



KONGSBERG



M352

Mine Countermeasures
MCM

www.kongsberg.com

WORLD CLASS

- through people, technology and dedication

Kongsberg Gruppen ASA (KONGSBERG) is an international technology corporation that delivers advanced and reliable solutions that improve safety, security and performance in complex operations and during extreme conditions.

KONGSBERG is a customer focused organization with a worldwide performance culture. KONGSBERG works with demanding customers in the global defence, maritime, oil and gas and aerospace industries.

KONGSBERG MCM SYSTEMS

The MCM C2 systems supports all phases of mine hunting and minesweeping, from planning, performance prediction and preparation, via the operation to report and debrief. To obtain effective MCM operations, MCM C2 is tailored to these tasks by means of an effective integration of the vessel's sensors, effectors and other capabilities.



ONE THIRD OF
THE WORLD
IS COVERED BY LAND
- THE REST IS COVERED
BY KONGSBERG

MCM C2 SYSTEM

The MCM C2 system architecture is based on LAN and open SW solutions, including COTS-based multi-function consoles and cabinets.

The MCM C2 offers the following main features:

- Capability to interface all sensors, to plan and control the MCM mission, process mine objects, manage large route survey databases as well as repositories for mine libraries and digital sea charts and to do tactical calculations.
- Close integration to the Mine-hunting Sonar's capability to detect and classify a mine
- Close integration to the Navigation and Dynamic Positioning System's capability to calculate and present the precise position and keep the vessel automatically in the wanted position and on the track
- Close integration to the underwater systems, i.e. ROV/AUV, MDS (Minesniper) and hydroacoustics Positioning Systems capability to localize, position and neutralize the mine.

HUGIN and/or REMUS Autonomous Underwater Vehicles

The Hugin 1000 and REMUS Mine Reconnaissance systems offers the following features:

- Full capability forward mine reconnaissance and Rapid Environmental Assessment (REA)
- Very stable and low noise hydrodynamic platform providing excellent Synthetic Aperture Sonar performance
- High manoeuvrability provides terrain following
- Operator supervised (acoustic tether or autonomous by Aided Inertial Navigation System (AINS)
- Provides robustness and sound technical solutions
- Typical sensors are: Side Scan Sonar, Synthetic Aperture Sonar, Anti-collision Sonar, Multibeam Echo Sounder, Conductivity, Temperature, Depth (CTD) Sensor, Camera and Turbidity Sensor.



**EXTREME
PERFORMANCE
FOR EXTREME
CONDITIONS**

The Minesniper Mine Disposal System (MDS)

The MINESNIPER is a low cost, high performance mine disposal system, utilising an expendable lightweight ROV-type weapon for rapid and efficient mine identification and destruction.

- The MINESNIPER offers the following features:
 - Increased safety
 - Increased efficiency
 - Reduced cost
 - Reduced weight
 - Applicable to all types of mines
 - Modular system well suited for upgrades, organic MCM and custom solutions.

Mine Warfare Data Centre

The shore based Mine Warfare Data Centre provides maintenance of Route Survey Data Base, Mine- and Equipment Libraries and Environmental Data Base:

- Preparation of Survey Data
- Planning of Sea Lanes of Communication
- Preparation of MCM operations and Mission Evaluation
- Rapid Environmental Assessment (REA)
- Publishing of Mine Warfare Pilot.



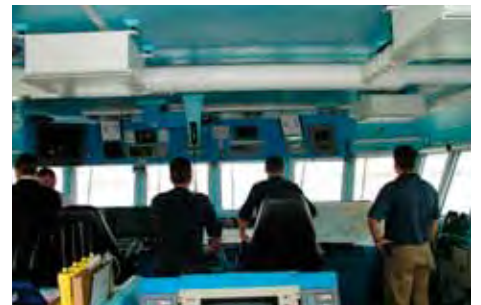
ORGANIC MCM

Organic MCM supplements the dedicated MCM forces as it can be operated from any vessel of opportunity with low risk, as all operations, including surveillance, reconnaissance and mine disposal, are operated remotely.

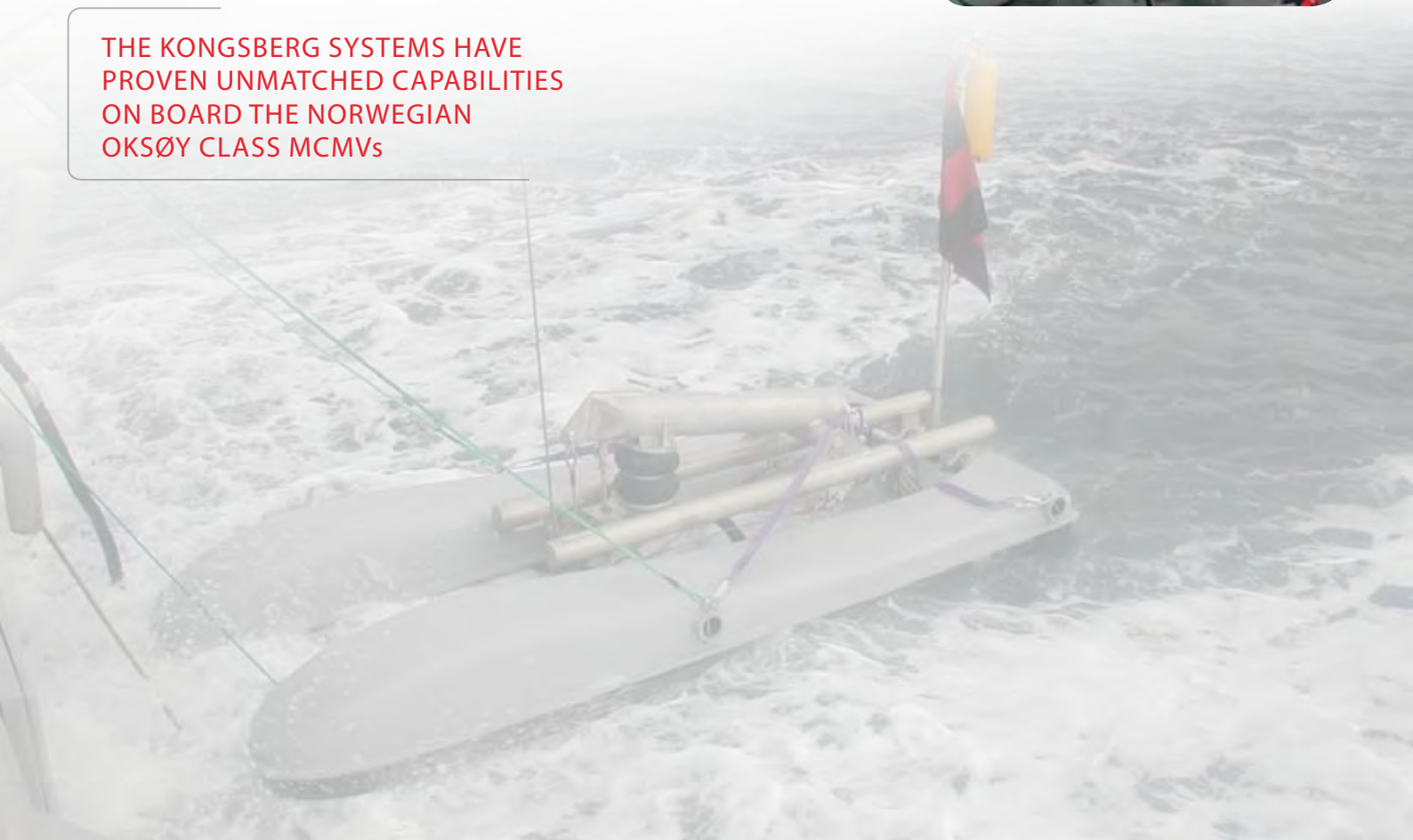
KONGSBERG can supply:

- Mine Warfare Data Centre
- MCM C2
- Hugin 1000 AUV
- REMUS AUV
- Minesniper

The systems can be supplied integrated into transportable ISO containers or any other convenient configuration.



**THE KONGSBERG SYSTEMS HAVE
PROVEN UNMATCHED CAPABILITIES
ON BOARD THE NORWEGIAN
OKSØY CLASS MCMVs**



WORLDWIDE OPERATIONS

KONGSBERG is an international corporation with strong Norwegian roots. Collaboration with our customers, partners and suppliers, and a commitment to understand the context where our technology is applied, are important driving forces behind the corporation's international development and growth.



* Kongsberg, Asker, Bergen, Billingstad, Horten, Kjeller, Kristiansand, Oslo, Sandefjord, Sandvika, Stavanger, Stjørdal, Svalbard, Tromsø, Trondheim.

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