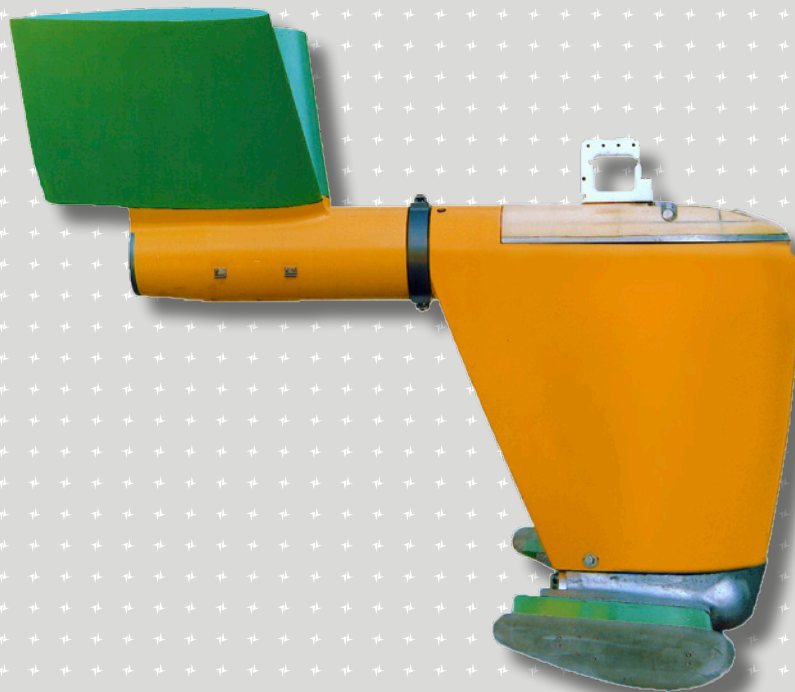




# Active Towed Array Sonar Outstanding Over-The-Horizon Surveillance

**ACTAS**

Anti-Submarine Warfare



... a sound decision

 **ATLAS ELEKTRONIK**

# Detect and Attack – Effective Sonar Systems for Surface and Underwater Warfare

Surface combatants need highly effective and efficient sonar systems. Our innovative solutions comprise decades of experience in the field of sonar technology and the highest level of professional competence in hydroacoustics. This is why we are the absolute world leader in sonar technology.

Our spectrum of sonar systems for surface combatants consists of active and passive sonars, ranging from the Hull-Mounted Sonar (ASO) through to the Low-Frequency Active Towed Array Sonar (ACTAS). Our systems meet the requirements of every conceivable mission scenario with diverse operational areas, resolutions and applications.

Advanced processing methods guarantee that our sonar family can be used for every ASW missions as well as for self-defence. Our sonars have the ability to detect, track and classify submarines, torpedoes, UUVs, anchored mines and even small surface combatants, such as high-speed patrol boats.





# ACTAS – Active Towed Array Sonar Designed to Detect, Track and Classify

The ATLAS ELEKTRONIK Active Towed Array Sonar (ACTAS) is a low-frequency ASW sonar system that operates simultaneously in active and passive detection modes and provides high-resolution target detection.

It is designed to detect:

- Submarines
- Torpedoes
- Surface vessels including speed boats.

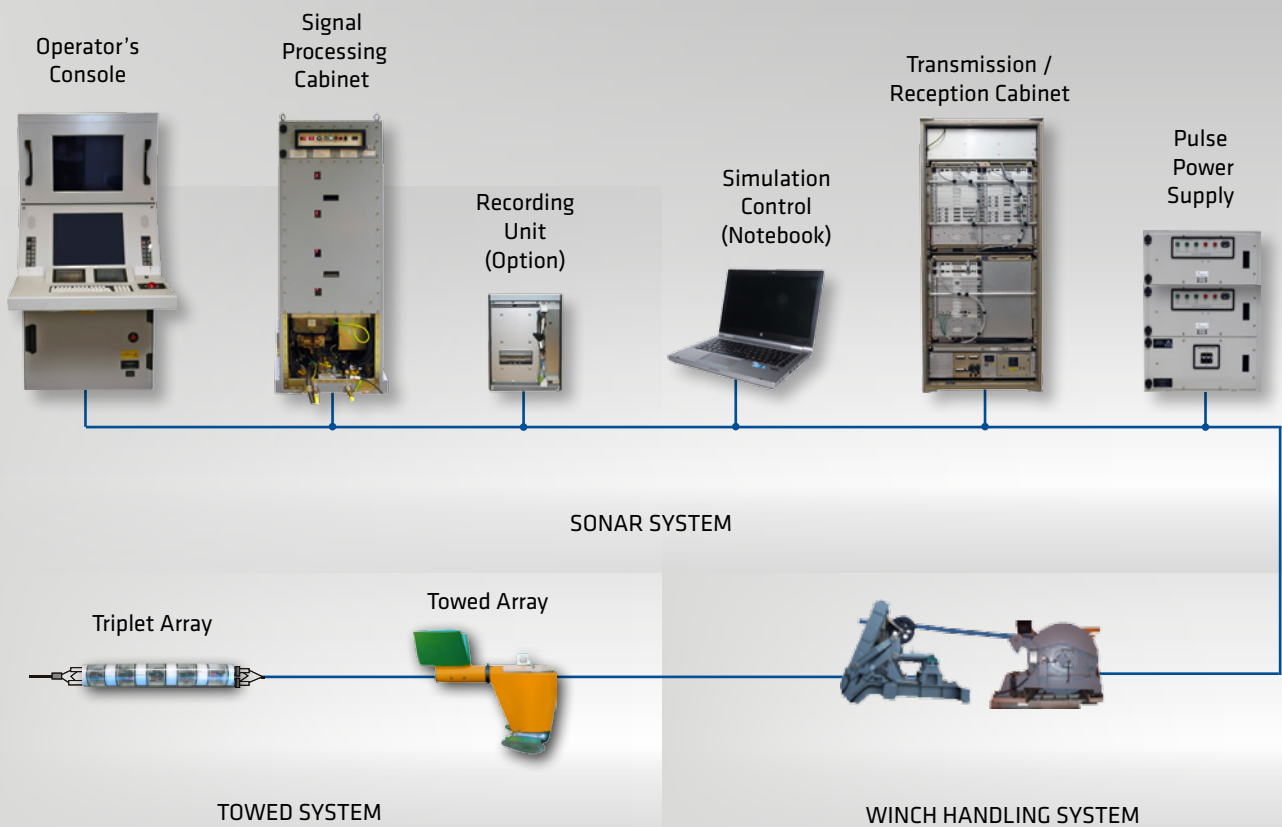
The detection ranges of ACTAS exceed the weapons' range of hostile submarines, thereby denying the enemy an offensive capability. ACTAS provides excellent performance up to very long ranges, including over-the-horizon surveillance. Because of the good sound propagation of echoes and target noise in the low-frequency band, the system is capable of operating below acoustical layers.

Superior performance is ensured by the high source level, the high dynamic range and the large bandwidth. Various analysis tools are incorporated to support target classification.

The winch and handling system together with the towed body, tow cables and triplet array are designed for sonar operations in deep and shallow waters and allow for variable depth operation.

Focus has been laid on the sonar's detection capability for torpedoes with a "passive while active" operation mode. The automatic torpedo warning function works continuously in the background and generates torpedo alerts automatically.

# ACTAS – Basis Configuration



## Options

- Full integration into the ATLAS Modular ASW Combat System (AMACS)
- Interface to ASW weapon and/or torpedo defence system (TDS) and other ASW systems (e.g. HMS, Intercept) as integrated sonar suites
- Bi-/multistatic operation with dipping sonar, sonobuoys or submarines
- Raw data recording function
- External training simulator
- SONIX sonobuoy processing

**NEW**

## Performance Data

- Frequency range passive 50 – 10,000 Hz
- Frequency range active 1,400 – 2,400 Hz

Inboard Equipment	Weight approx. [kg]	Height [mm]	Width [mm]	Depth [mm]
Operator's Console	265	1,600	750	1,350
Signal Processing Cabinet	305 <sup>1)</sup>	1,810	800	600
Transmission / Reception Cabinet	305 <sup>1)</sup>	1,479	640	657
Pulse Power Supply	415 <sup>1)</sup>	1,460	615	440

<sup>1)</sup> Winches, towed body, tow cables and towed array depends on ACTAS configuration

# The Low Frequency Sonar System ACTAS – Main Features

Designed with an open system architecture and with a powerful COTS signal processing capability. The sonar's multifunction console (MFC) is based on workstation technology and proven industrial standard software to display sonar data.

The human machine interface (HMI) is based on long experience of sonar display and control. State-of-the-art technology allows handling of the system to be learnt easily.

- Triplet array design to instantaneously resolve the left/right ambiguity with processing of high number of staves and pre-formed beams
- Transmitter with high source level and bandwidth
- Coverage of entire 360° panorama allowing simultaneous target detection and Doppler measurement from all directions
- Passive operation with broadband and narrow band processing (LOFAR, DEMON)
- Hydrodynamic optimised towed system for high speed sonar operations in deep and shallow waters
- Several display modes for active and passive detection and classification
- Adaptable to any combat management system
- Robust and safe winch and handling system
- Long acoustical array aperture to cover the important information in the low-frequency band
- BITE and back-up functions
- Performance prediction function
- Data exchange with combat management system
- Bistatic and multistatic operation
- Transmission of various pulse types for detection and classification (moving/stationary targets)
- Simultaneous active and passive processing
- Automatic target tracking in active and passive mode
- Automatic torpedo warning function
- Target analysis and classification
- Sonobuoy processing

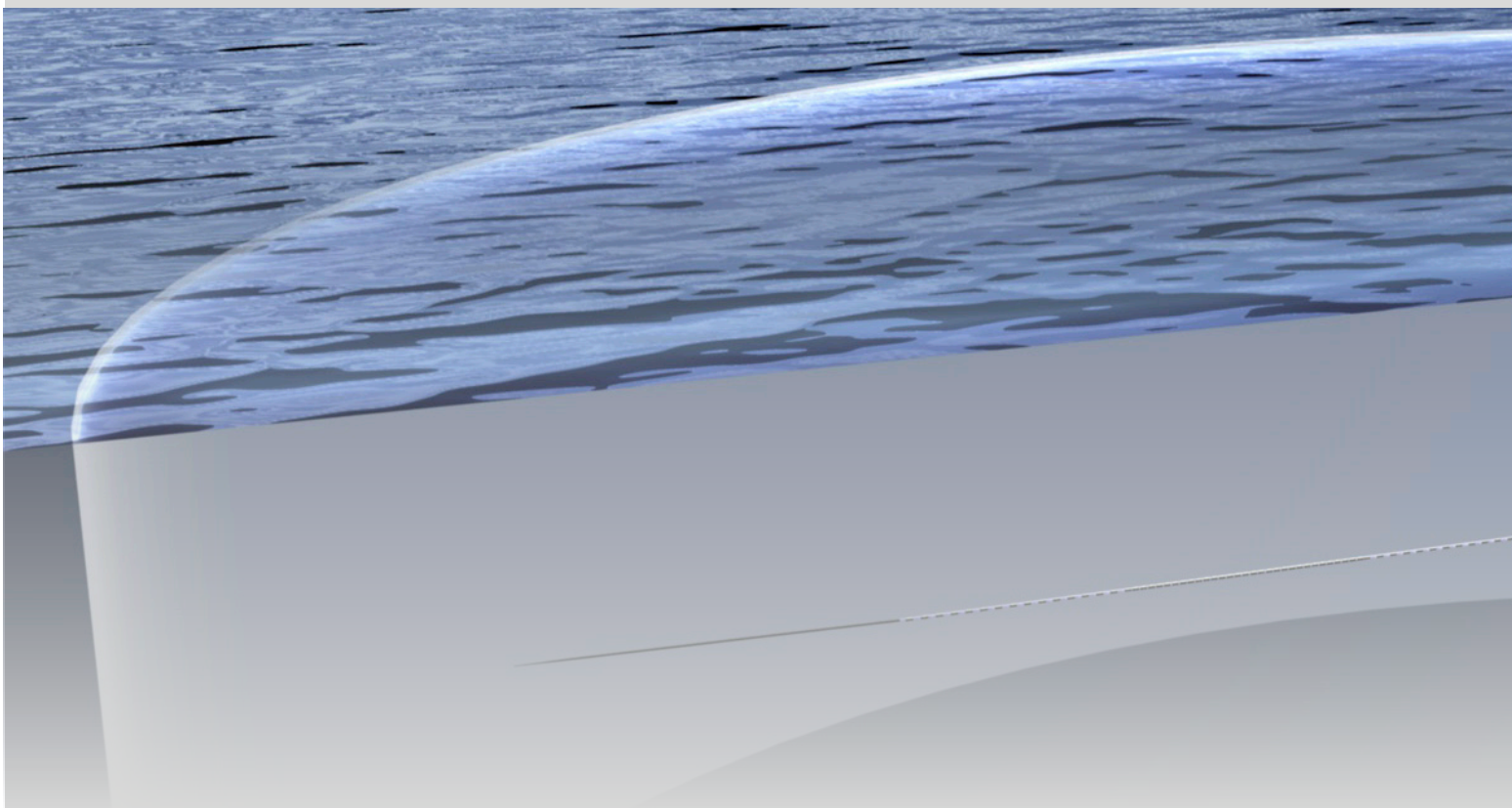
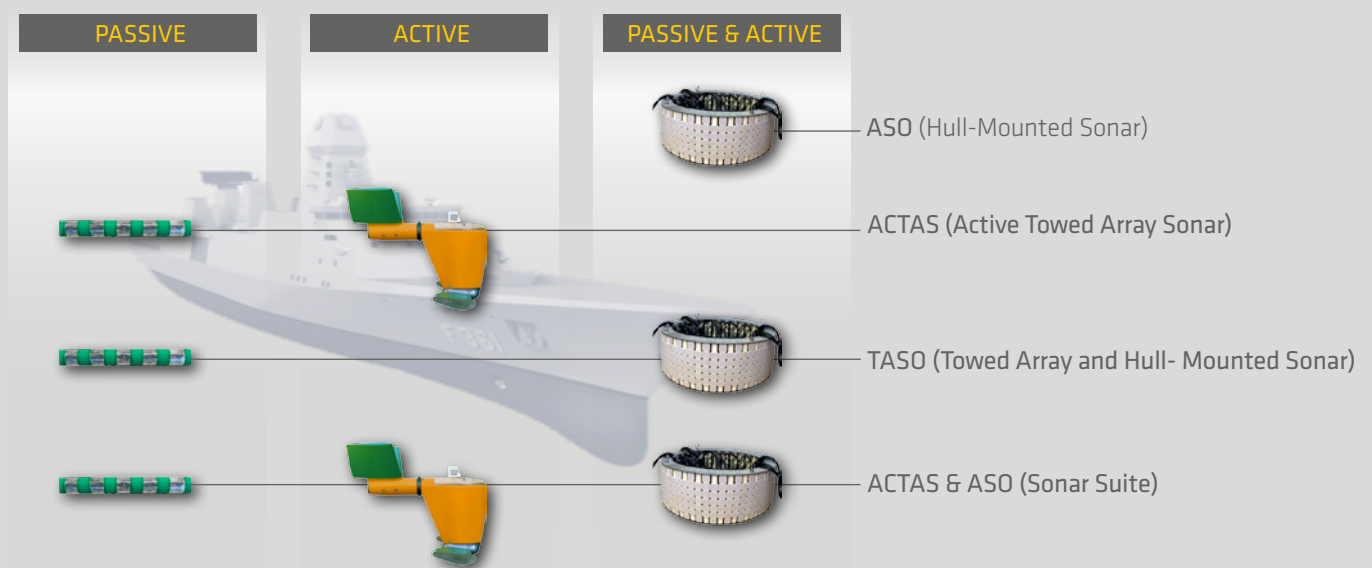
**NEW**

# ATLAS ELEKTRONIK

## ASW Sonar-Portfolio

Our comprehensive, high-performance sonar portfolio meets all of today's challenges in the detection, tracking and classification of underwater targets:

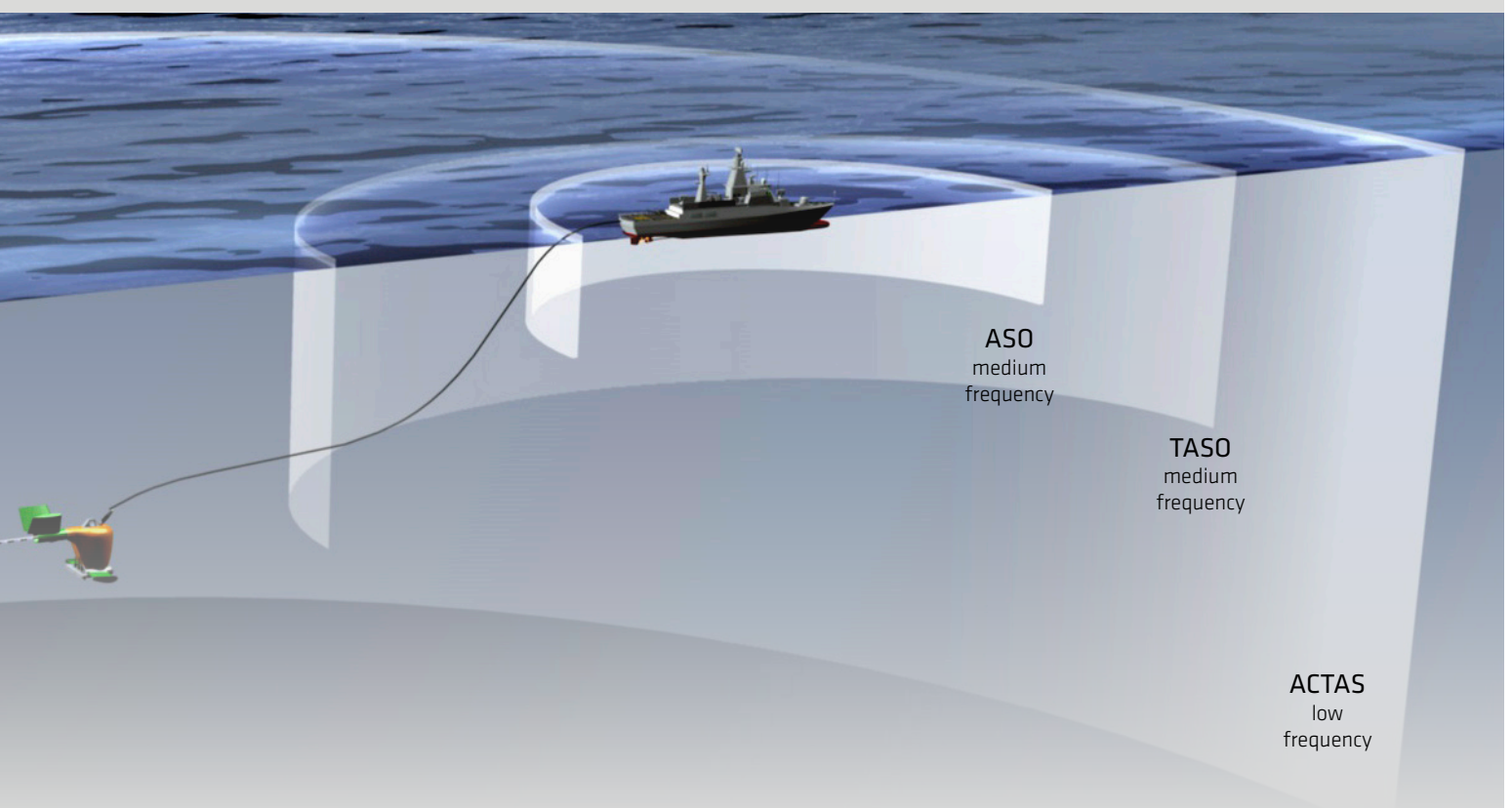
- From shallow to blue water
- Multipurpose deployment on various ship classes
- Covers all ranges; from self-protection up to long range, even over-the-horizon surveillance





# ASW<sup>M</sup> Mobile Mission Module – Adapt Your Vessel to Your Mission

Plug & play solutions for highest flexibility. Standard containers, connected to the CIC, offer rapid switching of operational requirements. With the modules TAS<sup>M</sup> and ACTAS<sup>M</sup>, the range capabilities of ASO and other hull-mounted sonars can be upgraded flexibly and independently of the platform to suit the current mission, also making it possible to initiate bistatic or multistatic sonar scenarios.



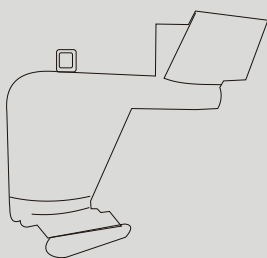
# AMACS – ATLAS Modular ASW Combat System

## A Step Ahead in Underwater Warfare

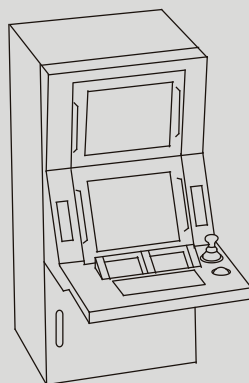
With its ATLAS Modular ASW Combat System (AMACS), ATLAS ELEKTRONIK offers outstanding competence in underwater warfare, covering all functional chains and ranging from sensors to effectors. AMACS provides excellent performance and capabilities in underwater warfare. A special configuration of AMACS is the Torpedo Defence Suite designed to protect ships against torpedo threats in all relevant tactical scenarios. The AMACS can be fully integrated into any combat management system but is also available as a stand-alone solution which can be fitted on any surface ship.

### SENSOR PORTFOLIO

- ACTAS
- ASO
- TASO
- SONIX/Sonobuoy
- Joint ASW
- Cerberus (Diver Detection Sonar)



### COMMAND & CONTROL



### EFFECTOR PORTFOLIO

- Softkill Systems (e.g. LOKI)
- Anti Torpedo Torpedo System (ATT) (e.g. SeaSpider)
- Light Weight Torpedo
- ...



# ATLAS SERVICES Naval Support – Worldwide

## We Make Sure Your Systems Run Smoothly

In the maritime sector, our customers play an essential role in securing the safety of the world's nations. ATLAS SERVICES provides the necessary logistical support. We ensure that our customers have the needed flexibility, combat effectiveness and operational readiness.

Quality and reliability form the foundation of our corporate philosophy. Our wide-ranging service spectrum is designed this way. Our customers deserve nothing less.

ATLAS SERVICES means much more than just the delivery of spare parts, maintenance of products or training in the use of our systems. ATLAS SERVICES offers a comprehensive and independent package that is available at any time and any place.

In close cooperation with our clients, we put together the most suitable service concept, providing the basis on which we intensively support our components and systems over the entire life-cycle. What is more, we also offer this complete support for the products of other manufacturers – a process with which we are most familiar in our role as system integrator.

### **Technical Engineering**

From the straightforward software update, through wide-ranging technical support in the upgrade of your ships, and up to the complete retrofitting of your systems – all of these tasks comprise a vital part of our technical competence. We will find a solution for each of your requirements.

### **Professional Support**

Exceptional challenges, such as technical analyses, the execution

of studies, as well as all other supporting technical services up to operational models for entire platforms, are fulfilled by our specialists with the very highest level of competence.

### **Product Support**

Complex military systems, whether supplied by ATLAS ELEKTRONIK or other manufacturers, require sophisticated logistical support – during both the development and the in-service phases. ATLAS SERVICES is your competent and reliable point of contact.

### **Advanced Training**

Knowledge is power. Training courses reflecting the state of the art are a core element of our customer care. To match the constant professional development of our service staff, we offer tailor-made training solutions for your personnel: face-to-face trainings, computer based trainings, simulation applications, and much more besides.

## Contact

### ATLAS ELEKTRONIK GmbH

Sebaldsbruecker Heerstrasse 235

28309 Bremen | Germany

Phone: +49 421 457-02

Fax: +49 421 457-3699

[www.atlas-elektronik.com](http://www.atlas-elektronik.com)



# ACTAS

Anti Submarine Warfare

