

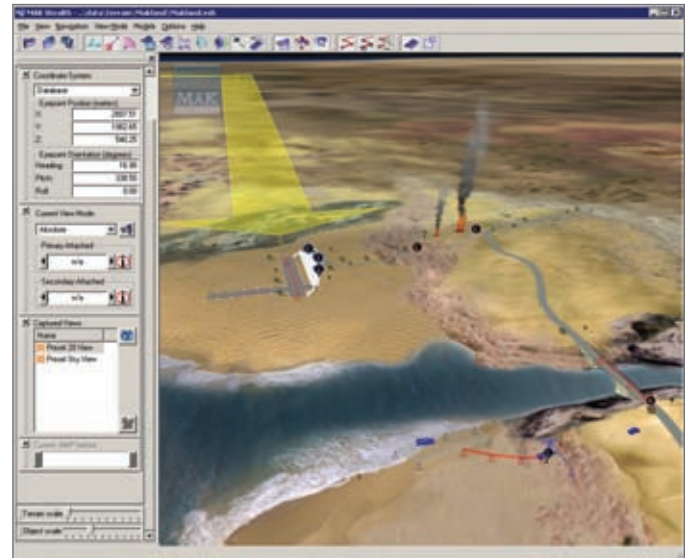
## Honeywell SMARTlab Uses MÄK Tools for Simulation Based Acquisition

The Honeywell SMARTlab serves as the modeling and simulation center for Honeywell Defense and Space Electronic Systems in Albuquerque, New Mexico. SMARTlab provides simulation-based acquisition support to DoD and commercial projects using the Army's Simulation and Modeling for Acquisition Requirements and Training (SMART) Concept. The facility supports the development, testing and integration of network-centric battlefield systems and training devices. It includes a virtual reality laboratory, war gaming capability and battle space software for military training and testing.

The facility's SMARTeam is using MÄK products to support SMART projects. Most recently, the tools were used to simulate unmanned air vehicles (UAV) so they can connect a virtual UAV aircraft to the actual remote Operator Control Unit (OCU).

The MÄK tools being used by the SMARTlab include the VR-Link® networking toolkit, the VR-Forces® computer generated forces toolkit, and the MÄK ViewSuite, which consists of the MÄK Stealth 3D viewer, MÄK Plan View Display 2D viewer, and MÄK Data Logger simulation recording and review system. MÄK products offer a set of DIS and HLA tools that would provide plan view displays, stealth views, data logging, and most importantly a constructive simulation to be customized for the projects' requirements.

In addition to the live-to-virtual UAV, the Honeywell SMARTeam is using VR-Link to create custom stealth views that can simulate the camera sensors on the UAV. This customization includes the ability to position the "Stealth" cameras on the UAV in the actual proposed locations, with the appropriate field-of-views, pixel-densities, and so on. This capability gave a feel for which sensor placements and angles might give the best results.



The MAK Stealth provided 3D views for Honeywell Smartlab projects.

**“Our tools gave the SMARTeam the ability to quickly create a simulation, from scenario development through data collection,”** said Len Granowetter, MÄK's director of product engineering. “In addition, MÄK's technical support helped the program enable some advanced features for their projects by sending them some early beta-releases. This is part of our philosophy of making our technical support an extension of our client's development team.”

Honeywell has a lot of experience creating flight models and avionics systems. The Honeywell SMARTeam is taking these existing flight models and integrating them into VR-Forces, so the Honeywell virtual UAV will fly and behave in an accurate way. This capability will support evaluations of the OCU and enable more detailed engineering integration between the UAV and the OCU.

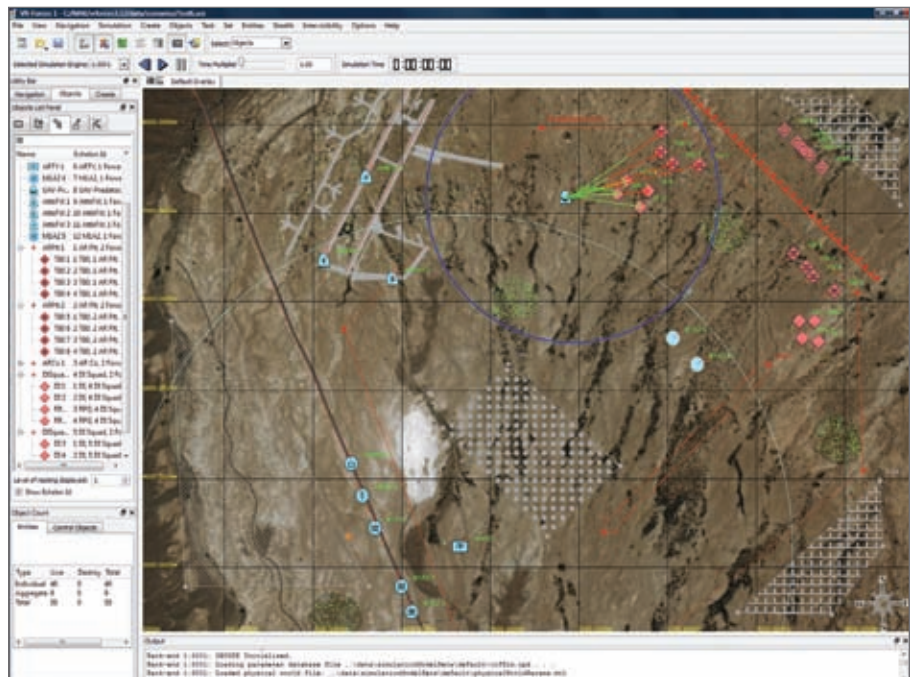
The SMARTeam is using MÄK products to create linkages between the remote OCU and the VR-Forces air vehicle. This enables them to fly a virtual UAV while Honeywell

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works as the lead systems integrator to create actual air vehicles.

VR-Link is an HLA/DIS networking toolkit and VR-Forces is a flexible computer generated forces toolkit. It provides all the out of box features needed in a COTS tool to give users a jump start on development, but its clean API and built-in flexibility give developers the opportunity to customize it to meet their needs. MÄK Stealth, a vital tool for distributed simulations, provides a three dimensional view of the virtual battlefield. It is an important component of after action review. The MÄK Stealth also enables visualization of non-visual information like fire and detonation lines, trajectory histories, sensor volumes, and entity labels. The MÄK Plan View Display provides a 2D tactical map of the virtual battlefield. The MÄK Data Logger records and replays networked simulations. The MÄK ViewSuite allows customers to purchase all three of MÄK's after action review tools, the Stealth, Plan View Display, and Data Logger, at a substantial savings.

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MAK tools, like VR-Forces (pictured) gave the SMARTeam the ability to quickly create a simulation.