MVRsimulation introduces First Person View UAV Simulator at I/ITSEC 2024

The FPV UAV Simulator is running demonstrations in VRSG's high-resolution Yuma Proving Ground virtual terrain at I/ITSEC in booth #727

Orlando, Fl, 2 December, 2024: MVRsimulation introduces a new First Person View UAV Simulator at I/ITSEC 2024, designed to provide a highly-realistic training solution for the operation of racing-style quadcopter attack drones on the contested battlefield.

The internally-developed simulator combines MVRsimulation's Virtual Reality Scene Generator (VRSG) with a high-fidelity flight model from Bihrle Applied Research, to replicate the tactile, visual and cognitive demands of operating agile UAVs in combat to successfully defeat enemy targets in the contested battlefield.

The system consists of a high-end gaming notebook running VRSG and an ROG handheld controller device with configurable integrated pilot controls. Users experience the FPV camera view, simulated by VRSG, via 2D video display goggles. Training scenarios take place in VRSG's high-resolution geospecific terrain, which can be populated with real-time entities from VRSG's extensive library of unique models of currently-deployed military weapons and platforms.

Bihrle's high-performance physics flight model is configured as a very lightweight quad-rotor racing drone UAV with front-facing FPV camera and attachable payload. It has been developed to replicate a high-performance UAV, similar to those in active use in combat.

The simulator enables users to:

- Train to acquire, identify, prioritize and defeat ground targets, represented by real-time, unique 3D VRSG models that replicate military platforms deployed in current real-world conflicts, complete with articulated parts, damage states and advanced animations;
- Interact with a game style controller and goggles and fly the high fidelity physics model based drone in a manner very similar to flying a real quadcopter drone;
- Train to navigate visually in detailed terrain that closely replicates real-world locations using VRSG's whole earth terrain with high-res insets;
- Create and edit real-time 3D scenarios to play back in VRSG: use Scenario Editor's (included in VRSG) game-level editor type interface to add culture and moving models directly to 3D terrain to create dense 3D scenes, and build deterministic pattern-of-life scenarios;
- Train for the real-world experience of operating in electronically denied and degraded environments: the VRSG video stream can be downrated as the range of the UAV flight increases, and replicate the effects of counter-UAV devices such as EW jammers;
- Integrate with ATAK end user devices: VRSG's ability to stream HD-quality H.264 video complete with KLV metadata allows VRSG to integrate with ATAK for increased battlefield situational awareness.

The FPV UAV Simulator can be used as an ultra-low footprint stand-alone training device for tactical operations, or networked with other deployed air and ground simulators that operate on VSRG infrastructure, enabling Large Scale Combat Operations (LSCO) training exercises.

"Game-style drone simulators that use low-fidelity physics models give users the wrong impression of how extremely agile racing-style drones work on the battlefield," Garth Smith, President, MVRsimulation said. "We identified the three key elements in developing a highly-realistic training solution for the operation of racing-style quadcopter attack drones carrying munitions on the contested battlefield: an advanced physics-based flight model that matches real quadcopter dynamics, the ability to populate the geospecific virtual training environment with accurate models that reflect the reality of the battlespace and real-world conflicts, and the need for adherence to open networking standards in order to support large, distributed simulation multi-participant exercises.

"By partnering with Bihrle Applied Research, we have brought our resulting FPV UAV Simulator to market in less than six months, and are looking forward to demonstrating this new capability at I/ITSEC this week."

The FPV UAV Simulator is running demonstrations in booth #727 at I/ITSEC this week, alongside MVRsimulation's two mixed-reality JTAC/Joint Fires training systems, the Deployable Joint Fires Trainer, and new Portable Joint Fires Trainer; the mixed-reality Part Task Mission Trainer, and Mixed Reality Sand Table. All simulators run on VRSG's infrastructure, enabling fully-networked operations in a shared, virtual environment.

About MVRsimulation

Founded in 1997, MVRsimulation develops commercial PC-based software and simulators for the military simulation and training markets. MVRsimulation's real-time Virtual Reality Scene Generator (VRSG) provides the fidelity of geospecific simulation with game-quality graphics, enabling mixed-reality training featuring high-speed 3D visualization content and rapid creation of networked virtual worlds using real-world data. Users can build (with real-world photographic imagery, elevation data, and feature data) high-fidelity virtual worlds with our terrain generation tools, and render in real time. For more information, visit http://www.mvrsimulation.com.