



KONGSBERG

Kongsberg Maritime

# K-Sim® DP

Empower DP Training. Enhance Precision. Elevate Performance



Maritime Simulation

# Kongsberg Maritime

## Shaping the maritime future

Kongsberg Maritime is a global leader in sustainable maritime innovation.

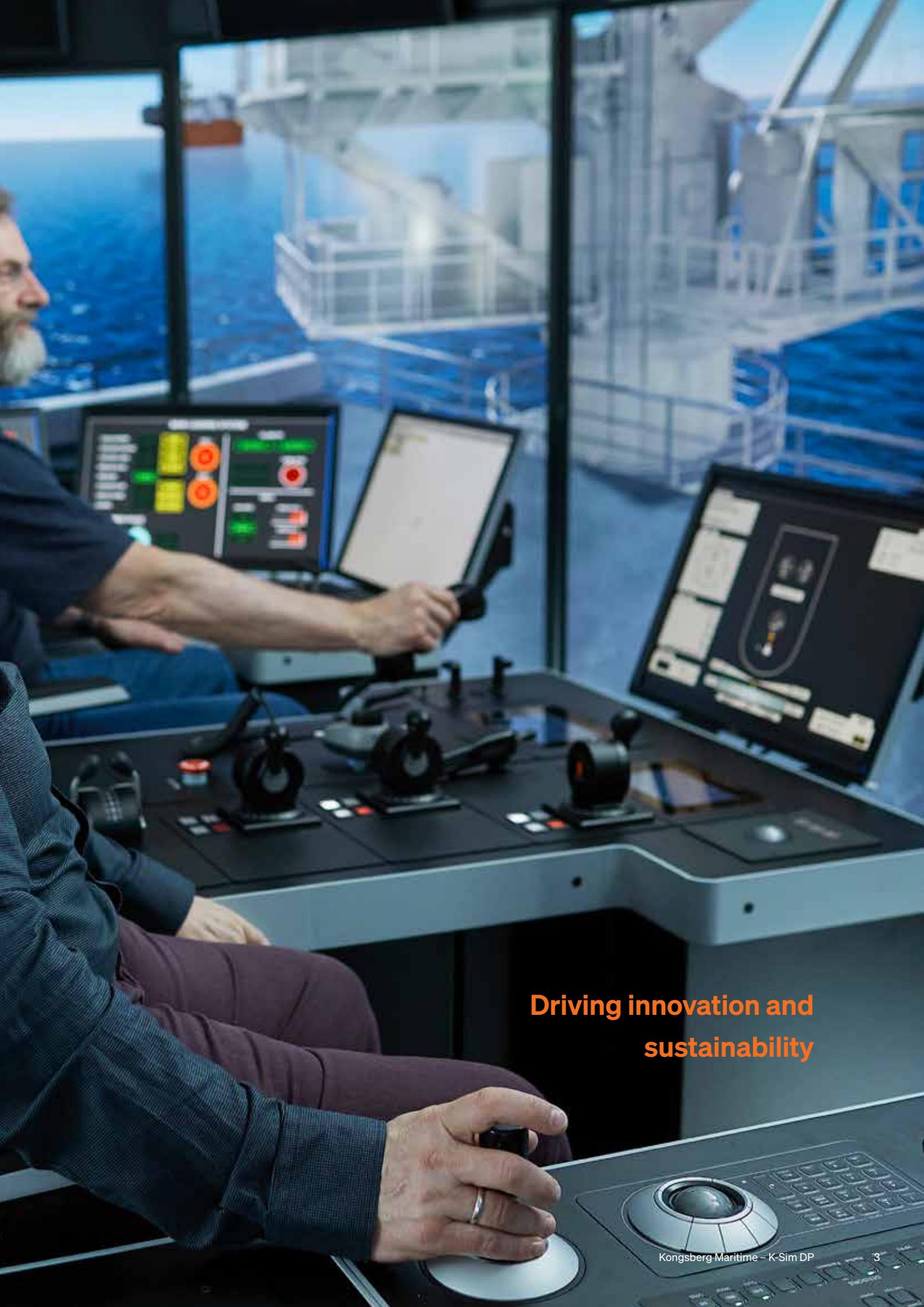
We deliver safe, efficient, and long-term performance across a wide range of ocean space markets - from passenger to cargo, from fishing to complex naval and offshore energy solutions.

With pioneering digital solutions and seamless integration, we help the maritime industry optimise operations, reduce emissions, and move toward a decarbonised future. Our commitment to technological advancements keep us at the forefront of ocean space expertise, driving progress and shaping a greener, more connected maritime world.

Our simulation technology is widely embraced by maritime research and training centers worldwide, serving as a foundational tool for training both students and crew members. Moreover, it supports advanced studies in critical domains such as human factors, fuel consumption, emission reduction, port development, operational verification, digital twins, and the pioneering field of autonomous shipping operations.

[www.kongsberg.com/maritime](http://www.kongsberg.com/maritime)





**Driving innovation and  
sustainability**



Empower your crew with the confidence, and competence needed to operate safely and efficiently in any DP environment — all through the proven performance and reliability of Kongsberg Maritime.

## Where real-world expertise meets realistic simulation

# Empower DP training

### Built on 50 years of DP expertise

With over four decades of experience and more than 4,000 Dynamic Positioning (DP) systems in operation worldwide, Kongsberg Maritime has set the benchmark for DP excellence. This deep-rooted expertise forms the foundation of our K-Sim DP simulator — a fully integrated, next-generation training solution built on the same trusted technology that powers our real-world K-Pos DP systems.

By combining proven hardware, advanced software, and unmatched industry insight, Kongsberg Maritime delivers a complete DP training ecosystem from a single, reliable source.

### Comprehensive DP Training – From Fundamentals to Advanced Operations

The K-Sim DP simulator enables training at every competency level, from beginners to seasoned DP operators, in accordance with DNV and the Nautical Institute's standards. Designed to promote operational safety and efficiency, K-Sim DP provides a highly realistic and risk-free environment where operators can learn, practice, and perfect their skills before stepping onto a vessel.

Through immersive, scenario-based exercises, crews can:

- Master standard DP procedures
- Strengthen communication and teamwork
- Develop situational awareness and decision-making skills
- Build emergency preparedness and response confidence
- Safely practice handling critical and high-stress scenarios
- Pre-simulate demanding offshore operations before deployment

Each session turns potential mistakes into valuable lessons — protecting people, vessels, assets, and the environment.

### Compliant with standards & regulations

- IMCA M117, "Guidelines for Training and Experience of Key DP Personnel"
- DNV's standard DNV-ST-0033, "Maritime simulator systems"
- Nautical Institute (NI) standards for Dynamic Positioning training
- OSVDPA Simulator Standards version 2
- IMCA Guidance on the Use of Simulators; C 014 Rev.4

# DP simulation training solutions

## DP Standards & regulations

K-Sim DP offers exceptional flexibility to meet a wide range of training objectives. The simulator provides the high level of fidelity and realism required for engineering studies, crew training, mission planning, and competency assessment. Complex and challenging DP operations can be safely studied, evaluated, and optimized -reducing operational risk while improving performance.

Kongsberg Maritime delivers several tailored K-Sim DP solutions designed in full compliance with:

- The Nautical Institute's (NI) Dynamic Positioning Accreditation and Certification Scheme Standard, and
- DNV-ST-0033, Maritime Simulator Systems.

Both regulatory bodies define simulator requirements by Class A, B, and C, depending on the system's level of physical realism, equipment configuration, behavioral accuracy, and the operational environment.

We currently offer three levels of DP simulators:

- K-Sim DP Basic - Class C
- K-Sim DP Maneuvering - Class B
- K-Sim DP Maneuvering - Class A

## K-Sim DP Basic - Class C

K-Sim DP Basic is a limited-task simulator designed for instrumentation or blind DP maneuvering, joystick control, and position keeping. Compliant with Nautical Institute and DNV Class C standards, it features:

- K-Pos user interface identical to that on board K-Pos-equipped vessels
- Automatic position-keeping, including position and heading changes
- Follow Target, Autopilot, and Auto Track modes
- Simulated vessel behavior
- Simulated position-reference systems and sensor

- Simulated thruster performance
- Adjustable simulated wind and current conditions

## K-Sim DP Maneuvering - Class B

K-Sim DP Maneuvering – Class B is a multi-task simulator supporting instrumentation or blind DP operations, joystick maneuvering, and position keeping.

It meets Nautical Institute DP Simulator Class NI-B and DNV Class B (DP) requirements and includes:

- K-Pos user interface identical to that on board K-Pos-equipped vessels
- Automatic station-keeping with position and heading change, autopilot, and auto track mode
- Manual joystick operation
- Simulated vessel dynamics, sensors, and thruster performance
- Adjustable simulated wind and current
- Instructor-controlled error and failure settings
- Optional integration with various reference systems and bridge equipment found on offshore vessels
- A 360° visual system enhancing realism and learning outcomes

## K-Sim DP Maneuvering - Class A

K-Sim DP Maneuvering – Class A is a full mission simulator, capable of replicating Dynamic Positioning operations in a highly realistic, fully-equipped ship bridge environment.

Fully compliant with NI and DNV DP simulator requirements, it includes:

- All features of Class B and Class C systems
- A high-fidelity visual system with a minimum 180° (aft) or 210° (forward) horizontal field of view, expandable to a full 360° for maximum immersion and realism



K-Sim DP Basic

K-Sim DP Maneuvering - Class B

K-Sim DP Maneuvering - Class A



### An ocean of training possibilities

Experience limitless training scenarios with K-Sim DP. Featuring a diverse fleet of vessels, advanced navigation aids, realistic geographical areas, and fully dynamic environments with changing weather and time of day, it delivers unmatched realism and flexibility for DP training.



The K-Sim DP system can be easily expanded with hardware and software to form a complete K-Sim Offshore simulator. Its flexibility allows adaptation to evolving training needs, unlocking a variety of new training possibilities.

## Provide DP training courses which are Compliant with DP standards

### DP training possibilities

K-Sim DP supports operations, testing procedures, competence-building, and error reduction in demanding DP operations.

### DP offshore training scheme:

- DP induction course: requires a NI-C DP simulator (max. two students per console).
- DP simulator course: requires a NI-A or NI-B DP simulator (max. four students per simulator).
- Sea-time reduction course: requires a NI-A full mission DP simulator; completion counts as 30 days' sea-time on a DP vessel.
- Revalidation course: requires a NI-A or NI-B DP simulator; enables DPOs with insufficient sea-time to revalidate their NI DPO certificate.

### Shuttle tanker training scheme:

- DP Induction course: requires a NI-C DP simulator (max. two students per console).
- DP simulator course: requires a NI-A or NI-B DP simulator (max. four students per simulator).
- Shuttle tanker training course B: requires a NI-A full mission DP simulator.

DNV DPO training scheme includes training and competency assessment with extensive use of simulators, per DNV-RP-007 and DNV-ST-0023.

Our DP Simulators are certified by DNV under DNV-ST-0033 (Maritime simulator systems).

DNV-Certified training providers can offer course like:

- DPO Start
- DPO Experience
- DPO Specialization shuttle tanker/offshore loading
- DPO Specialization advanced operations
- DPO Specialization rig

DNV-Certified test centers provide:

- DPO Cert. Exam. shuttle tanker/offshore loading
- DPO Cert. Exam. advanced operations
- DPO Cert. Exam. rig

With Kongsberg Maritime's full mission DP simulator, shuttle tanker training in accordance with Norwegian and UK WR2394 training requirements can be offered by qualified training centres.



The K-Sim DP system can easily be expanded with hardware and software to form a complete K-Sim Offshore simulator. Its flexibility allows adaptation to evolving training needs.

## Configuration and integration flexibility

# Optimise the learning experience

### The world's most advanced simulator

K-Sim DP simulators are designed to build competence and train best practices for demanding operations. They integrate an advanced physics engine and hydrodynamic modeling, ensuring vessels, objects, and equipment behave realistically—essential for training that adapts to real-life operations.

### Equipment and configuration

K-Sim DP Maneuvering includes a dual redundant K-Pos DP operator console, dual redundant DP controller, and an independent joystick system. These connect to an instructor station with dedicated functions to control vessel settings and introduce faults. Realism is further enhanced with a visual scene and additional bridge equipment, enabling procedural training and new course types.

### Realistic simulation

The K-Sim DP Maneuvering simulator includes a K-Sim Navigation or K-Sim Offshore simulator with RADAR/ARPA, ECDIS, up to 360-degree visuals, a DP class 2 redundant K-Pos system including a joystick system.

Available as either an aft- or forward bridge, it can fully integrate with Kongsberg Maritim's position reference systems, third-party products, and standard offshore bridge equipment.

### Reference systems

Position reference systems are crucial for DP training. K-Sim DP models come with various reference systems and interface with both real onboard systems and emulated software solutions. Below is an overview of available reference systems for different models.

### Power Management System

Understanding the Power Management System (PMS) is vital for DPOs. K-Sim DP offers a comprehensive PMS for advanced offshore vessel and rig models, allowing DPOs to monitor systems and practice response to power failures. A blackout of electrical power to thrusters or control systems is critical, making training in proper procedures essential. The K-Sim DP instructor can act as an engineer, introducing errors, unexpected loads, or partial or full blackouts to enhance training realism.

## Simulation of offshore operations

K-Sim simulators support training on specific operations including HAZOP/HAZID, concept studies and engineering. It can be used to test procedures, and competency development to minimize errors and reduce incident costs during DP operations.

Examples of extensive DP training realistically simulated:

- Offshore loading (FPSO/FSO tandem, buoy-loading CALM, OLS, SAL)
- Loading and tug assistance
- Offshore supply and construction operations
- Subsea and dive support
- Semi-submersible/drilling vessel station keeping
- Emergency maneuvering



K-Sim DP simulators provide training for most types of DP vessels including supply vessel, anchor handler, subsea, Inspection, Maintenance and Repair (IMR) vessel, wind turbine installation vessel (WTIV), shuttle tanker, drillship and semi-submersible rig. Additionally, we can offer customer-specific ship models with corresponding DP. Here are some examples:



### Kongsberg Challenger II

The simulated vessel model is a multipurpose Inspection, Maintenance & Repair Vessel. The vessel is developed according to IMO DP Class 2, with an option to upgrade to class 3 if requested. Reference systems included: DGPS, HPR/HIPAP, RADiUS, Light Taut Wire and Fanbeam



### Kongsberg Britannia II

The simulation model is a crude-oil DP shuttle tanker designed for IMO DP Class 2. It can operate in three loading operations: tandem loading, single point mooring and a principle submerged loading system. Reference systems included: DGPS, Rel DGPS (DARPS), HPR/ HiPAP, RADiUS, Fanbeam and Artemis



### Kongsberg Alpha Semi II

This is a simulated deep-water semisub drilling rig model. The model is designed for IMO DP Class 2, but can include Posmoor ATA and be upgraded to meet IMO DP Class 3. Reference systems included: DGPS, Light Taut Wire and HPR/ HiPAP



With the K-Sim Instructor system, monitoring, assessment and debriefing have never been easier.

## Provide objective assessment with our **Powerful instructor system**

The K-Sim DP Instructor System is designed with the user experience at its core, providing instructors with a powerful, efficient, and intuitive platform for designing, controlling, and assessing customized training exercises for individuals and teams.

### Key features

- Customisation of menus and pages for enhanced flexibility and user experience
- Configuration of student stations to define what information should be accessible and visible
- Easy-to-use route preparation and validation
- Modified ECDIS chart as a starting point for easy creation of a geographical area for the exercises
- Intuitive drag-and-drop function for selection of all exercise variables, including ship models
- Advanced Seagen GIS (Geographical Information System) tool for third party data import of currents, tides, waves and winds to create optimum realism
- Control of simulator actions derived from initiated variables and malfunctions e.g., extreme weather or power blackout.

- Guidance and feedback possibilities through triggers and e-coach messages during the exercise
- Underwater view to observe hull/seabed interaction, chains, wires and anchors

### Assessment and debriefing

All activity during the simulation is automatically recorded. Review and debrief sessions can include replaying selected segments or the entire exercise, allowing instructors to focus on specific learning objectives and performance outcomes.

### Unique 'resume' functionality

A unique 'resume' feature allows any exercise to be paused, resumed, or rewound at any time. If a student encounters difficulties, the instructor can pause the simulation to provide immediate guidance, continue, or return to an earlier point in time to replay and reinforce critical operations.

# Life Cycle Support - stay updated!

## Built for purpose – supported for life

At Kongsberg Maritime, we don't just deliver advanced simulation systems—we support you every step of the way. Our Life Cycle Management services guide customers from initial design and installation to long-term operation, ensuring optimal system performance over time.

With deep in-house expertise in both system design and user operations, we develop purpose-built solutions that enhance efficiency, adaptability, and long-term value.

## Flexible, future-proof design

K-Sim DP systems are engineered with maximum flexibility, allowing easy upgrades and the addition of new functions or control segments. This modular design ensures your simulator evolves with your training needs—step by step.

## Why choose Kongsberg Maritime?

- High system reliability
- Cost-effective life cycle support
- Simple, scalable upgrade paths
- World-class customer support

## Long-Term System Support Program

Our Long-Term System Support Program (LTSSP) offers tailored service packages to keep your system up to date and fully operational. Choose from Priority Support or Premium Customised Care, depending on your needs. Both options ensure peak system performance and peace of mind—so you can focus on delivering top-quality training.

## Instructor & technical training

Your people are your most valuable asset. We offer modular and customized training programs for instructors and technical personnel to ensure they get the most from your K-Sim DP system. To support you in accreditation and certification of your DP instructors according to NI DP accreditation and certification standard, we are also proud to offer comprehensive training and assessment programs for DP instructors.

**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 a favorable lifecycle expenditure.**



# We empower the future of maritime training

Please contact us if you would like more information about our K-Sim DP Simulator Solutions. **We are here to support you.**

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