsystem measures samples taken from 18 different points on the submarine
- The system transmits status data to various systems on the boat
- It is tested in accordance with the environmental conditions of submarine platforms
- MIL-STD-810F Temperature, Humidity, Thermal Shock
- MIL-S-901D Shock
- MIL-STD-461E EMC
- DOD-STD-1399 Magnetic
- Analysis subsystem can perform automatic calibration
- The sensor subsystem takes measurements with sensor arrays in 10 different compartments of the submarine
- The system operates automatically
- The system monitors hydrogen, oxygen, carbon dioxide, carbon monoxide, hydrogen sulfate, chlorine, and refrigerant gases (R134A and R404A), etc., and provides alarms when thresholds are exceeded

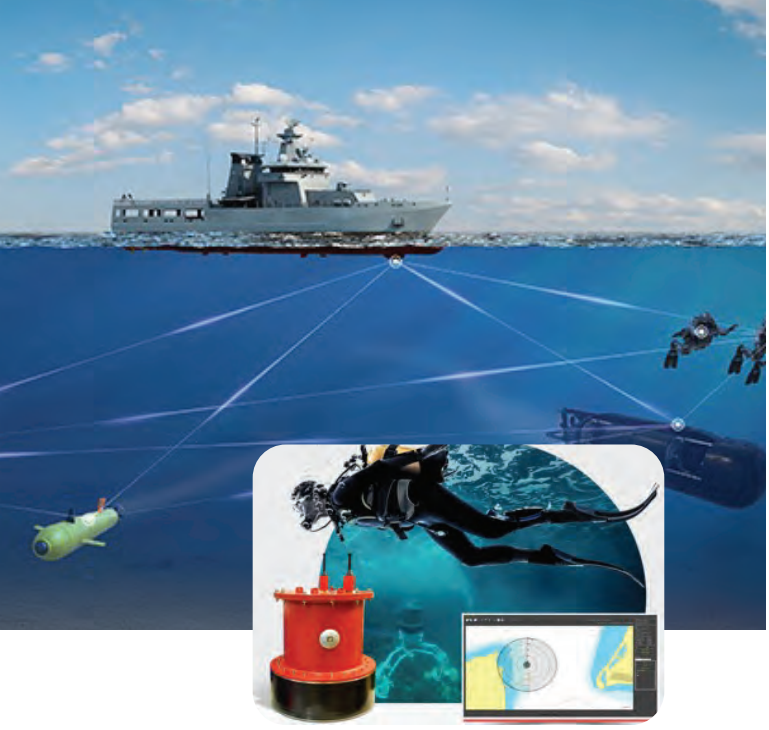
Reference / User

Naval Forces Command (6 x Reis Class Submarine)



Sonar Systems

Sonar
Systems



Sonar Systems

ECHORIUM Diver
Detection Sonar

General Features

ECHORIUM DD70 and PDD70 Diver Detection Sonars, are a versatile system that caters to ensure the security of high-value units, facilities, docked or anchored ships, and fixed platforms against underwater threats against infiltration that can be made from underwater by elements such as divers, manned and unmanned small transport vehicles, etc.

Areas of Use

- CNI facilities, energy terminals, LNG terminals, nuclear power plants
- Offshore oil platforms
- Commercial ports
- Naval or civilian vessels (cruise ships, super yachts)
- Specially protected underwater areas
- Maritime borders
- Naval bases
- Coastal residential areas
- Coastal military installations and airports
- VIPs at sea

Technical Specifications

- Detect approaching targets at long range
- Reliably detect, track and classify targets at ranges up to 1.000 meters with a single sonar head
- Portable software that runs on any desktop or laptop computer
- Temporary, permanent or portable installation
- User-friendly interface that allows operators with no sonar knowledge to use the system
- Automatic alarm that sounds when an intrusion is detected
- Provides real-time mobile and wireless imaging for security forces
- Very low false alarm rate
- Remote imaging from anywhere in the world
- Suitable for large or small coastal installations
- Short delivery and installation time

Reference / User

TÜPRAŞ Refineries
Naval Forces Command

Sonar Systems

Acoustic Wake **Detector**

General Features

KoçSavunma has developed, qualified and launched mass production of the Wake Detector for AKYA Heavy Torpedo Project.

This high-frequency sonar system detects the wake, which consists of air bubbles left behind by ships, with the acoustic signals it produces, processes the bubbles, and enables the torpedo to proceed to the target.

Technical Specifications

Confidential Information

Reference / User

Naval Forces Command, ROKETSAN (AKYA Heavy Torpedo Project)

Sonar Systems

SMARTIUM Underwater Detection **and Classification System**

General Features

SMARTIUM, the Intelligent Underwater Detection and Classification System, consisted of the entire sensor block, safety and locking systems, and central processing unit of the MALAMAN Smart Sea Mine. The system detects and identifies the target using acoustic, magnetic and pressure sensors, and fires the mine automatically or based on user-defined criteria.

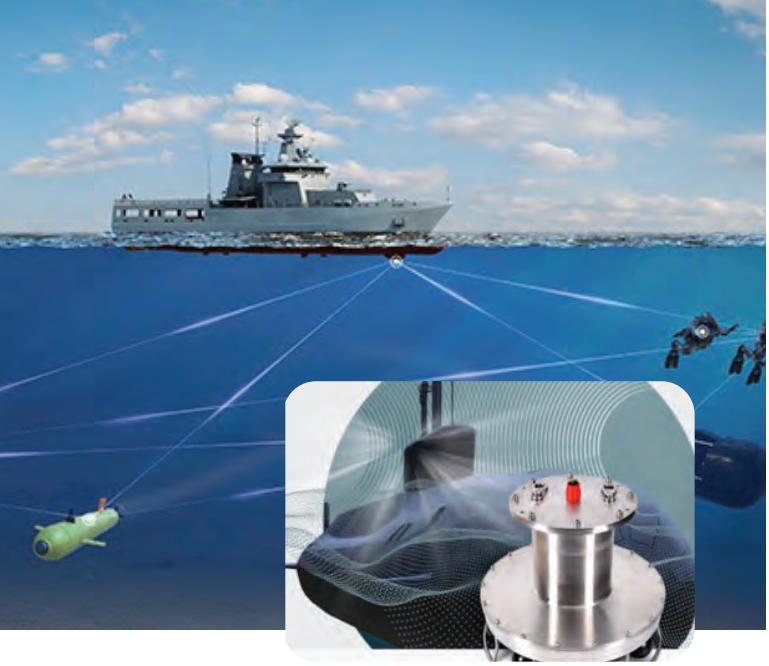
The system provides solutions for projects requiring underwater surveillance, detection, identification and classification functions for military and security purposes, thanks to its data recording and instant data transmission capacity.

Technical Specifications

Confidential Information

Reference / User

Confidential Information



Sonar Systems

SENSIUM Acoustic Detection **and Monitoring System**

General Features

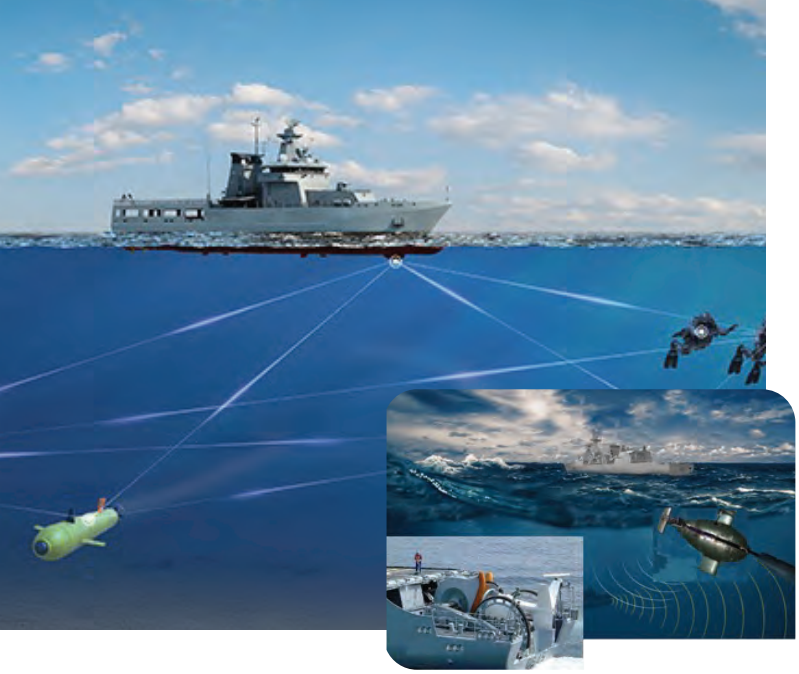
Designed and developed by KoçSavunma, the SENSIUM Acoustic Detection and Monitoring System is a search and rescue system that operates at various depths. It detects the signals transmitted by submarines in distress and downed aircraft, and locates the source of the signals, enabling search and rescue units to be quickly directed to the location of the signals.

Technical Specifications

- Digital map support
- High accuracy (±2° bearing accuracy)
- Maximum operating depth: 150 meters
- Detection frequency range: 5 kHz-45 kHz
- Detection distance: 10 m-9,000 m
- Hydrophone Array: 360°, array of 8 omnidirectional hydrophones
- Shock Resistance
- Carriage box
- Operable up to Beaufort Scale 3

Reference / User

Naval Forces Command (2 x Surface Ship)



Sonar Systems

Sonar Fish Test and Measurement System

General Features

The Sonar Fish Test and Measurement System was developed as part of the National Modernization Project to determine whether the verification and acceptance criteria of acoustic systems are met during the sea trials of Reis Class submarines being built under the Turkish Naval Forces New Type Submarine Program.

This system is towed by a surface ship and mimics the signals that any sonar system can produce. It is used in the sea trials of all Reis Class submarines and also provides various opportunities as an invaluable training aid in basic CASEX training to achieve the training objective in a cost- effective manner.

Technical Specifications

- Produces variable and preset broadband acoustic signals for functional and performance testing of sonars
- Simulates characteristic acoustic structures of platforms such as gunboats, torpedoes, etc.
- Repeats active pulses of tested sonars to mimic Doppler and echo extension
- Changes the backup depth of the transducer block (fish) to avoid underwater environmental effects
- Communicates with the tested submarine via the system's underwater telephone
- Provides cost-effective, customized, and efficient training for sonar personnel

Reference / User

Naval Forces Command (New Type Submarine Project (Reis Class))

Sonar Systems

SuGA
Underwater Surveillance System

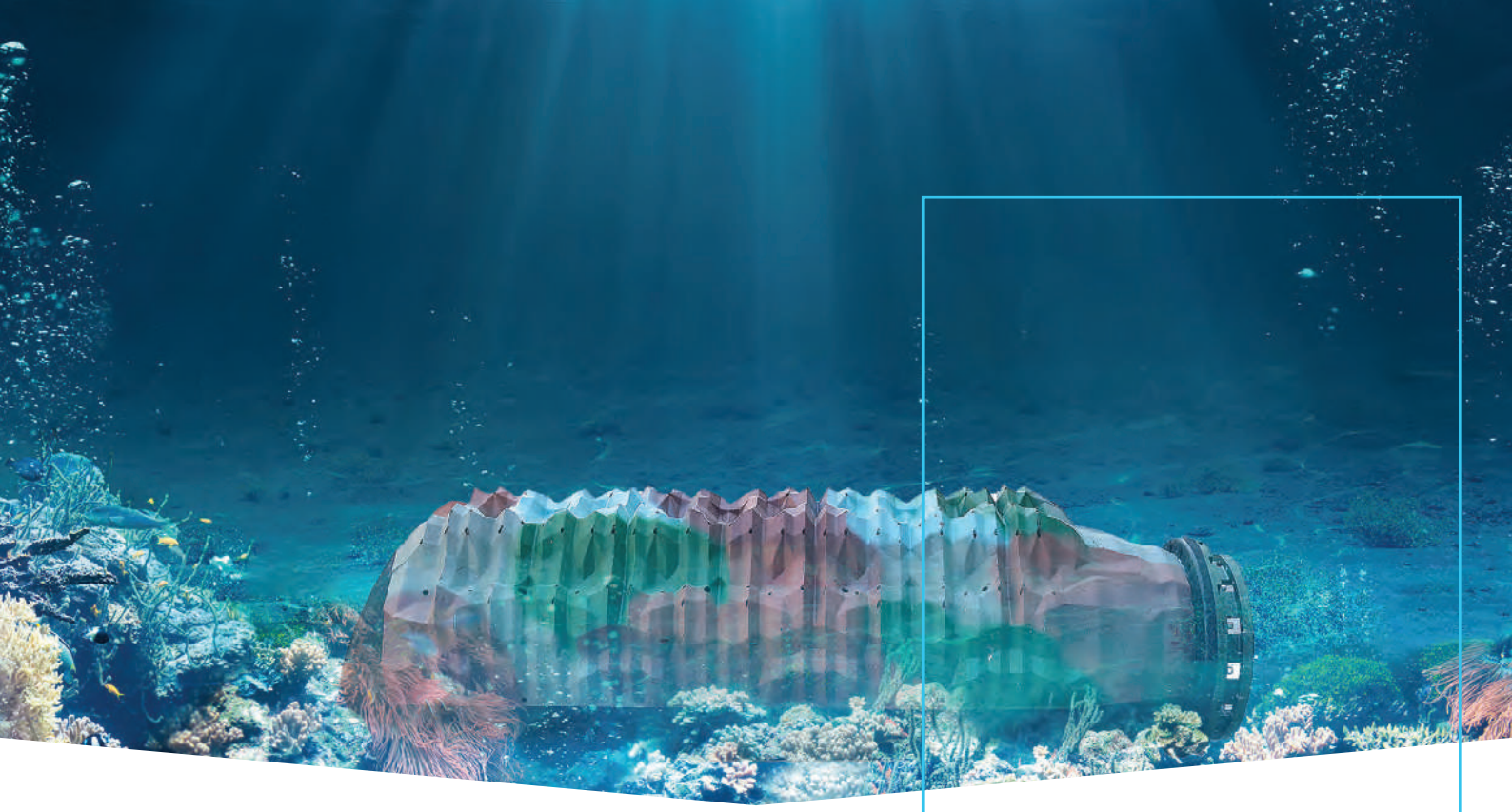
General Features

The Underwater Surveillance System (SuGA) is being developed for use in the "network-centric anti-submarine warfare in the littoral waters" for the following purposes.

- Perform underwater surveillance with active sonar networks within the area of operation, using the systems own energy generated by renewable energy systems,
- Produce submarine detection and tracking information,
- Transmitting the tracking information to the appropriate endpoints in the network.

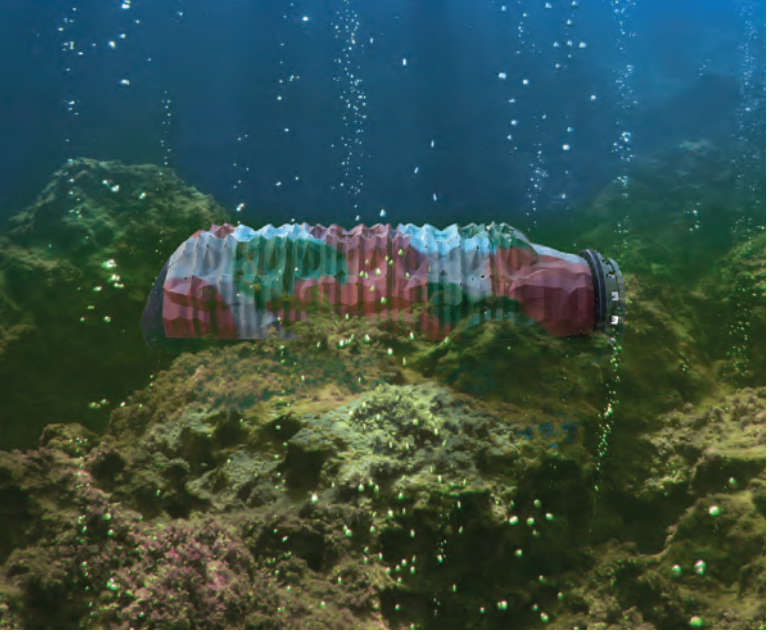
Reference / User

Confidential Information



Mine
Systems

Mine Systems



Mine Systems

MALAMAN Smart **Sea Mine**

General Features

MALAMAN is an intelligent sea mine designed as a cutting-edge, adaptable and scalable component. This mine is equipped with acoustic, magnetic, and pressure sensors that allow it to detect its targets from great distances and depths, as well as detection and identification capabilities.

The mine can be deployed from a variety of platforms including aircraft, surface warships, submarines, UAVs and UMVs.

The mine also has visual and acoustic stealth capabilities that blend into the seabed environment, and it carries plastic-bonded underwater explosives that make it resistant to rapid heating and munition impact.

MALAMAN Smart Sea Mine is jointly developed by TÜBİTAK SAGE and MKE A.Ş.

Technical Specifications

- Mine Type: War and Training Sea Mine
- Deployment Platform: Warship, Submarine, Aircraft (adapted for unmanned platforms)
- Sensor Types: Acoustic, Magnetic, Pressure
- Operational Depth: > 100 meters
- Weight: >600 kg
- Diameter: 533 mm
- Length: > 1800 mm
- Explosive type: Plastic-bound underwater explosive
- Resistance-1: Rapid heating (Type V)
- Resistance-2: Munition impact (Type IV)
- Operating Temperature: -2.5°C to +36°C

Reference / User

Naval Forces Command
Presidency of Defense Industries
TÜBİTAK SAVTAG

IT Systems

IT Systems

IT Systems

Ship Integrated **Information System**

General Features

Ship Integrated Information System (GEBİS) provides military-grade in-ship information networks for surface and underwater platforms. It provides secure connection points to the Internet and Intranet networks worldwide, as well as the local information network within the ship. The system provides a reliable, fast, and paperless shipboard information operating environment. The infrastructure is compatible with TEMPEST. Unique solutions are developed with a special system design based on user needs and project requirements.

GEBİS is an integrated system consisting of Commercial Off-The-Shelf (COTS) products. Upon request, the specified critical units are provided in accordance with the MIL-STD-810G standard.

GEBİS structure supports all hardware units and separate networks. It connects the installed ship's local networks with existing coast-to-ship and ship-to-ship network connection points and with TSK-NET, NATO, and mission networks via satellite communication infrastructures. It is equipped with cables and interconnection hardware for these connections.

Technical Specifications

- Special Design Cabinets
- The Active Network Unit and Modules
- Vessel/Coast Network Connection Hardware
- Network Accelerator
- Passive Network Hardware
- Network and Server Cabinets
- Uninterruptible Power Supply
- KVM Console with Control Unit
- User Computers
- Printers and Scanners
- Data Storage Units
- Backup Units
- Power Distribution Units
- Server Management Software
- Video Teleconferencing System

Reference / User

Naval Forces Command (6 x Reis Class Submarine)
STM (2 x Ukraine Corvette)

Underwater Communication Systems

Underwater Communication Systems

Underwater Communication Systems

UWaT D-1 Digital Underwater Telephone

General Features

Developed by Koç Bilgi ve Savunma Teknolojileri A.Ş., Türkiye's only UnderwaterTelephone Manufacturer, with the technology partnership of TÜBİTAK, the UWaT D-1 Digital Underwater Phone is a fully software-controlled system that provides ANALOG and DIGITAL communication between submarines and surface ships via underwater acoustic waves.

The UWaT D-1 Digital Underwater Telephone will first be used on the corvettes of the MİLGEM (National Ship) 6-8 Project and will enter the inventory of the Naval Forces.

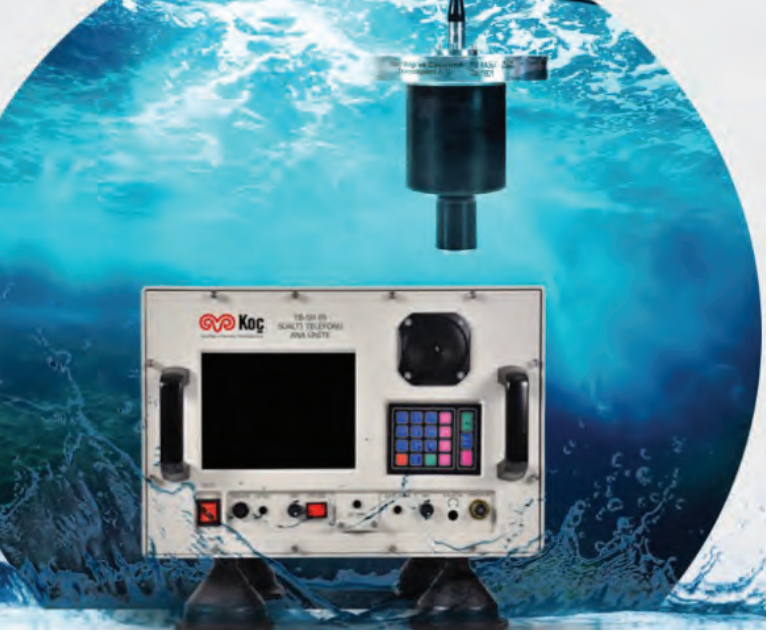
With the UWaT D-1 Digital Underwater Telephone, the data transfer capability, which can be briefly defined as the possibility of SMS communication underwater, will be gained, and in this way, the technological infrastructure necessary for the implementation of new concepts that allow friendly submarines and surface ships to recognize each other in naval operations will be offered to the Naval Forces.

Technical Specifications

- Telephone and Telegram Communication
- STANAG-1074 and STANAG-1382 compliant
- Three stage adjustable output power
- Digital Data Communication
  - STANAG 4748 (JANUS)
  - STANAG 1481 (IFS)
- Unique user interface design
- Internal test function
- Detection of SONAR beacon (pinger) signals
- Sonar Silencing Interface
- Emergency Channel Listening
- Audio recording and listening
- Data transfer to/from external storage unit
- Upgradeable software
- Modular design
- Unidirectional or bidirectional transducer transmission options
- User interface language selection

- Reference / User

Naval Forces Command (MİLGEM 6,7,8,9,10,11 and 12 Corvettes)



Underwater Communication Systems

TB-SH 05
Underwater Telephone

General Features

Microprocessor-controlled TB-SH 05 Underwater Telephone is a NATO-compatible communication system, produced according to the Technology Transfer Agreement under the license of TÜBİTAK BİLGEM. This telephone provides optimal communication between surface and submarine ships through acoustic waves. It is equipped with an "auxiliary unit" to communicate from a different location in a ship and an "internal communication" option that uses the ship's existing communication system.

It is equipped with two modes, namely telephone (voice) and telegraph. The communication is carried out on the selected channel frequency. Voice messages are recorded 24 hours a day and transmitted via SD card.

Technical Specifications

- Communication Channels Frequency Range:
  - Upper Side Band: 2.000-40.000 Hz
  - Lower Side Band: 5.000-43.000 Hz
- Number of Adjustable Channels: 3-6 Channels: NATO (8.087,5 Hz), National (3.500 Hz)
- Adjustable Output Power: 10 W (Near), 50 W (Middle), 100 W (Distant)
- Distance Measurement Mode: Fully Automatic
- Maximum Distance Measurement Range: 30.000
- Telegraph Mode Features: Transmitting – Receiving with Morse Code
- Applied Standards: STANAG 1074, STANAG 1382

Reference / User

Naval Forces Command (6 x Surface Ships)
DEARSAN SHIPYARD (Turkmenistan, Nigeria Patrol Ships)

Underwater Communication Systems

Emergency
Underwater Telephone

General Features

The Emergency Underwater Telephone is used when the submarine cannot surface and cannot supply power to the communication systems (or when the submarine's limited power must be reserved for other systems). The system provides various operating modes such as telephone, telegram, pinger, and can operate for very long periods without interruption by means of selectable power levels.

It can operate on user-selected frequencies as well as NATO standard communication frequencies. In addition to its battery, the phone is also powered by the ship's circuit. It is equipped with an SOS function for use in emergencies.

In addition to submarines, this equipment can easily be used in small boats and ships that have the power and space to integrate traditional underwater phones. In addition, its scalable and digital-based infrastructure allows the phone to be adapted for non-emergency use (such as tactical communications) on large ships and submarines.

Technical Specifications

- Transmit - Receive
- Pinger signal (transmits SOS or Morse code signals)
- Powered by submarine supply or own battery
- Standard underwater telephone system carrier frequency according to NATO STANAG 1074
- Transmits on at least three different frequencies according to NATO STANAG 1298
- Transmits and receives 360 degrees horizontally
- Power output up to 100W

Reference / User

Naval Forces Command (Preveze Class Submarines)

Software-Based Underwater Telephone

General Features

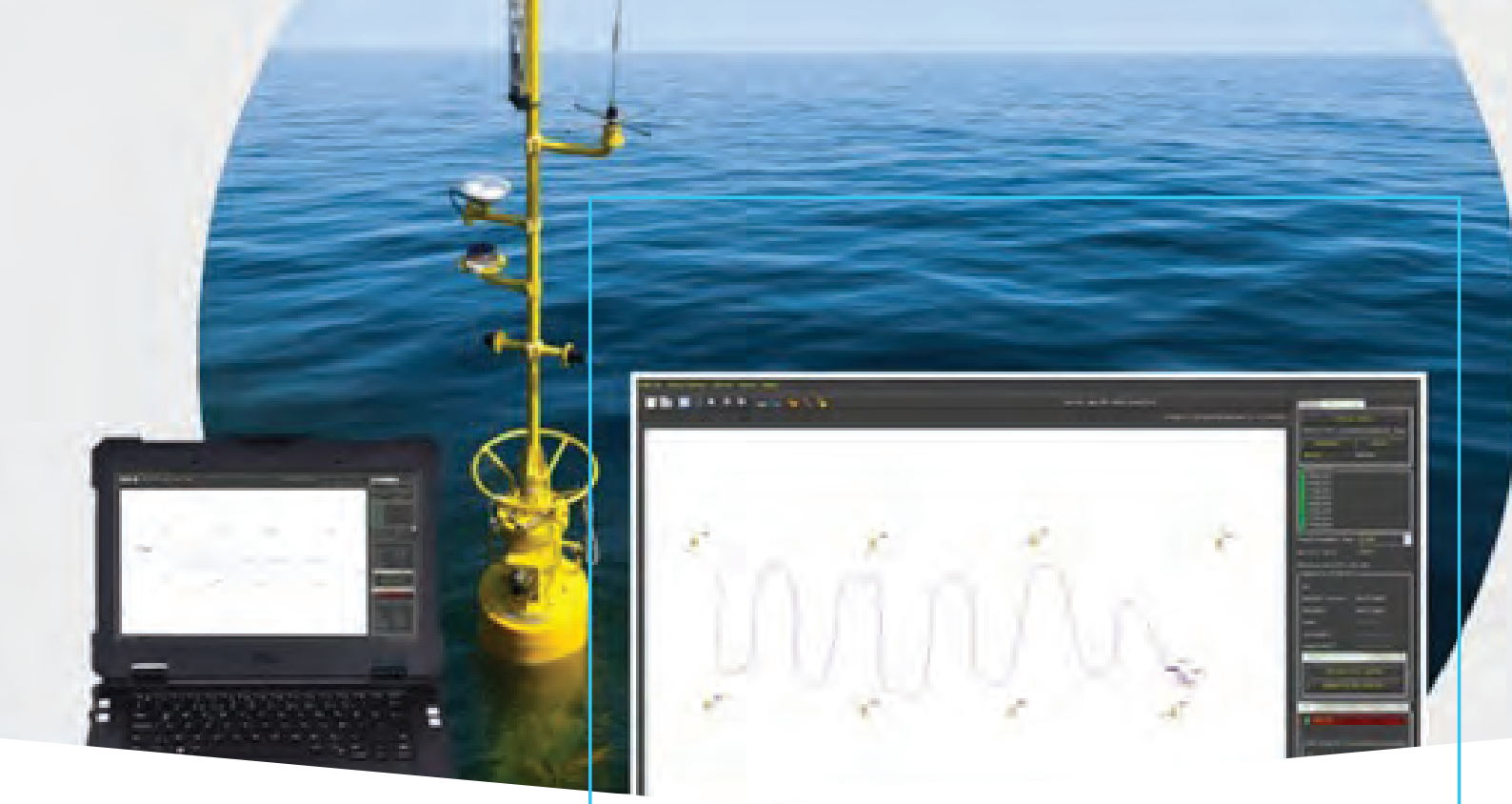
The Software-Based Underwater Telephone utilizes the transducers of existing surface ship and submarine sonar systems. The system provides underwater communications through interfaces on the sonar or command control system console, using the acoustics of the underwater environment.

Technical Specifications

- Single Side Band (TYB) Amplitude Modulation
- Telephone function: Upper Side Band or Lower Side Band
- Telegram function: Upper Side Band
- Transmits audio signal
- Audio band range used in telephone function 300 - 3000 Hz
- Up to 80 characters ASCII message in telephone mode
- Converts ASCII characters to Morse code

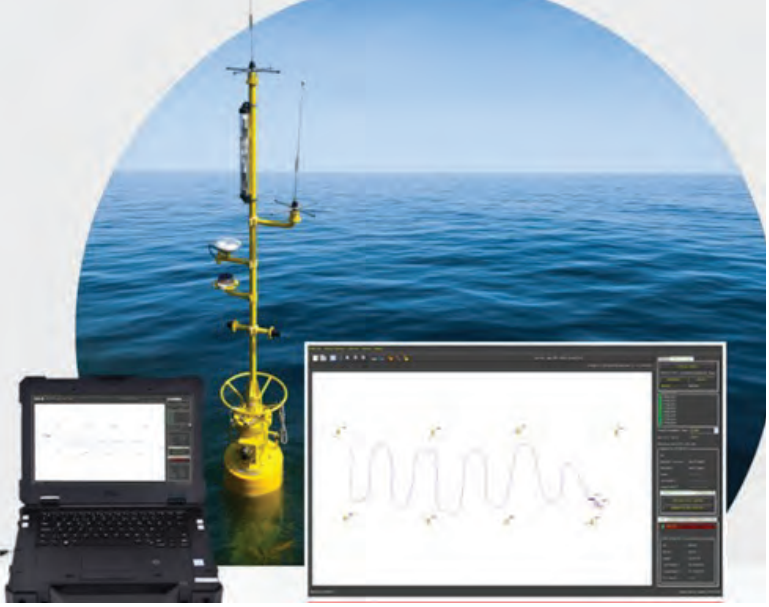
Reference / User

Naval Forces Command (Müren CMS Modernization)
2 x Pakistan Corvettes
2 x Ukraine Corvettes



Detection and Positioning Systems

Detection and Positioning Systems



Detection and Positioning Systems

UnderwaterDetection and **Positioning System**

General Features

Detection and Positioning System is used for testing and qualification of unmanned underwater platforms navigating at high speed (>40 kts). This system allows command and control officers to monitor unmanned underwater platforms in real-time and in a 3-axis plane with a high positioning accuracy of less than 1 meter. The underwater behavior of the platforms is analyzed and used for testing and qualification purposes.

A pinger system that transmits reference acoustic signals is installed on the platforms, which can move underwater at high speed to accurately monitor their position. The buoy detects the reference acoustic pulse signal periodically transmitted by the pinger installed on the underwater platforms.

Technical Specifications

- Test area size: 120 km^2
- X and Y Plane and Depth Positioning Accuracy <1 m (RTK solution)
- Positioning Method: Synchronous and asynchronous with GPS
- Number of buoys: 5 to 20
- Pinger frequency: 8 - 15 kHz (customizable to different frequencies)
- Maximum time at sea on a single charge 4 days
- RF wireless communication range: 20 km
- The number of platforms for simultaneous surveillance is 4

Reference / User

ROKETSAN (AKYA Torpedo development and verification activities)
ROKETSAN (Ongoing torpedo development activities)

Detection and Positioning Systems

Offshore & Inshore

Weapon Scoring System

General Features

The Offshore and Inshore Weapon Scoring System provides a solution for scoring and analyzing surface firings. During firing tests, the system uses intelligent buoys to accurately detect the impact points of ammunition on the water. The sensor on each buoy detects the sound generated underwater when the ammunition hits the water. This data, along with the buoys location, is transmitted to the measurement station. Here the data collected by the sensors is evaluated and, the munition impact point is determined and displayed to the operator.

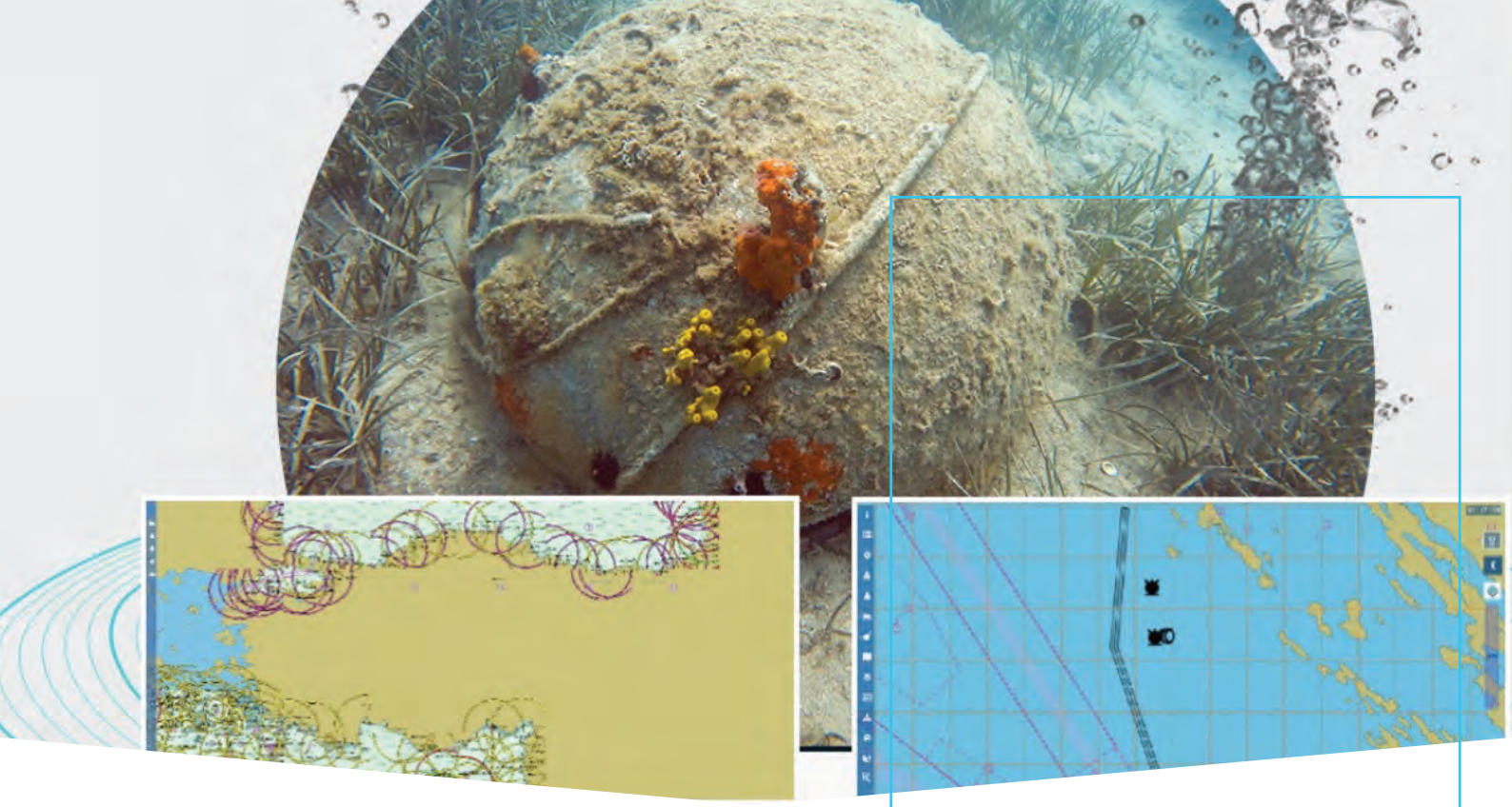
The system is used in the development and verification of guns, guided munitions, rockets, and fire control systems, and also provides real-time precision measurement services for firing range training.

Technical Specifications

- Detects ammunition impact points with 6 smart buoys for shots fired within a radius of 1 km
- Accurately detects ammunition impact point (CEP <5 m)
- Operates on Beaufort Scale 0, 1 and 2
- Operates synchronously with GPS time
- Provides wireless communication between buoys and measuring station (via RF/GSM)

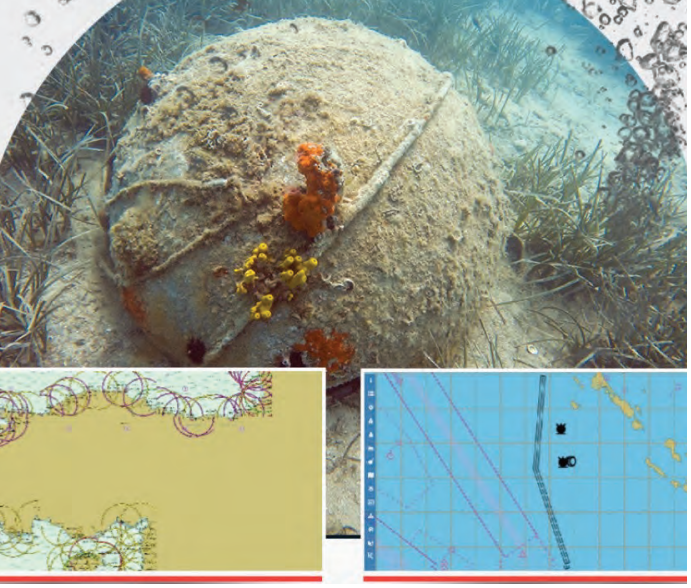
Reference / User

Naval Forces Command, ASELSAN (Verification activities within the modernization of the Gun Fire Control Systems of BARBAROS Class Frigates)



Software Based Products

Software Based Products



Software Based Products

Mine Warfare
Data Center Software

General Features

The Mine Warfare Data Center software enables the transfer and management of tactical and environmental mine warfare data between mine hunters and other data centers.

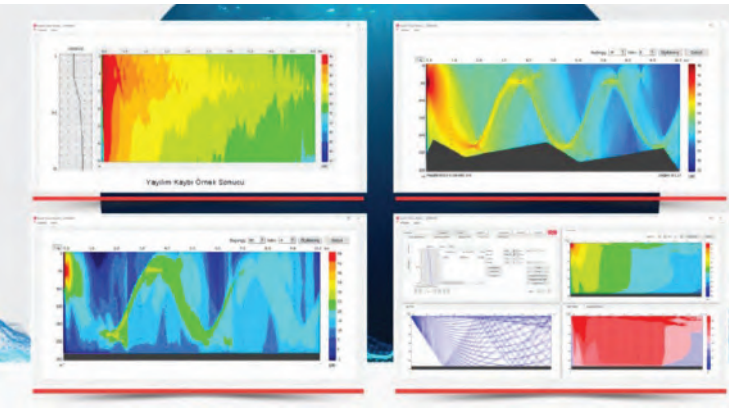
The software is ready for use by NATO countries as it is developed according to NATO standards. On the other hand, its architecture is open for customization based on different end-user requirements.

Technical Specifications

- NATO STANAG 1116 compliant tactical data management
- Data transfer capability between NATO members and mine hunters
- Cutting-edge Geographic Information System layer support (S57, S63, AML, etc.)
- Advanced query and reporting capabilities
- Web-based, user-friendly interface running on secure networks

Reference / User

Naval Forces Command (Mine Warfare Data Center)



Software
Based Products

SORTAM Sonar Performance
Modelling Software

General Features

The Underwater Environment Model (SORTAM) is a software-based precision modeling tool that displays the "Tactical / Estimated Sonar Range". The tool models the underwater propagation of acoustic signals from any active sonar or target using propagation models. SORTAM can model the performance data of both active and passive sonar systems with high fidelity, depending on the environmental conditions in which they operate.

SORTAM can operate independently of any other system. It displays the results of the propagation model with easy-to-use Graphical User Interfaces (GUI).

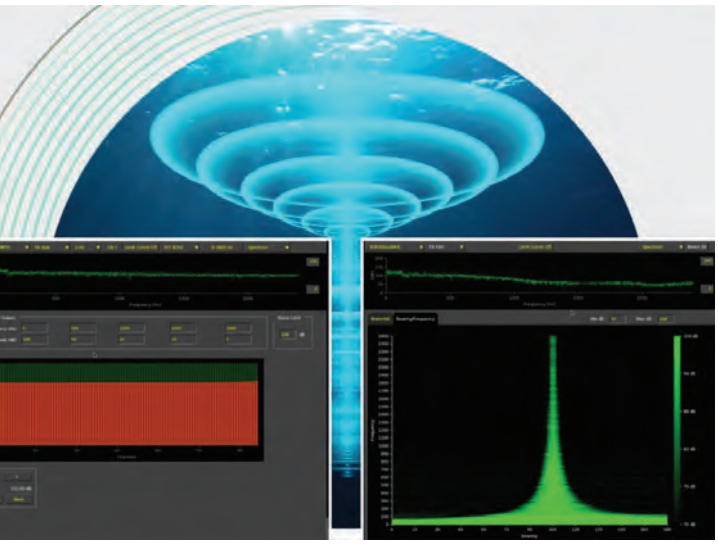
SORTAM can be adapted to different user needs thanks to its open architecture and modular structure.

Technical Specifications

- Provides mechanism for scenario field generation
- Processes multiple sound velocity profiles as a function of horizontal distance
- Identifies Beaufort scale sea state as a function of field distance
- Identifies seafloor and surface structure from reflection levels as a function of field distance
- Displays images of the propagation losses calculated by the acoustic environment model in the defined underwater area as a result of running the ray tracking model, depending on the distance and environment
- Simulates the propagation of rays emitted from an acoustic source at specified angles
- Calculates and displays the signal level reached by the receiver of the pulse reflected from an object in the field
- Finds possible detection percentages depending on the calculated SNR (signal-to-noise ratio) value and the sonar's detection threshold
- Shows values for reflection and noise caused by the sea surface, bottom, and volume of water

Reference / User

4 x Pakistan Corvettes
2 x Ukraine Corvettes



Software Based Products

Self-Noise **Measurement Software**

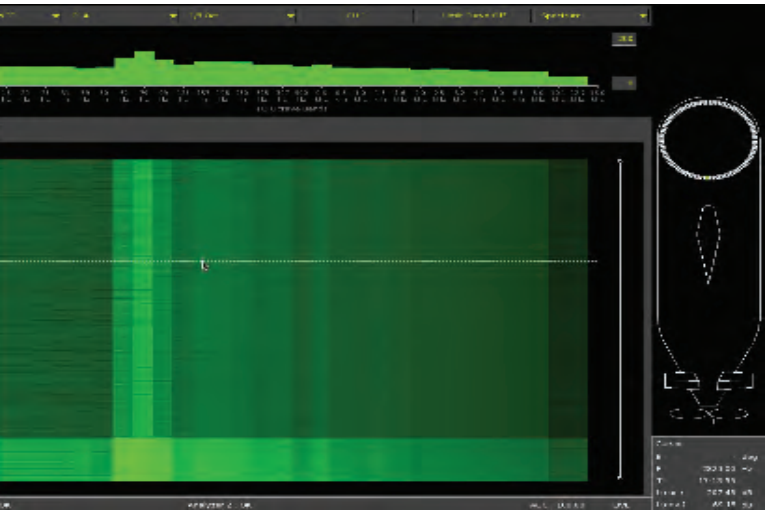
General Features

A series of sonar subsystems are found among KoçSavunma's unique and effective solutions, including Self-Noise Measurement Software. This tool analyzes data from different sonar sensors of underwater platforms in real-time, online and offline. In this way, self-noise information of the platform is obtained and analyzed.

This tool is used in the indigenously produced Integrated Underwater Combat Management System (MÜREN) Preveze Class Submarine application. It is also used on various platforms equipped with sonar sensors. The tool can be adapted to different platforms and sonar sensors in a short time thanks to its modular structure.

Reference / User

Naval Forces Command (MÜREN Preveze)



Software Based Products

Acoustic Signal **Generator Software**

General Features

The Acoustic Signal Generator Software transmits real-time acoustic signals to the front electronic units of various sonar sensors of underwater platforms, according to the scenarios created. In this way, the tool ensures that the signal processing algorithms and command and control software of the platforms are verified and qualified in the ground-based test system and in port tests.

This tool is used in the indigenously produced Integrated Underwater Combat Management System (MÜREN) Preveze Class Submarine application. It is also used on various platforms equipped with sonar sensors. On account of its modular structure, the tool can be adapted to different platforms and sonar sensors in a short time.

Reference / User

Naval Forces Command (MÜREN Preveze)

Civil Sector Products

Civil Sector Products

SMARTIUM FARM
Manual Guidance Systems for **Tractors**

General Features

The electronic control unit determines the tractor's position using global positioning systems and processes the position data. As a result, this system allows steering in the field at regular intervals, quickly and with centimeter accuracy, regardless of weather conditions (day/night).

While the tractor is moving, the operator manually steers to minimize any deviations from the planned route, which are displayed on the screen.

This system provides an economical solution for planting, spraying and fertilizing during field preparation.

Technical Specifications

- ENS 0310 N compliant
- IMU: Three-plane accelerometer and gyroscope
- Screen: 10" 1280x800 pixels, 1000 nits
- Optional distance measurement on the working screen
- Change area measurement unit
- Automatic creation of headland with a specific offset based on the field boundary
- Specify the offset value of the headland with the accuracy in centimeters
- Navigate the processed area on the work screen
- Configurable KHB
- Local software
- Automatic update

Reference / User

TürkTraktör

Civil Sector Products

SMARTIUM ALGEA

Algea Preventive

General Features

The formation of algae blooms is promoted by high temperatures, stagnant water and intense sunlight. The use of an ultrasonic algae cleaning system is the most effective and economical way to prevent biological pollution in the shortest possible time and without harming other aquatic life.

Controlled by a mobile interface, this is an environmentally friendly system that prevents algae blooms and eliminates existing algae in stagnant water.

Areas of Use

This system can be installed in industrial and irrigation reservoirs, lakes, dams, cooling ponds, aquaculture ponds, wastewater treatment plants, power plants, settling ponds, wastewater lagoons.

Technical Specifications

- Operation on a 24/7 basis
- 220V AC
- Device controlled by mobile phone via Wi-Fi connection
- Operating frequency 20 kHz-50 kHz
- Period change
- Water depth: minimum 50 cm
- Minimum maintenance requirement
- Safe for fish, plants and other aquatic life

Reference / User

METU Tekno Kent
Bursa Metropolitan Municipality

R&D Projects

R&D Projects

SMARTIUM FARM
Automatic Guidance Systems for **Tractors**

General Features

The Automatic Guidance system provides the driver with visual and/or audible warnings to automatically follow the planned tracks in the field, thanks to the steering control module.

The electronic control unit determines the tractor's position using global positioning systems and processes the position data. As a result, this system enables steering in the field at regular intervals, quickly and with centimeter accuracy, regardless of weather conditions (day/night).

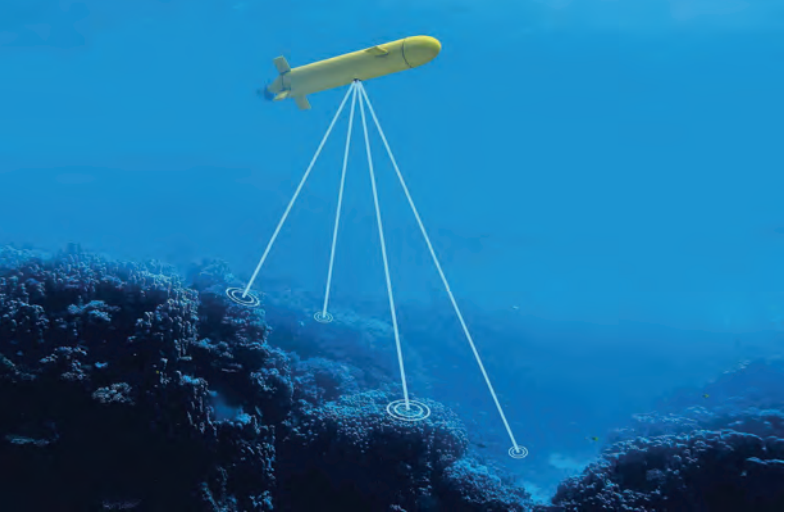
The goals of this system include increasing agricultural efficiency, minimizing operator fatigue, and saving labor and materials.

Technical Specifications

- ENS 0310 N compliant
- IMU: Three-plane accelerometer and gyroscope
- Screen: 10" 1280x800 pixels, 1000 nits
- Optional distance measurement on the working screen
- Change area measurement unit
- Automatic headland creation with a specific offset based on the headland boundary
- Specify the offset value of the headland with accuracy in cm
- Navigate the processed area on the work screen
- Configurable KHB
- Local software
- Automatic update

Reference / User

TürkTraktör



R&D Projects

Doppler Velocity Log **(DVL)**

General Features

The Doppler Velocity Log estimates velocity relative to the seabed by sending acoustic waves through four-angle transducers and then measuring the frequency shift (Doppler effect) from the received echo.

The project aims to develop Doppler Velocity Log, which produces linear speed data to increase the accuracy of the navigation system, with national capabilities.

The Doppler Velocity Log to be developed will be able to generate velocity data referenced both to the seabed and to the water mass.

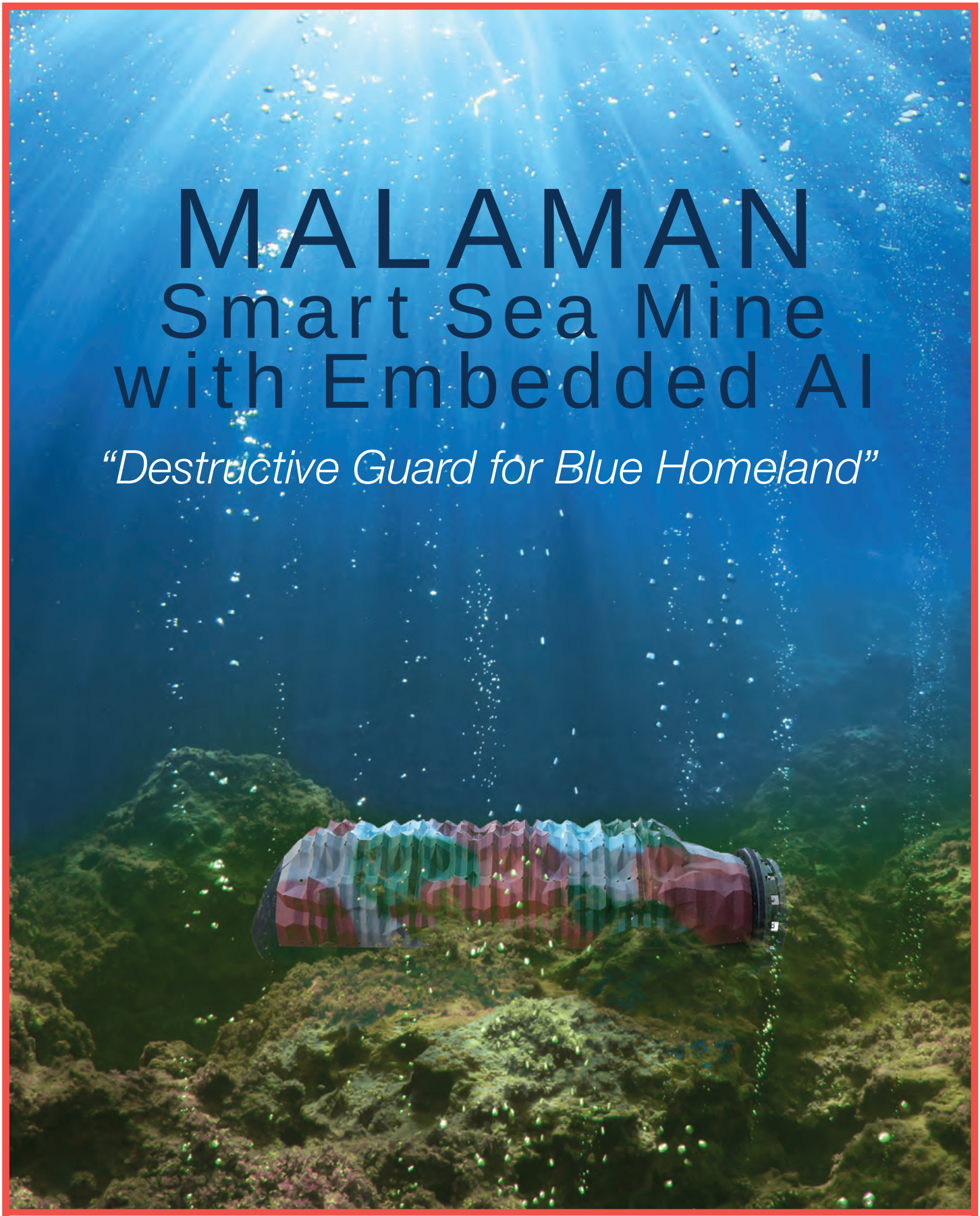
Reference / User

It is being carried out as an R&D project to be used in underwater platforms.

MALAMAN

Smart Sea Mine with Embedded AI

"Destructive Guard for Blue Homeland"



MKE

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TÜBİTAK SAGE

"This product was developed in framework of TÜBİTAK's SAVTAG-1007 Support Program"

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