SimuView™

PC-based image generation has taken a new leap forward. SimuView™, the next generation PC-based image generation system from Link Simulation & Training, delivers a full range of simulation mission features that are critical to providing complete visual solutions.

SimuView provides this high level of performance on a PC-based image generator architecture that has leveraged the latest video, database and distributed processing technical advances. The result: when compared to today’s monolithic image generators SimuView clearly delivers equal or better performance at a substantially reduced cost.

SimuView traces its legacy back to Link’s RightView™ image generator application. SimuView image generation is powered by commercial-off-the-shelf (COTS) Intel®-compatible personal computers that use graphics accelerator cards. SimuView also incorporates the functional features found in RightView in addition to adding simulation features for use with COTS PCs, including Genlock Synchronization and a Video Combiner for higher resolution applications.
SimuView’s complete visual solutions are supported by a large set of image generator features. Moving models in the data base, special effects such as detonations and muzzle flash, and weapons launch effects depicted by missiles, dust and smoke bring a heightened sense of realism to the training scenario. For rotary wing applications, features such as rotor disk, dust cloud, rotor wash and landing searchlight enhance training.

Infrared simulation provided by SimuView, which uses emissivity values calculated from database material coding, produces a realistic sensor simulation. Infrared simulation includes weather effects and allows for modeling of specific sensors through the control of the infrared and sensor special effects such as automatic gain control, noise, range effects and white hot/black hot.

System Overview
SimuView can generate one or multiple out-the-window (OTW) scenes for presentation on the OTW display system and one or multiple sensor video scenes for display on cockpit instrumentation. SimuView consists of a Master Control Processor, Render and Sensor Node(s), in addition to optional video features.

Master Control Processor
The master control processor is a single PC that controls the timing, update rate and initialization of all other nodes within the image generator. The master control processor interfaces with the host computer for control of ownership and entity data, environmental and special effects.

The master control processor contains a removable disk that contains software and database information needed by the entire SimuView image generator system. The single disk system provides an easily configurable and maintainable system for ensuring that all processors are operating with the correct data.

Video Render Nodes
The render node is a single PC that creates an independent video channel. Each video render node is a single computational system with its own graphics card, CPU, memory and Ethernet interface. The render node extrapolates, culls, draws, renders and interfaces to the video board to produce an output video to the display device.

Video Combiner (Optional)
The Video Combiner provides the capability to produce very high-resolution imagery from multiple render nodes. The Video Combiner combines the output from four render nodes to produce an output resolution of 2048 pixels x 1536 lines at 60 hertz non-interlaced.

Sensor Node (Optional)
The sensor node is similar to the render node, but makes use of a physics-based infrared model to determine real-time emissivity values. The sensor node is also capable of overlaying symbology for driving cockpit displays.

Mission Node (Optional)
The mission node, similar to the render and sensor nodes, provides height above terrain, collision detection and line-of-sight ranging data to the host computer (via the master control processor).

Genlock (Optional)
The SimuView PC image generator provides the capability to synchronize video channels to the vertical sync from a selected channel or external source. The Genlock system provides the capability to synchronize multiple resolution image formats.