multiSIM

open simulation solutions

Your solution for Research, Development and Training

multiSIM

multiSIM is an engineering firm from the Netherlands that builds high-tech training and research simulations for customers all over the world. We develop D-SIM, D-WORLD and D-NAMICS as the core of our and your solutions, providing accessible, open simulation for rapid development and easy integration into existing simulators and hardware.

D-SIM
Your solution for rapid development in an open simulation framework.

D-WORLD
Your virtual reality render engine for realistic simulations in one distributed world.

D-NAMICS
Your high-fidelity physics solution for aircraft and vehicle simulations.

Simulation
multiSIM develops open simulation that lets you access all the simulator data and processes. This enables fast development of simulator solutions for research, development and training, and easy integration into existing simulators and hardware.

Training
multiSIM builds highly effective training applications with the D-SIM, D-WORLD and D-NAMICS software. We deliver distributed simulation for different platforms such as helicopters, fifth generation fighters and vehicles.

Research & Development
The open simulation framework of multiSIM provides an efficient solution for Research & Development in simulated environments. It allows for quick and easy adaptation of simulation solutions to your specific research needs.

D-SIM

All multiSIM solutions are built on the D-SIM Framework. Our open simulation philosophy is that every variable in every simulation should be accessible. This unconventional approach is essential for interconnected and customizable simulation solutions.

D-SIM provides a framework for rapid integration of all necessary software and hardware components into networked simulation solutions. The framework was developed with both developers and end-users in mind to provide a modular, open and user-friendly software environment. D-SIM configures and manages all software and hardware processes on a single simulator level while simultaneously synchronizing massive amounts of data from multiple simulators for distributed simulation.

D-WORLD

D-WORLD is a detailed virtual representation of the real world in which simulations interact naturally. It is a geographic copy based on existing local map, photo, elevation and cultural data. D-WORLD is scalable and easily customizable by developers through the use of the high-quality Unity game engine.

With D-SIM as the network solution, a large number of simulators can operate simultaneously in D-WORLD under exactly the same virtual conditions. They see each other from their own perspective, observe the same events, and communicate and operate together in real-time. D-WORLD offers the ultimate environment for synchronized and distributed simulation.

D-NAMICS

multiSIM develops realistic physical models, such as flight models, with the D-NAMICS toolbox. The D-NAMICS toolbox provides the software tools to create realistic operator handling and natural interaction with the virtual environments.

The D-NAMICS toolbox includes modular aerodynamics and aircraft engine models, accurate mathematical models for atmosphere and wind simulation, ballistics, dynamic sling loads, and ground interaction for landings and vehicle dynamics. It provides the ability to accurately simulate any plane or helicopter, including avionics. External vehicle models can also be integrated into D-NAMICS and then linked via the D-SIM network solution.

F-35 Hypoxia Trainer Simulator

multiSIM developed unclassified F-35A simulation for part-task training, multi-ship multi-type training and human performance research. The F-35A simulation is based on available data and allows the creation of realistic fifth generation fighter simulation in an unclassified environment. A representative flight model has been developed with performance characteristics consistent with the available data.

The Panoramic Cockpit Display (PCD) is accurately simulated and the most commonly used PCD portals are available. Capabilities such as radar performance, radar cross-section and sensor properties are representative and can be adjusted by the customer.

The Helmet Mounted Display System (HMDS) is also simulated and provides both the HUD when looking forward and the off-boresight symbology. FLIR and I^2 (NVG) images are incorporated in the HMD.

Virtual Reality Flight Trainer Simulation

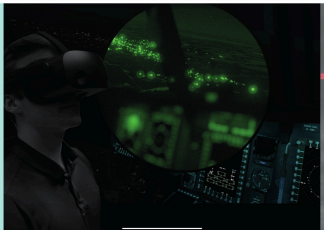
multiSIM provides full flight Virtual Reality (VR) simulations of trainer aircraft, such as the PC-7, PC-9, T-6 and A-29 Tucano. The high level of realism of the aircraft dynamics, the avionics and the look and feel of the cockpit are important as it directly affects the transfer of training to the real aircraft. Our VR solutions deliver high training value at minimal cost.

Compared to conventional simulation, VR offers new methods for instructing and assessing student pilots in a compelling flying environment. VR offers real-time eye tracking, automatic feedback on scan patterns and look-out, individual learning analysis and natural learning at your own pace.

Aerial Refueling Operator Trainer Simulation

The Aerial Refueling Operator (ARO) simulator demonstrates and trains various dynamic aspects of handling a refueling boom system. The simulator accurately models the visual feedback and manual control of the refueling boom and receiving aircraft, including force-feel joysticks and a 3D-enhanced stereo visualization.

The configurable ARO simulator has a small footprint and is perfectly suited for both training and research purposes. To train and understand the effects of the various system components on task performance, the instructor can easily modify their dynamic properties through the D-SIM interface. For example, different receiving aircraft, aerodynamic properties and environmental settings such as turbulence, weather and shadows can be changed.



NVG and FLIR Demonstrator

Flying at night with Night Vision Goggles (NVG) or thermal imaging (FLIR) requires awareness of the negative effects synthetic vision has on situational awareness. multiSIM developed a simulator that uses Virtual Reality (VR) to immerse pilots in realistic demonstrations of the various (negative) effects of NVG and FLIR.

NVG effects can be passively demonstrated to non-pilots, such as loadmasters, or actively to pilots while flying a helicopter or fixed-wing aircraft. MultiSIM's NVG and FLIR demonstrator familiarizes students with the aeromedical aspects of night vision equipment as explained in STANAG 7147. Our VR solution can be embedded in full flight simulation and provides effective training at a significantly lower cost.

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