



KONGSBERG

Naval Systems & Surveillance

Providing excellent performance



www.kongsberg.com

Submarines

- Combat Management System
- Sonar suite
- Towed array system

Surface vessels

- Combat Management System
- ASW sonar

Mine counter measures

Ship self-protection systems

Tactical bridge systems

Underwater Surveillance & Protection

Mission planning systems

Delivering outstanding system performance

Our mission

We aspire to earn respect and recognition for our dedication to providing innovative, reliable naval systems that ensure optimal performance at sea. By utilising and integrating our technology and experience in hydroacoustics, command & control, navigation, simulation and systems integration, we offer world-class naval systems that will further reinforce our leading position with respect to technologies and solutions for top performance in coastal and blue waters.

Our philosophy

Success depends on customer satisfaction. We achieve our goals by actively listening to our customers and truly understanding their needs, and then translating those needs into successful products and solutions.

Skilled people are the key to our success and we give our customers the tools they need to succeed. We work together in a global network of knowledge, guided by our values, giving rise to innovation and world-class performance.



Decades of experience = optimal solutions

KONGSBERG has developed and manufactured Combat Management Systems (CMS) for submarines since the late 1960s. Today, our systems feature state-of-the-art technologies based on our vast experience, customer responses and continuous R&D.

KONGSBERG takes pride in its international calibre Target Motion Analysis algorithms for passive sonar tracking.

Our basic philosophy is to integrate the sensors and weapons selected by the customer. KONGSBERG takes full system responsibility, thus reducing the customer's risk. Our core competencies include open systems solutions and COTS technologies.

KONGSBERG's CMS systems are especially well-suited for mid-life upgrades of existing conventional submarines, taking advantage of the existing wet parts of the sonar systems and providing new sonar processing that is fully integrated with the CMS.

Flexibility based on proven perfection

U212A class for German and Italian Navies

Our latest major deliveries include the MSI-90U CMS supplied to the Federal German Navy and the Italian Navy for their U212A Class Submarines. Thus far, 15 MSI-90U systems have been delivered to Norway, Germany and Italy. Our next generation system is now ready for delivery. It comprises a COTS-based version of the original MSI-90U system, featuring extended functionality to fulfil the requirements that will apply to tomorrow's submarine operations.



Ula Class Sonar Upgrade

In May 2008 KONGSBERG was awarded the contract from the Norwegian Defence Procurement Division for the Ula Class Sonar Upgrade project. The scope of supply for six submarines comprises a new Combat System Integration Infrastructure, new Passive Sonar System processing suite and a Tactical Simulator Upgrade System. The existing hydrophone arrays shall be reused.



Surface vessels

Tailor-made solutions for littoral warfare

Norway's coastline is more than 2000 nm long, and the Norwegian littorals are our home ground. We have more than 30 years' experience of Combat Management Systems (CMS) for all kinds of surface combatants, ranging from fast patrol boats via corvettes and frigates to destroyers.

As a Norwegian company, KONGSBERG is well acquainted with the challenges of designing CMS for littoral warfare.

Our CMS systems are based on open systems architectures largely based on COTS technology.

Network Enabled Capabilities are an integral part of our systems today and will be even more important in tomorrow's CMS systems.



Experience the quality of KONGSBERG's CMS solutions

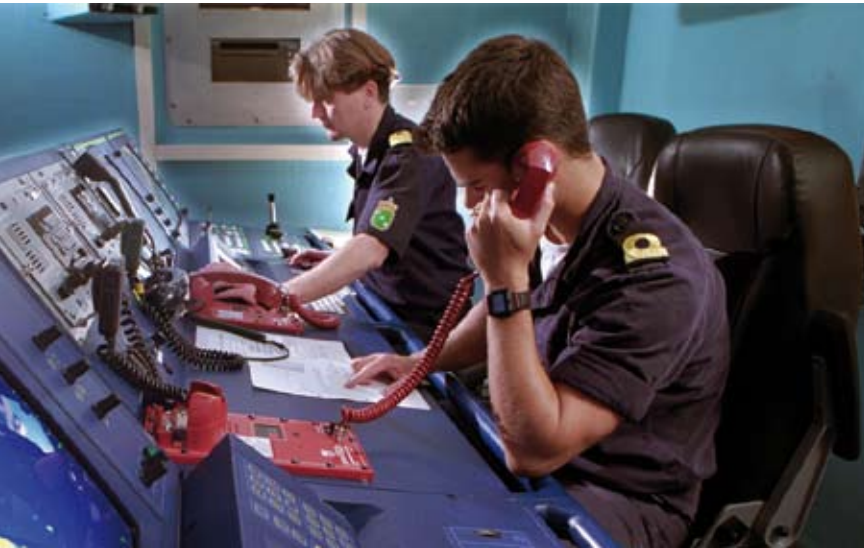


Fridtjof Nansen class frigates for the Royal Norwegian Navy
KONGSBERG is responsible for the Anti-Submarine Warfare (ASW), Anti-Surface Warfare (ASuW) and the Integrated Bridge/Navigation Systems on the new Fridtjof Nansen class frigates. These sub-systems have been integrated into a modern, modular, COTS-based Combat Management System, which can easily be adopted to other classes of surface combatants.



KDX-III Destroyers for ROK Navy
KONGSBERG is responsible for the design and delivery of the ASW control software for the KDX-III Destroyers being acquired by the Republic of Korea. This is a further development of the ASW system delivered to the Fridtjof Nansen class frigates, and offers proof positive that our products provide world-class performance.

Supporting all phases - from search to destruction



KONGSBERG's MCM systems support all phases of mine hunting and minesweeping, from planning and preparation, via operation, to reporting and debriefing.

Our MCM portfolio comprises the Mine Warfare Data Centre, the MICOS tactical system, the AGATE acoustic influence mine sweep, the Minesniper one-shot mine disposal system and the HUGIN mine reconnaissance system.

The Royal Norwegian Navy is one of the leading MCM navies within NATO, achieving outstanding results in all NATO MCM operations.

We are proud to have delivered the MCM systems for the RNoN's world-renowned Oksøy class MCM vessels.

Detect and destroy mines safer and faster

RNoN's Oksøy and Alta class MCM vessels

In June 2008 KONGSBERG signed a contract for updating these vessels with the next generation MCM Command & Control (C2) and Dynamic Positioning (DP) systems. The Mine Hunters are equipped with the AUV system Hugin 1000 and the Mine Sweepers with the Influence Sweep AGATE. All vessels will be prepared for the One-Shot Mine Disposal system Minesniper, which is already thoroughly evaluated on board.



Minesniper One-shot Mine Disposal Vehicle

The Minesniper is a low cost, high performance mine disposal system, featuring an expendable lightweight ROV-type weapon for rapid and efficient mine identification and destruction. The system has proven effectiveness against modern mines with insensitive munitions, i.e. bottom or moored mines in shallow or deep waters. The Minesniper is also deployed on the Spanish Navy Segura class MCM Vessels.



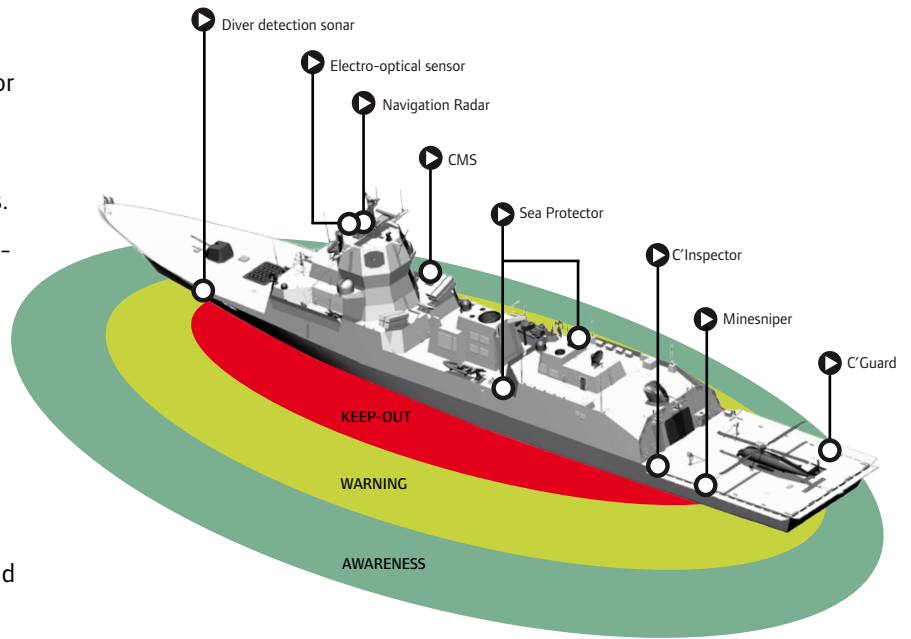
Scalable concept for the new threat scenarios

In today's world, terrorism presents an extreme threat to military and commercial vessels alike. This has created a demand for effective vessel self-protection systems.

KONGSBERG has developed a Ship Self-Protection System to counter such threats.

Our system concept is scalable from stand-alone Sea PROTECTOR systems to Ship Self-Protection Systems fully integrated with the vessel's Combat Management System.

The main purpose is protection of own vessel and other assets against asymmetric threats from above and below the sea surface at closer range than what is supported by the vessel's standard sensors and weapons.



Protect your assets from asymmetric threats



Sea PROTECTOR

Sea PROTECTOR offers unique operational capabilities for countering asymmetric threats and enhances overall vessel protection in the face of terrorism. Sea PROTECTOR is a fully stabilised remotely controlled weapon station for small calibre weapons and missiles, based on the very successful army version of PROTECTOR. Sea PROTECTOR has exceptional capabilities for harbour defence and is well suited for naval vessels and patrol craft of all types and classes.



Gyda class Home Guard vessel

The Gyda class vessels are the first ones being fitted with Sea PROTECTOR. The vessels are operated by the Norwegian Home Guard.

These vessels are mainly engaged in maritime surveillance, control of shipping, the surveillance and protection of specific objects, and support for the civilian community.

Commercial technology adapted to military requirements



KONGSBERG Tactical Bridge System features an integrated solution designed to support the navigator in all phases of vessel operation using workstations optimised for the bridge environment.

The Tactical Bridge System supports all navigation functions required by naval vessels, e.g. ARPA, (W)ECDIS, (W)AIS.

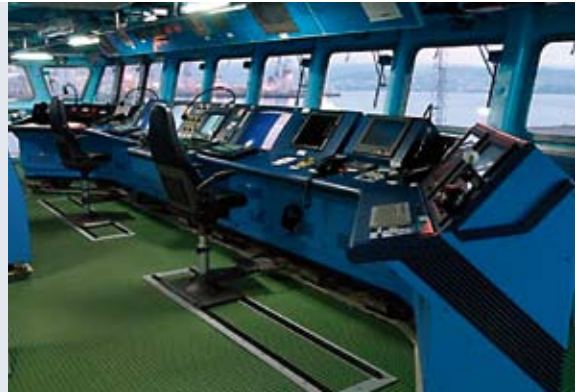
In addition, the system provides Combat System functionality, enabling wheelhouse operation of vessel self-defence and helicopter control. The system is interfaced with a variety of sub-systems, e.g. tactical data links, the helicopter control system and vessel self-defence weapons.

This unique combination supports lean manning and eliminates the need for a separate CIC on logistic support/utility vessels.

Safe navigation is the key to mission success

Fridtjof Nansen class frigates

The RNoN's Fridtjof Nansen class frigates are equipped with KONGSBERG's Integrated Bridge & Navigation System. This is a militarised version of the well known KONGSBERG DB-10 bridge for commercial vessels. Several thousand such systems have been sold world wide and are in operation on all seven seas.



Skjold class fast patrol boats

KONGSBERG has also delivered the Tactical Bridge System to the RNoN's Skjold class fast patrol boats. These vessels are capable of speeds up to 60 knots. Accordingly, they are subject to very strict requirements for safe navigation at high speeds. The design incorporates fully seated operation with armrest interaction devices, ensuring fast, safe operation under all circumstances.



Be prepared for asymmetric underwater threats

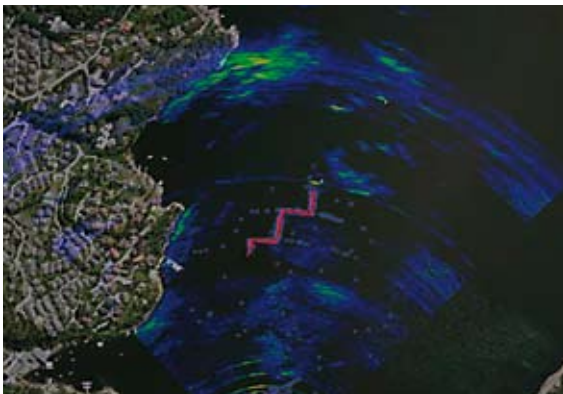
KONGSBERG Underwater Surveillance & Protection (USP) system is part of the C-Scope family of high performance maritime, land and air domain awareness products for ports, coastal authorities, offshore companies, national security, and joint military organisations. The system is available as a permanent installation or a portable system.

Long-range sonars, diver detection sonars, remotely operated vehicles and counter measures are all integral parts of a complete Underwater Surveillance & Protection system from KONGSBERG.

The systems feature comprehensive data reduction to cut down on the false alarm rate, taking into account sensor overlap and geographical constraints. Radar and electro/optical sensors are integrated to support the automatic data reduction process to mitigate operator workload.



Get the full underwater picture



Diver Detection Sonars

The KONGSBERG range of sonars provides unique diver detection capabilities using wide band, optimised frequencies for long-range detection of divers and diver delivery vehicles. The wide bandwidth, the manoeuvrable arrays and the sophisticated processing devices ensure excellent performance in reverberant waters. KONGSBERG's wide band sonars are available as permanent installations as well as portable systems.



C'Inspector Underwater Inspection Vehicle

C'Inspector provides the user with a highly effective tool for underwater inspection, interactive threat identification and interception. C'Inspector is a flexible multi-purpose UUV equipped with a scanning sonar and a video camera. To cover a wider range of missions, it can also be equipped with additional sensors, e.g. side scan sonars. It is controlled by a portable or fixed operator workstation via a thin fibre-optic cable.

Improve your mission performance

Military operations are often complex and time is a critical factor. Platforms and assets are limited, expensive and have advanced capabilities. The need to exploit asset capabilities under time restrictions makes efficient planning and decision-making imperative.

The KONGSBERG Mission Planning System (KAMP) provides the functions needed to support the user in mission planning and briefing, as well as post-mission debriefing.

The uniqueness of our mission planning systems lies in the combination and integration of existing and proven application components. They are carefully selected from different application domains and highly specialised skills and technologies. One major advantage is the flexibility it gives with a view to customising, making it possible to meet specific needs and system configurations.



Plan your mission more effectively

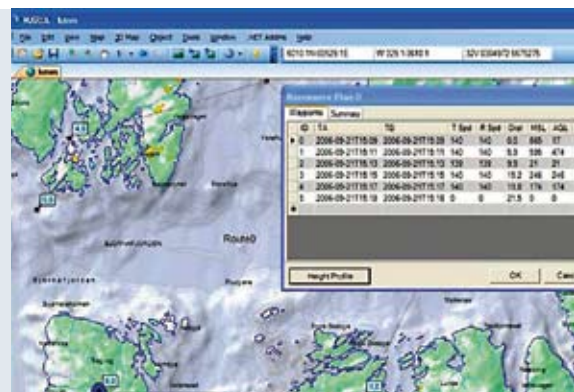
NH-90 ASW Helicopters for Fridtjof Nansen class frigates

The KAMP Mission Planning System has been selected for the maritime NFH NH-90 helicopters being deployed on the Norwegian Coast Guard vessels and the Fridtjof Nansen class frigates. These helicopters will be an organic element of the vessels and there will be close integration between the helicopter's Mission Management System and the vessels' Integrated Weapon System. KAMP is the tool designed to facilitate this close integration.



KAMP Mission Planning System

KAMP supports planning for a wide range of different platforms, e.g. surface vessels, helicopters, UAVs, etc., as well as aggregated forces. New platforms can easily be added. KAMP provides tools to support the commander, enabling him to efficiently evaluate and consider threats in the operational theatre and make prudent plans for achieving objectives.



We're there for you, whenever and wherever you need us

Kongsberg Gruppen (KONGSBERG) primarily targets offshore, merchant marine and defence markets. The bulk of the Group's activities address the international arena, with Europe, the USA, the Middle East and Asia as the most important markets. KONGSBERG has two business areas: Kongsberg Maritime mainly addresses the offshore industry and merchant marine, while Kongsberg Defence & Aerospace's operations are directed at the defence and aerospace markets.

Kongsberg has facilities world wide and has approx. 4 200 employees, some 800 of whom work outside Norway. The Group is one of Norway's largest industrial engineering communities, and its range of products is characterised by a high technology content. Kongsberg's products have to function under the most demanding conditions as they are used from ocean depths down to 11 000 metres and up to solar panels on space probes that spend years hurtling through outer space.



Solid competence reduces cost

KONGSBERG has consistently recognised the importance of supporting its products and systems with professional training.

We tailor our training courses to our customer's requirements.



Upgrading pays

Product and system upgrades can improve your system/vessel operations and reduce overall maintenance costs. We ensure that existing products and systems can be extended and/or upgraded to meet customers' future requirements.

www.kongsberg.com

WORLD CLASS – through people, technology and dedication

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