KONGSBERG

Kongsberg Maritime

K-Sim® Engine

Empower the future
of maritime training

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 committment to technological advancements keep us at the forefront of ocean space expertice, 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

Driving innovation and sustainability

Training in engine room operations with K-Sim Engine's interactive 3D platform, BigView

Empower the future of training

As a global leader in ship automation and control systems, Kongsberg Maritime understands the maritime industry's evolving training needs. Our K-Sim Engine simulators are built on in-depth system knowledge and extensive research—delivering optimal solutions for present and future maritime training.

Supports safer, smarter and greener vessel operations

K-Sim Engine sets a new standard in maritime education by building real-world competence through advanced simulation. It offers a structured, hands-on approach to mastering basic as well as complex engine operations—enabling students to isolate systems, repeat critical tasks, and sharpen decision-making skills in realistic scenarios.

By training for both everyday routines and high-pressure emergencies, students learn to reduce fuel consumption and emission, improve efficiency, and operate safely.

Through the use of advanced physical models and real-time simulation, K-Sim Enigne provides knock-on effects across subsystems reinforcing cause-and-effect learning.

Combining high realism with user-friendly, flexible operation, K-Sim Engine gives instructors greater control and enables a wide range of training scenarios—meeting the demands of shipowners and maritime training centers worldwide.

Fulfilling training requirements

K-Sim Engine exceeds requirements in IMO's STCW convention. regulation 1/12 and DNV's Standard DNV-ST-033 for maritime Simulator Systems.

With K-Sim Engine, the next generation of marine engineers gains the skills, confidence, and experience needed to drive safer, greener, and more efficient vessel operations.

Extensive simulator model library

High fidelity models for realistic training

The K-Sim Engine product family features a wide range of high-fidelity engine models, each designed as a dynamic real-time process simulator based on authentic engine physics and manufacturer specifications. This ensures that all operational sequences follow correct timing and logic—crucial for understanding real-world systems and behavior.

Our extensive model library includes a variety of engine types: high, medium, and slow-speed diesel engines such as MAN Diesel, Wärtsila, Pielstick, MaK, and MTU, gas turbine, diesel-electric, water jet, and steam propulsion.

The model library includes:

Low-speed engine models:

- ERS L11 MAN 6S70ME-SCC
- ERS L11 MAN B&W 5L90MC VLCC - V
- ERS L22 LNG Carrier MAN ME GI
- ERS L11 PCTC MAN ME GI
- ERS L11 Wärtsila RT Flex Container Vessel

Medium/high speed engine models:

- ERS M22 Pielstick 10PC4 Ferry-IV
- ERS M22 MaK 6M453C River
- ERS M11 MaK Navy
- ERS M11 Trawler
- ERS M42 AHTS
- ERS M11 CNTR
- ERS H22 MTU Waterjet, Ferry
- ERS H43 MTU Waterjet, Corvette

Steam turbine engine model:

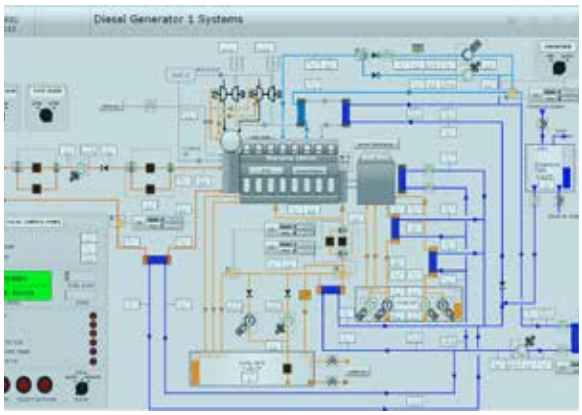
- ERS SP-Dual Fuel, turbine ship

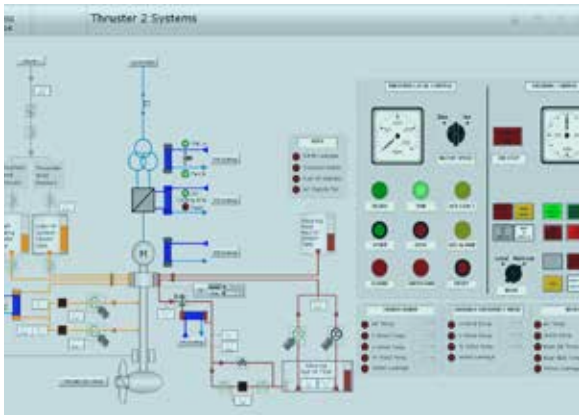
Diesel Electric engine models:

- ERS DE 22 AC-AC Cruise Vessel - |||
- ERS DE 21 Dual Fuel LNG Carrier
- ERS DE 32 Landing Helicopter Dock
- ERS DE 88 Semi Submersible Drilling Rig
- ERS DE 66 Drill Ship
- ERS DE 42 Landing Ship Dock
- ERS DE 42 Dual Fuel LNG Cruise Ferry
- ERS DE 42 Dual Fuel Cruise Ferry - ||
- ERS DE 42 Dual Fuel CPV Hybrid

Special task models:

- GE LM 2500 30, gas turbine trainer
- TPP Steam Driven Shore Based Power Plant





Images: Different engine views and process mimics of various models in the engine model library

Optimise the learning experience

At Kongsberg Maritime, we're committed to making high-quality maritime training accessible. That's why K-Sim Engine offers unmatched flexibility—from affordable PC-based desktop setups to fully immersive full mission simulators with real ship equipment and custom panels including several detailed 3D solutions.

Flexible simulation solutions for every budget

Our desktop systems are perfect for engineering and process training, while our full mission configurations replicate the complete engine room and control room experience, providing hands-on familiarity with real ship-board operations. With our cloud-based K-Sim Connect platform, students can access simulation-based training remotely—anytime, anywhere—making it easier than ever to integrate high-quality learning into any curriculum.

Tailored to your needs

K-Sim Engine is fully customisable. Interactive mimic panels, consoles, and monitor-based local stations can be configured in any combination to match your specific training requirements. To learn/train on different engine types, our systems support interchangeable switchboards and touchscreen consoles, enabling fast changeovers and broader course offerings—without large hardware investments.

Realism that delivers results

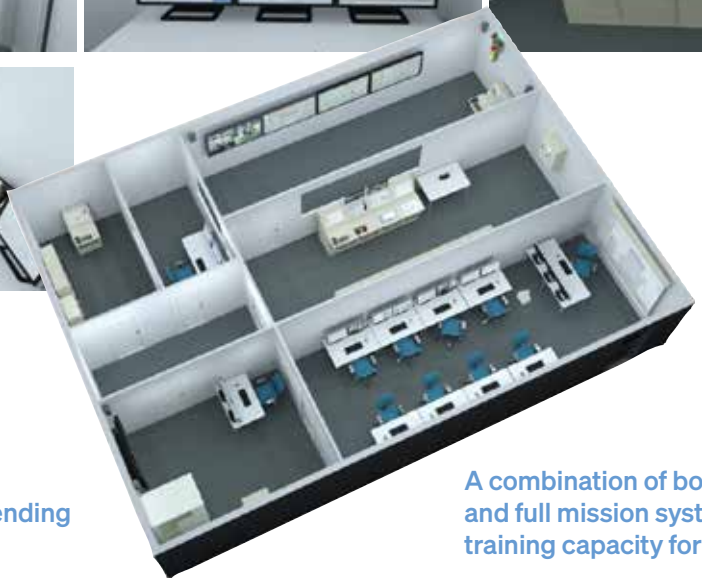
The full mission simulator delivers an authentic ship-board environment, complete with dynamic engine room sounds, alarms, and equipment behavior. From engine speed variation to pump operations, every detail is designed to replicate real-life conditions—ensuring your students train in a highly realistic, immersive setting.

ENGINE ROOM

INSTRUCTOR ROOM

ENGINE CONTROL ROOM

DESKTOP SYSTEM



Different configurations and solutions are available depending on training requirements.

A combination of both desktop and full mission systems enables training capacity for any level.

Skills Transfer

The leading objective for simulator training is to understand and operate the entire engine room system in a safe, timely and cost-effective manner.

Whether you choose a full mission or desktop version of the K-Sim Engine, your students or employees will learn a vast array of skills thanks to the pedagogical values and high fidelity realism that K-Sim offers.

Typical basic operational training for junior officers:

- Preparing for getting underway
- Maneuvering to open sea
- Steady steaming
- Approaching harbour
- Finishing with engine
- Operation of auxiliary boilers and cargo turbines

Typical advanced operational training for senior officers:

- Failures and Emergencies
- Team training
- Fault diagnosis and tracking
- Crisis management
- Restoring to normal operation

Typical economy/optimizing studies for senior officers:

- Fouling & wearCombustion performance
- Control loop optimizing
- Heat balance/recovery
- Variable pitch
- External conditions

"As an instructor, K-Sim Engine allows me to develop standardised exercises and assessments that monitor the student's progress, providing evidence of successful completion. The system also enables me to develop exercises on the go, providing 'just in time' training and to disseminate the training individually or to desktops connected as a group."

- Jeff Smith, Senior Marine Engineering Instructor, BAE Systems Australia.

"Working with the K-Sim Engine Instructor system really is a pleasure. It is fast to create exercises, but at the same time you can adjust even tiny details, making the scenarios highly realistic, and enable us to test both the technical skills and human factor abilities of the experienced course participants."

- Per Larsen, Instructor, Maritime Department, Maersk Training

3D Virtual Simulation Systems

Immersive familiarisation with 3D technology

Kongsberg Maritime enhances the learning experience with the latest 3D technology, helping students gain a deep understanding of engine room layouts, equipment, and operations.

Our 3D virtual systems are ideal for familiarisation training, giving users a realistic sense of the engine room's complexity. Since key components—like valves and pumps—can be difficult to access in real life, the system emphasises communication, time management, and case planning in a virtual environment that mirrors actual onboard conditions.

Tailored 3D solutions for any training need

KONGSBERG offers three scalable 3D solutions to match different training goals and environments:

- BigView – Interactive mimic system with 3D pop-up displays
- 3D Virtual Walkthrough – classroom edition
- 3D Virtual Walkthrough – full mission simulator Edition

BigView with 3D pop-up display

BigView is an advanced interactive mimic system displaying K-Sim Engine model process diagrams on large HD monitors with touch functionality. The interactive mimic includes a 3D pop-up display of vital parts of the engine room, where students can familiarise and operate equipment found onboard.

3D virtual walkthrough

This immersive application lets students explore the engine room in full 3D, complete with realistic subsystems such as boilers, compressors, pumps, pipes, and coolers. Trainees can operate equipment directly within the virtual space, replicating real-world tasks in a safe, interactive setting.

Surveilance camera

Simulated CCTV views allow students to monitor key areas like the funnel, main engine, and generator spaces—observing exhaust and realistic effects such as oil leaks, fire, blackout, and water mist release.

Photo on top: K-Sim Engine for classroom with 3D virtual displays.

Photos 2-3: Student and crew operating equipment through the pop-up displays in BigView interactive mimic system.

Photo 4: 3D Virtual walkthrough application

High Voltage training module

To meet revised STCW requirements, Kongsberg Maritime offers a High Voltage (HV) training module for selected K-Sim Engine models. It enables students to safely practice isolating and removing main circuit breakers, and trains them in the correct use of interlock keys and safety systems.

By combining simulated operations with real switchboard hardware, the module delivers realistic, hands-on training that mirrors actual onboard procedures—boosting safety awareness and ensuring full compliance with international standards.

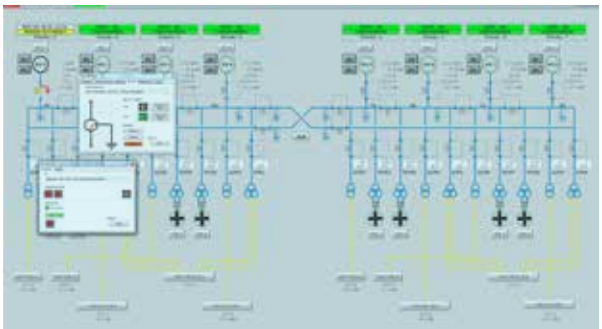
Provide familiarisation to the real systems used onboard

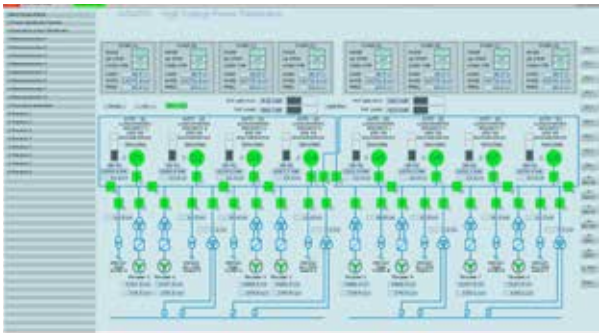
Integrated Automation Systems (IAS)

Every K-Sim Engine model includes a fully functional Integrated Automation System (IAS) interface, offering realistic training in remote control and monitoring of vital shipboard systems, including:

- Power management
- Auxiliary machinery control
- Ballast/bunker monitoring and control
- Cargo monitoring and control
- Alarm handling
- Trend systems

ControlView our proprietary IAS for K-Sim Engine, is based on the advanced HMI standard used in Kongsberg Maritime's market-leading K-Chief systems. It provides a realistic interface that mirrors actual onboard operations. K-Sim Engine also supports full integration with real K-Chief and AutoChief systems, offering the highest possible level of operational realism.





Facilitate advanced crew training

Integrated crew training for safer and smarter operations

Training the entire crew in a shared scenario offers powerful benefits. Teams that practice together are more likely to communicate effectively, collaborate under pressure, and reduce the risk of human error—especially in advanced or emergency situations.

Thanks to its flexible architecture, K-Sim Engine can be integrated across multiple Kongsberg Maritime simulation platforms, including K-Sim Navigation and K-Sim Offshore, creating highly realistic, cross-functional training environments.

A unified system - a stronger crew

The integrated solution enables comprehensive training with a focus on:

- situational awareness
- interaction and team-work
- interpersonal communication
- leadership and decision making

By combining simulator systems, training centers can deliver Crew Resource Management (CRM) exercises that mirror real-life operations—enhancing crew performance, strengthening teamwork, and improving safety at sea.

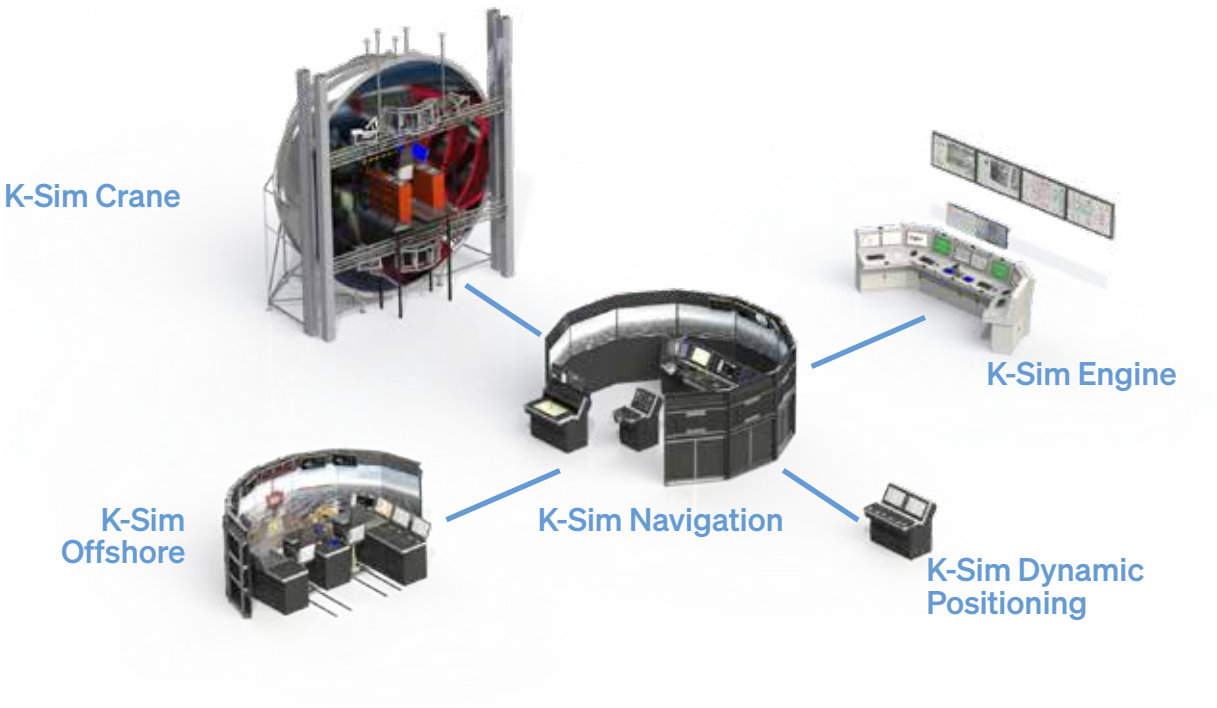
"Maersk Training has a close and professional long-term relationship with Kongsberg Maritime, which for decades has delivered highly realistic simulators, including customer-specific models. Because of this, it was natural to choose K-Sim Engine when we decided to add engine room simulators to our facilities.

Due to the growing complexity of Dynamic Positioning (DP2 and DP3) in drilling and offshore vessels and the zero room for errors due to the environmental and economic impact, the opportunity for both new and experienced offshore personnel to practice emergency situations is crucial to safety.

With the new K-Sim Engine models customized for offshore rig & vessel training (DE-88, DE-66 and M-42), we are able to offer our high-end customers a training environment identical to what they will experience on board. Features like the sophisticated Power Management System, new Integrated Automation System and interface to DP and K-Sim Offshore are a big leap forward in taking safety and efficiency to the next level."

- Per Larsen, Instructor, Maritime Department, Maersk Training

Integrated training possibilities



The Instructor have the full overview of the student exercise from the instructor room

Provide objective assessment with our

Powerful Instructor System

The monitoring, assessment and configuration tool for our K-Sim Engine training solutions has been designed to enhance the quality of simulation training by providing complete, intuitive and userfriendly control of student exercises.

K-Sim Instructor enables the instructor to develop customised exercise modules for individuals, teams or a combination of both from any PC running the application, with fully controllable areas such as:

- Initial Condition – describes all the variables at the start of the exercise
- Triggers – a combination of events that initiate an Action, e-Coach message or assessment
- Actions – derived from input variables and malfunctions, which can be initiated instantaneously, or preprogrammed as part of the exercise
- e-Coach messages – an electronic guidance and performance feedback system
- Student Station Configuration – define what information is accessible and visible to students
- Assessment – monitor and assess alarms, and any of the many variables in the simulation models

Recording of all activity during the simulation exercise takes place automatically and review/debriefing can include the replay of parts of or the entire exercise in order to focus on specific learning objectives.

A unique 'resume' functionality also enables an exercise to be stopped and started at will. If a student begins to have problems or fails in a particular operation, the instructor can pause the simulation to give guidance or advice and then resume the exercise. The instructor can also go back to any earlier point in time and restart from there.

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

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 Engine 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?

- 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 training programs for instructors and technical personnel to ensure they get the most from your K-Sim system—maximising safety, efficiency, and training outcomes.

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.


KONGSBERG

We empower the future of maritime training

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

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