

## ITT Uses MÄK Tools for CB Simulation Suite

For over twelve years, ITT has been providing the US Department of Defense with a toolset for nuclear, chemical, biological, and radiological simulation and modeling. And for over twelve years, MÄK tools have been an integral component of ITT's efforts.

ITT's CB Simulation Suite is used to support the research, development, and testing of and training for nuclear, chemical, biological, and radiological active and passive defense equipment. This includes detection, reconnaissance, and warning systems. The CB Sim Suite has been successfully used in support of simulation-based acquisition activities. The Suite serves as the WMD environment for the Fox NBC Reconnaissance Vehicle and several CB detection system trainers at the US Army Chemical School, the Close Combat Tactical Trainer at Ft. Hood, and Ft. Polk, LA. System developers have used the Suite to support system design, virtual testing (the CB Sim Suite is the core of the US Army's Dugway Virtual Proving Ground), and TTP development for several Joint CB Defense detection and messaging systems.

As a distributed simulation, the CB Simulation Suite has to be compliant with DIS and HLA. To support the networking compliance requirements, ITT has been using VR-Link and the MÄK RTI.

"Using MÄK's tools, particularly for our simulation networking requirements, lets us focus on what we do best—simulating CB environments, effects, and CB defense materiel," said Dennis Jones, ITT's Simulation Section Manager. "MÄK takes care of the details of the networking, like keeping up with the standards and protocol changes. We just need to recompile. It's a small cost versus doing it ourselves—and significantly reduces the risk for our customers."

The CB Sim Suite also uses the MÄK Stealth 3D viewer, MÄK PVD 2D viewer, and the MÄK Data Logger for simulation recording and replay.

The three principal components of the ITT CB Sim Suite include:

- Nuclear, Chemical, Biological, and Radiological (NCBR) Environment Server
- CB Exposure Toxicity Server (ETS)
- CB Dial-a-Sensor™



The NCBR Environment Server calculates, in real-time, high-fidelity 3D hazard environments. The calculations are based on threat delivery system, weather, and terrain. The ETS tracks the contamination status and exposure levels of entities in a distributed simulation exercise, notifying entities when they've reached certain exposure thresholds for miosis, incapacitation, and death. ETS is built on a modular and scalable architecture that allows it to operate as a standalone server or as a module in a larger simulation. CB Dial-a-Sensor™ lets users dial in parameters to set performance characteristics for a known or proposed set of detector technologies. The user is able to attach these sensor models to a variety of platforms including UAVs and unmanned ground vehicles.

"ITT has built the core of their system on MÄK products," said Marc Schlackman, vice president of sales and marketing. "Because all our tools have APIs they could extend and customize what we offer to exactly suit their needs."

"We like MÄK because we are able to put faces with products," said Jones. "We get great support. It's the developers who answer our support questions. We know the folks who write the code."