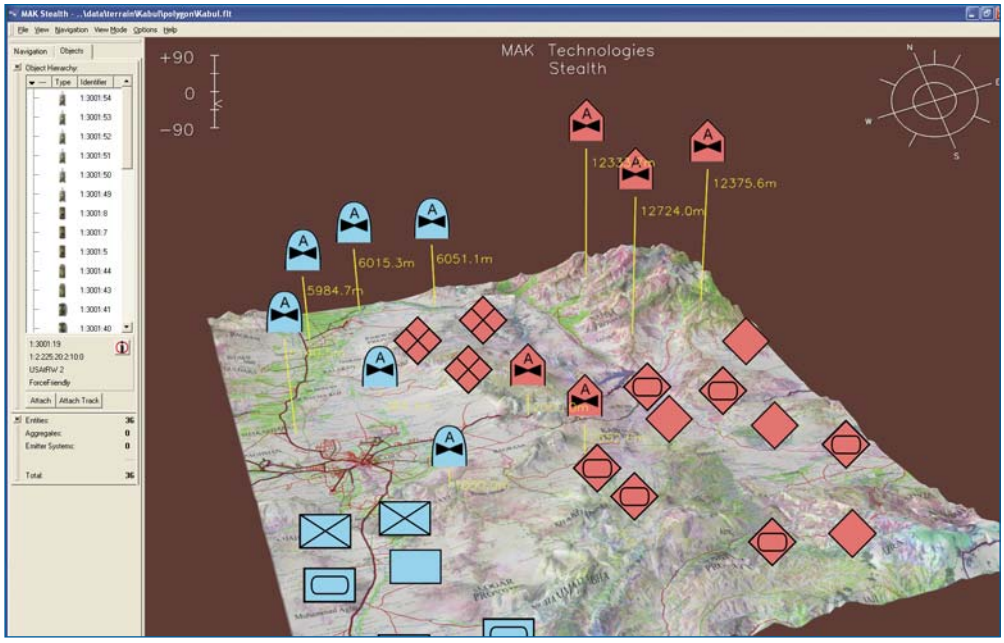
FALL 2004 : VOL 6 : NO 2

What's UP MÄK

StealthXR Debuts

TECHNOLOGY UPDATE :

At I/ITSEC, MÄK is releasing the new StealthXR 3D situation awareness tool that combines the best features of traditional 2D and 3D visualization systems into a single "exaggerated reality" (XR) 3D display. The StealthXR is an add-on module to the MÄK Stealth, providing a big-picture understanding of a battlefield situation and an immersive sense of perspective, all in a single tool.



StealthXR augments your view of the virtual world by providing a rich set of advanced visualization features and techniques. Vehicles can be represented using MILSTD 2525B icons, or using bold-colored 3D models, drawn out of scale to be clearly visible even from a distance. As you zoom in and out, you can switch dynamically between these exaggerated views and the realistic, textured 3D models normally used in MÄK Stealth. The tool can automatically declutter the scene by using a single icon or model to represent several overlapping entities. StealthXR natively supports both HLA and DIS, but it can be tailored through a plug-in API to import entity locations and tracks from various C4I protocols or specific scenario file formats.*

Terrain data can be imported directly from DTED or GIS formats, or from OpenFlight files. StealthXR can automatically color terrain based on elevation, but also allows you to dynamically switch among various raster images draped over the 3D terrain (satellite imagery, political maps, etc.) Terrain elevations can be scaled and exaggerated to better judge contours. Information that is not typically seen during a real-world battle, such as intervisibility lines, sensor volumes, threat domes, and depth and altitude indicators, can be displayed in order to provide additional insight.

Because it is built on the MÄK Stealth, StealthXR preserves all the Stealth features you find indispensable. It retains the intuitive navigation controls, allowing you to fly over the battlefield, pivot the terrain, and switch among saved views, by using a joystick, game controller, keyboard, or GUI. ■

* Certain functionality may require a VR-Link and/or Vega Prime Developer's License.

INSIDE THIS ISSUE

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NEWS :

MÄK Product Update Email List

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This is not an email discussion group (you cannot post to it). Your name and email address will not be given to other customers or to telemarketers. We will use this information only to let you know about product updates or major product announcements.

The list is only for MÄK customers, resellers, and partners. You will be added to the list after we verify your eligibility (approximately 24 hours after subscribing). ■

MÄK Launches Game-Link

MÄK announces the release of MÄK DIS/HLA Game-Link. MÄK Game-Link allows training games developed using Epic Games' Unreal Engine toolkit for game developers to interoperate with HLA or DIS compliant simulations and trainers. The module opens interoperability between a world of stovepipe games, like *America's Army*, and HLA or DIS simulations, for broader, richer training. Based on MÄK's leading networking toolkit VR-Link, the module leverages the company's expertise in DIS and the HLA.

Developers can integrate MÄK Game-Link into any game, preexisting or new, developed using Unreal Engine. The module is an extension of the Unreal Engine, making it easier to communicate with the engine and avoiding the need for a detailed understanding of DIS/HLA complexities.

"This is a new and exciting marketplace for our technology," said Jay Wilbur, Epic Games' vice-president of business development. "The MÄK Game-Link module bridges the gap between video game technology and DoD simulations and trainers, expanding the possibilities for both."

The Unreal Engine was originally created for Epic's 3D first-person Unreal computer game and has been updated to provide programmers with a complete toolkit solution for software development — from design and Artificial Intelligence (AI) to texture mapping and networking. Many programmers and artists both inside and outside of the gaming industry use the Unreal Engine. Its best known defense application is as the underlying engine behind the US Army's successful game *America's Army*. ■

PRODUCT UPDATES

VR-Link 3.9.3

- Support for latest RPR FOM 2.0 drafts
- Support for IEEE 1516 version of HLA

MÄK RTI 2.3

- Full support for IEEE 1516 version of HLA
- Packet bundling
- Smart TCP forwarding (sender-side filtering)
- Java bindings
- RTI diagnostics can be logged to a file
- Run TCP forwarder as a separate application
- rtidump utility supports reliable traffic.

VR-Forces 3.7.1 & Plan View Display 2.7

- Ground entities now avoid obstacles and terrain features
- API for configuring Object Parameter Database
- New MoveToLocation task (without requiring a waypoint)
- New and updated interface features:
  - While loops, Stealth control, and new triggers for plans
  - Ability to load symbol map files at runtime
  - Animated, representational, entity icons
  - Ability to show directional arrows on lines
  - Ability to view the status of entity resources
  - Ability to print the map image or save it to a file
  - Reorganized entity information dialog box
  - Continuous navigation when pressing Navigation toolbar buttons
  - Reorganization of the main menu
- New special effects:
  - Display of electromagnetic emissions
  - Animation of munitions fire and detonation
  - Sound effects

Data Logger 3.10

- Support for exporting Logger data to SQL databases for analysis or data mining
- Filtering by entity type, entity ID or PDU kind in DIS and by object or class in HLA.
- Implementation of keyboard shortcuts for Logger menu options and playback and record controls

MÄK Stealth 5.3

- Navigation via joystick, game controller or Spaceball
- Ability to load DTED or GIS data directly
- Improved entity labels
- Threat volumes
- MetaFlight terrain database paging
- Control other Stealths via eyepoint "mirroring"
- Launch of StealthXR

Contact Us

If you are a current product customer with up-to-date maintenance, please contact Jean Giglio [**jgiglio@mak.com**] for access to the latest product versions.

For additional information or pricing, please contact the MÄK sales department at **info@mak.com** or **1.617.876.8085 x2**

CUSTOMER PROFILE :

Honeywell SMARTlab Uses MÄK Tools for Simulation Based Acquisition

MÄK VR-Forces

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.

"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

[CONTINUED PG. 4]

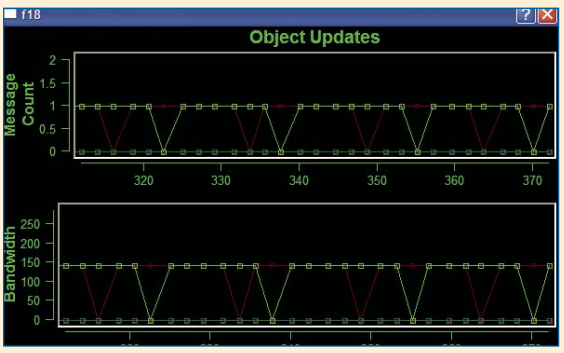
TECH TIP

: Tech.Tip - The RTIspy LRC GUI Network Monitoring Tool TIP 2004.6.2

The RTIspy network monitoring tool is a new feature that provides you with a window into the "black box" of the RTI by recording each message sent and each API call made. You can use this information to guide you in setting RTI configuration parameters. It can also help you locate the bottlenecks in your simulations, whether they are due to the underlying network, processing in the RTI, processing in Federate Ambassador callbacks, or the simulation execution itself.

The network monitoring tool exposes the internal processing of the RTI in the following ways:

1. Using the process utilization meters, you can see at a glance whether the RTI is truly a bottleneck for the federate, either in RTI Ambassador calls or Federate Ambassador callbacks. You can then look at the lists of API calls and messages to see which specific calls are dominating the execution.
2. You can observe how much data is sent across the network to represent the simulation's objects and interactions. This can help identify possible problems and optimizations.
3. You can log the gathered statistics to a file, allowing deeper analysis after a simulation run.



To open the RTI Network Monitoring window, in the RTIspy LRC GUI, **choose: View > Display Network Statistics.** ■

Honeywell SMARTlab Uses MÄK

[CONTINUED]

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 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.

Honeywell International is a $25 billion worldwide technology and manufacturing leader. Its aerospace business based in Phoenix, is a leading provider of integrated avionics, engines, systems and service solutions for aircraft manufacturers, airlines, business and general aviation, military, space and airport operations. For more information, visit www.honeywell.com. ■

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Dec. 6–9, 2004 : BOOTH 2504
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www.iitsec.org

ITEA
Dec. 13–19, 2004 : BOOTH TBD
Las Cruces
New Mexico
FOR INFORMATION & ATTENDANCE VISIT:
www.itea.org

ITEC 2004
April 26-28, 2004 : BOOTH TBD
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www.itec.co.uk

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