Simulation and Training Solutions
Wärtsilä Simulation & Training Solutions

Bringing Technology, Expertise and Content Together

Wärtsilä Simulation & Training solutions connect maritime stakeholders by providing integrated solutions and high quality content that bridges the gap between STCW and required level of competency.
Wärtsilä steps up to the challenges of providing training in a digital world characterised by increased emphasis on learning methods that accommodate flexibility and collaboration. Wärtsilä Simulation and Training solutions are built from the ground up to train and prepare seafarers of the future. They offer micro-learning, enabling education anytime from anywhere, personalized training and e-learning supported by remote tutoring. They offer gamification of training, drawn from real-life situations and virtually recreated, to make it more engaging for individual learning or for building team skills in multi-player mode. Furthermore, new content distribution technologies allow these solutions to reach seafarers on every platform, with options for virtual, augmented and mixed reality.

**COMPLETE SOLUTIONS**

Wärtsilä supports training providers throughout the whole process:
- Training need analysis (TNA)
- Selecting the right simulation technology
- Design of training facilities; consultancy on infrastructure works
- Turnkey project management and deployment
- Customised development for specific applications
- Train-the-trainer courses
- Certification support
- Customised maintenance and support services
- Courseware and training content development and delivery

**SCALABLE SIMULATORS**  
for training and certification of seafarers on all types of vessels

**CLOUD SIMULATION SOLUTION**  
lets users access simulators and other training content and applications online anywhere anytime

**TOTAL SHIP CONCEPT** connects the bridge with the engine room to allow training in the communications skills required in real life

**e-TUTOR** automated evaluation and assessment system for simulator control and reporting

**INTEGRATED SOLUTIONS**  
knowledge exchange and crewing service

A wide range of own **TRAINING COURSES** covering different maritime domains

**MORE THAN 5500 MARINE SIMULATION SYSTEMS IN 91 COUNTRIES**

**45% OF THE MARINE SIMULATION MARKET**
NAVIGATIONAL and GMDSS Simulation & Training Solutions

TRAINING TO STCW AND BEYOND

**ECDIS SIMULATOR** allows for STCW 2010 compliant ECDIS training, meeting the latest IEC and IHO requirements.

**ICE NAVIGATION SIMULATOR** is used for training on vessel operations in cold weather, meeting the requirements of the Polar Code.

**OFFSHORE SIMULATION SOLUTIONS** are designed for training in Dynamic Positioning, Anchor Handling, Oil Spill Response, and Remotely Operated Vehicle operations.

**SAR OPERATIONS SIMULATOR** enables practice for search and rescue operations involving rescue boats, helicopter support and coordination with shore authorities even in the most adverse weather conditions.

**DP SIMULATOR** allows for The Nautical Institute approved Dynamic Positioning training focused on operational procedures for adverse events, which are too complex and dangerous to train at sea.

**SURVIVAL CRAFT SIMULATOR** delivers a solution that prepares seafarers for multiple possible scenarios that can occur during lifeboat drills.

**ECOLOGICAL SIMULATOR** educates seafarers on the relationship between fuel consumption and emissions, and implications for vessel operation and compliance with international regulations.

**DP SIMULATOR** allows for The Nautical Institute approved Dynamic Positioning training focused on operational procedures for adverse events, which are too complex and dangerous to train at sea.

**TUG SIMULATOR** provides users with effective tools for both ship assistant training tasks and professional training in tug and barge operations.

**NAVAL APPLICATIONS** provide procedural and operational simulation training for navies and coast guard authorities.

**FISHING SIMULATOR** allows for training in basic fishing processes, vessel manoeuvring and acoustic device handling.

**GMDSS SIMULATOR** imitates ship-to-ship and ship-to-shore communications using simulated terrestrial and satellite communication systems.
TECHNOLOGICAL Simulation & Training Solutions
BASED ON THE ADVANCED TECHSIM PLATFORM

ENGINE ROOM SIMULATOR is built to train and assess the competence of engine department personnel, including officers in charge of an engineering watch, second and chief engineers and ratings.

HIGH VOLTAGE TRAINING BREAKER is a solution for training marine engineers in electrical systems, which replicates the functions and operation of a real hardware high voltage generator breaker cabinet.

ERS can provide a replica of a vessel’s machinery and engine control rooms, accurately simulating their function down to every detail.

SHIP ENERGY MANAGEMENT SIMULATOR trains watchkeeping personnel in techniques for monitoring vessel energy consumption and best practice for making continuous improvements leading to energy savings.

ERS allows ship compartments to be recreated as a virtual reality model, in which the user controls an avatar to move between operation posts and perform job functions.

LIQUID CARGO HANDLING SIMULATOR enables the training and competence assessment of crew working on liquid cargo tankers, gas carriers and shore terminals, as well as other staff responsible for the safe cargo handling operations and auxiliary equipment.

ERS hardware can be both REAL DEDICATED PANELS and VIRTUAL PANELS, or a combination of both.

The ship model can be changed in one click, allowing several ship types to be simulated within the same FULL MISSION INFRASTRUCTURE.

SAFETY MANAGEMENT AND CONTROL SIMULATION teaches personnel responsible for the safety of cargo, personnel and equipment, emergency procedures for preventing fires, flooding and other incidents.
Simulator Development Tools

R&D SUITE FOR QUICK AND ACCURATE MODELLING

**MODEL WIZARD 3D DATABASE EDITING TOOL** for the development and modification of high-quality marine simulation area databases and ship models

**VIRTUAL SHIP YARD SOFTWARE** for developing and editing ship motion, engine and propulsion models, as well as controlling and documenting the results

**SHIP MODEL TOOLKIT** for real-time hydrodynamic ship motion simulation for external software applications

**SEAGULL 3D VISUALIZATION TOOLKIT** for developing real-time 3D applications that realistically simulate the sea surface, wave and wind force and direction

**SHIP MODEL LIBRARY** today contains more than 600 highly realistic and mathematically accurate virtual models of a wide selection of ships. Our catalogue is continually growing

**SAILING AREA LIBRARY** covers nearly all important shipping areas, straits and ports of call, as well as extensive sections of inland waterways

**CARDINAL SOFTWARE** for 3D current analysis and forecasting in support of specific consultancy or R&D projects

Simulators can function as an effective tool for research and feasibility studies for designing ports, channels and terminals etc, thanks to their highly accurate MATHEMATICAL MODELLING
Simulation & Training in a Shared Environment

HIGH QUALITY TRAINING ON LAND OR AT SEA

**IMPROVED INTEGRATION** between training schools, ships and shore based fleet operation centers

**SYSTEM-SPECIFIC TRAINING** available direct to the ship enabling immediate familiarisation for new crew

Scenarios run on simulators using REAL SHIP TRAFFIC CONTROL, SHIP SPECIFIC AND OPERATIONAL DATA

Cloud-based access to high quality professional DEVELOPMENT, CONTENT AND EXPERTISE anywhere, onshore or onboard

Real-world data CONTINUOUSLY ADJUSTS SHIP MODELS AND SCENARIOS within the simulation environment

Real-time ship data can be utilised for PREDICTIONS and REHEARSAL SIMULATION

Seafarers gain the CRITICAL CORE COMPETENCES that enable SUPERIOR DECISION-MAKING, ENHANCED SAFETY in everyday operations

Shore-based staff can simulate and analyze scenarios to offer ADVICE & SUPPORT to the ship before, during and after challenging operations

Simulators can be interlinked to provide TRAINING AND ASSESSMENT FOR MULTIPLE CREW ROLES working together

As part of the DECISION-MAKING PROCESS, Simulation & Training are employed to OPTIMISE processes and to enable more integrated way of working
Training Courses

HIGH QUALITY TRAINING CREATES HIGH QUALITY SEAFARERS

- Engine Control Room Full Mission Simulator
- Specialised Shiphandling Training
- Part-Task Navigational Bridge
- Instructor Workstations
- Flight Deck Operations
- Outsourced Training
- Survival Craft
- Classrooms
- Ship Traffic Control
- Ice Navigation Training
- Machinery Control Room
- Bridge Resource Management
- Human Element Leadership & Management
- Specific and Bespoke End-User Training
- Simulation and Training Solutions
- Navigational Simulation Facility
- Full Mission ASD Tug Bridge
- Part-Task Mini-Tug Bridge
- Local Operation Posts
- Fleet Operations
- Ship
- Techsim Facility
- High Voltage Courses
- Incident Response Training
- Engine Resource Management
- Ship and Tug Handling Simulators
Wärtsilä is a global leader in smart technologies and complete lifecycle solutions for the marine and energy markets. By emphasising sustainable innovation, total efficiency and data analytics, Wärtsilä maximises the environmental and economic performance of the vessels and power plants of its customers.

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