



ASO – 713/723 Hull-Mounted Active Sonar

ASO

Anti-Submarine Warfare



... a sound decision

 **ATLAS ELEKTRONIK**



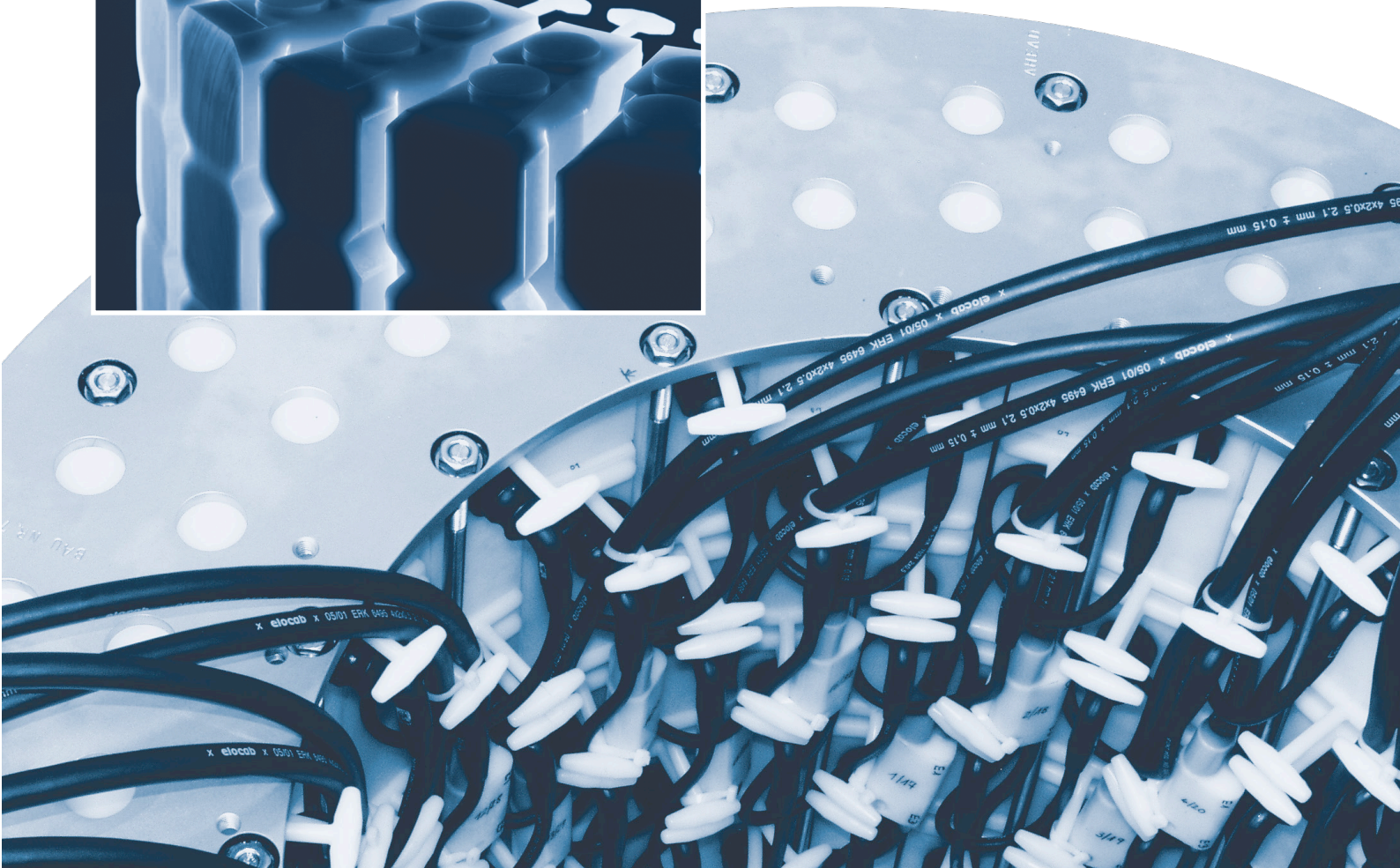
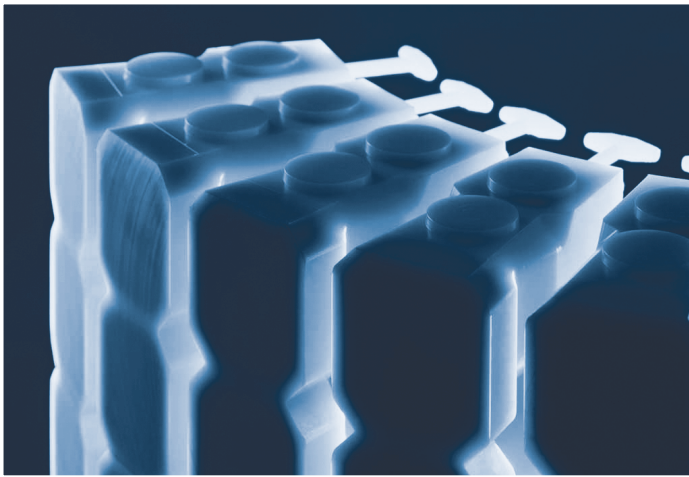
ASO

The ATLAS ELEKTRONIK Hull-Mounted Sonar (HMS) systems ASO 713/723 belong to the ASW sonar family in the 4th generation. More than 100 of these superior sonar systems were sold in the past 30 years. ASO is designed for active and passive operations in the medium frequency band with the main focus on surveillance of the underwater situation like detection, classification and tracking of the targets as well as the localisation of moored mines. With the ability of different operational modes and parameter settings the systems are optimised for detection of targets from littoral (shallow) to blue (deep) waters. Advanced processing methods ensure the efficient use for classical ASW tasks as well as self protection.

The ASO sonar is capable to detect:

- Submarines, Midget- and Mini-Submarines
- Small Underwater Vehicles, such as AUV, UUV, Diver Delivery Vehicles
- Torpedoes
- Moored mines and underwater obstacles
- Surface Vessels, Speed Boats, etc.



Superior performance is ensured by providing a high source level, high dynamic range and a large bandwidth. Various analysis tools are incorporated to support the target classification. Active operation can be operated in ODT (omni-directional) or RDT (directional) modes with the possibility to limit the transmission and reception to a sector only. The electronic beam stabilisation and a tilt function for transmission compensate the ship's movement. Focus has been laid on the sonar's detection capability of torpedoes with a „passive while active“ operation capability. The automatic torpedo warning function works continuously in the background and generates torpedo alerts automatically for upcoming torpedoes. For self defence the sonar is capable to detect small moving underwater objects and moored mines.



ASO Main Features



Features and Options

- Intercept sonar for extended torpedo detection and classification
- Raw data recording function
- Simulation function
- Keel or bow mounted sonar domes
- Interface to ASW weapon and/or torpedo defence system (TDS)
- Integration with other sonar systems (e.g. TAS, ACTAS, to form an integrated sonar suite)
- Active operation with frequencies in the range 6 kHz to 9 kHz
- Puls length up to 4000 ms
- Simultaneous active and passive processing
- Passive operation with broadband and narrow band processing (LOFAR, DEMON)
- Various transmission modes (omni, triple rotational, sector)
-  Electronic beam stabilisation - Tilt and roll compensation (transmission and reception)
-  Passive & Active torpedo detection, warnings
 - Obstacle and mine avoidance function
 - Encapsulated transducer technology
 - Light weight in comparison to other systems
 - Easy installation due to separation of wet and dry antenna cable by bulk head gland, very good maintainability
 - Underwater telephony / telegraphy
 - Target analysis and classification
 - Performance prediction function
 - Integrated simulation function
 - BITE and back-up functions

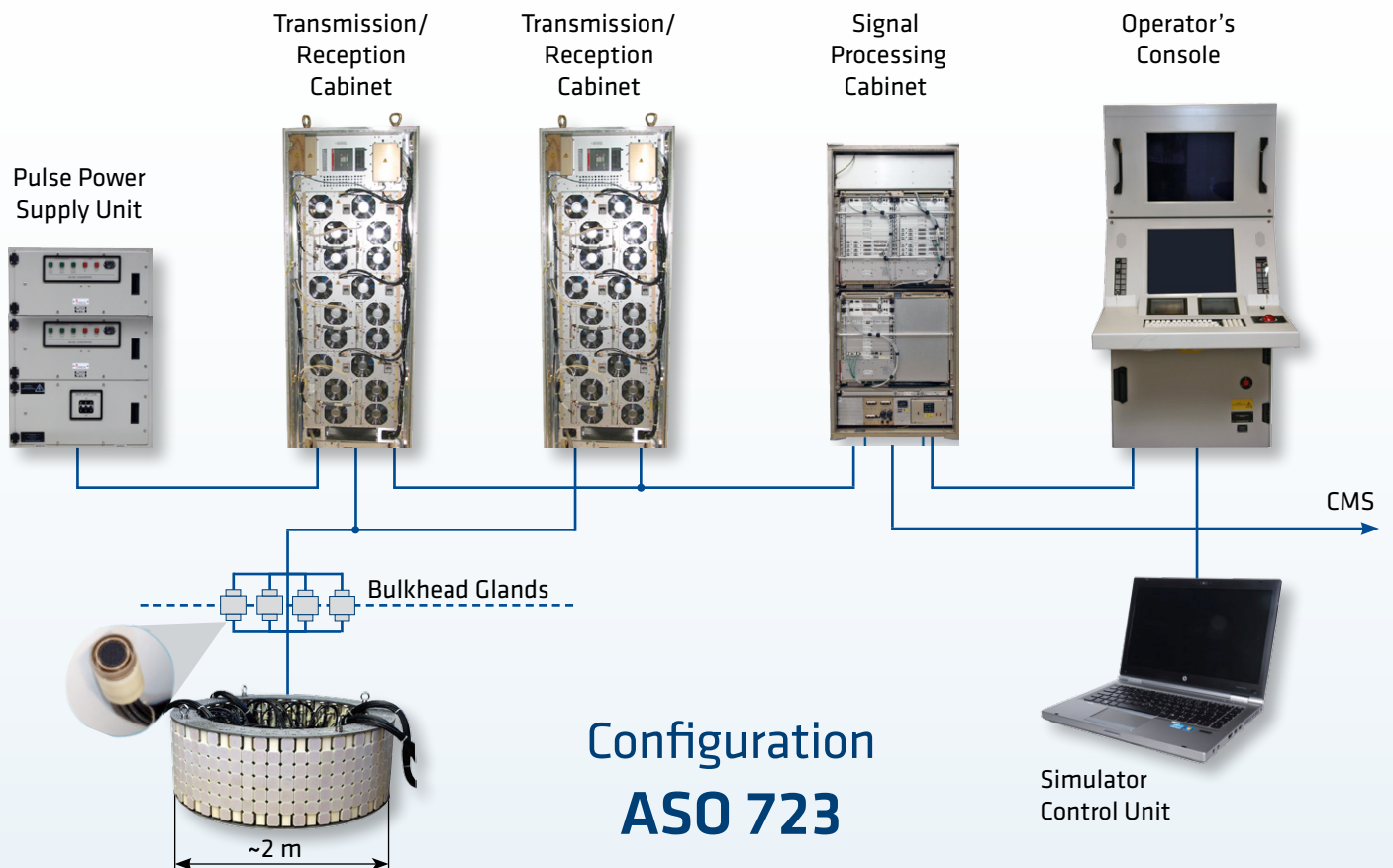


SONIX, sonobuoy processing

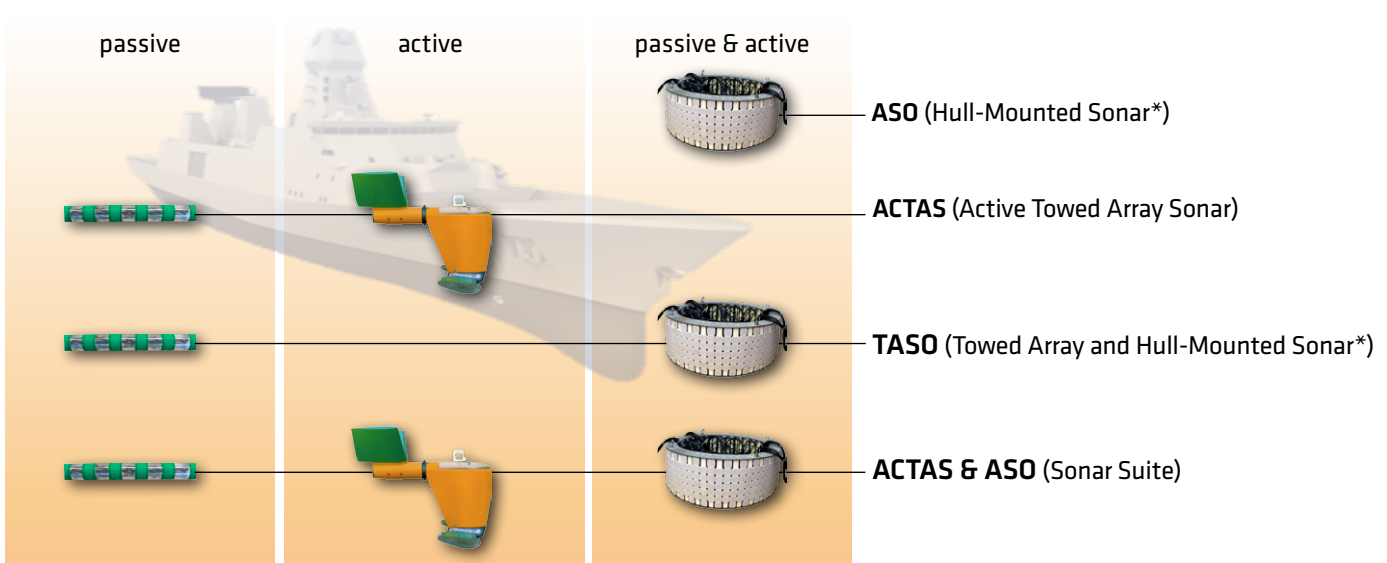
- Passive acoustic processing and recording
- Active mono, bi- and multi-static processing with ASO
- Proven technology in both surface and airborne platforms
- Also as refit for existing ASO systems
- For all kind of buoys : Barra, DIFAR, HIDAR, LOFAR

The sonar is 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 Computer Interface (HCI) is based on a long standing experience of Sonar display and control. State-of-the-art technology supports an easy to learn and user-friendly handling of the system.



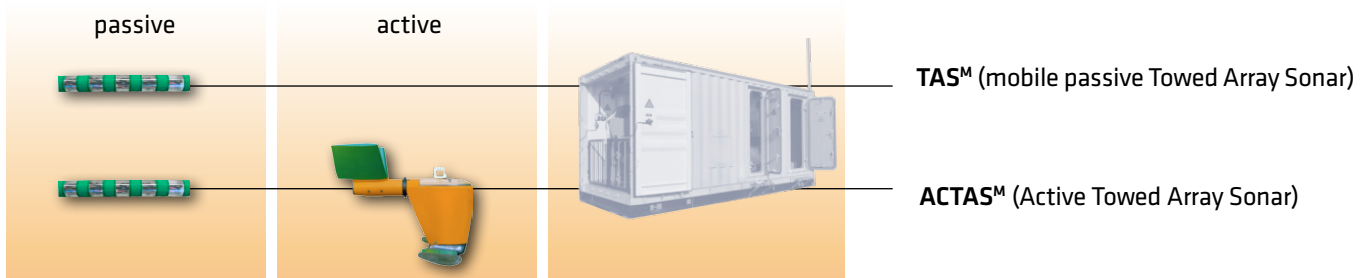
ATLAS ELEKTRONIK Product Range ASW Systems



*) Sonar dome portfolio: bow sonar domes, bow sonar windows and keel sonar domes

ASW^M Mobile Mission Module – Adapt your vessel to your mission.

Plug & Play for highest flexibility. Standard containers, connected to the CIC via LAN, offer a rapid switching of operational requirements.



ATLAS SERVICES

ATLAS SERVICES are a Commitment of the ATLAS Group to our Customers:

We Support our Customers' Systems Through Their Lifetime – Reliably and Cost-Effectively.

From the very earliest development stages on, ATLAS' logistics engineers ensure that the design will also meet the customers' highest logistic expectations:

A reliable system, easy to operate, simple to maintain.

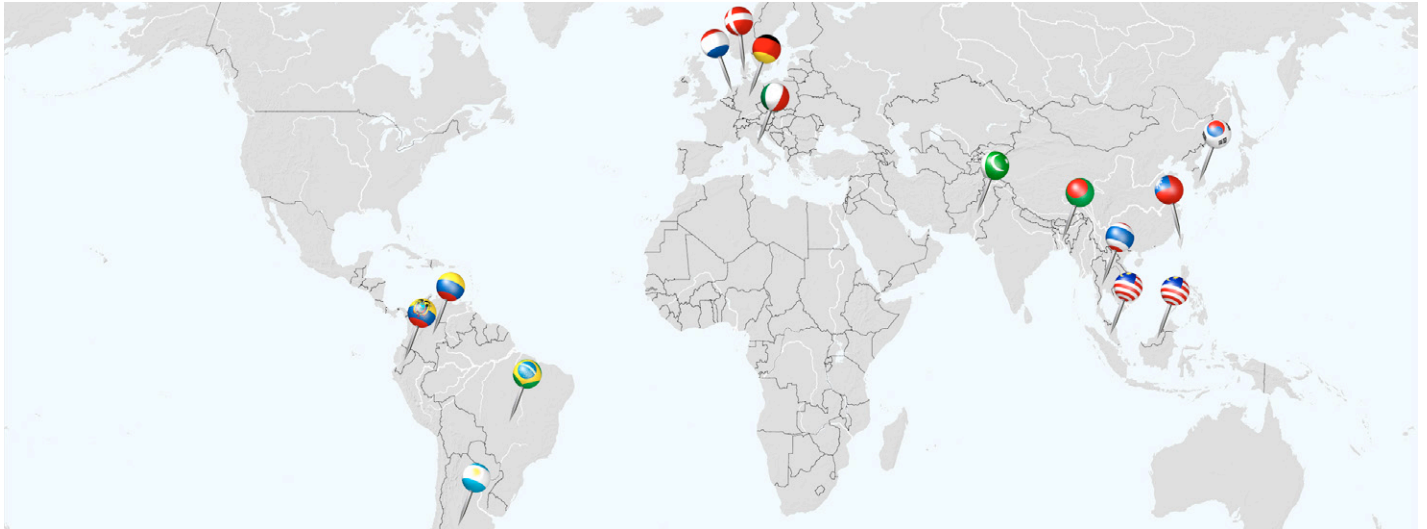
We ensure that the Integrated Logistic Support (ILS) Packages perfectly match the customer Navy's support structures. Accordingly, ATLAS tailors the documentation and training packages (including train-the-trainer courses), spare parts and special tools sets to match all the requirements.

During the years and decades of a demanding Operational Lifetime, our Product Support boosts the performance and availability of the system. Whether done via case-by-case orders, basic ordering agreements or full-support contracts - ATLAS is your reliable partner during the lifecycle.

Our capabilities as a lifecycle-oriented Maritime Systems House serve our customers also in other areas. ATLAS can also provide contractor-operated Training Solutions, take over the complete maintenance responsibility in a Naval Support Centre, or provide Upgrade Solutions for other parts of the weapons or the platform system.

World wide experience

More than 100 Systems are in Service world wide



Characteristics

Transmission		Reception	
3x Frequency range	6...9 kHz	Number of preformed beams	32 (ASO 713), 64 (ASO 723)
Modes	ODT, TRDT, Sector, FM and CW	Bandwidth, passive	Alternatives selectable: 2...12 kHz; 2...5 kHz; 1 kHz
Pulse lengths	50... 2000 ms, also in combinations	Passive Signal Processing	BDT, LDT / Classification: LOFAR & DEMON
Pulse type and shape	HFM, CW (shaded)	Active Signal Processing	Doppler Filter Bank, Correlator Classification : Doppler, ALADIN
Section Transmission	360°, sector 20° up to 340°		
Beam stabilization	Yes		
Tilt capability	Yes		
Bandwidth, active	660 Hz; 3000 Hz		

	Weight approx. [kg]	Dimensions [mm]			Scope of Supply	
		Height	Width	Depth	ASO 713	ASO 723
Operators Console	265	1600	750	1350	1	1
Signal Processing Cabinet	305 ¹⁾	1810	800	600	1	1
Transmission / Reception Cabinet	305 ¹⁾	1479	640	657	1	2
Pulse Power Supply Unit	415 ¹⁾	1460	615	440	1	1
Bulkhead Glands	3	117	Ø 98		2	4
Cylindrical Transducer Array - ASO 713	1020 ²⁾	710	Ø 950		1	
Cylindrical Transducer Array - ASO 723	2220 ²⁾	710	Ø 1880			1

¹⁾ without shock mounts

²⁾ included 20 m cable length

Contact

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