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AVE: 5639,35 (ZAR)

Simulation-based training system for the SA Navy

The CSIR and Cybicom Atlas Defence have jointly developed a simulation and training platform to be used by the South African Navy (SAN). The distributed, integrated simulation system was developed to help with procedural training for deck landing officers on the frigates. The new simulation centre was launched at the SAS Simonsberg and was hosted by the Chief of the SAN, Vice Admiral Samuel Hlongwane.

The distributed, integrated simulation system, seen at the new Simulation Centre. Photograph: Cybicom Technologies

The SAN operates a number of Lynx maritime helicopters that land and take off from the decks of its frigates. A deck landing officer on the frigate guides the helicopter pilot safely onto the deck. Training of the deck landing officer and pilots become especially valuable in difficult sea-state conditions when the deck tilt angle complicates the landing or take-off.

The newly developed helicopter flight deck trainer is designed to provide joint training for flight deck controllers and marine helicopter pilots. It provides a safe, cost-effective solution to train personnel in a realistic and controlled environment. The flight deck trainer is a flexible, modular system that can be supplied in various levels, from a simple, portable, desktop trainer, to a multi-channel, high-performance tracking system that can accommodate multiple trainees and provide a 360-degree, high-fidelity simulation with full-environment simulation.

The distributed simulation environment integrates three man-in-the-loop simulator stations. The first is a CSIR-developed helicopter flight simulator with pilot interface that models the helicopter, the airflow over the deck and the ship interaction dynamics complete with an image-generation system that displays the external world view to the pilot. The second simulation component is a ship bridge simulator developed by Cybicom Atlas Defence that includes sea-state, rain, and cloud-cover models with a bridge interface for the captain. The third simulator station is a deck landing officer station also developed by Cybicom Atlas Defence.

Cybicom Atlas Defence and the CSIR are also working towards industrialising the training system. This will create a product suitable for small scale production that will cater to both the commercial and defence markets. This is being undertaken with the support of the Aerospace Industry Support Initiative (AISI). The AISI is an initiative of the Department of Trade and Industry hosted and managed within the CSIR.

• *Editorial by Steve Haselum, CSIR*