SIMULATION AND TRAINING

Immersive, high-fidelity, 3D software solutions
Providing Synthetic Environment based training systems and simulations that are efficient, effective, and reliable for operations in the real world.

FEATURES & BENEFITS

- State-of-the-art Synthetic Environment training & simulation
- Significant risk reduction for real world operations
- Immersive and flexible systems
- Use open standards and the games engine latest technology

SEA’s simulation technology is easy to reconfigure, expand and apply to multiple use cases. Procedural training technology has been created through the use of an innovative training engine solution, coupled with a repurposed high-fidelity gaming environment. Once a training need or problem is identified, the procedural training management tool provides a series of individually scripted steps or actions that are deployed to the student and then monitored by the instructor.

A toolset of high fidelity, physics-based, reconfigurable simulation components is also available, validated against real world data to provide a greater level of confidence in their outputs. Looking to the future of simulation service delivery, SEA is at the cutting edge of research into how simulations can be procured, managed, and operated to maximise re-use and interoperability.
De-risking complex engineering and operational scenarios by combining modern physics based modelling with realistic, immersive visualisation, and distributed open standards.

FEATURES & BENEFITS

- State-of-the-art physics based modelling
- Realistic and immersive visualisation
- Flexible architecture and interoperability using open standards
- Enables optimised designs and performance

Systems simulations can be applied, ranging from initial engineering design and prediction of operational performance, through to support of entry into service and forming the basis for synthetic training. They allow exploration of the full performance envelope for candidate solutions, support engineering and design decisions.

SEA has a proven record of delivering complex simulation projects, working inclusively with partners from the UK and internationally ensuring high quality outputs. Previous simulation projects include:

- Predicting the recovery performance of the NATO Submarine Rescue System in high sea states
- Investigating operating limits for helicopters and Unmanned Air Systems (UAS) from naval vessels
- Modelling the physical behaviour of small boat launch and recovery systems
The DECKsim product range delivers an immersive, high-fidelity, 3D virtual training environment for students of flight deck and land-based airfield operations.

**FEATURES & BENEFITS**

- Rapid development
- High reliability
- Library of customisable assets
- Very efficient core system
- Low cost of ownership

Developed by SEA, DECKsim’s training infrastructure provides a complete suite of procedural training management tools and a high fidelity synthetic environment that can be deployed rapidly. Using synthetic environments for immersive procedural training is proven to increases teaching efficiency and effectiveness.

DECKsim training sessions are easily configurable by an instructor and can incorporate any desired combination of airfield or ship flight deck, aircraft, approach/departure waypoints, and standard or emergency procedures. Designed to keep the instructor ‘simulator driving’ workload to a minimum, the DECKsim training environment enables firm focus on the procedural and cognitive skills transfer aspect of every training session.
CAPABILITIES

- Fixed or portable system options
- Wireless automatic gesture recognition
- Multi-channel projection, VR and AR display options
- Simulated Radio Communication
- Straightforward and Scalable System Architecture
- Provides on-deck Flight Deck Officer and remote FLYCO training

DECKsim can be provided in a variety of hardware configurations, including a 2-man portable version and several display variants. Options also include voice recognition and gesture recognition to further reduce instructor workload.

The result is a comprehensive and cost-effective training system that delivers considerable safety benefits by allowing student skill levels to be developed to near-operational standards in advance of exposure to live aircraft.
Equipment Emulation provides a 3D virtual environment with realistic aural and visual cues.

**FEATURES & BENEFITS**

- Fully configurable for each platform
- Student debriefing facility
- Cost-effective training
- Equipment familiarisation
- Extendable for joint training operations

Equipment Emulation enables the cost-effective teaching of standard and emergency operating procedures, platform familiarisation, and maintenance training.
Simulation Management

Identifying how to optimise the management of simulation assets by leveraging targeted and industry leading research.

SEA understands the desire to move towards a more centralised, service-oriented approach to the management of simulation assets, in order to reduce duplication and maximise re-use and return on investment.

Based upon open standards, an architecture and common data model approach has been employed that supports the rapid discovery of existing simulation assets, enabling end users to build and execute simulations using common components and services.

CAPABILITIES

• Key enabler for Modelling and Simulation as a Service (MSaaS) approach
• Common data model that describes all of your simulation assets
• Provides structure for a searchable registry of assets
• Highlights potential opportunities for interoperability and re-use
• Tools built using open standards
• Rapidly identifies existing assets that can be used to meet specific simulation requirements
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