

## CMLabs Announces New Release of Vortex – The Leading Physics Toolkit for High-Fidelity Simulations

*Vortex 4.2 features new VxSonar module and other key updates that provide extended capabilities and additional benefits for visual-simulation developers in multiple industries.*

**December 1, 2009, Montreal, Canada** – [CMLabs](#), the global innovator of real-time, physics-based simulations, announced today the availability of Vortex 4.2, a new release of its flagship physics SDK. Designed for software developers and system integrators to produce engineering-grade simulations, Vortex leads the industry in simulating wheeled and tracked vehicles, machines, robots and more for real-world operator training, mission rehearsal, virtual prototyping and testing. CMLabs will present Vortex 4.2 and its new capabilities at the Interservice/Industry Training, Simulation and Education Conference (I/ITSEC) in Orlando, FL from November 30 to December 3 at Booth 1237.

Building on Vortex's robust modules for vehicles, cables, particles, grasping and sensors, Release 4.2 rolls out the significant new VxSonar module for wide-ranging marine and subsea applications. It allows developers to incorporate single-beam scanning sonar and/or sidescan sonar into ships, submarines, ROVs and other vessels for training operators in object detection, identification and safe navigation. The new Raycasting sensor can be employed to simulate a depth camera or a LIDAR (Light Detection And Ranging) sensor for many robotics and defence applications. Other significant updates include terrain and mesh transformation improvements, and time-saving, movement-enhancing constraint options.

"The feature-filled Vortex 4.2 demonstrates our commitment to ensuring Vortex is the most powerful, effective and fully stocked physics SDK on the market," stated Arnold Free, VP Business Development at CMLabs. "It provides developers and researchers in both the commercial and academic spheres with the easy-to-use toolset and comprehensive libraries they need to put realistic, project-driven behaviour in motion. The Vortex community will truly benefit from this substantial evolution of Vortex, as well as from our ongoing R&D and our well-renowned dedication to customer success."

### New Vortex Highlights

- **Powerful sonar capabilities:** The VxSonar module provides two multifeatured sonar options – sidescan sonar, which captures wide areas of the seafloor through a cascading waterfall display; and active single-beam scanning sonar with rotating transducer array, displayed on a Plan Position Indicator (PPI).
- **New Raycasting sensor:** The VxSensor module now features a powerful Raycasting sensor, which can be used to simulate a depth camera or a LIDAR (Light Detection And Ranging) sensor for robotics, military and other applications.
- **Features for dynamic terrain:** With newly added support for terrain deformations along the vertical axis, users can integrate their own terrain deformation calculations with Vortex collision responses and vehicle simulations for heightened results.
- **Faster mesh deformations:** The performance of Vortex's triangle mesh has been optimized by giving users more control, allowing them to limit deformation to just a subregion of mesh.
- **More robust cylindrical constraint:** Vortex's cylindrical constraint is now quaternion based, making for more stable simulations, particularly when forces are large on the joint.
- **Flexible general constraint:** The addition of several new angular constraints offers four or five controlled coordinates, providing users with a robust general mechanism that they can use to simulate a combination of existing Vortex constraints, such as universal, linear, and prismatic.



***Vortex in action simulating a subsea ROV, a log-forwarder, and an M1 Tank.***

### **About CMLabs**

CMLabs provides industry-leading physics-based behaviour modeling solutions and services to companies and institutions throughout the real-time visual-simulation world. With a long history in the visual-simulation and gaming industries, the Vortex team produces feature-rich simulation tools that set the industry standard for interactive 3D dynamics and simulating mechanical equipment behaviour. Vortex expertise and technology put high-fidelity behaviour in motion in applications for training simulators, mission rehearsal, serious games, virtual prototyping and testing. Vortex customers include Honda, John Deere, L-3, Lockheed Martin, NASA, Carnegie Mellon University, and over 100 other leading companies and academic institutions.

For more information, please visit CMLabs at [www.vxsim.com](http://www.vxsim.com) or contact [info@vxsim.com](mailto:info@vxsim.com).