KaTron®

SHIP*tron*™ - Maritime Simulation and Training Solutions

KaTron's SHIP*tron*™ product suite, consisting of the next generation marine and naval simulation and training systems, are the exact solutions addressing the requirements of IMO STCW'95 Convention and takes fully into account the DNV requirements for 'Class (A, B, C & X) NAV' simulators. SHIP*tron*™ product suite, ranging from desktop to full bridge simulators, enables simulator training and certification of watch officers, chief officers and captains serving on commercial and naval ships and can be tailored to any customer need through its modular, flexible and COTS based infrastructure.

Training Applications and Benefits

+ Ship maneuvering training for navigating officers at management and operational levels
+ Training on 'blind' navigation systems
+ ARPA/Radar training
+ ECDIS training
+ GMDSS training
+ AIS training
+ Bridge team management training
+ Crisis and emergency management training
+ Search and rescue operations training
+ Rule of the road and collision avoidance training
+ Ship maneuvering and tactical training for naval officers
+ Watchkeeping arrangements and procedures training
+ Remote controls operation training of propulsion plant and engineering systems

System Features

Integrated Bridge Console

+ ARPA/Radar Simulator
+ ECDIS Simulator
+ GMDSS Simulator
+ Conning and Steering Station
+ Engine Control (EC Display, Engine, Rudder and Bow Thruster Controls)
+ Instrument Panels (Mooring, Anchoring, Tug Control, Alarms)
+ Navigation Aids (GPS, Echo Sounder, Doppler Log, Course Recorder)
+ Sound Signal Controls

Visual System

+ 2 - 3 LCD Monitors (Desktop Simulators)
+ 3 - 9 Channel Projection System for 120°- 360° Field-of-View Coverage (Full Bridge Simulators)
+ Curved Screen with Seamless Image Blending System (Full Bridge Simulators)
+ TRON*scene*™ Image Generation and 3D Visual Simulation Software

The 3D Visual Simulation is based on KaTron's real-time image generation and visual simulation software called TRON*scene*™, which with TRON*mlib*™, KaTron's object model library with high image quality, enables innovative approaches in realtime 3D visual simulation applications. The 3D virtual environment can be monitored through various cameras and view points. TRON*scene*™ enables accurate visual simulation of virtual terrains, environments and sea states for day and night sky view in accordance with the latitude-longitude, date and time of day information and provides appropriate lighting simulation suitable for these conditions. It also enables realistic simulation of weather conditions and the meteorological environment.

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Sound System

The Sound Simulation is based on KaTron's sound libraries developed using OpenAL. During the simulation run the sounds are generated in real-time in 20Hz - 20kHz spectrum based on the navigation conditions, ship's dynamics response and environmental situations. The sound and noise intensities are adjustable as required. Multiple 5.1 Dolby Surround sound systems each with four speakers and a subwoofer are used for simulation of operation and incident noises and other sound effects.

Instructor Operator Station

- Instructor's Console
- Multiple monitors based on the number of visual channels
- Scenario Generation/Edit/Control Displays
- IOS*tron*™ - Instructor Operator Station Software
  The Instructor Operator Station software IOStron™ is the heart of the simulator where it manages and controls the whole simulator and the simulation environment. It is designed to provide the instructor the full control of the simulator, maximum interaction with the simulation environment and scenario criteria, and full control of the trainee performance.
- DAQ*tron*™ - Simulation Recording Software
  KaTron's DAQ*tron*™ is a next-generation Simulation Data Acquisition and Recording Database software. With the help of DAQ*tron*™, any kind of data and event can be recorded easily during the simulation. All the internal parameters of the simulation is recorded and these records can be deployed on any machine in the network.
- DB*tron*™ - Debriefing and Performance Evaluation Software
  KaTron's DB*tron*™ is a next-generation Simulation Debrief and After Action Review software. DB*tron*™ debriefs the simulation events and the audio and video playbacks of a recorded simulator exercise or a recorded simulation run. All recorded events including automatically configured or manually entered malfunctions, limit exceedings or messages are displayed on the event viewer window.

High-Fidelity Ship Dynamics

The ship dynamics module is responsible for the accurate dynamic behaviour of the ship and its interaction with the physical environment. The ship behaviour for any type of ship is modeled to correctly exhibit the 6 DOF maneuver of the ship under the combined effects of internal, external and interactive forces.

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