

# Simulation and Training Solutions





**STANDARDS AND REGULATIONS**

STCW | IMO | Class | International Standards | International Regulations | Maritime Administrations

**TRAINING INSTITUTIONS**

- Maritime Schools
- Training Centres
- Pilot Associations
- Fleet Operations Centres
- Shipping Companies
- Port Authorities
- Oil and Gas Companies
- Governmental Authorities
- Navies and Coast Guards

**REQUIRED COMPETENCY LEVEL**

**WÄRTSILÄ SIMULATION AND TRAINING SOLUTIONS**



Simulation



Training



Quality Content Development




Database and Scenarios




Integrated Solutions


**TECHNOLOGICAL PLATFORM**



Technology



Content



Expertise

# 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.



**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



## DRIVING PROGRESS IN MARITIME SIMULATION AND TRAINING

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



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

**45 % OF THE MARINE  
SIMULATION MARKET**

# NAVIGATIONAL and GMDSS Simulation & Training Solutions

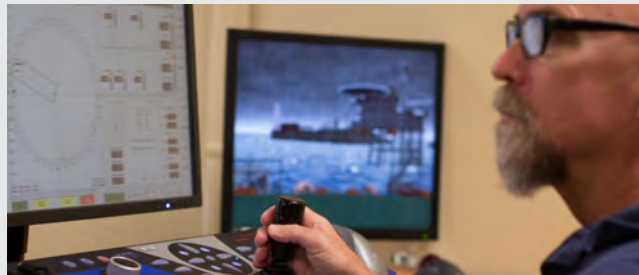
## TRAINING TO STCW AND BEYOND



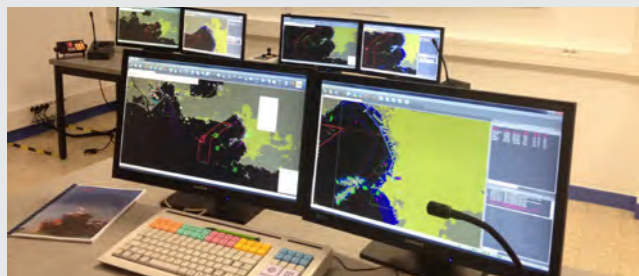
**ECDIS SIMULATOR** allows for STCW 2010 compliant ECDIS training, meeting the latest IEC and IHO requirements



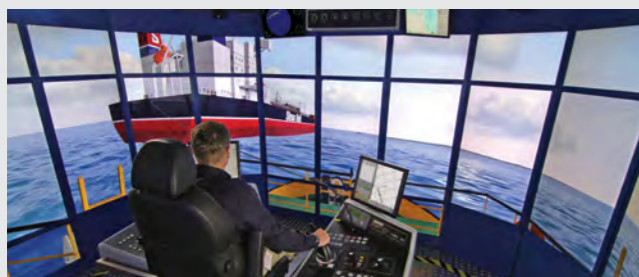
**OFFSHORE SIMULATION SOLUTIONS** are designed for training in Dynamic Positioning, Anchor Handling, Oil Spill Response, and Remotely Operated Vehicle operations



**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



Full-scale **VTS SIMULATOR** allows the provision of IALA V-103 training in a realistic environment

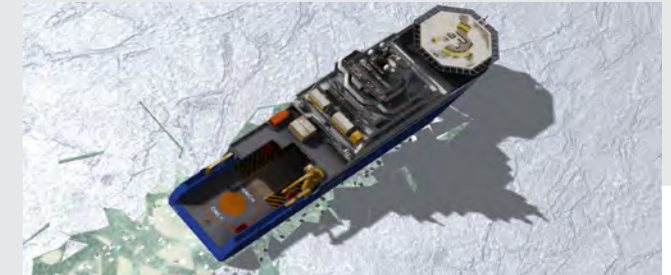


Fully integrated **TUG SIMULATOR** provides users with effective tools for both ship assistant training tasks and professional training in tug and barge operations



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

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



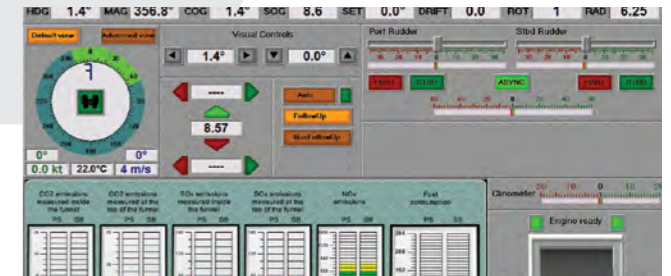
**SAR OPERATIONS SIMULATOR** enables practice for search and rescue operations involving rescue boats, helicopter support and coordination with shore authorities even in the most adverse weather conditions



**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



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



**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



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



**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



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**

**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



**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



**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

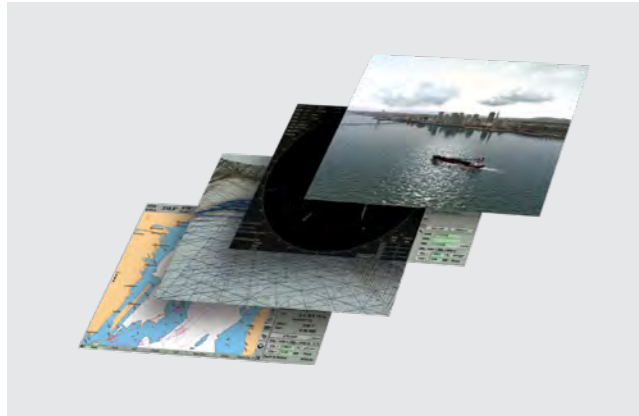


**SAFETY MANAGEMENT AND CONTROL SIMULATION** teaches personnel responsible for the safety of cargo, personnel and equipment, emergency procedures for preventing fires, flooding and other incidents



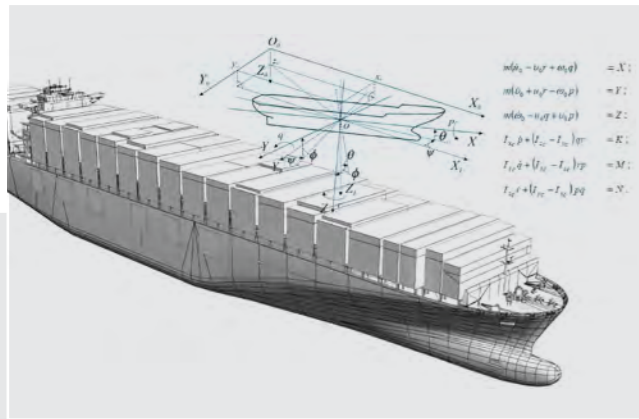
# Simulator Development Tools

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



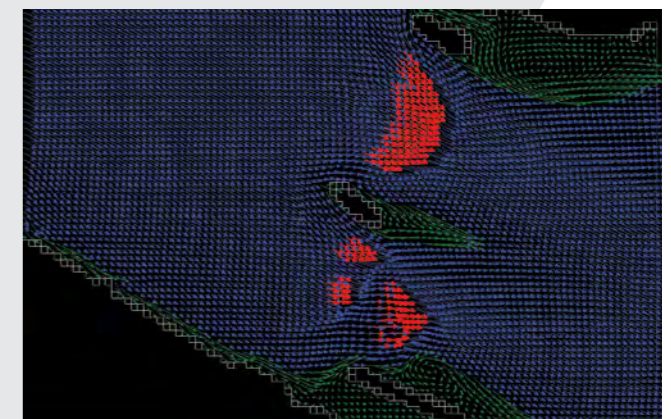
**SHIP MODEL LIBRARY** today contains more than 600 highly realistic and mathematically accurate virtual models of a wide selection of ships. Our catalogue is continually growing

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



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**

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



# 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



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



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



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



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

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



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



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



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

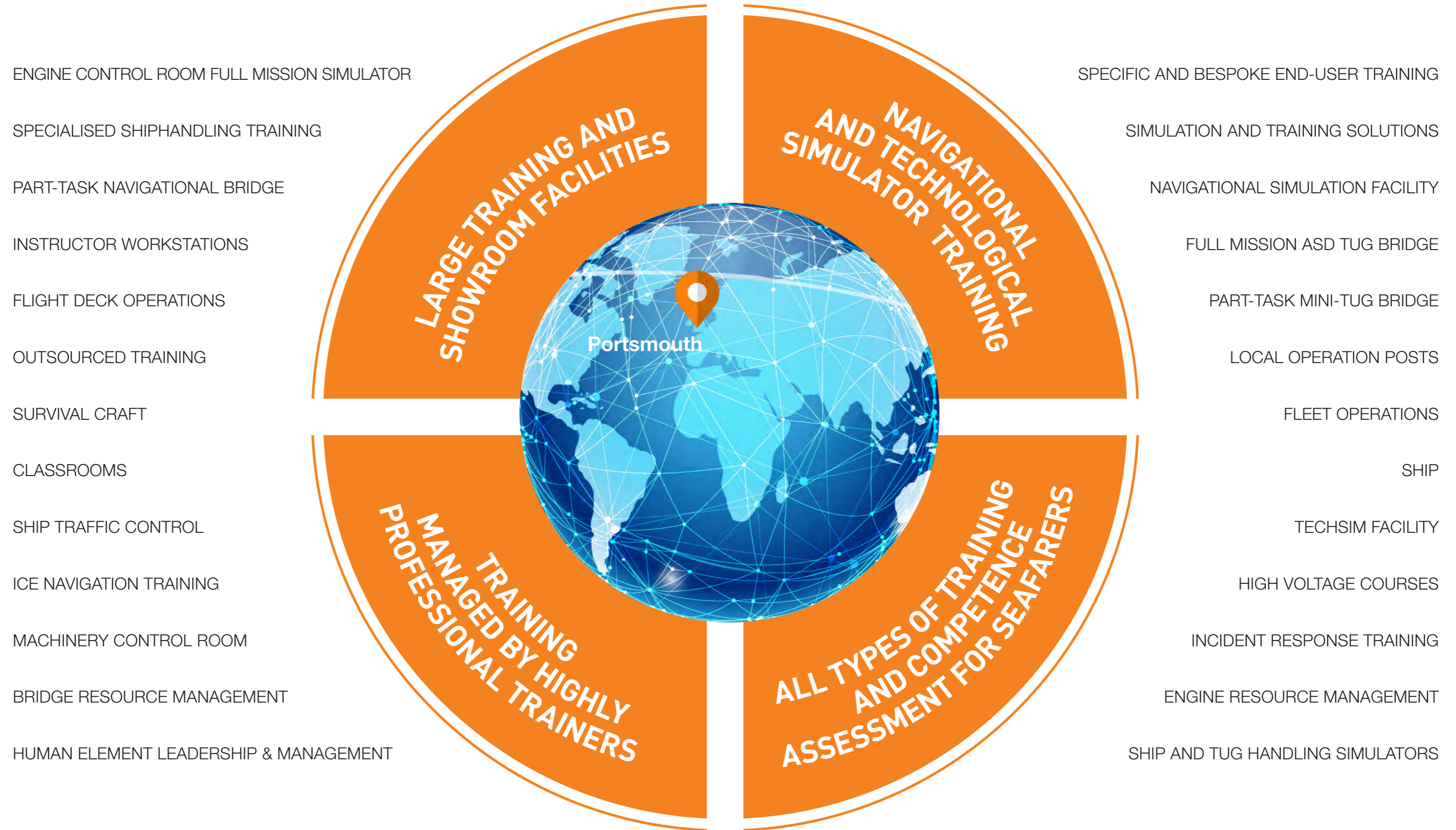


As part of the **DECISION-MAKING PROCESS**, Simulation & Training are employed to **OPTIMISE** processes and to enable more integrated way of working



# Training Courses

HIGH QUALITY TRAINING CREATES HIGH QUALITY SEAFARERS





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.

[wartsila.com/transas](https://www.wartsila.com/transas)