SAAB

AUV62-MR
MINE RECONNAISSANCE SYSTEM

ONE SYSTEM
ANY MISSION

Naval mission environments can be harsh and unpredictable. Saab's ***thinking edge*** enables us to develop underwater systems that are unique and versatile, ensuring optimal operational efficiency in any condition and any scenario.

The latest generation Autonomous Underwater Vehicle (AUV), Saab's AUV62-MR is a superior alternative to traditional mine reconnaissance and Mine Countermeasures (MCM).

Fully equipped for military purposes, the system's modular design means it can be easily adapted for a variety of missions, performing long-term operations covertly.

With a high degree of operational autonomy, the AUV62-MR aims to take vessels and men out of the minefield, providing a safer underwater solution for mine hunting.

Cutting-edge information gathering capabilities enable the vehicle to search, detect and classify underwater threats. The AUV62-MR incorporates equipment for mission planning and post-mission analysis, as well as a Launch and Recovery System (LARS) that allows the vehicle to be deployed from surface ships and submarines, or from the shore.

OPERATIONAL CONCEPT

The AUV62-MR is designed to undertake long-endurance missions over large areas. These can be performed with different levels of operator interaction; either fully autonomously or in supervised mode. Its controlled communication features transfer position and status information, protecting the vehicle and enabling it to be located, updated and supervised during a mission if necessary.

The Mission Planning and Analysis Unit (MPAU) allows the system to function independently, following a set route or solving a specific task within a pre-defined area. The vehicle itself also has the ability to optimise a route, maximising its performance in the surrounding environment. Missions can then be re-planned autonomously, based on data collected during the operation.

MULTI-PLATFORM CAPABILITY

Due to its flexibility and adaptable components, the AUV62-MR can be launched from multiple platforms and is usually recovered the same way, whether by ship, submarine or from the shore. It was intentionally designed to resemble a Heavyweight Torpedo (HWT) with the same mechanical and electrical interfaces, so there is no need for modification or integration if used on a submarine.

The AUV62-MR can therefore be launched directly from an HWT tube for covert, effective deployment. For surface ship recovery, the system comprises different launch and recovery devices depending on the vessel. When used on a submarine, a specially designed Remotely Operated Vehicle (ROV) – the SUBROV – is used for recovery.

HIGH PERFORMANCE FEATURES

The AUV62-MR contains high resolution sonar for systematic, comprehensive investigation of the environment, creating a detailed picture of any threats.

Adapted for mine reconnaissance, the system includes a payload module with a dual flank array Synthetic Aperture Sonar (SAS) and an image sensor to support identification. The vehicle is also fitted with a forward-looking sonar for obstacle avoidance.

Once launched, the system performs a Rapid Environment Assessment (REA) so a detailed search mission can then be planned and conducted. Any mine-like objects (MLOs) are identified using the onboard Computer Aided Detection and Classification (CAD/CAC) algorithms and their positions stored, alongside high resolution SAS data and optical images.

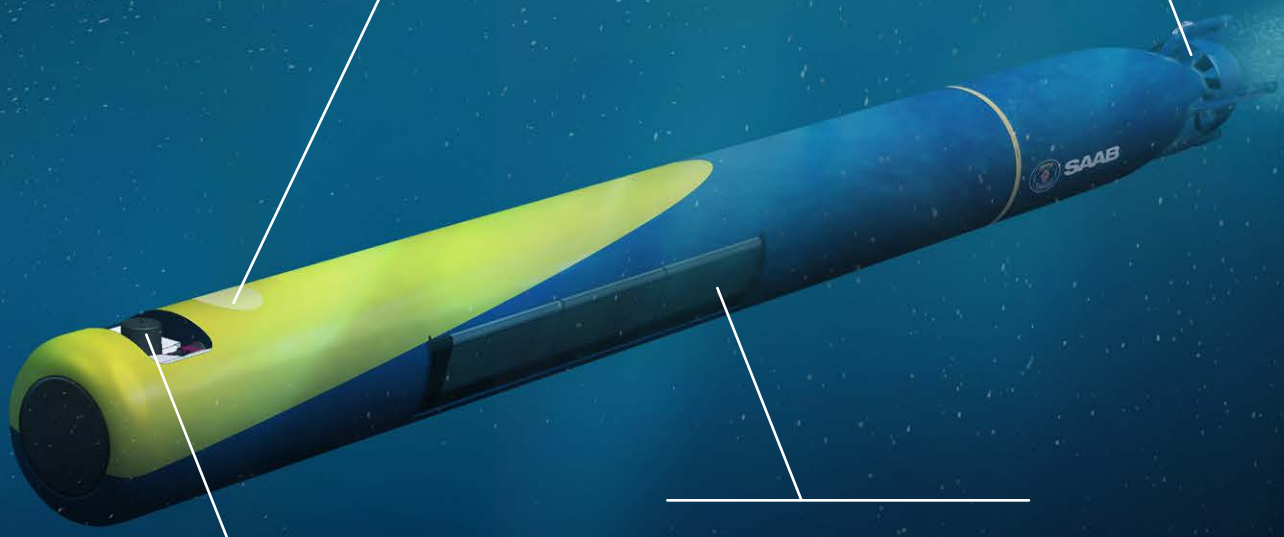
Onboard Synthetic Aperture Processing (SAP) enables rapid real-time data evaluation within the vehicle, reducing the time of the overall MCM operation. This processed data can then be transferred to either a Mine Warfare Data Center (MWDC) or to other MCM units for operator-supported identification.

RETRACTABLE MAST

Equipped with antenna for communication and data transfer

PROPULSION SYSTEM

The pump-jet design provides powerful propulsion, is low in energy consumption and has low noise emissions



PAYLOAD MODULE

Can be adapted to suit various mission specifications

COMMUNICATION

Hydroacoustic modem and tracking system for user interaction with the AUV62-MR when submerged

THE SUPERIOR CHOICE FOR MCM

SYSTEM OVERVIEW

The robust AUV62-MR has a modular design, offering high levels of flexibility and short turnaround times for MCM operations. The hydro-dynamically stable, highly reliable system boasts exceptional performance and low lifecycle costs, making it an ideal, cost-effective choice for MCM operators.

Independent of mission type, the AUV62-MR has a common infrastructure with separate components that work together for efficient and effective operation. The AUV62-MR is comprised of four sub-systems: a Mission Planning and Analysis Unit, a battery recharging system, LARS and an Integrated Logistic Support (ILS) package.

These individual elements are held in a standard 20 foot container that has been adapted for any Craft of Opportunity (COOP), and can be installed on any type of ship.

The system is designed to be adaptable to a variety of search missions, such as bathymetric data gathering, sub-bottom profiling, detection and tracking of subsurface installations and environmental surveys.

The modular design of the AUV62-MR allows its basic configuration to be altered to suit each mission, simply by substituting certain parts. During the mission planning stage, relevant payloads can be integrated to create a tailored, assignment-specific AUV. This efficient interchange of parts ensures easy and effortless configuration upgrades.

SYSTEM AREAS

MAST MODULE

The mast module includes a retractable mast, equipped with antennae for WLAN, VHF and satellite communication.

BUOYANCY MODULE

The buoyancy module features ballast tanks to compensate for changes in water density and to enable easy vehicle recovery.

ENERGY MODULE

The interchangeable energy module contains high-power, long-life batteries and electronics with fast recharge cycles, for long-endurance operations.

NOSE MODULE

The nose module includes a high-frequency, short-range, forward-looking sonar for obstacle avoidance and an Underwater Acoustic Modem.

PAYLOAD MODULE

Each unique payload module – such as sonar array, image sensor, environmental sensor, transmitter or transponder – can be interchanged to suit a variety of tasks.

PROPULSION SYSTEM

The propulsion system is comprised of a pump-jet and vehicle control systems for navigation and mission guidance.

SYSTEM SPECIFICATIONS

DIAMETER	21 inches
LENGTH	4–6.5 m
WEIGHT IN AIR	800–1,250 kg
SPEED	0–12 knots
OPERATIONAL DEPTH	300 m
ENDURANCE	24 hours at 3 knots

COMMUNICATION – SURFACED	WLAN, UHF/VHF, SatLink
COMMUNICATION – SUBMERGED	Hydro Acoustic Link
POSITIONING ACCURACY TYPICALLY	<± 5 m rel. ground
AREA COVERAGE RATE	2.5 km2/h (SAS, for synthetic aperture processing) 20 km2/h (REA and bathymetric-focused multi-beam processing)
SWATH WIDTH	2x200 m (SAS for synthetic aperture processing) 2x500 m (REA and bathymetric-focused multi-beam processing)
SONAR RESOLUTION	<4x4 cm (combined with optical identification)

ADVANCED UNDERWATER INDEPENDENCE

Brochure, AUV62-MR, English, ver. 1, September 2015

SAAB DEVELOPS **HIGH TECHNOLOGY** UNDERWATER SYSTEMS THAT ENABLE ARMED FORCES TO ENHANCE THEIR **SITUATIONAL AWARENESS,** EXTEND THEIR **OPERATIONAL CAPABILITIES** AND RESPOND TO **ANY THREAT** – EVEN IN THE **HARSHEST ENVIRONMENTS.**

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