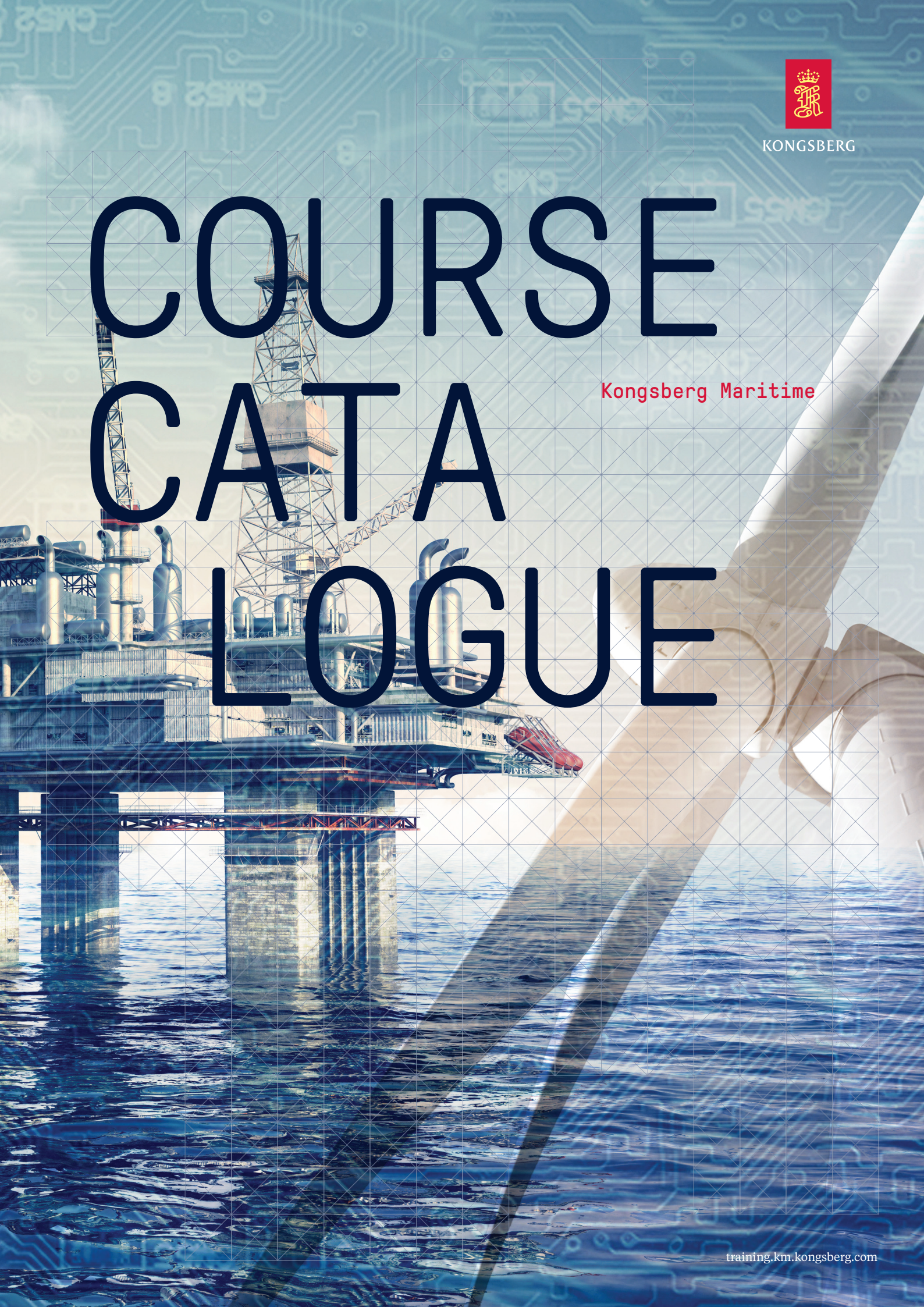
KONGSBERG

COURSE CATALOGUE

Kongsberg Maritime



training.km.kongsberg.com

Maximizing performance by providing

THE FULL PICTURE

Content

KONGSBERG MARITIME TRAINING

Experience and Proud History

EXPERIENCE AND PROUD HISTORY

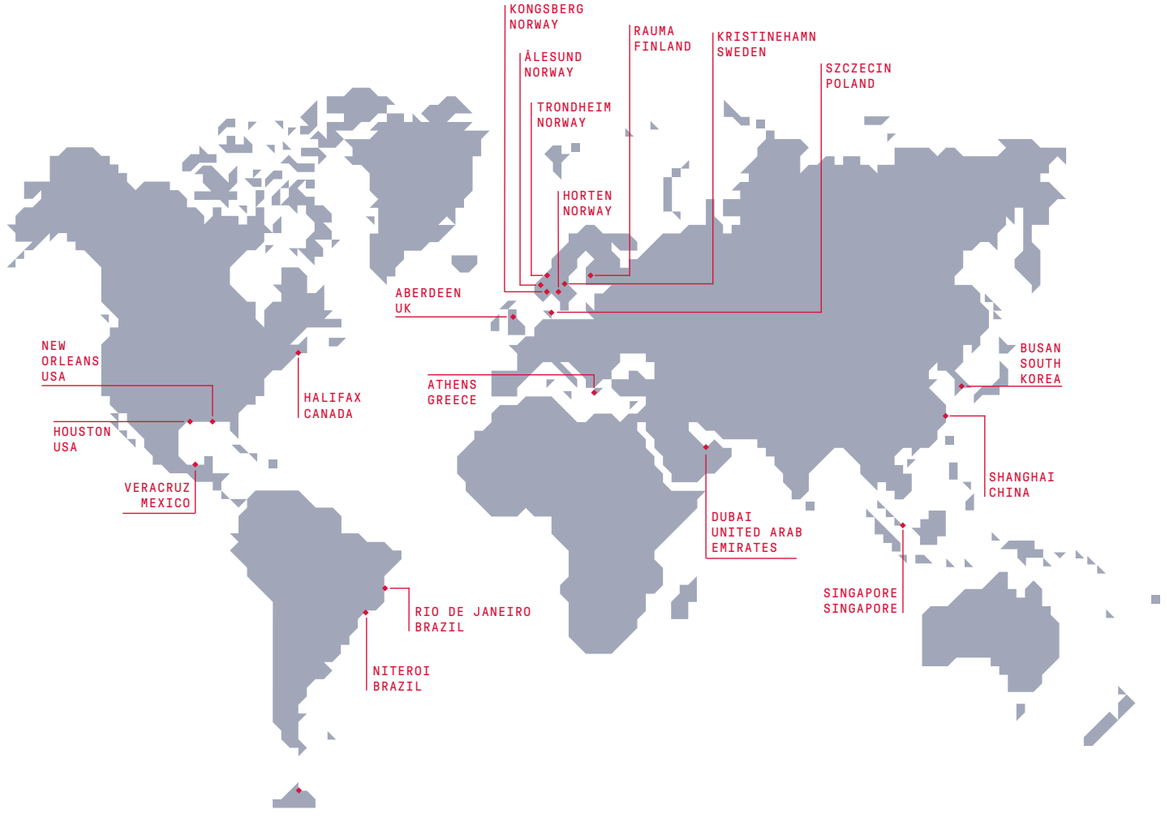
The KONGSBERG group has existed since 1814 and we delivered our first maritime products in 1946. With more than 30 years of expertise in maritime training and learning services, we are the experts in developing the skills of around 2000 people every year. We have a network of global centres and if you require training in a specific region we will do our utmost to deliver the training there.

SAFE AND EFFICIENT OPERATION - OUR COMMON INTEREST

Our mission is to support you to achieve predictable, safe and uninterrupted operations throughout the lifecycle of our delivered products. People are the bridge between advanced technology and optimal operations - investing in developing their abilities is the key to efficient operations as well as preventing interruptions and loss of hours.

TRAINING CENTRE LOCATIONS

We develop the skills of around 2000 people every year across our network of global training centres. If you require training in a specific region we will do our utmost to deliver it there.



World Class Instructors

We take pride in our world-class team of instructors in Kongsberg Maritime Products and integrated systems. Our instructors have a variety of backgrounds including project engineers, service engineers, bridge officers and teachers. We have immediate access to the product & technology developers, which gives us a unique advantage of acquiring up-to-date, thorough system knowledge for the direct benefit of our customers.

Another essential key to creating a great learning experience is having instructors capable of communicating their wisdom to others. All our instructors have successfully completed our comprehensive instructor training program including 'The Art of Instruction' module, which ensures that the instructor is capable of creating a positive learning environment where the participants gain the competence and confidence to maintain and operate our systems in a safe and efficient way.

The combination of deep system knowledge, operational competence and the instructors' ability to educate result in a powerful learning experience for our customers.

To optimise the realism of our training experiences in operational scenarios we develop, deliver and utilise state-of-the-art simulators, delivering powerful 'at sea', experiences on shore.

Basic theory and principles may be learned through e-learning or classroom lessons. Practical skills are achieved using basic trainers and simulators, while operational procedures and crew coordination involve the use of our more advanced crew trainers and state-of-the-art simulators.

Sound operator skills and attitudes are developed using operational scenarios that allow the operators to learn in a safe but realistic environment.

STEP 1

Learning element
- Basics, theory, system knowledge

Training media/method
- E-learning, classroom lessons

Typical Content
- Presentations, interactive dialog, case solving
- individually or in groups

STEP 2

Learning element
- Practical skills

Training media/method
- Basic trainers/ simulators

Typical Content
- Practical tasks and exercises, solved individually

STEP 3

Learning element
- Advanced skills, crew coordination, developing sound and safe attitude

Training media/method
- Advanced simulators/ crew trainers

Typical Content
- Operational scenarios, real-world examples and incidents

STEP 4

Learning element
- Advisory services

Training media/method
- All necessary training media

Typical Content
- Development/ improvement of procedures, dry-run of critical operations, risk reduction

Train as You Operate

The more realistic the training is, the better prepared you will be for the real operation. The core of our mission is to bring participants up to a level where they are able to handle normal operations efficiently and are prepared to handle unexpected situations and emergencies. Using real examples from our incident database, we continuously aim to update the training so that similar situations will be deescalated and repetition of incidents is avoided.

We encourage you to use your own real procedures in our high-end simulators with instructors that know the systems best. You may want to practice general and emergency procedures or prepare for specific complex operations. In our higher level training available for individual customers, we encourage open experience sharing and discussions across crew members and units in order to prevent new incidents through learning from each other's experiences.

We offer expert technical and operational advice before, during and after the exercise, in accordance with your preferences.
A competent crew member will be able to deescalate a situation and prevent incidents from becoming accidents. Competent operation and utilisation of complex systems reduce costs through quicker execution of operations and lower maintenance cost. On the other hand, incidents with lost operational time and damaged equipment involve considerable cost and loss of revenue. Over time, safe and efficient operation results in increased profit – the cost of Training is miniscule in comparison.

In order to verify that our participants have gained real competence, we have integrated various forms of assessment methods into our training programmes. We can perform theoretical pre- and post- assessment as well as practical assessments using simulators.

Our Offerings

STANDARD COURSES AND CUSTOMISED TRAINING

To meet any specific training requirements we offer both standard and customised courses that focus on how to operate and maintain the product.

Standard courses will be available on our training portal:
https://training.km.kongsberg.com/

In addition we offer a wide variety of high-end, customised packages on request, for instance:

- Vessel specific courses
- Operation specific courses
- Scenario courses
- Emergency Response Courses
- Onboard/Onsite Training
- Remote Training
- Advisory services

For more information on customised courses, please see the next pages. To book a customised course, please contact us directly on training@km.kongsberg.com and we will try to meet your needs.

VESSEL SPECIFIC AND CUSTOMER SPECIFIC TRAINING

In order to meet your bespoke training needs, we offer a quick analysis of your crews' competence before you order your training. As all our courses consist of many smaller sub-modules, we can design a course that fills your competence gap exactly. It could be a combination of several different products and you will get a separate diploma for each main topic covered in the course.

At sea, almost every ship is different from the next and generic training will only get you to a certain point. We offer vessel specific courses, where we use your ship's exact software, your exact drawings, your vessel's configuration and hardware setup during the course.

By using our knowledge of your vessel layout and technology together with the reporting data found in our service desk system, we are able to address questions and issues in our courses that will be of utmost relevance to your personnel.

PRODUCT TRAINING
KONGSBERG product specific training courses.

OPERATIONAL TRAINING
Task centered training courses assisted by offshore simulator - based on the KONGSBERG systems.

LEARNING SERVICES
Instructor training programs, learning-need assessment, training framework and consultancy.

LEARNING TECHNOLOGY (SIMULATION)
A variety of advanced simulators.

Online Training

Remote Training, E-Learning, Blended Learning, Onboard Training with DP-CAP™ and Competence Assessment, with vessel specific software - Video conferencing and virtual machines allow in-depth, hands-on training to be safely delivered to customers at their own site or even in their homes.

REMOTE TRAINING

Remote Training is delivered through established virtual classrooms and online training tools. All you need as a customer is a computer with a good internet connection, a headset and preferably two monitors. The remote training typically includes live transfer of;

- Instructor live video and sound
- On-screen presentations (i.e. PowerPoint and other presentation tools)
- Demonstrations and instruction in actual, vessel specific KM application software
- Discussions and interaction between course participants and with the instructor
- Simulation and interaction in actual KM application on your own computer

E-LEARNING

Currently, three E-Learinings are available. K-Chief 600, our well-established ECDIS Familiarisation E-Learining and Seismic Winch System Introduction. The E-Learning comprises a combination of theoretical lessons, practical tasks and summative tests after every topic, qualifying the student to sign up for a final online assessment.

BLENDED LEARNING

On request, a course or part of a course or specified modules can be delivered as remote training and/or E-Learning, thereby shortening the time spent at the training centre. Most of the presentation material and software application training may be delivered remotely, while certain technical hardware-based training will require your physical presence at the training centre.

ONLINE COMPETENCE ASSESSMENT – KONGSBERG COMPETENCE ASSESSMENT TOOL (K-CAT)

More and more shipowners want to ensure that their crews are actually competent to operate and maintain their KONGSBERG products properly. K-CAT has been developed to meet this

Usage includes verification of crews' competence, pre-employment assessments, measurement of learning outcome and more – for example, to verify a potential employee's knowledge of a subject prior to hiring them. K-CAT also offers a portfolio of competence assessments that measure key competencies from two perspectives: system understanding/utilisation of the DP system and practical skills of DP Operators. Compliant with the Continuous Professional Development layout from the IMCA M 117 and DNV-GL standards, K-CAT can be accessed from all smart devices and computers with internet coverage or used offline when suitably configured.

DP CAP™ - DP COMPETENCE ASSURANCE AND PRACTICE

DP-CAP™, the Kongsberg Maritime's solution to efficient onboard DPO training.

Fulfilling the Equinor requirements for onboard DP training. The tool for training and assessment of the individual DPO. Excessive performance reporting tools for the shipowner.
Field qualification training, reducing the need for substitute captains.
Developed for the shuttle tanker industry. Has been an important factor in the huge reduction of DP related incidents in the shuttle tanker operations since its introduction in 2003.
Training for all the major offloading buoy systems. (OLS, Tandem, SAL, SpreadMooring)
Can operate offline but need to come online for a short period to update results and exercises.
Soon to come: training for the "Independent Joystick".
Can also be used for other applications onboard where you need an efficient tutorial for operation of deck machinery, automation systems, position reference equipment (XPR, Radius, SpotTrack etc.)
Available in ordinary protection class and in Ex class 2 version for use in an environment where EX class 2 is mandatory.

For more information, please contact training@km.kongsberg.com or go to www.km.kongsberg.com/remote-training

Automation

Our marine automation systems, K-Chief and Autochief are divided into different series. If you are not sure which system the participants are using onboard you can get this information from the technical department onshore or from the crew onboard.

K-CHIEF 700

The K-Chief 700 Marine Automation System is a distributed monitoring and control system. Its flexible architecture allows it to be used for a wide range of tasks in safety and control systems within offshore industry. It is primarily a standalone system that covers all important functions onboard a vessel, such as: power management, auxiliary machinery control, ballast/bunker monitoring and control and cargo monitoring and control.

The system is built from modular hardware components and modular application software. Any number of these modules can be combined to provide an optimal solution for a specific vessel's requirements.
K-Chief 700 courses are divided in two paths; K-Chief 700 for LNG and K-Chief 700 for other vessels.

K-CHIEF 600

The K-Chief 600 Marine Automation System is a substantially upgraded and extended version of the K-Chief 500. It is designed to meet the challenging demands of shipyards and ship owners and is configurable from 16 to 20 000 channels. A modular design based on standard modules allows us to configure the system to individual requirements, covering the whole range from low complexity alarm systems to highly integrated alarm and monitoring systems with advanced process control and power management. Different selections of these modules are used to configure each individual system to fit exactly to your bespoke requirements.

AUTOCHIEF

The AutoChief Propulsion Control System is a complete control and safety system suitable for all 2 and 4 stroke engines, both fixed and controllable pitch propellers.

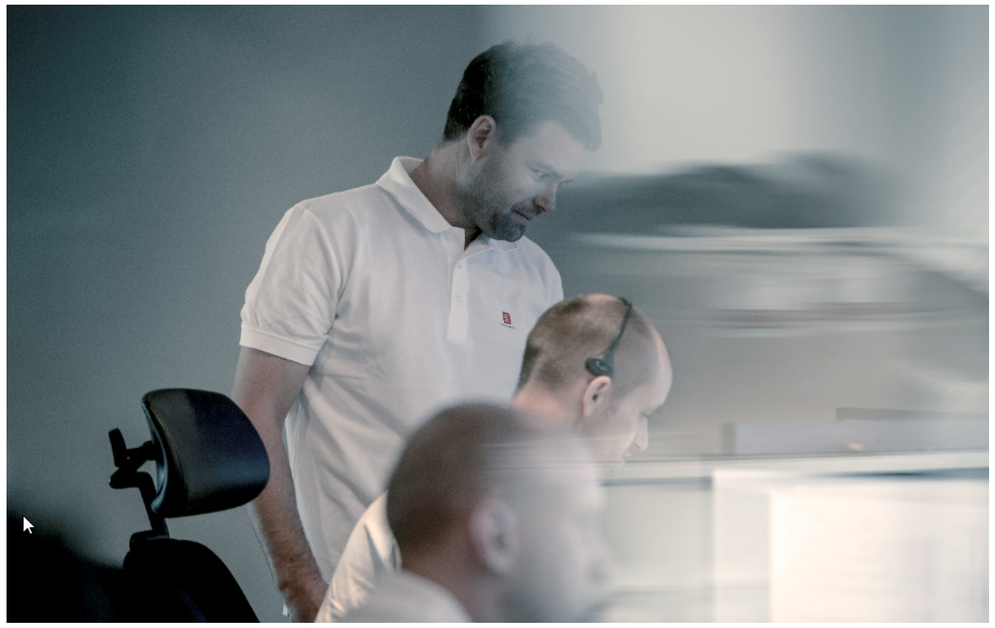
ACON

The Acon Automation System is a distributed monitoring and control system. Its flexible architecture either offshore industry safety and control systems OR offshore industry and safety and control systems. The Acon System is primarily a standalone system that covers all important functions onboard a vessel, such as: power management, auxiliary machinery control, ballast/bunker monitoring and control and cargo monitoring and control.

Automation Courses

COURSES AND TARGET GROUP	DURATION	OFFERED REGULARLY IN	OFFERED ON REQUEST
K-CHIEF 700 FOR LNG			
K-CHIEF 700 STEP 1 - LNG SYSTEM INTRODUCTION This course is for all personnel that shall operate the K-Chief 700 LNG system	5 days (27 hours) Participants: 9	Norway, Kongsberg, Singapore, Korea, Busan	Brazil, Greece, Athens, China, Shanghai, Korea, Busan, United Arab Emirates, Dubai, UK, Aberdeen, Polen, Szczecin
K-CHIEF 700 STEP 2 - MAINTENANCE This course is for maintenance personnel	5 days (27 hours) Participants: 6	Norway, Kongsberg, Singapore,	Greece, Athens, China, Shanghai, Korea, Busan, United Arab Emirates, Dubai, UK, Aberdeen, Brazil
K-CHIEF 700 LNG INTENSIVE MAINTENANCE This course includes Step-1 and Step-2 and is for maintenance personnel	8 days (45 hours) Participants: 6	Not offered regularly	Brazil, Greece, Athens, Korea, Busan, Norway, Kongsberg, Singapore, UK, Aberdeen, United Arab Emirates, Dubai
K-CHIEF 700 LNG DUAL FUEL MANAGEMENT COURSE For personnel who will be operating and/or maintaining the Dual Fuel Gas Management System	3 days (18 hours) Participants: 9	Norway, Kongsberg	Brazil, Greece, Athens, China, Shanghai, Korea, Busan, Singapore, UK, Aberdeen, United Arab Emirates, Dubai, Polen, Szczecin
K-CHIEF 700 ME-GI SCENARIO COURSE Optimizes the performance of the LNG vessel in regards to choice of fuel, fuel consumption and maintenance cost	3 days (18 hours) Participants: 9	Norway, Kongsberg, Singapore	Brazil, Greece, Athens, China, Shanghai, Korea, Busan, Singapore, UK, Aberdeen, United Arab Emirates, Dubai, Polen, Szczecin

COURSES AND TARGET GROUP	DURATION	OFFERED REGULARLY IN	OFFERED ON REQUEST
K-CHIEF 700 FOR OTHER THAN LNG			
K-CHIEF 700 OPERATOR COURSE This course is for bridge personnel	3 days (15 hours) Participants: 9	Brazil, Norway, Kongsberg, Singapore, UK, Aberdeen, USA Houston, New Orleans	All locations
K-SAFE OPERATOR COURSE This course is for personnel that shall operate the K-Safe system	2 days (9 hours) Participants: 9	Brazil, Norway, Kongsberg, Singapore, UK, Aberdeen, USA New Orleans	All locations
K-CHIEF 700 STEP 1 – SYSTEM INTRODUCTION Personnel who will be operating and/ or maintaining the automation system onboard	5 days (27 hours) Participants: 6	Brazil, Norway, Kongsberg, Singapore, UK, Aberdeen, USA Houston, New Orleans, Korea, Busan	All locations
K-CHIEF 700 STEP 2 – MAINTENANCE This course is for maintenance personnel	5 days (27 hours) Participants: 6	Brazil, Norway, Kongsberg, Singapore, UK, Aberdeen, USA, New Orleans	United Arab Emirates, Dubai, China, Shanghai, Korea, Busan, Greece
K-CHIEF 700 RETROFIT MAINTENANCE This course is for maintenance personnel on a retrofitted K-Chief 700 system	5 days (27 hours) Participants: 6	Not offered regularly	Brazil, Korea, Busan, Norway, Kongsberg, Singapore, UK, Aberdeen
K-SAFE MAINTENANCE This course is for maintenance personnel	3 days (18 hours) Participants: 6	Brazil, Norway, Kongsberg, UK, Aberdeen, Singapore, USA New Orleans	
POWER MANAGEMENT SYSTEM This course is for DP class vessel engineers, PMS operators, supervisors, ETO, auditors, inspectors	3 days (18 hours) Participants: 9	Brazil,	All locations
K-IMS (INFORMATION MANAGEMENT SYSTEM) This course is for on- and offshore personnel using K-IMS	1 day (6 hours) Participants: 9		All locations



COURSES AND TARGET GROUP	DURATION	OFFERED REGULARLY IN	OFFERED ON REQUEST
K-CHIEF 600			
K-CHIEF 600 OPERATOR & MAINTENANCE This covers all the topics of the operator and the maintenance courses above	3 days (18 hours) Participants: 6	Norway, Horten, UK, Aberdeen	Greece, Piareus, USA, New Orleans and Houston, Singapore
K-CHIEF 600 CUSTOMISED This course is for on and offshore maritime personnel who are technical users of the system	3 days (18 hours) Participants: 6	Norway, Horten, UK, Aberdeen	Korea, Busan, Greece, Piareus, USA, New Orleans and Houston, Singapore
K-CHIEF 600 ONBOARD USER COURSE This course is for personnel that shall operate the system	1 day (6 hours) Participants: 10	Not offered regularly	Offered on request
K-CHIEF 600 REMOTE This course covers the theory from the basic course, and some maintenance theory. Includes practical tasks, troubleshooting and “how-to-do”	eLearning	eLearning	eLearning
K-CHIEF 500, DC 20, AUTOCHIEF AC 600 AND AUTOCHIEF 4			
K-CHIEF 500 / DC C20 BASIC COURSE This course is for personnel that shall operate the system	2 days (12 hours) Participants: 6	Greece, Athens	UK, Aberdeen, United Arab Emirates, Dubai, Korea, Busan, China, Shanghai
K-CHIEF 500 MAINTENANCE COURSE This course is for on and offshore maritime personnel who are technical users of the system	2 days (12 hours) Participants: 9	Norway, Horten, Greece, Athens	UK, Aberdeen, United Arab Emirates, Dubai, Korea, Busan

COURSES AND TARGET GROUP	DURATION	OFFERED REGULARLY IN	OFFERED ON REQUEST
AUTOCHIEF			
AUTOCHIEF C20 TECHNICAL COURSE This course is for on and offshore maritime personnel who are technical users of the system	3 days (18 hours) Participants: 10	Greece, Athens,	Korea, Busan, China Shanghai, United Arab Emirates, Dubai
AUTOCHIEF AC 600 BASIC COURSE This course is for personnel that shall operate the system	2 days (12 hours) Participants: 10	Greece, Athens,	USA, New Orleans and Houston, Korea, Busan
AUTOCHIEF 4 TECHNICAL COURSE This course is for personnel that shall operate the system	3 days (18 hours) Participants: 10	Greece, Athens	Korea, Busan, China Shanghai, United Arab Emirates, Dubai
K-THRUST 600 BASIC COURSE This course is for personnel that shall operate the system	1 day (6 hours) Participants: 10	Not offered regularly	
K-STEERING 600 BASIC COURSE This course is for personnel that shall operate the system	1 day (6 hours) Participants: 10	Not offered regularly	
LODIC AND SHIPLOAD			
K-LOAD LODIC DRILL SHIP VESSEL OPERATOR COURSE This course is intended for maritime crew on drill ships	2 days (12 hours) Participants: 8	Norway, Trondheim	Customers premises
K-LOAD LODIC 'JACK UP' VESSEL OPERATOR COURSE This course is intended for maritime crew on jack up vessels	2 days (12 hours) Participants: 8	Norway, Trondheim	Customers premises
K-LOAD LODIC OFFSHORE VESSEL OPERATOR COURSE This course is intended for maritime crew on offshore vessels	2 days (12 hours) Participants: 8	Norway, Trondheim	Customers premises
K-LOAD LODIC SEMI SUB RIGS VESSEL OPERATOR COURSE This course is intended for maritime crew on semi sub rigs	2 days (12 hours) Participants: 8	Norway, Trondheim	Customers premises

Dynamic Positioning (DP)

We have chosen to group our Dynamic Positioning (DP) courses in four main categories of courses; 'DP Operator Certification', 'Operational DP', 'System Specific DP' (including maintenance) and 'Other DP' courses.

DP OPERATOR CERTIFICATION

The majority of the offshore industry requires DP operators to be certified. We deliver all courses relevant to two different DP operator certification schemes: 1) The DNV-GL Certification scheme with independent assessment, and 2) The Nautical Institute Dynamic Positioning Operator training and certification scheme. Feel free to contact us for more information about the two schemes.

OPERATIONAL DP

Operational DP courses are designed for DP operators that need or may benefit from deeper knowledge and hands-on training in the use of the DP in specific operations, such as position mooring, seismic track, drilling and power management.

SYSTEM SPECIFIC TRAINING

Each vessel has its own system setup and there are different modes and software versions. We deliver the K-Pos DP Familiarisation Course - Vessel Specific, this course is strongly recommended for operators on new-build vessels or vessels with functions or setups that are new to the operators.

DP MAINTENANCE

Well trained maintenance personnel on board can ensure that the right maintenance is done at the right time, making sure that the systems are fully operational when the vessel is in operation.

Dynamic Positioning Courses

COURSES AND TARGET GROUP	DURATION	OFFERED REGULARLY IN	OFFERED ON REQUEST
DP OPERATOR CERTIFICATION DNV-GL			
DPO PREPARATION (DNV-GL) This course is for bridge officers aiming to work as Dynamic Positioning operators	5 days (30 hours) Participants: 6	Norway, Trondheim, Brazil	Norway, Kongsberg UK, Aberdeen
DPO START (DNV-GL) This course is for bridge officers aiming to work as Dynamic Positioning operators	5 days (30 hours) Participants: 6	Norway, Trondheim, Brazil	Norway, Kongsber UK, Aberdeen g
DPO EXPERIENCE (DNV-GL) This course is for bridge officers aiming to work as Dynamic Positioning operators	5 days (30 hours) Participants: 3	Norway, Trondheim	Norway, Kongsberg, Brazil UK, Aberdeen
DNVGL DPO SPECIALIZATION AUTH (DNV-GL) This course is designed for training of operators of unclassed DP Vessels such as; Cruise and Mega Yachts.	2-3 days (16 hours) Participants: 3	Norway, Trondheim	UK, Aberdeen All locations remote
DPO SPECIALIZATION / STATION KEEPING (DNV-GL) This course is for bridge officers aiming to work as Dynamic Positioning operators	4 days (24 hours) Participants: 3	Norway, Trondheim	Norway, Kongsberg, Brazil UK, Aberdeen All locations remote
DPO SPECIALIZATION / ADVANCED OPERATIONS (DNV-GL) This course is for bridge officers aiming to work as Dynamic Positioning operators	4 days (24 hours) Participants: 3	Norway, Trondheim, UK, Aberdeen	Norway, Kongsberg, Brazil UK, Aberdeen All locations remote
DPO SPECIALIZATION / SHUTTLE TANK (DNV-GL) This course is for bridge officers aiming to work as Dynamic Positioning operators on shuttle tankers	3 days (18 hours) Participants: 3	Norway, Trondheim	Norway, Kongsberg, Brazil All locations remote
DPO SPECIALIZATION / POSMOOR ATA (DNV-GL) This course is for bridge officers aiming to work as Posmoor ATA operators	4 days (24 hours) Participants: 3	Norway, Trondheim	Norway, Kongsberg, Brazil UK, Aberdeen All locations remote

COURSES AND TARGET GROUP	DURATION	OFFERED REGULARLY IN	OFFERED ON REQUEST
EXAMINATION AND CERTIFICATION / AUTH DNV-GL SCHEME: The exam and certification is aimed at individuals presently, or in the process of becoming, responsible for maintaining a vessels position while the vessel carries out an assigned operation	1 day (6 hours) Participants: 1-3	Norway, Trondheim	UK, Aberdeen
EXAMINATION AND CERTIFICATION / STATION KEEPING DNV-GL SCHEME: For bridge officers for working as Dynamic Positioning operators	1 day (6 hours) Participants: 3	Norway, Trondheim	Brazil, UK, Aberdeen
EXAMINATION AND CERTIFICATION / ADVANCED OPERATIONS DNV-GL SCHEME: For bridge officers working as Dynamic Positioning operators	1 day (6 hours) Participants: 3	Norway, Trondheim	Brazil, UK, Aberdeen
EXAMINATION AND CERTIFICATION / POSMOOR ATA DNV-GL SCHEME: For bridge officers working as Posmoor ATA operators	1 day (6 hours) Participants: 3	Norway, Trondheim	Brazil, UK, Aberdeen
EXAMINATION AND CERTIFICATION / SHUTTLE TANK DNV-GL SCHEME: For bridge officers working as Dynamic Positioning operators on shuttle tankers	1 day (6 hours) Participants: 3	Norway, Trondheim	Brazil, UK, Aberdeen
RE-CERTIFICATION: PREPARATORY COURSE Recertification within DNVGL DPO scheme or transferring from other certification scheme. The course must be in combination with examination as described above	1 day (6 hours) Participants: 3	Norway, Trondheim	Brazil, UK, Aberdeen

DP OPERATOR CERTICATION OFFSHORE SERVICE VESSEL DYNAMIC POSITIONING AUTHORITY (OSVDPA)

PHASE 1 (INDUCTION) COURSE For users of DP systems who would like to start the OSVDPA's DP Operator Certification Scheme	4 days (30 hours) Participants: 8	USA, Houston, New Orleans	
PHASE 3 (SIMULATOR) COURSE For users of DP systems who are in the OSVDPA scheme and have successfully completed Phase 1 and 2	4 days (30 hours) Participants: 4	USA, Houston, New Orleans	

DP OPERATOR CERTIFICATION THE NAUTICAL INSTITUTE

DP INDUCTION COURSE (NI) For users of DP systems who would like to start the Nautical Institute's DP Operator Certification Scheme	5 days (30 hours) Participants: 8	Brazil, China, Shanghai, Mexico, Veracruz, Norway, Trondheim, Singapore, UK, Aberdeen, USA, Houston, New Orleans	
DP SIMULATOR COURSE (NI) This course is for DP operator trainees	5 days (30 hours) Participants: 4	Brazil, China, Shanghai, Mexico, Veracruz, Norway, Trondheim, Singapore, UK, Aberdeen, USA, Houston, New Orleans	
DP SEA TIME REDUCTION (NI) This course is for DP operator trainees	5 days (30 hours) Participants: 4	Brazil, Norway, Trondheim, Singapore, USA, Houston	
DP OFFSHORE LOADING OPERATIONS (NI COURSE B) This course is for DP shuttle tanker operator trainees	5 days (30 hours) Participants: 3	Brazil,	
DP REVALIDATION (NI) This course is for DP operators lacking seatime to renew their DP certificate	5 days (30 hours) Participants: 4	Brazil, Mexico, Veracruz, Norway, Trondheim, Singapore, UK, Aberdeen, USA, Houston, New Orleans	
POSITION REFERENCE SYSTEM OPERATOR COURSE This course is for Shuttle Tanker Navigators and DP Operators	5 days (28 hours) Participants: 8	Norway, Horten Brazil	

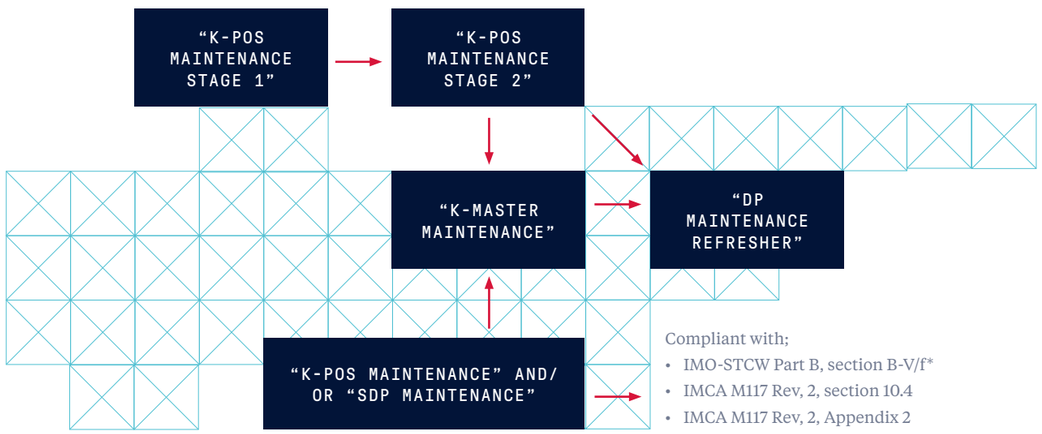
COURSES AND TARGET GROUP	DURATION	OFFERED REGULARLY IN	OFFERED ON REQUEST
DP OPERATIONAL TRAINING			
DP DRILLING SCENARIO AND POWER MANAGEMENT SIMULATION COURSE For Certified DP operators to expand their competence in specified operation established with the customer	4 days (24 hours) Participants: 6		USA, Houston
DP SCENARIO OPERATION / COMPANY SPECIFIC For Certified DP operators to expand their competence in a specified operation established with the customer	3 - 5 days (18-30 hours) Participants: 4 – 9	Not offered regularly	Norway, Kongsberg, Horten UK, Aberdeen
K-POS SEISMIC TRACK OPERATOR COURSE For Bridge Officers and Navigators working on board seismic vessels	4 days (26 hours) Participants: 6	Norway, Horten and Kongsberg	
DP OPERATIONS WITH GANGWAY This course is for DP Operators working with gangways connected to fixed or movable targets	4 days (24 hours) Participants: 4	Norway, Kongsberg	Singapore, United Kingdom, Aberdeen, USA, Houston, Brazil
DP EMERGENCY RESPONSE Training DPO's and other involved personnel onboard vessels performing high risk operations. Offered as General and vessel specific Course	3-4 days Participans: 8	Norway, Kongsberg	Singapore, United Kingdom, Aberdeen, USA, Houston, Brazil
K-POS POSITION MOORING (PM) OPERATOR COURSE - FPSO For Operators of DP and PM systems and others who need knowledge of the PM system's functions, use and limitations onboard FPSOs	3 days (18 hours) Participants: 9	Not offered regularly	Canada, Halifax, China, Shanghai, Greece, Athens, Korea, Busan, Singapore, UK, Aberdeen, United Arab Emirates, Dubai, USA, Houston, New Orleans
K-POS POSITION MOORING (PM) OPERATOR COURSE - GENERAL Provides Operators of DP and PM systems and others knowledge of the PM/DPM system's functions, use and limitations	5 days (29 hours) Participants: 9	Norway, Horten, Kongsberg UK, Aberdeen	Canada, Halifax, China, Shanghai, Greece, Athens, Korea, Busan, Singapore, United Arab Emirates, Dubai, USA, New Orleans, Norway, Horten, Kongsberg, Remote online training
K-POS DP (DYNAMIC POSITION) AND K-POS PM (POSITION MOORING) Provides sufficient knowledge to operate the K-Pos PM (Position Mooring) system and K- Pos DP (Dynamic Position) system in a correct way	7 days (41 hours) Participants: 9	Not offered regularly	
CJOY OPERATOR COURSE For bridge personnel requiring training on the KONGSBERG cJoy system	2 days (12 hours) Participants: 4	Not offered regularly	Brazil, Norway, Horten, Kongsberg and Trondheim. UK, Aberdeen

SYSTEM SPECIFIC TRAINING (K-POS)

K-POS DP OPERATOR FAMILIARISATION - GENERAL / K-POS DP OPERATOR INTENSIVE TRAINING This course is for Trained DP operators who need familiarisation with the Kongsberg K-Pos 8 SW DP system	3 days (18 hours) Participants: 6	Brazil, Canada, Halifax, Mexico, Veracruz, Norway, Kongsberg and Horten, Singapore, UK, Aberdeen	Korea, Busan, United Arab Emirates, Dubai, USA, Houston and New Orleans
K-POS DP SYSTEM OPERATOR COURSE - VESSEL SPECIFIC Intensive training for Trained DP operators to familiarise with Kongsberg K-Pos DP system as a vessel-specific course	3 - 5 days (18-30 hours) Participants: 9	Not offered regularly	All locations
DP DATA LOGGER COURSE This course is for professionals who work with the operation, administration, audit and supervision of DP vessels and rigs	1 day (6 hours) Participants: 10		Brazil

COURSES AND TARGET GROUP	DURATION	OFFERED REGULARLY IN	OFFERED ON REQUEST
DP MAINTENANCE			
K-POS MAINTENANCE COURSE This course is for electrical/electronic engineers (ETO) and maintenance personnel onboard who are involved in the periodic maintenance of the K-Pos system	5 days (27 hours) Participants: 6	Brazil, Canada, Halifax, China, Shanghai, Mexico, Veracruz, Norway, Kongsberg, Singapore, United Arab Emirates, Dubai, UK, Aberdeen, USA, New Orleans, Poland Szczecin	Korea, Busan, On board
K-POS MAINTENANCE STAGE 1 This course is for all personnel involved in activities or decision-making that may affect the integrity of the DP system and operational safety	2 days (12 hours) Participants: 6	Canada, Halifax, Mexico, Veracruz, Norway, Kongsberg, United Arab Emirates, Dubai, UK, Aberdeen, Poland, Szczecin, USA New Orleans	Korea, Busan, Brazil, Singapore
K-POS MAINTENANCE STAGE 2 This course is for electrical/electronic engineers (ETO) and maintenance personnel onboard who are involved in the periodic maintenance of the K-Pos system	2,5 days (15 hours) Participants: 6	Canada, Halifax, Mexico, Veracruz, Norway, Kongsberg, United Arab Emirates, Dubai, UK, Aberdeen, Poland, Szczecin, , USA New Orleans	Korea, Busan, On board, Brazil, Singapore
DP MAINTENANCE REFRESHER This course is for electrical/electronic engineers (ETO) and maintenance personnel onboard who are involved in the periodic maintenance of the DP control system.	2 days (12 hours) Participants: 6	Canada, Halifax, Mexico, Veracruz, Norway, Kongsberg, United Arab Emirates, Dubai, UK, Aberdeen, Poland, Szczecin	Korea, Busan, On board, USA, New Orleans, Brazil
SDP MAINTENANCE COURSE This course is for electrical/electronic engineers (ETO) and maintenance personnel onboard who are involved in the periodic maintenance of the SDP system	5 days (27 hours) Participants: 6	Not offered regularly	Canada, Halifax, Mexico Veracruz, Norway, Kongsberg, Singapore United Arab Emirates, Dubai, UK, Aberdeen, USA, On board

DP Maintenance Course Sequence



Compliant with;

- IMO-STCW Part B, section B-V/f*
- IMCA M117 Rev, 2, section 10.4
- IMCA M117 Rev, 2, Appendix 2
- MTS Guidance for Professional Development of DP Personnel, Appendix A, section 5

COURSES AND TARGET GROUP	DURATION	OFFERED REGULARLY IN	OFFERED ON REQUEST
DP MAINTENANCE			
CPOS MAINTENANCE COURSE This course is for electrical/electronic engineers (ETO) and maintenance personnel onboard who are involved in the periodic maintenance of the cPOS system	2 days (12 hours) Participants: 6	Not offered regularly	Norway, Kongsberg, United Arab Emirates, Dubai, UK, Aberdeen, USA, New Orleans, On board, Singapore
CPOS OPERATOR COURSE This course is for Shipboard personnel requiring training on the KONGSBERG YachtPos / cPos DP system, but do not need DNV GL or the Nautical Institute DP Operator Certificate	2 days (14) hours Participants: 9	Not offered regularly	UK Aberdeen
K-POS MAINTENANCE COURSE - VESSEL SPECIFIC This is a vessel specific course, one vessel, for electrical/electronic engineers (ETO) and maintenance personnel onboard who are involved in the periodic maintenance of the K-Pos system	5 days (27 hours) Participants: 6		All locations
ONSHORE, CLIENT, PROJECT OR TECHNICAL PERSONNEL			
DP INTRODUCTION COURSE This course is designed for fleet managers and other client, office, offshore, project or technical personnel who have a need for general knowledge about dynamic positioning	2 days (12 hours) Participants: 9	UK, Aberdeen, Mexico, Veracruz, Norway, Trondheim, UK, Aberdeen, USA, Houston and New Orleans	Brazil, Norway Kongsberg and Horten, Korea, Busan
DP AWARENESS COURSE This course is for Technical inspectors, fleet managers and other office or client personnel who have a need for general knowledge about dynamic positioning	5 days (30 hours) Participants: 9	Brazil, Canada, Halifax, China, Shanghai, Mexico, Veracruz, Norway, Kongsberg, Horten and Trondheim, Singapore, United Arab Emirates, Dubai, UK, Aberdeen, USA, Houston, New Orleans	Korea, Busan

Positioning Reference

We deliver different types of Positioning Reference Systems and motion sensors, ranging from global satellite based systems to subsea systems. If you are not sure which systems your operators have onboard you can get this information from the technical department onshore or from the crew on board.

Positioning Reference Systems Courses

COURSES AND TARGET GROUP	DURATION	OFFERED REGULARLY IN	OFFERED ON REQUEST
HAIN REFERENCES OPERATOR COURSE This course is for navigators, DP operators, vessel managers	1 day (5 hours) Participants: 8	Brazil, Rio de Janeiro, Canada, Halifax, Norway, Horten, UK, Aberdeen, USA New Orleans	Singapore
HAIN SUBSEA OPERATOR COURSE This course is for offshore surveyors, survey engineers, project engineers project and others with a particular interest for HAIN operational subjects	1 day (6 hours) Participants: 8	Not offered regularly	Norway, Horten, UK, Aberdeen, Brazil,
HIPAP LBL OPERATOR COURSE This course is for navigators, DP operators or other persons with a particular interest for APOS and HiPAP® operational subjects	3 days (20 hours) Participants: 8	Brazil, Rio de Janeiro, Canada, Halifax, China, Shanghai, Norway, Horten, UK, Aberdeen, USA, New Orleans, Singapore	Korea, Busan, China, Shanghai
HIPAP OPERATOR COURSE This course is for navigators and DP operators	2 days (13 hours) Participants: 10	Brazil, Rio de Janeiro, Canada, Halifax, Norway, Horten, Singapore, UK, Aberdeen, USA, New Orleans	Korea, Busan, China, Shanghai
HIPAP TECHNICAL COURSE This course is for Ship electricians and maintenance personnel	4 days (23 hours) Participants: 8 - 6	Canada, Halifax, Norway, Horten, Singapore, UK, Aberdeen, USA, New Orleans	
APOS LBL SURVEY COURSE This course is for offshore surveyors, project engineers/surveyors, survey engineers	3 days (18 hours) Participants: 6	Norway, Horten, UK, Aberdeen	Canada, Halifax, Brazil, USA, New Orleans, Singapore
POSITION REFERENCE SYSTEM OPERATOR COURSE This course is for Shuttle Tanker Navigators and DP Operators	4 days 24 hours Participants: 8	Norway, Horten, Trondheim	Korea, Busan, Canada, Halifax, UK, Aberdeen
POSITION REFERENCE SYSTEM - NI COURSE A This course is for navigators and DP Operators	5 days (27 hours) Participants: 8	Brazil	
HIPAP CALIBRATION COURSE	1 Day (6 hours) Participants: 6	UK Aberdeen Online	
XPR OPERATOR COURSE This course is for DP operators and navigators	0,5 day (4 hours>)	Not offered regularly	Trondheim

COURSES AND TARGET GROUP	DURATION	OFFERED REGULARLY IN	OFFERED ON REQUEST
SEATEX DARPS OPERATOR AND TECHNICAL COURSE This course is for electricians (ET) and DP operators who need more in-depth system understanding	3 days (18 hours) Participants: 8	Norway, Trondheim	Canada, Halifax, Korea, Busan, Norway, Horten
SEATEX DARPS OPERATOR COURSE This course is for DP operators and navigators	2 days (12 hours) Participants: 8	Norway, Trondheim	Canada, Halifax, Korea, Busan, Norway, Horten, UK Aberdeen
SEATEX DPS OPERATOR AND TECHNICAL COURSE This course is for Electricians (ET) and DP operators who need more in-depth system understanding	3 days (18 hours) Participants: 8	Brazil, Norway, Trondheim, UK, Aberdeen	Canada, Halifax, China, Shanghai, Korea, Busan, Norway, Horten, Kongsberg
SEATEX MRU TRAINING COURSE This course is for DP operators, navigators, electricians and others who needs more in-depth MRU understanding	1 day (6 hours) Participants: 8	Norway, Trondheim UK Aberdeen	Canada, Halifax, China, Shanghai, Greece, Athens, Korea, Busan, Norway, Horten, Kongsberg, UK, Aberdeen, United Arab Emirates, Dubai, USA, Houston
RADIUS OPERATOR COURSE This course is for DP operators and navigators	0.5 days (3 hours) Participants: 8	Not offered regularly	Canada, Halifax, China, Shanghai, Greece, Athens, Korea, Busan, Norway, Horten, Kongsberg, UK, Aberdeen, United Arab Emirates, Dubai, USA, New Orleans, Brazil
SPOTTRACK OPERATOR COURSE This course is for DP operators and navigators	0.5 days (3 hours) Participants: 8	Not offered regularly	Canada, Halifax, China, Shanghai, Greece, Athens, Korea, Busan, Norway, Horten, Kongsberg, UK, Aberdeen, United Arab Emirates, Dubai, USA, New Orleans
SEATEX SEAPATH TRAINING COURSE This course is for hydrographic surveyors, survey engineers and system integrators	2 days (12 hours) Participants: 8	Norway, Trondheim	Brazil, Canada, Halifax, Norway, Horten

Subsea & Marine Robotics

Aimed at the offshore survey industry, these subsea courses focus on the operation and maintenance of our subsea products including our underwater acoustic positioning systems, AUVs and hydrographic products. Training will be a combination of theoretical and practical exercises, taught by experienced instructors.

COURSES AND TARGET GROUP	DURATION	OFFERED REGULARLY IN	OFFERED ON REQUEST
HIPAP SURVEY COURSE This course is for offshore surveyors, survey engineers, project engineers with a particular interest for APOS and HiPAP® operational subjects	3 days (18 hours) Participants: 6	Norway, Horten, UK, Aberdeen, OR Online	Canada, Halifax, Brazil
SURVEY LBL CALIBRATION COURSE This course is aimed at Client representatives, surveyors, survey engineers, party chief who require knowledge and theory of calibrating a Kongsberg LBL Array to survey accuracies.	1 Day (6 hours) Participants: 6	Online	UK, Brazil
SURVEY SPARSE LBL COURSE This course is aimed at Client representatives, surveyors, survey engineers, party chief , who require a theoretical & practical overview of the set up with Dos and Don'ts.	1 Day (6 hours) Participants: 6	Online	UK, Brazil
VESSEL HIPAP FOR SURVEY COURSE This course is aimed at Client representatives, surveyors, survey engineers, party chief who require knowledge on what survey application can be performed with the vessel's HiPAP system. Vessel configuration	1 Day (6 hours) Participants: 6	Online	UK, Brazil

Navigation

We deliver the K-Bridge System. It is adaptable to the requirements of all sea-going ship types. It is designed to meet all IMO and classification societies' requirements all the way up to one-man bridge operation. More than 50% of the world's navigators are trained on our bridge simulators. We understand the maritime environment and the need for user-friendly systems.

Radar and Navigation System Courses

COURSES AND TARGET GROUP	DURATION	OFFERED REGULARLY IN	OFFERED ON REQUEST
ECDIS NMA COMPETENCE COURSE	3 days (18 hours)	Norway, Trondheim	
K-BRIDGE ECDIS FAMILIARIZATION COURSE This course is for navigating (Deck) officers	2 days (12 hours) Participants: 8		Aberdeen, Korea, Norway; Trondheim and Horten
ECDIS FAMILIARISATION, E-LEARNING COURSE This course is for navigation (Deck) officers	(6-12 hours)	Online	Online
K-BRIDGE MAINTENANCE COURSE This course is for electronics technicians, electricians, maintenance and operator personnel onboard	2 days (12 hours) Participants: 6	Norway, Horten	Korea, Busan
K-BRIDGE OPERATOR COURSE INCLUDING ECDIS FAMILIARIZATION This course is for navigating (Deck) officers	3 days (18 hours) Participants: 8	Aberdeen, Norway; Horten and Trondheim	
K-POS AND K-BRIDGE COMBINED FAMILIARISATION COURSE This course is for Navigation officers serving on vessels with both K-Pos DP and K-Bridge systems.	3 days (24 hours)	Norway Horten	
SEATEX AIS MOBILE STATION OPERATOR COURSE This course is for operators onboard, navigators, technical personnel and others that are going to operate the mobile station	1 day (6 hours) Participants: 8		Canada, Halifax, China, Shanghai, Greece, Athens, Norway, Horten, Kongsberg, Trondheim, UK, Aberdeen, United Arab Emirates, Dubai, USA, Houston

Propulsion

KONGSBERG offers the full range of propulsors and propulsion systems including propellers, thrusters and waterjets. Our Propulsion training courses will give you a thorough introduction to the operation and maintenance of your specific propulsion product either it is Azimuth Thrusters, Tunnel Thrusters, Waterjets, Controllable Pitch Propeller, Fixed Propeller or our Reduction Gear. The training will be a combination of theoretical lessons and hands-on training in our training workshops.

Propulsion Courses

COURSES AND TARGET GROUP	DURATION	OFFERED REGULARLY IN	OFFERED ON REQUEST
AZIMUTH THRUSTER,TYPE AZIPULL This course is intended for technical and maintenance personnel working onboard	1-2 days (7-14 hours) Participants: 8	Norway, Aalesund	
AZIMUTH THRUSTER,TYPE TCNS/TCNC MAINTENANCE TRAINING This course is intended for technical and maintenance personnel working onboard	1-2 days (7-14 hours) Participants: 8	Norway, Aalesund	
REDUCTION GEAR,TYPE AGSC/AGHC MAINTENANCE TRAINING This course is intended for technical personnel shore or vessel based	1-2 days (7-14 hours) Participants: 8	Norway, Aalesund, Brazil	
TUNNEL THRUSTER,TYPE TT MAINTENANCE TRAINING This course is intended for technical and maintenance personnel working onboard	1-2 days (7-14 hours) Participants: 8	Norway, Aalesund	

Offshore Loading

Our offshore loading courses are focused on the handling, both manual and by DP, of shuttle tankers in close proximity to a wide selection of loading systems and installations.

Approach, berthing and un-berthing at a selection of discharge terminals and ports is also included in the courses.

Offshore Loading Courses

COURSES AND TARGET GROUP	DURATION	OFFERED REGULARLY IN	OFFERED ON REQUEST
OFFSHORE LOADING PHASE 1 This course is mandatory within 6 months for bridge officers on shuttle tankers. Main focus of the course is on shuttle tank ship handling	5 days (36 hours) Participants: 3	Norway, Trondheim	Brazil
OFFSHORE LOADING PHASE 2 This course is mandatory within 12 months after completing phase 1 for bridge officers on shuttle tankers. Main focus of the course is on shuttle tank DP operations	5 days (40 hours) Participants: 3	Norway, Trondheim	Brazil
OFFSHORE LOADING PHASE 3 This is a refresher course for bridge officers on shuttle tankers, and must be attended every second year. Latest developments in systems and incidents are included in the course	3 days (26 hours) Participants: 3	Norway, Trondheim	Brazil
OFFSHORE LOADING PHASE 1 (IN COMBINATION WITH DP-CAP TRAINING) This course is mandatory within 6 months for bridge officers on shuttle tankers	3 days (24 hours) Participants: 3	Norway, Trondheim	Brazil
OFFSHORE LOADING PHASE 2 (IN COMBINATION WITH DP-CAP TRAINING) This course is mandatory within 12 months after completing phase 1 for bridge officers on shuttle tankers	3 days (24 hours) Participants: 3	Norway, Trondheim	Brazil
OFFSHORE LOADING SAL, PHASE 1 This is a joint training course involving bridge officers from the shuttle tanker and from the stand-by vessel	2 days (18 hours) Participants: 12	Norway, Trondheim	Brazil
OFFSHORE LOADING SAL, PHASE 2 This is a refresher course for personnel involved in SAL offshore loading operations	1 day (9 hours) Participants: 12	Norway, Trondheim	Brazil
DIRECT LOADING This course is designed to give the shuttle tank DP operators a better understanding of the specialized DP software for specific direct loading operations	2 days (16 hours) Participants: 3	Norway, Trondheim	

Deck Machinery & Motion Control

Kongsberg Maritime has a long history of designing control systems and machinery that meet and surpass maritime safety standards. We offer an unrivalled range of deck machinery products and systems, ranging from cost effective winches for mooring and anchoring vessels to specialised winches and handling systems for offshore, tugs, naval ships and many other vessel types. We also supply a complete range of steering gears and stabilizers – suitable for all ship types and sizes, including VLCCs, large container vessels, offshore and naval applications. Our Deck Machinery & Motion Control training courses will give you a thorough introduction to the operation and maintenance of your specific equipment. The training will be a combination of theoretical lessons and hands-on training.

Deck Machinery & Motion Control Courses

COURSES AND TARGET GROUP	DURATION	OFFERED REGULARLY IN	OFFERED ON REQUEST
STABILISERS MECHANICAL,HYDRAULIC AND CONTROL SYSTEM TRAINING This course is intended for bridge and technical personnel shore or vessel based	1-2 days (7-14 hours) Participants: 8	UK, Dunfire Onboard	
TOWCON RT-AHT WINCH TECHNICAL TRAINING This course is intended for technical personnel, chief/electrician	3 days (21 hours) Participants: 4	Norway, Aalesund Brazil, Niteroi	
AHT WINCH OPERATOR TRAINING This course is intended for bridge and technical personnel, shore or vessel based	2 days (16 hours) Participants: 3	Norway, Aalesund Brazil, Niteroi	
LARS-LAUNCH AND RECOVERY SYSTEM OPERATOR AND MAINTENANCE TRAINING This course is intended for ROV operators, chief and technical personnel shore or vessel	2-3 days (16-24 hours) Participants: 8	Norway, Aalesund	
AH RAIL CRANE FAMILIARISATION TRAINING This course is intended for crane operators, chief and technical personnel shore or vessel based	1-2 days (7-14 hours) Participants: 8	Norway, Aalesund	
INTRODUCTION TO HYDRAULICS OPERATION AND MAINTENANCE TRAINING This course is intended for marine crew, chief and technical personnel shore or vessel based	3 days (24 hours) Participants: 8	Norway, Aalesund	
DECK CRANE/CARGO RAIL CRANE FAMILIARISATION TRAINING This course is intended for crane operators, chief and technical personnel shore or vessel based	1-2 days (7-14 hours) Participants: 8	Norway, Aalesund	
STEERING GEAR, TYPE SR/RV OPERATION AND MAINTENANCE TRAINING This course is intended for technical personnel shore or vessel based	2-4 days (14-28 hours) Participants: 8	Norway, Aalesund Singapore Onboard	
SEISMIC WINCH SYSTEM OPERATION AND MAINTENANCE TRAINING This course is intended for Chief Engineers, Chief Observers and technical personnel shore or vessel based.	3-5 days (21-35 hours) Participants: 8	Norway, Aalesund	
SEISMIC WINCH SYSTEM INTRODUCTION This course gives an introduction to Hydraulics, Hydraulic Power Units (HPU's), Cooling and Filtration Units and Streamer Winch operation, maintenance and fault finding. Includes troubleshooting and "how to do".		e-Learning	

Crane

We deliver high-end simulator training and theory lessons in accordance with NORSOK R003 for both offshore and subsea lifting operations.

In our state of the art, DNV GL class A certified simulators, we provide close to reality training that enhances the training effects.

Crane Courses

COURSES AND TARGET GROUP	DURATION	OFFERED REGULARLY IN	OFFERED ON REQUEST
OFFSHORE CRANE BASIC This course is intended for deck operators and others involved in offshore lifting operations	2 days (16 hours) Participants: 4	Norway, Trondheim	
OFFSHORE CRANE ADVANCED This course covers the mandatory retraining for G5 offshore crane operators according to NORSOK R003	3 days (24 hours) Participants: 3	Norway, Trondheim	
OFFSHORE CRANE & SUPPLY VESSEL This course is a joint training course involving offshore crane crew and relevant supply vessel personnel	3 days (24 hours) Participants: 9	Norway, Trondheim	
SUBSEA CRANE BASIC This course is intended for ship officers and deck operators involved in subsea lifting operations	3 days (24 hours) Participants: 3	Norway, Trondheim	
SUBSEA CRANE ADVANCED This course covers the mandatory retraining for G5 subsea crane operators according to NORSOK R003	3 days (24 hours) Participants: 3	Norway, Trondheim	
SUBSEA CRANE FOR ENGINEERS This course is designed to provide engineers, project managers and technical personnel with an operational perspective on subsea crane operations	3 days (24 hours) Participants: 6	Norway, Trondheim	

Ship Handling

Our ship handling courses are designed to enable masters and watch-keeping officers further develop their existing knowledge, understanding and skills relevant to the behaviour and handling of ships in normal operations and during challenging conditions.

Ship Handling Courses

COURSES AND TARGET GROUP	DURATION	OFFERED REGULARLY IN	OFFERED ON REQUEST
SHIP HANDLING Theory presentations of knowledge understanding and skill related to manual shiphandling. Simulator exercises covering operation of all navigational equipment, propulsion and rudder(s). Operation scenarios in open sea, narrow waters and ports	5 days (30 hours) Participants: 3	Norway, Trondheim	Norway, Trondheim Company specific request on type of operations, locations and vessel
SHIP HANDLING FOR PILOTS, PHASE 1 Theory and exercises cover all external forces related to shiphandling. Piloting in open sea, narrow waters and ports. Use of tugs and anchors. Bridge team co-operation and communication	5 days (30 hours) Participants: 3	Norway, Trondheim	Norway, Trondheim Special type of Tug(s), vessel and location
SHIP-TO-SHIP LIGHTERING, PHASE 1 Support and increase knowledge, understanding and skill of ship to ship operations. Theory covers all basic maneuvering elements in OCIMF STS Transfer Guide. Operations underway, at anchor and in port	5 days (30 hours) Participants: 3	Norway, Trondheim	Norway, Trondheim Special type of vessels and location. Company specific STS manual
SHIP-TO-SHIP LIGHTERING, PHASE 2 Increase knowledge, understanding and skill of advanced STS ship handling issues, with emphasis on limits due to external forces and vessel's ability. Operations underway, at anchor and in port	5 days (30 hours) Participants: 3	Norway, Trondheim	Norway, Trondheim Special type of vessels and location. Company specific STS manual
SHIP-TO-SHIP LIGHTERING, PHASE 3 This course is intended for Mooring Masters having attended STS phases 1 and 2. Focus on unwanted incidents, non-conformities and emergency maneuvering operations	3 days (30 hours) Participants: 3	Norway, Trondheim	Norway, Trondheim Special type of vessels and location. Company specific contingency plans and STS manual
TUG OPERATIONS Hands-on training in simulator on operations during normal and heavy weather, Simulator exercises on harbour operations, escort operations, emergency towing ocean towing, barge towing and rig towing	4days (30 hours) Participants: 3	Norway, Trondheim	Norway, Trondheim Special type of Tug(s), assisted vessels, operations and location. Company specific contingency plans and towing manual
ESCORT TUG FOR MASTERS AND PILOTS Theory covering Tug boat design, equipment, abilities and limitations. Focus on co-operation and communication between Tug boat and Pilot. Operation exercises in narrow waters and ports	3 days (18 hours) Participants: 3	Norway, Trondheim	Norway, Trondheim Special type of Tug(s), assisted vessel and location

Integrated Workstations

Our K-Master workstation is a complete and independent operating station designed to meet strict aft bridge ergonomic considerations regarding the arrangement of working places, the instrumentation and the operability of the equipment itself. Within easy reach of the operator, the K-Master workstation includes: Dynamic Positioning, Independent DP joystick, Thruster control, Machinery automation and cargo control, Chart radar and conning display bridge auxiliaries

Integrated Workstations Courses

COURSES AND TARGET GROUP	DURATION	OFFERED REGULARLY IN	OFFERED ON REQUEST
K-MASTER OPERATOR COURSE This course is for bridge personnel who will be conducting operations from the K-Master control chair	3 days (18 hours) Participants: 9	Not offered regularly	On board
K-MASTER MAINTENANCE This course is for electrical/electronic engineers (ETO) and maintenance personnel onboard who are involved in the periodic maintenance of the K-Master system	2 days (12 hours) Participants: 6	Norway, Kongsberg	On board

Maritime Simulators

Our simulators are built on 40 years of simulation experience gained from providing the industry with actual navigation, automation and dynamic positioning systems. This ensures that our simulators deliver the most realistic and pedagogical training possible and are ideal for R&D studies.

Simulator Systems Courses

COURSES AND TARGET GROUP	DURATION	OFFERED REGULARLY IN	OFFERED ON REQUEST
K-SIM NAVIGATION OPERATOR COURSE 1 For maritime instructors, maritime simulator trainers, and assessors	4 days (21 hours) Participants: 7		Norway, Horten
K-SIM NAVIGATION OPERATOR COURSE 2 For maritime instructors, maritime simulator trainers, and assessors	5 days (28 hours) Participants: 7		Norway, Horten
K-SIM NAVIGATION AREA MODELLING COURSE This course is for simulator instructors, technical personnel responsible for creating ship models, naval architects and hydrodynamicists	4 days (21 hours) Participants: 7		Norway, Horten
K-SIM ENGINE OPERATOR COURSE For maritime instructors, maritime simulator trainers, and assessors on engine room simulator	3 days (18 hours) Participants: 7		Norway, Horten
K-SIM CARGO OPERATOR COURSE For users of the K-Sim Engine simulators	3 days (18 hours) Participants: 7		Norway, Horten
POLARIS BRIDGE SIMULATOR OPERATOR COURSE This course is for maritime instructors and maritime simulator trainers and assessors	4 days (21 hours) Participants: 7		Norway, Horten
POLARIS BRIDGE SIMULATOR ADVANCED OPERATOR COURSE This course is for maritime instructors and maritime simulator trainers and assessors	4 days (21 hours) Participants: 7		Norway, Horten
POLARIS BRIDGE SIMULATOR MAINTENANCE COURSE This course is for simulator instructors and maintenance personnel at maritime colleges and training centers with Polaris ship bridge simulators installed	5 days (28 hours) Participants: 7		Norway, Horten

Echo Sounder

We deliver various types of echo sounders, from sweep systems to multibeam systems. Echo sounders are used for monitoring the depth and bottom profile, seabed mapping, and identifying and characterizing layers of sediment or rock under the seafloor. If you are not sure which systems your operators have onboard you can get this information from the technical department onshore or from the crew on board.

Echo Sounder Courses

COURSES AND TARGET GROUP	DURATION	OFFERED REGULARLY IN	OFFERED ON REQUEST
BASIC SIS OPERATOR COURSE This course is for surveyors and operators using SIS & EM 2040/2040C/ 2040P/710/712/302/304/122/124	3 days (18 hours) Participants: 8		Horten Norway, Halifax Canada, Veracruz Mexico, Brazil and Customers premises
EM & SIS OPERATOR COURSE This course is for surveyors and operators using SIS & EM 2040/2040C/ 2040P/710/712/302/304/122/124	5 days (30 hours) Participants: 8	Norway, Horten	Horten Norway, Halifax Canada, Veracruz Mexico, Brazil and Customers premises
MDM 500 OPERATOR COURSE This course is for offshore surveyors, project engineers/ surveyors, survey engineers	1 day (6 hours) Participants: 8		Horten Norway, Halifax Canada, Veracruz Mexico and Customers premises
SBP 120/300 OPERATOR COURSE This course is for surveyors and operators using SBP120/300	2 days (12 hours) Participants: 8		Horten Norway, Halifax Canada, Veracruz Mexico and Customers premises
EM MAINTENANCE COURSE This course is for offshore surveyors, project engineers/ surveyors, survey engineers	3 days (18 hours) Participants: 8		Horten Norway, Halifax Canada, Veracruz Mexico, Brazil and Customers premises
K-SYNC OPERATOR COURSE This course is for offshore surveyors, project engineers/ surveyors, survey engineers	1 day (6 hours) Participants: 8		Horten Norway, Halifax Canada, Veracruz Mexico and Customers premises
EA 400/600 OPERATOR COURSE This course is for users of EA400/600	1 day (6 hours) Participants: 8		Halifax Canada, Veracruz Mexico, Brazil and in Customers premises
EA 440/640 OPERATOR COURSE This course is for users of EA440/640	1 day (6 hours) Participants: 8		Horten Norway, Halifax, Canada, Veracruz Mexico, Brazil and Customers premises
GEOSWATH4 OPERATOR COURSE This course is for users of GeoSwath Plus/GeosSwath4	3 days (24 hours) Participants:8	Halifax Canada, Veracruz Mexico	
M3 SONAR HYDRPGRAPHIC APPLICATION This course is for users of GeoSwath Plus/GeosSwath4	3 days (24 hours) Participants:8	Halifax Canada, Veracruz Mexico	Brazil
TOPAS FAMILY This course is for users of TOPAS 18/40/120	3 days (24 hours) Participants:8	Halifax Canada, Veracruz Mexico	
PULSAR SIDE SCAN SONAR This course is for users of PULSAR	3 days (24 hours) Participants:8	Halifax Canada, Veracruz Mexico	

Acoustic Communication and Control

We deliver Acoustic Control System - ACS designed for acoustic control of Blow Out Prevention (BOP) and subsea production units. The subsea unit may control up to 16 different functions. An advanced acoustic telemetry link, using either the latest technology, Direct Sequence Spread Spectrum, or upon request from operator: the traditionally used Frequency Shift Keying. This provides a reliable communication in noisy and reverberant offshore environments and maintains compatibility between new and existing topside control systems.

Acoustic Communication and Control Courses

COURSES AND TARGET GROUP	DURATION	OFFERED REGULARLY IN	OFFERED ON REQUEST
ACS 400 OPERATOR AND TECHNICAL COURSE This course is for subsea engineers, drilling supervisors or other personnel responsible for operation of the portable ACS 400 system	1 day (6 hours) Participants: 8	Not offered regularly	Norway, Horten
ACS 500 OPERATOR AND TECHNICAL COURSE This course is for subsea engineers, drilling supervisors or other personnel responsible for operation of the portable ACS500 system	2 days (12 hours) Participants: 8	Not offered regularly	Norway, Horten
HELICON X3 MAINTENANCE COURSE After completing the course the participants should be able to identify and define the design and functionality of the Helicon X3 control system. The participants will be introduced to operating functions in the system, learn about different alarm situations and what influences they may have on the performance of the vessel.	2 Days (12 Hours)	Ålesund	UK Aberdeen

Autonomous Underwater Vehicle

We deliver Autonomous Underwater Vehicles. HUGIN and MUNIN AUVs provide unmatched subsea survey performance. The combination of market-leading underwater navigation, world-class payload sensors, long endurance and true autonomous behaviour makes HUGIN and MUNIN AUVs the preferred choice for survey companies, navies and research institutions worldwide.

Autonomous Underwater Vehicle Courses

COURSES AND TARGET GROUP	DURATION	OFFERED REGULARLY IN	OFFERED ON REQUEST
HUGIN / MUNIN OPERATOR COURSE This course enables the student to plan, execute, monitor, control and assess a complete HUGIN/MUNIN mission, together with all physical handling and preparations	15 days (90 hours) Participants: 8	Not offered regularly	Norway, Horten and Customers premises
HUGIN / MUNIN FAMILIARISATION COURSE Introduction training for survey/ offshore managers and supervisors, staff personnel, who require an overall but thorough understanding of HUGIN / MUNIN concept of operation and capabilities	3 days (18 hours) Participants: 12	Not offered regularly	Norway, Horten and Customers premises
MUNIN CONVERSION COURSE This course enables the experienced HUGIN operator to operate and perform maintenance on the MUNIN AUV	5 days (30 hours) Participants: 8	Not offered regularly	Norway, Horten and Customers premises
SONAR M3 This course is for users of M3 Sonar	3 days (18 hours)	Not offered regularly	Brazil

Miscellaneous Courses

COURSES AND TARGET GROUP	DURATION	OFFERED REGULARLY IN	OFFERED ON REQUEST
KONGSBERG NETWORKS AND EARTHING COURSE This course is for vessel technicians, instrument technicians and ETO's	1 days (7 hours) Participants: 6	Singapore, UK, Aberdeen	Norway, Kongsberg
YACHT MAINTENANCE COURSE Electrical/electronic engineers (ETO) and maintenance personnel onboard who are involved in the periodic maintenance of the Kongsberg systems	5 days (27 hours) Participants: 6	Not offered regularly	Norway, Kongsberg, Aberdeen, On board
RISER MANAGEMENT COURSE This course is for DP Operators, Subsea Engineers, Electrical/Electronic Engineers, Toolpushers and other offshore personnel who benefit from the use of RMS or require knowledge of RMS	2 days (12 hours) Participants: 9	Norway, Horten, UK, Aberdeen, USA, Houston	Brazil, Canada, Halifax, China, Shanghai, Greece, Athens, Korea, Busan, Norway, Horten, Kongsberg, Singapore, UK, Aberdeen, United Arab Emirates, Dubai, USA, Houston

K-FLEET

K-FLEET Fleet management software (Maintenance, Spareparts, Experience, Budget, Purchase, Provision and Voyage)	2 days (12 hours) Participants: 9	Norway, Horten	The course can be delivered as a customized course and/or at customer site

Non-technical Training

We deliver training to complement technical skills and contribute towards to safety and efficiency. We offer crew resource management training in full scale simulators and classroom lectures focusing on human element and leadership in accordance with IMO model course 1.22 and NMA requirements for BRM & ERM.

We also deliver training courses for maritime instructors and maritime simulator instructors and assessors focusing on efficient teaching, instructions and assessment in accordance with IMO model course 6.09 and 6.10. The training is approved by NMA to meet the requirements in STCW reg. 1/6 section A-1/6.

Non-technical Training Courses

COURSES AND TARGET GROUP	DURATION	OFFERED REGULARLY IN	OFFERED ON REQUEST
TRAINING COURSE FOR INSTRUCTORS This training for instructors is based on IMO Model course 6.09 and approved by The Norwegian Maritime Authority as specified in STCW regulation I/6 and section A-I/6	5 days (30 hours) Participants: 10	Norway, Kongsberg and Trondheim	Brazil, Canada, Halifax, China, Shanghai, Greece, Athens, Korea, Busan, Norway, Horten, Singapore, UK, Aberdeen, United Arab Emirates, Dubai, USA, Houston
TRAINING COURSE FOR ASSESSORS This training for maritime instructors, simulator instructors and assessors is based on IMO Model course 6.10 and approved by The Norwegian Maritime Authority as specified in STCW regulation I/6 and section A-I/6	4 days (24 hours) Participants: 6	Norway, Kongsberg and Trondheim	Brazil, Canada, Halifax, China, Shanghai, Greece, Athens, Korea, Busan, Norway, Horten, Singapore, UK, Aberdeen, United Arab Emirates, Dubai, USA, Houston
SHIP SIMULATOR AND BRIDGE TEAMWORK This training for Deck officers is based on IMO Model course 1.22 and approved by The Norwegian Maritime Authority as specified in STCW chapter II and VIII	5 days (40 hours) Participants	Norway, Trondheim and Kongsberg	

Advisory Services

In KM Advisory Services, we have a proud history of helping our customers succeed with their maritime operations. Within KM, we have a unique combination of operational knowledge and product competence, that we combine with efficient and precise simulation tools. Hence, we can assist our customers with project analysis and support from the initial concept phase throughout the life cycle of an installation or vessel. Our target is to support our customers to ensure safe, efficient, economic and environmental-friendly operations.

REAL TIME SIMULATION STUDIES	WHAT WE DELIVER	CLIENT BENEFIT
NAVIGATIONAL STUDIES AND HARBOUR OPERATION	Harbour procedures and sailing routes With or without tugboat assistance	Testing and verification of harbour layout, docking procedures etc in high fidelity simulator environment.
COMPLEX DP OPERATIONS/SIMOPS	Multiple Vessels manuevering and conducting operations within close proximity	Validation & verfication of policies, procedures and operational plan. Proof of concept.
CONFINED WATERS	Vessel navigation within confined waterways and narrow passages • Halden (Tug assisted transit to Nexans) • Rekefjord (passage on DP)	Vessel specific simulator models. Joint training courses with local pilots.
OFFSHORE LOADING	DP bouy development. Loading concept simulations. Procedural workshops	Visualization of operational steps and field layout. Testing of conceptual ideas. Support from DP and training environment in KM.
CRANE AND LIFTING	Lifting route and blind zones Subsea Crane lift of modules/templates	Risk mitigation. Procedural development and training

OPERATIONAL SUPPORT	WHAT WE DELIVER	CLIENT BENEFIT
HARDWARE IN THE LOOP TESTS	DP control system coupled with DNV-GL simulator for verification of KM hardware and software functionality.	Results from simulations are used as a basis for granting Posmoor ATA notation by DNVGL. Reduced Seatrial period, Reduced downtime during upgrades. Verification of software functionality prior to deployment
DP MODEL TANK TESTS	KM support to shipyards and shipowners during a model tank test to assure that DP is ready for approval by Class.	Tests have been performed at model basins in Korea, Netherlands, Norway and Denmark.
OFFSHORE OPERATIONAL SUPPORT	Decision support and response forecasting for DP operations (onboard or on-shore)	Operational forecast planning and contingency planning
DEVELOPMENT OF OPERATIONAL PROCEDURES, MANUALS AND CHECKLISTS	Documentaion review Workshops Customer support Possibility to extend verification of policies and procedures against realtime simulations based on anylitical study.	Quality assurance of operational procedures. Assistance from objective analytical tools. Revisions of Training Manuals, Checklists and ASOGs

ANALYTICAL SIMULATIONS	WHAT WE DELIVER	CLIENT BENEFIT
VESSEL CAPABILITY ANALYSIS	Static and dynamic capability analysis integrated with K-Pos DP	Results from simulations are used as a basis for granting Posmoor ATA notation by DNVGL. Reduced Seatrial period, Reduced downtime during upgrades. Verification of software functionality prior to deployment
OPERATIONAL SPECIFIC DP STUDIES	Numerical modelling and analysis of vessel and operational elements like: • Cranes • Pipes • Gangway • Mooring • Load • Tension • Risers • Dp settings	Defined operational limits with consideration to CAM/TAM Identify critical tasks or phases Optimal use of the vessel´s DP system Sailing route/track optimazation Operability/ uptime Drift off, drive off and force off data for calculation of disconnection times.
CONCEPT STUDY	Modelling client concept in numerical simulator and perform analysis • Pre-analysis prior to vessel construction • Define thruster requirements based on Class, industrial mission and working area.	Feasibility Proof of concept Ensure vessel design concept in line with industrial mission

Operational Insight Services

Kongsberg Maritime's Analytics and Fleet Operation team can provide a wide range of analytics services aiming to turn operational data into value for our customers.

CUSTOM REPORTING

This service aims to help customer with their specific reporting needs based on available data. This is a tailored add-on service to our existing standardised digital offerings, e.g. Vessel Performance and Health Management.

NEWBUILD AND UPGRADE HYBRIDISATION ANALYTICS

Kongsberg Maritime's Analytics and Fleet Operation team can also provide decision-making support and key data for financial feasibility studies to customers considering hybrid power and propulsion system of their vessel. Actual savings can later be quantified and compared with the predictions.

EVENT ANALYTICS

By analysing logged data from onboard equipment and systems the root cause of unexpected problems and faults occurring during commissioning, sea trial or operation can be identified. Such a service can be especially valuable when settling equipment claims.

HEALTH ANALYTICS

This service aims to support customers plan maintenance intelligently based on the condition of in-service equipment, thus reducing vessel and equipment downtime. By analysing equipment data we can identify equipment degradations, abnormal operation and future risks.

DATA-BASED ADVISORY SERVICES

- Custom Reporting
- Newbuild and Upgrade Hybridisation Analytics
- Optimisation of Ship Performance
- Event Analytics
- Health Analytics

Lifecycle 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 for 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 cost.

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 upgrade solutions

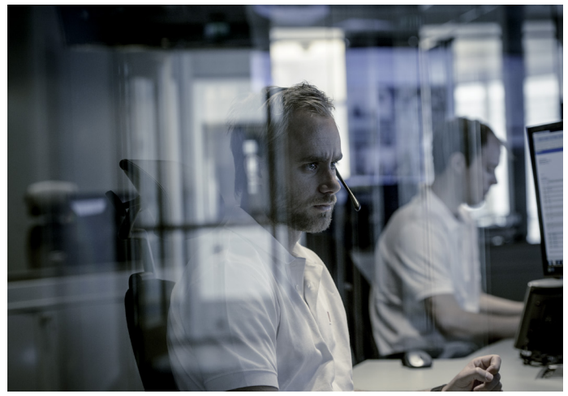
EVERGREEN

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 enabling us to offer upgrades 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 qualified for 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 where 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. KONGSBERG support 24 is a solution designed to give round-the-clock support. For mission-critical operations, KONGSBERG support 24 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

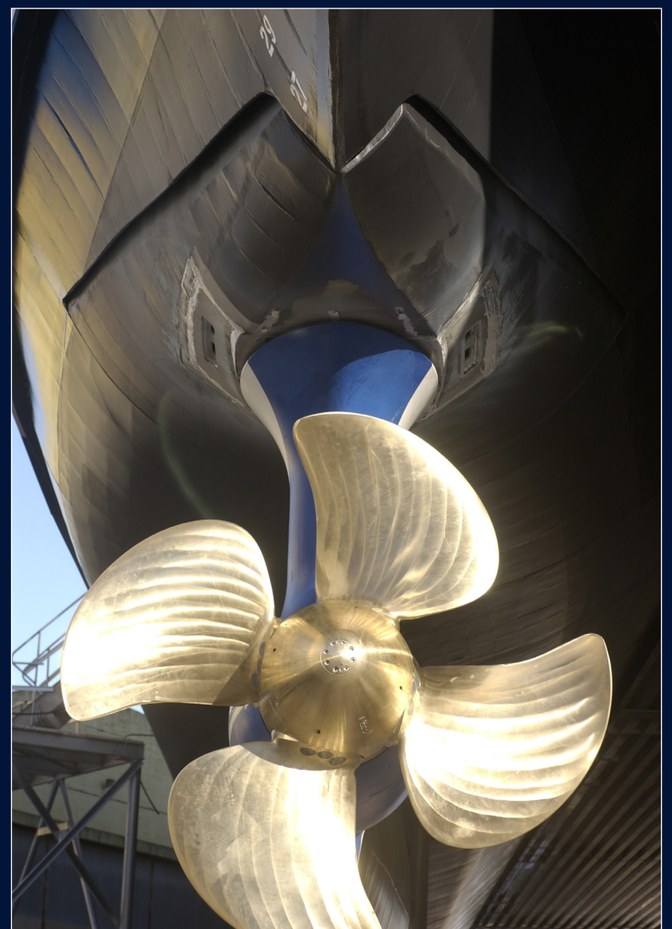
We provide global support from local service and support facilities at strategic locations world wide. Service and support work is carried out under the supervision of your personal account manager, who will ensure that you receive high-quality service and support where and when you need it.

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

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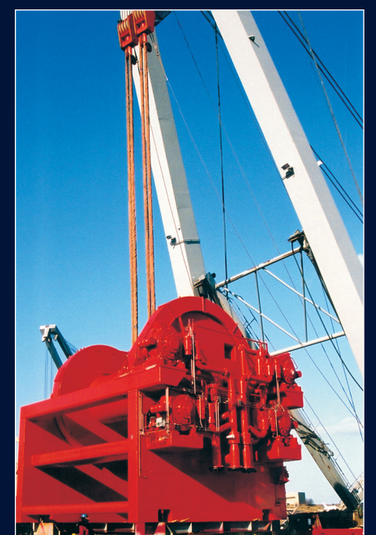
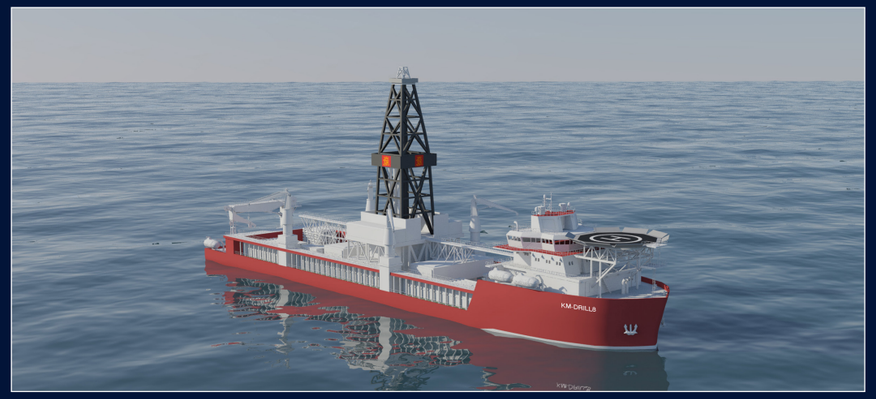



KEEP THIS DOOR CLOSED AT ALL TIME
F


AUXILIARIES
MAIN S.W. SYSTEM
H/F AIR SYSTEM
REFRIG SYSTEM COMPR MOTORS
PROPULSION
PORT
STBD
AUXILIARIES
ELECTRICAL
DAMAGE FIRE
FLOOD
RBCD
IPMS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