

DESIGN, DEPLOYMENT AND MAINTENANCE

Our team delivers high-quality turnkey solution that covers every aspect of your project.

Design of complex simulation systems

- System diagram and master plan
- LAN & Power Supply layout, cable logs
- Heat emission calculation charts
- Block diagrams and site plans
- Equipment list
- Other layouts & technical documents needed for the project implementation

Project Deployment

Depending on the scale of a project, the most suitable management approach is selected to organize the team's work in the most efficient way according to PMI PMBOK methodology, including but not limited to:

- Project Supervision
- Sourcing & Procurement,
- Engineering,
- Contractors' supervision

Project Support and Technical Assistance

- Service and Support based on SLA (Service Level Agreement)
- Remote monitoring and support system

Training Support

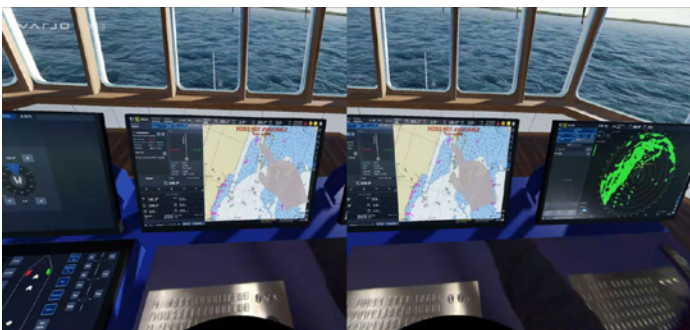
- Operator's training, including CBT and Distance Learning
- Developing of specialized training content

MAAS and cybersecurity

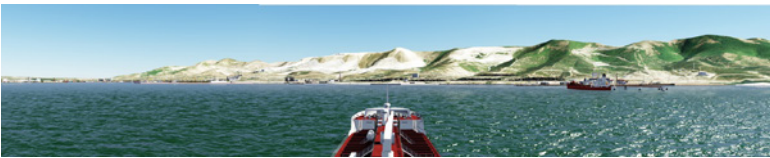
- Ship RCC operator workplace.
- RCC to bridge control transfer procedures.
- Telemetry signal delay, degradation and loss,
- False targets and position spoofing.

SIMULATOR VISUALIZATION

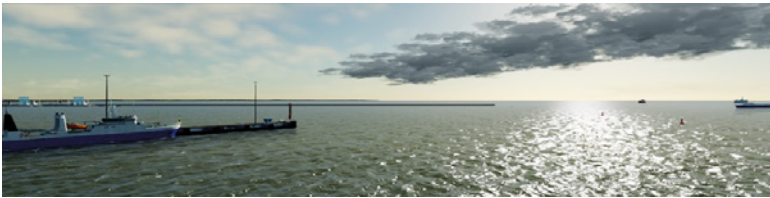
The Simulator Visualization system provides a realistic visual scenario of the virtual environment of the sailing area, visual components of the stage, 3D visualization of the sky, the sea, the seabed by day, dusk or by night, including variable visibility, changing in time, virtual and argument reality applications.



- The visual system replicates movements of own ship according to 6 degrees of freedom.
- The view is updated with a frequency of at least 30 Hz and have an angular resolution of ≤ 2.5 arc minutes.



- The visual system creates a variety of visual weather conditions, from rain to fair weather.



- The visual system is capable of creating a range of visibility conditions, from dense fog to clear.



NAVIGATION TRAINING SYSTEM

NAVIGATOR PRO



Navigational simulator Navigator PRO 6000 is designed for training and certification of watch officers, chief officers, captains and pilots on commercial and fishing vessels.

Provides training for maritime and river vessels operators and shipmasters:

- Certification training for navigation specialists
- Upgrading qualifications and skills assessment

in compliance with

- International Convention of Training, Certification and Watch keeping for Seafarers (STCW): Applicable requirements of Regulation I/12 of STCW Convention 1978 with the latest amendments
- Class Type Approvals: DNV Class A, B, C, D
- IMO Conventions, resolutions and circulars: Chapters A-I/12, B-I/12 of STCW Code, as amended; IMO Model Courses 7.01, 7.03
- Other international regulations and standards

The NAVIGATOR PRO Simulator is an advanced integrated hardware and software solution consisting of dedicated and hands-on equipment operating under the instructor control in a highly-realistic learning environment.

TRAINING APPLICATIONS

- ECDIS Training
- RADAR/ARPA Training
- Bridge Resource Management (BRM) Training

Advanced training for:

- Pilots
- Tug operators
- Autonomous vessel (MASS) operators
- Operators for vessels equipped with DP systems (class 1, 2, 3)
- Operators for Vessel Traffic Control systems
- Ice-Navigation in accordance with the Polar Code
- Inland waterways navigation

SIMULATOR CONFIGURATION
According to DNV classes

Navigational simulator Navigator PRO 6000 has a modular structure of its own original software which can be readily adjusted for any possible configuration of workplaces within the training bridges for the required type of simulator training.

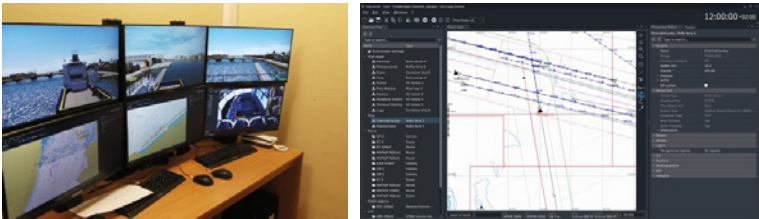


- Individual computer-based simulator
- Desktop Bridge (Class B)
- Small Bridge (Class B, C)
- Navigation Bridge DNV Class A
- DP Bridge according to NI requirements

INSTRUCTOR’S WORKSTATION

The Instructor's workplace is built on the basis of the Active Situational Display, intended for:

- creating exercise scenarios;
- conducting a training session;
- analysis of results.
- Designed according to the best practices in operating navigation simulators of all types, with the application of modern user interface design methods;
- A multi-panel interface can be easily configured by the instructor to optimize exercise control. Various panels can be moved across the screen and docked in any position providing the instructor with a clear display of all necessary information for a specific type of training;
- In case of multiple monitors, the second screen can be arranged as a separate chart view of exercise area;
- Enhanced presentation of charts data, along with similar functionality of the ECDIS, overall high performance of the application



The training exercise area includes:

- terrain models (underwater and surface);
- spatial models of coastal structures (buildings, bridges, piers, etc.);
- navigational aids (beacons, buoys, etc.).

Scenes from different geographic areas are delivered with the simulator.

Main list of exercise objects includes:

- ships;
- tugs;
- mooring facilities;
- objects of search operations;

BRIDGE

The simulator bridge is built using the multiple universal consoles.

Each console can be used for control or indication, and can contain any, or all three, main components:

- Electronic Chart Display and Information System (ECDIS) Display
- Radar/ARPA Display
- Multipage Conning

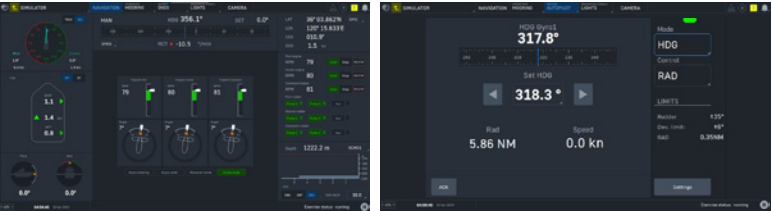
A universal console can be run on a single monitor, in case of a simulator classroom, or, in the case of Full Mission Bridge, distributed across bridge monitors with individual panel configurations.



MULTIPAGE CONNING

Multi-functional conning includes at least the following pages:

- Main conning page
- GPS, NAVTEX, VHF
- Autopilot and alarm panel
- Mooring display with mooring lines and tugs control
- Navigational lights and signals

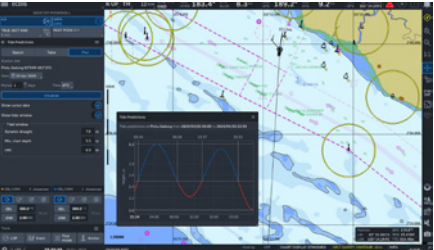


The ECDIS and Radar/ARPA simulators replicate the operational capabilities of shipboard equipment that meet the applicable IMO technical and operational requirements

ECDIS

Electronic charts format:

- S-57 ENC;
- S-57 Primar;



The ECDIS simulation incorporates the facilities for:

- Integration with other navigation systems
- Own position & Sea area display
- Mode and orientation
- Charts data update
- Voyage planning & Route monitoring
- User-created information layers & Radar overlay
- Interfaced with AIS and ARPA tracking

RADAR/ARPA

- Display in X-band and S-band antenna scanners
- ARPA (automatic radar plotting aid) unit
- Operation in the stabilized relative motion mode and sea and ground stabilized true motion modes
- The radar simulation models weather conditions, shadow sectors, false echoes, propagation effects. Generates coastlines, navigational buoys, search and rescue transponders

The ARPA simulation incorporates the facilities for:

- Manual and automatic target acquisition
- Parallel index lines
- Past track information
- True\relative vectors
- Trial manoeuvres.

