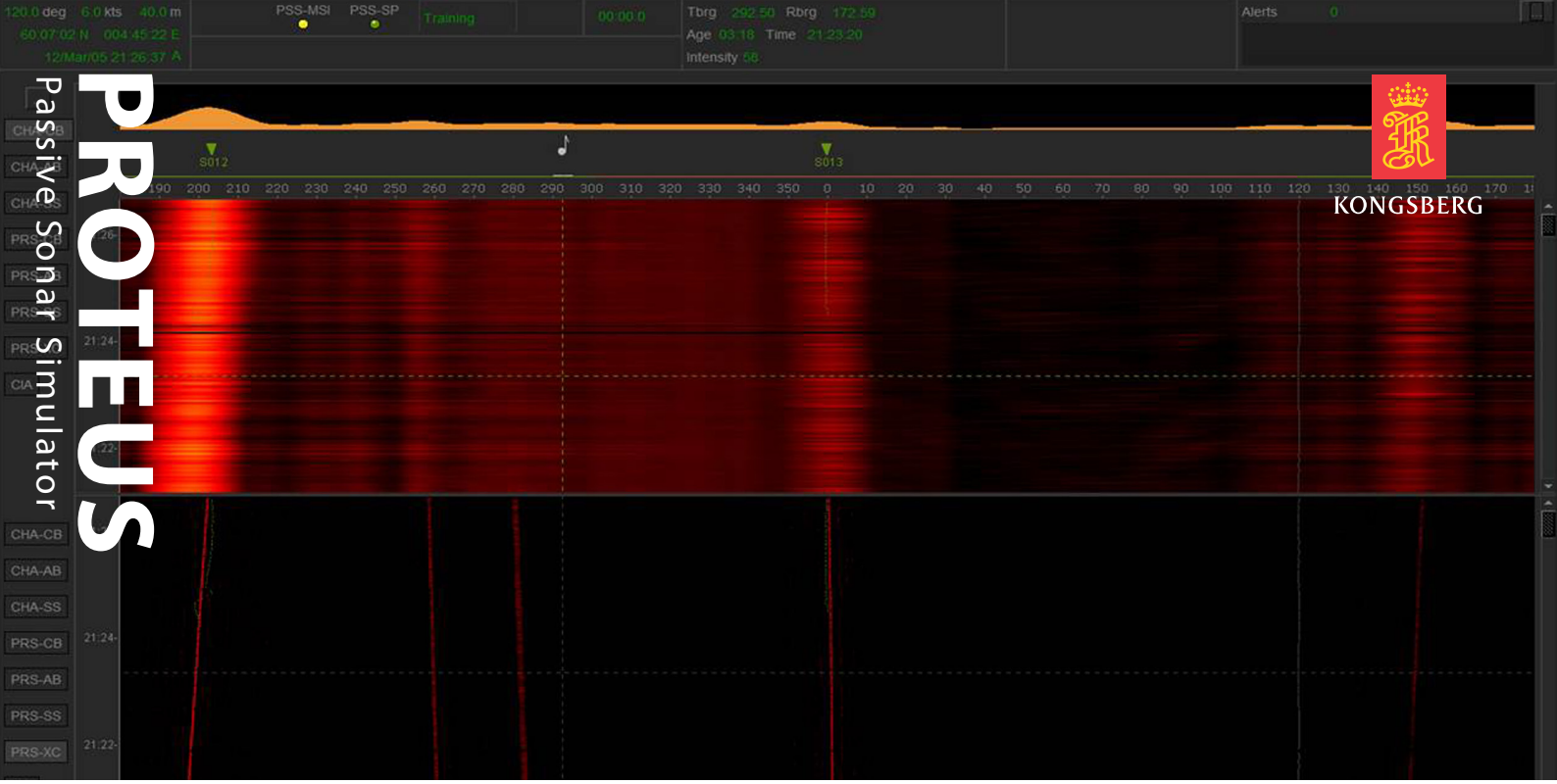


PROTEUS
Passive Sonar Simulator (PSS)

The PROTEUS Passive Sonar Simulator is a high-fidelity trainer developed and used to stimulate the hydrophone output of real sonar systems to create highly realistic operator training.

The instructor is provided with a wide variety of sounds to inject, including: computer-generated noise, such as propulsion systems, auxiliary machinery, active sonar, narrow and broadband noise; recordings of actual vessel sounds; engine, gearbox, shaft and various types of propeller noise; and biological noise.

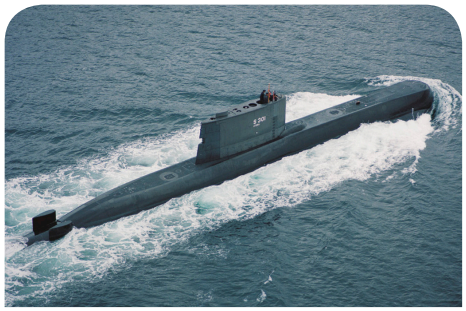
An advantage of stimulating the hydrophone output of real sonars is that the operator is using real equipment to analyse the target's acoustic signature.

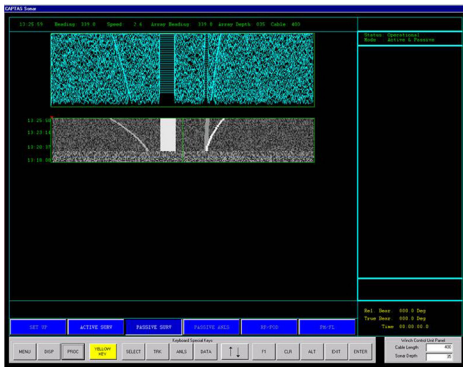
The PROTEUS Passive Sonar Simulator builds operator skills by using their actual on-board displays, HMI, and analysis software tools.

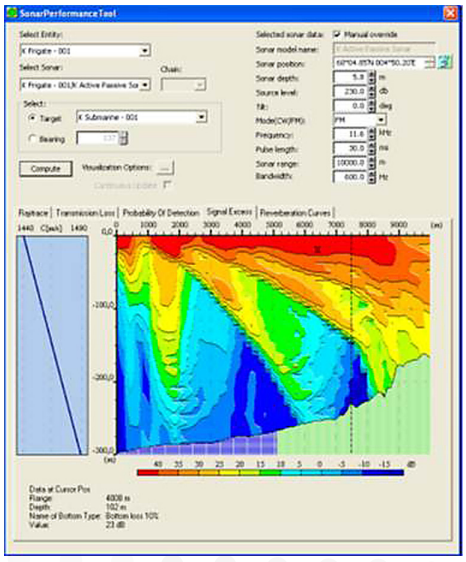
As known sounds are used to stimulate the hydrophone output, system noise appears be as in a live tracking situation.

FEATURES

- Proven in operational training - provides low-risk, cost-effective training solution.
- Can be tailored to meet each user's specific training requirements.
- Runs on COTS PCs.
- HLA evolved compliant (IEEE1516.2010).
- Can be federated with any other PROTEUS training system, or:
- Kongsberg Maritime's POLARIS training systems.
- Third party trainers using either an HLA or DIS interface.
- Long-term follow-on support contract available.







PROTEUS PASSIVE SONAR SIMULATOR

In a conventional sonar trainer every part of the sonar system is simulated, including the displays, HMI, analysis software tools and the computer- generated audio and target signature. However, in the PROTEUS Passive Sonar Simulator only the audio and target signature are computer-generated and used to stimulate the real sonar systems on a submarine or warship. This significantly increases the realism of the training as sonar operators use their actual displays, HMI, analysis software tools and audio output to identify target signatures, exactly as they would whilst tracking live targets at sea. The output from the PROTEUS Passive Sonar Simulator stimulates the real sonar's hydrophone output. Modified by real system-generated noise, the stimulated output makes the displayed target information and audio heard by the sonar operator, more representative of real-world target detection, identification, localisation and tracking and is thus highly effective for training.

Another advantage of stimulating real equipment with known sounds is that the information reaching the sonar display can be calibrated to ensure it is accurate. Such calibration may highlight errors or faults in the vessel's sonar system and assist in fault finding. Should on-board sonar software be updated, or hardware components changed, the PROTEUS Passive Sonar Simulator can be used to test the updated installation to ensure that the information displayed to the sonar operator is still correct.

If required, the PROTEUS Passive Sonar Simulator can stimulate the hydrophone output with recordings of actual threats to build, and then consolidate the audio recognition skills that are vital for a sonar operator. Furthermore, the instructor can run a scenario and compare the sonar operator's measurements with the stimulated information to assess the accuracy of the sonar operator's performance when using real sonar equipment on their vessel.

WORLD CLASS

- through people, technology and dedication

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