MetaVR's VRSG to provide visuals for US Air National Guard HH-60G Pave Hawk simulator

An Air National Guard HH-60G Pave Hawk simulator equipped with MetaVR's Virtual Reality Scene Generator has been delivered to Kirtland Air Force Base

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MetaVR has provided visuals for a new HH-60G Pave Hawk Multi-Mission Crew Trainer (MMCT) delivered to the U.S. Air National Guard (ANG) at Kirtland Air Force Base (AFB) in Albuquerque, NM. The simulator, which will be used to train HH-60G pilots/copilots, and gunner and hoist operator crew, was delivered to the ANG by program prime contractor, J.F. Taylor, Inc.

MetaVR has supplied seven Virtual Reality Scene Generator™ (VRSG™) real-time 3D licenses to provide out-the-window views with near 20/20 visual acuity for the MMCT's twelve 4K projectors. VRSG also provides visuals for the HH-60G forward-looking infrared (FLIR) camera views and a belly-hatch LED display. Two additional VRSG licenses will support spares and development systems.

The Pave Hawk MMCT includes a purpose designed simulator dome built by Immersive Display Solutions (IDSI). The dome wraps around the cockpit, left and right door gunner positions and hoist operator training positions with image-corrected large field-of-view images on a display that combines spherical, oblate, cylindrical and flat geometry into a single, visually coherent image. The projected 3D environment is driven by twelve native 4K Sony GTZ-280 simulation projectors blended on the display using ImmersaView's SimVisuals warp and blend solution. The simulator also runs Battlespace Simulations' Modern Air Combat Environment (MACE).

For the project, MetaVR built a high-resolution, geospecific terrain of the airfield at Kirtland AFB, in round-earth geocentric Metadesic™ format with 15cm per pixel area blended into MetaVR's 1mpp CONUS++ imagery, for rendering in VRSG. The 3D terrain environment includes a highly detailed runway model including taxiway markings, airport signage, windsocks, navigational aids, lighting systems, runway distance remaining signs and real-world flight line buildings, including the Kirtland AFB control tower. The 3D terrain also includes a geospecific model of the Auxiliary Helicopter Training Field (AUX Field) for helicopter pilot training. The terrain can be updated according to customer needs.

"The solutions we have provided for the HH-60G Pave Hawk MMCT highlight how VRSG is differentiated from 'game simulation systems' for the military training market," Garth Smith, President of MetaVR, commented. "Our VRSG image generator is designed to meet the needs of military customers who require geospecific imagery for these training profiles – it allows helicopter pilots to fly low and navigate using visual cues from real-world terrain in a round-earth environment. Because of this, the various elements supplied by MetaVR – including sensor and external visuals and the geospecific terrain in which it is depicted – help bring this HH-60G Pave Hawk MMCT to life.

“Procedurally-generated terrain used in ‘game’ style simulators typically does not match the real world closely, and therefore it cannot be used to train helicopter pilots as effectively to fly nap-of-the-earth, or navigate with visual landmarks.”

The MMCT also runs a high-resolution HH-60G model built by MetaVR to depict the interior of the helicopter. The model includes an articulated M2 .50 caliber machine gun and gun mounts for gunnery training, camera gimbal, plus standard damage states and switch states for cargo doors, refueling port, and power plant.

The HH-60G Pave Hawk MMCT is set to enter operational training with the ANG in the near future.

Image: A screenshot from MetaVR's Virtual Reality Scene Generator of the HH-60G Pave Hawk at the Auxiliary Helicopter Training Field.

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About MetaVR

MetaVR, founded in 1997, develops commercial PC-based software for the military simulation and training markets, featuring high-speed 3D visualization content and rapid creation of networked virtual worlds using real-world data. MetaVR's real-time visual systems provide the fidelity of geospecific simulation with game-quality graphics. 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, at 60Hz frame rates, the resulting virtual world with our real-time 3D visualization application, Virtual Reality Scene Generator. MetaVR systems are used for applications such as UAS/RPA trainers, manned flight simulators, mission planning and rehearsal, joint fires and JTAC simulation training, urban operations training, and emergency response management training. For more information, visit www.metavr.com.