

# CM Labs and MARIN Demonstrate Small Watercraft Simulation

CM Labs Simulations (Booth 1620) is demonstrating its fast small watercraft simulation at I/ITSEC that it has developed in partnership with the Maritime Research Institute Netherlands (MARIN).

An extension of an original project to develop a fast small ship simulator for training Dutch Navy crews working on high-speed boats, the simulation is built on CM Labs' Vortex Studio simulation and visualization platform.

Visitors will be tasked with navigating the Milford Haven waterway, the UK's largest energy port.

Among other features, Vortex Studio provides multi-channel image generation capabilities, as well as ocean wave modeling and visualization.

Arnold Free, CM Labs' Chief Commercial Officer, explained that simulating fast small watercraft poses particular challenges as it requires accurate wave models, unique visualization of water surface including wake, wash and propeller effects and advanced dynamics for complex phenomena such as slamming, surf-riding and broaching.



"The extensibility of the Vortex Studio platform means that it can integrate with MARIN's existing application framework, hardware control systems, and proprietary vessel dynamics simulation engine," said Free. "It vastly reduces any need for custom development."

A world leader in hydrodynamic and nauti-

cal R&D, MARIN contributed its high-fidelity vessel models and eXtensible Modeling Framework (XMF) solver.

The simulation also employs Vortex Studio features for wash, wake, and spray visualization, as well as "Exact Wave" modeling to enhance training immersion.

The application can also combine "multi-channel visuals and maritime visualization capabilities with character animation for deck crew, and simulation of mechanical equipment, cranes, cables, hoisting, towing, anchor handling, and hydrodynamics," according to the company, which expands the range of potential training applications.

These range from full-mission bridge simulators, to offshore anchor-handling and combined vessel/heavy-lift operations.

Also at I/ITSEC 2017, CM Labs announced it had partnered with Bohemia Interactive Simulations (BISim) to demonstrate Vortex Studio integration with VBS3.

I/ITSEC attendees will have the opportunity to drive an LAV III vehicle powered by Vortex Studio, embedded in a distributed VBS3 solution

Free said that by demonstrating "how easy it is to integrate Vortex Studio's SDK into VBS3 for the creation of own ship simulators, we're really demonstrating the accessibility of high fidelity, cost-effective software solutions for tactical military training.

"Effective driver training programs can now be up and running in a fraction of the time, with none of the headaches typically associated with disparate technology integrations."

Other time-saving capabilities built into Vortex Studio include intuitive tools for vehicle modeling, building, testing, and validation. VBS3 provides a multiplayer, virtual training environment for land, air and sea training and mission rehearsal applications.

The simulation will run on CM Labs' Vortex Advantage simulator hardware, networked with other simulation stations on the BISim booth as part of a larger joint operations demonstration of role-based training.

Visitors to CM Labs will also be able to get behind the wheel of a simulated Joint Light Tactical Vehicle (JLTV) on an off-road patrol scenario to experience Vortex Studio's ground vehicle simulation capabilities.

## DoD Panel Highlights International Efforts

Reflective of ongoing involvement with the international defense community, Wednesday morning will feature a unique panel moderated by Dr. Sae Schatz, Director of the Advanced Distributed Learning (ADL) Initiative within the office of the Deputy Assistant Secretary of Defense for Force Education and Training.

"We like to say that if we're going to defend together, we have to train together," observed Dr. Jennifer Vogel-Walcutt, ADL's Director of Innovation "And if we're going to train together, then we have to be able to share our data, our education training program, as well as our apparatus. By having all of that force work together, we really can capitalize on the benefits of this connectivity."

Vogel-Walcutt observed that, while the US might have the largest physical force and largest defense budget, many other countries now participating across

the international arena "have an agility that is very beneficial in many ways."

"What is really neat is that I/ITSEC provides backdrop for all of these individuals to come and be able to make those connections," she said. "This will be relationship building but also information sharing, and ADL is right at the connection point for all of this, which is super exciting."

The Global General Officer/Flag Officer Perspectives in Learning panel, 'Many Perspectives, One Message: Learning Quality for Training and Education Technologies', will take place Wednesday at 0830-1000 in Room S330BCD.

International connections will be further enhanced later on Wednesday afternoon at the International Collaboration 2017 panel at 1400-1530 in Room S330BCD.