



KONGSBERG

K-MASTER BRIDGE SOLUTIONS



MAXIMIZING PERFORMANCE BY PROVIDING THE FULL PICTURE

OUR MISSION

We shall earn the respect and recognition for our dedication to provide innovative and reliable marine electronics that ensure optimal operation at sea. By utilising and integrating our technology, experience and competencies in positioning, hydroacoustics, communication, control, navigation, simulation, and automation, we aim to give our customers The Full Picture.

The Full Picture yields professional solutions and global services that make a difference enabling you to stay ahead of the competition.

OUR PHILOSOPHY

Our success depends on the success of our customers. Actively listening to our customers and truly understanding their needs, and then translating these needs into successful products and solutions is central to achieving our goal.

Our people are the key to our success and we empower them to achieve. Working together in a global network of knowledge, guided by our values, engenders innovation and world class performance. Every day we have to think a little differently, because every client is unique. We aspire to translate the imagination and dedication of our staff into successful technologies and solutions. Our commitment is to add value to your operations by providing you with The Full Picture.

CONTENTS

.....

KONGSBERG SYSTEM PHILOSOPHY	3
THE FULL PICTURE	4
OPERATION	8
LIFE CYCLE SUPPORT	10

KONGSBERG SYSTEM PHILOSOPHY

Designed for efficiency and safety

KONGSBERG has a long and distinguished pedigree in the design of bridge systems that meet and surpass maritime safety standards. Our experience has shown us the importance of functional integration and the intuitive arrangement of controls and monitoring systems for vessel machinery, navigation and manoeuvring.

We recognise that the user interface and an intuitive and harmonised style, look and feel across sub-systems and functions provide significant advantages for safe vessel operation.

K-Master - a complete working environment

With K-Master bridge solutions KONGSBERG sets the standard, integrating navigation, vessel automation and manoeuvring functions. Strict ergonomic considerations for the operability and arrangement of workplaces and instrumentation govern all our designs.

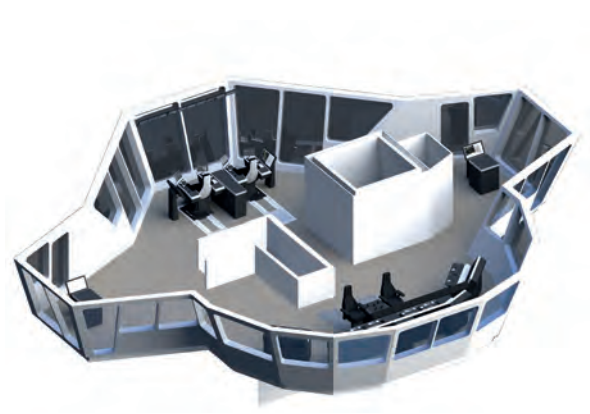
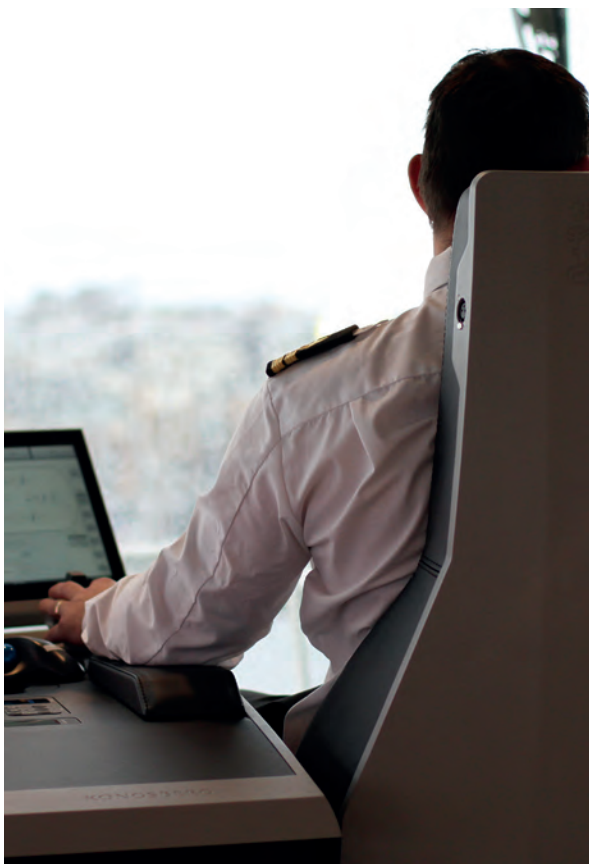
K-Master provides a common user interface for all functions and subsystems. In a complete and comprehensive K-Master bridge installation there is a common user interface for the following systems: dynamic positioning (DP) and the independent DP joystick, manual

propulsion and thruster control, alarm monitoring and remote control of machinery, central bridge alarm system, operation of auxiliary bridge systems and chart, radar, autopilot and conning displays.

The common user interface is intuitive and logical, created as the result of a user-centred design process, and presented with high quality graphics on touch sensitive screens.

The solution to complex operations

K-Master bridge solutions provide working environments for bridge operators on a wide range of vessels types. Originally designed for the aft bridge of offshore support vessels, the K-Master concept has been widened to cover the navigation bridge OSVs and on merchant vessels and yachts. The high level of integration makes K-Master solutions particularly suitable for vessels with limited space on the bridge, or for multipurpose vessels where the optimal bridge configuration has to be dynamically adapted to the immediate needs of the operator.



THE FULL PICTURE

Workstations for navigation, ship handling and support

K-Master bridge solutions provide platforms for excellent operational awareness and bridge team performance.

The K-Master aft bridge workstation has a compact combination of manoeuvre controls, control panels and radio communication, all built into a chair with electric seat adjustments for the comfort of the user. Touch sensitive control panels are provided for user interaction, while a number of larger screens surrounding the chair provide the user with state information from the various sub-systems.

When configured for ship handling, including K-Pos dynamic positioning (DP), the aft bridge workstation is designed with redundant power supplies and user interface devices, allowing a single chair to be used as a dual DP operator station.

A less comprehensively equipped chair is available for the forward bridge. Controls for navigation with the K-Bridge ECDIS in combination with radar/ARPA, conning and the autopilot, are built into the armrests. The design is easily

extended to include the K-Pos dynamic positioning system and the K-Chief alarm, monitoring and control systems. The operator interacts with all the different systems through the touch sensitive control panels and the large information displays surrounding the chair.

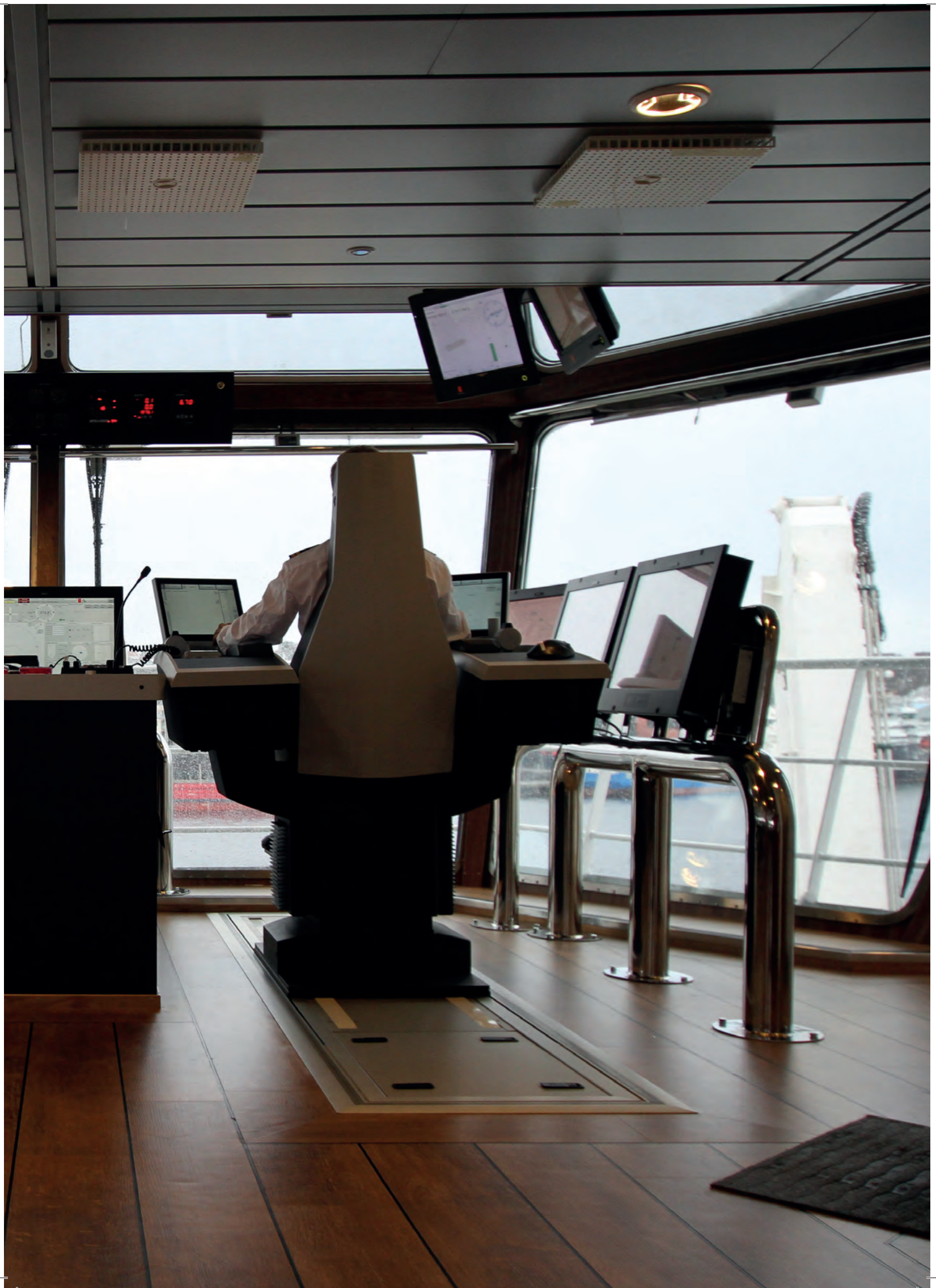
K-Master chairs can be complemented by a wide range of consoles and display pedestals. The components can also be delivered for installation into customized bridges designed by independent suppliers or by the shipyard.

K-Master bridge solutions are designed to be integrated into bridge systems complying with nautical safety class notations from the leading classification societies.









OPERATION

Simplicity is the art of technology

K-Master workstations feature touch sensitive control panels with graphic representation of input devices in combination with information displays. As each workstation can be in simultaneous control of multiple sub-systems, the operator is free to configure the contents of the information displays so that the information from the more important systems is directed to the most convenient display.

K-Master bridge solutions represent a generation of control equipment that combines simple and easy-to-use touch controls with structured access to large amounts of vessel information. Hardware buttons and switches are reserved for critical functions or for back-up.

Ergonomics for demanding operations

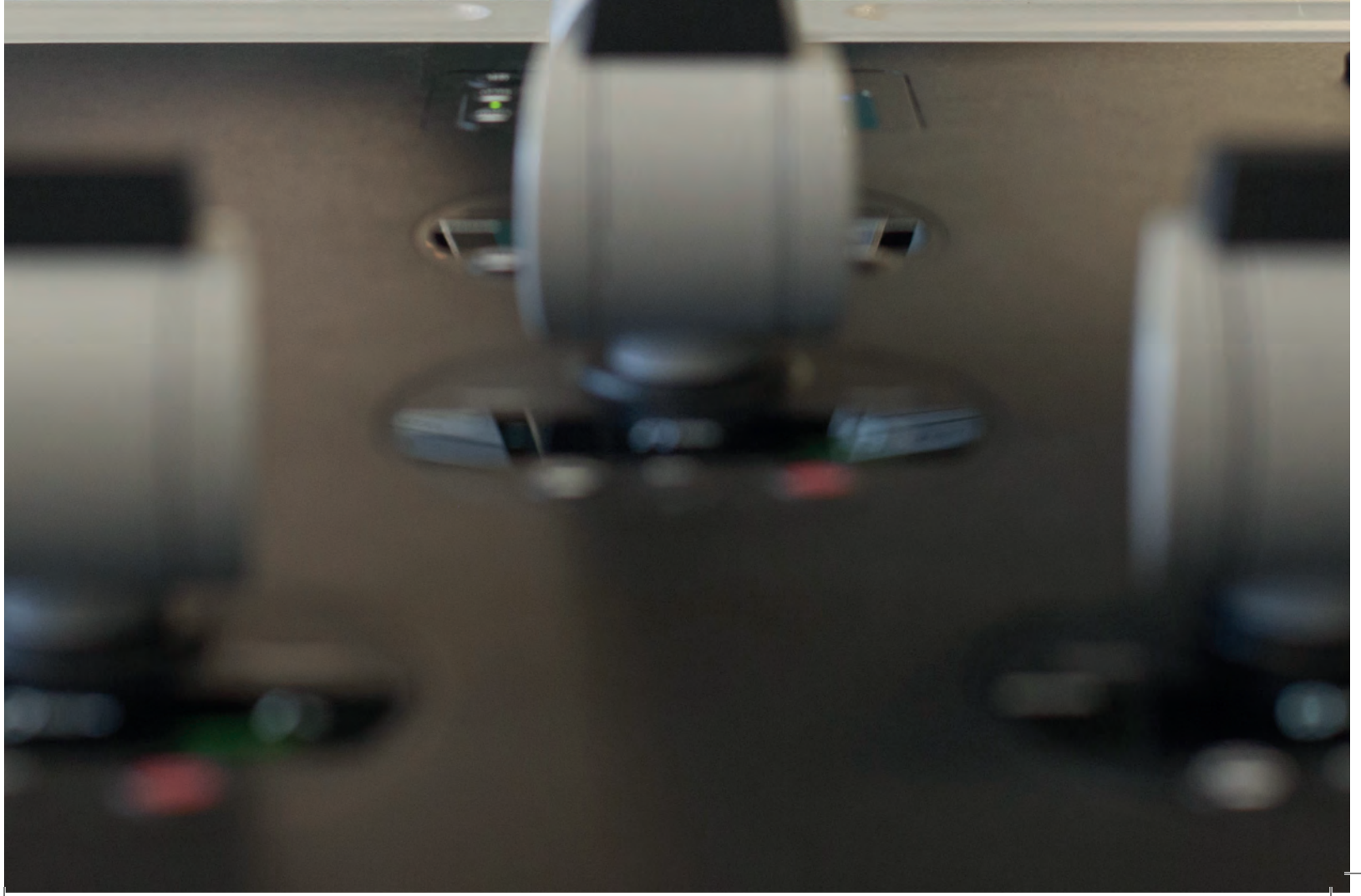
As safe execution of demanding vessel operations requires workstations that are well adapted to the convenience of the operator. Great effort has been made to ensure that levers, controls and displays are located intuitively and logically. The solutions have been designed in consultation with users and industry experts, and the aim has been to increase operational awareness while reducing operator fatigue. For example intricate operations associated with ballasting and fluid cargo handling have been automated to ensure quicker and safer operation.

Configured for the task

With K-Master, the operators always have the information required to make the right decisions – they have The Full Picture.

Versatile vessels are assigned to a wide range of tasks, each task having its own set of parameters for successful execution. K-Master bridge solutions allow the operators to focus on key performance indicators whatever the task because of the unique flexibility of the system for calling up information from the vessel systems. Together, the information displays and the touch sensitive control panels provide unlimited opportunities for both the operator and the vessel to perform at their best.





LIFE CYCLE SUPPORT

Designed to purpose – maintained to last

Our life cycle management service will assist our customers throughout all the phases, from design to commissioning and during the operational life time.

Solid in-house competence, both in system design and user competence enables us to provide solutions that are fit to purpose and thus yields efficiency in operation. Our common base technology provides robust designs, with few and reliable parts, an excellent foundation to maximize the output at competitive costs.

The distributed and open system design employs an industry standard communication network. Standard hardware components used for various applications and the open network approach results in:

- Increased reliability
- Competitive life-cycle support
- Easy up-grade solutions

Evergreen

We offer continuous hardware and software upgrade to keep your vessel at maximum efficiency. Our system is designed with consistent boundaries between individual systems and control segments. This design strategy makes it easy to add new functionality or complete new control segments thus enable us to offer up-grades step by step to keep your system evergreen.

Training

Qualified personnel are one of your major assets in efficient and safe operations. Thus, we offer modular training courses for all major subjects – from operator training to technical training that keeps your crew fit on the job.

PLANNING & DESIGN	PROJECT ENGINEERING & DEVELOPMENT	INSTALLATION & COMMISSIONING	OPERATION & MAINTENANCE	MODERNISATION
		On-line support »		
		Technical	support »	
Technical consulting »				
	Design and	software engineering »		
			Field service »	
			Repairs	and spare parts »
			Optimization	and modernization »



Supported by professionals

Our systems are easy to install and maintain – supported by professionals either on-site or through remote connectivity. They are designed for optimal operational availability and allow for favourable lifecycle expenditure

GLOBAL SUPPORT 24/7

We are always there, wherever you need us. KONGSBERG customer services organisation is designed to provide high-quality, global support, whenever and wherever it is needed. We are committed to providing easy access to support and service, and to responding promptly to your needs. Support and service activities are supervised from our headquarters in Norway, with service and support centres at strategic locations around the globe – where you are and the action is.

As part of our commitment to total customer satisfaction, we offer a wide variety of services to meet individual customers' operational needs. Global support 24/7 is a solution designed to give round-the-clock support. For mission-critical operations, Global support 24/7 can be extended to include remote monitoring. We can adapt the level of support needs by offering service agreements, on-site spare part stocks and quick on-site response arrangements.



Global and local support

We provide global support from local service and support facilities at strategic locations world wide. Service and support work is carried out under the supervision of your personal account manager, who will ensure that you receive high-quality service and support where and when you need it.

Your account manager will ensure continuity and work closely with your personnel to improve and optimise system availability and performance.

Under the direction of your account manager, and with a local inventory of spare parts, our wellqualified field service engineers will be able to help you quickly and effectively.

GLOBAL SUPPORT 24/7

Call +47 33 03 24 07

E-mail: km.support@kongsberg.com

KONGSBERG MARITIME

Switchboard: +47 815 73 700

E-mail sales: km.sales@km.kongsberg.com

km.kongsberg.com



KONGSBERG