

# What's UP MÄK

## CUSTOMER NEWS :

## U.S. Army Virtual Proving Ground Chooses MÄK Tools for SEIT Demonstrations

The Army Test and Evaluation Command (ATEC) Developmental Test Command's (DTC) Virtual Proving Ground (VPG) is using VR-Link®, MÄK RTI, MÄK Gateway, MÄK Stealth, and MÄK Data Logger as part of the Synthetic Environments Integrated Test

bed (SEIT) demonstrations. The goal of SEIT is to develop and demonstrate a high-resolution environment for the testing and evaluation of equipment for Department of Defense acquisition. It is an integration of High Level Architecture (HLA) compliant models, Distributed Interactive Simulation (DIS) applications, live test articles, and human operators all interoperating in a single tactical scenario. The demonstration is geographically distributed, networked across seven sites: Aberdeen Proving Ground, Md., Dugway Proving Ground, Utah, Fort Rucker, Ala., Fort Huachuca, Ariz., Redstone Arsenal, Ala., White Sands Missile Range, N.M., and Yuma Proving Ground, Ariz.

The SEIT demonstrations included three distributed test events that linked the seven test centers into a distributed simulation architecture. SEIT leveraged existing live, virtual and constructive test center capabilities with a mix of DIS and HLA simulations. The challenge for SEIT was to create an integrated simulation

network across seven sites using a mix of protocols. SEIT is the first initiative to link the simulation capabilities of the all DTC test centers. The first build of the SEIT capability included three distributed test events of the initial operating capability (IOC).

To support this challenge, SEIT IOCs used a suite of MÄK tools. All SEIT simulation traffic across the wide area network (WAN) was sent via the MÄK RTI, chosen for its performance and customer support. SEIT used the MÄK Gateway to convert simulation data between DIS and HLA. The MÄK Data Logger was used to record and playback both DIS and HLA data. The MÄK Stealth was used at each site to provide a 3D view of the distributed test. Future SEIT events will also use the MÄK Plan View Display. Finally, a number of the simulations in SEIT used VR-Link as a protocol independent interface for distributed simulation.

Ralph Liebert, co-director of the Virtual Proving Ground SEIT program, will be presenting a paper titled "SEIT: Environmental Representations to Support Distributed Testing" at Spring SIW 2004. Spring SIW, sponsored by the Simulation Interoperability Standards Organization (SISO), will be held in Arlington, Virginia from April 18 to April 23, 2004. For more information about Spring SIW, please visit the SISO web site at [www.sisostds.org](http://www.sisostds.org). ■



NEWS : 2

PRODUCT UPDATES : 2

TECHNOLOGY NEWS : 3

TECHNICAL TIP : 3

GENESYS & MÄK RTI : 4

WHERE WE'LL BE : 4

A PUBLICATION OF



185 Alewife Brook Parkway, Cambridge, MA 02138

PHN 617.876.8085

FAX 617.876.9208

EMAIL [info@mak.com](mailto:info@mak.com)

WEB [www.mak.com](http://www.mak.com)

EDITOR Michélene St. Amand, MarCom Manager

© 2004 MÄK Technologies, Inc.

## Soar and MÄK Win Army Contract To Integrate Human Behaviors Into VR-Forces

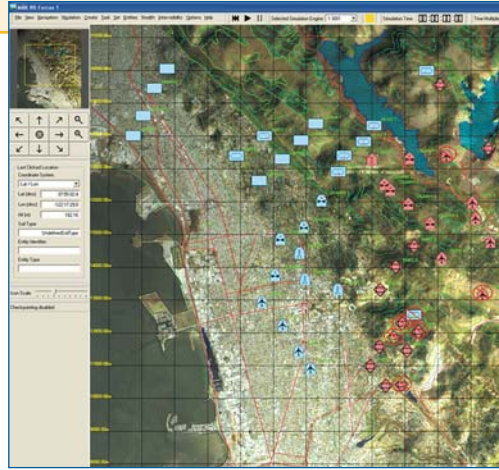
Soar Technology and MÄK have won a contract from the US Army Aviation and Missile Research, Development, and Engineering Center (AMRDEC) at Redstone Arsenal to integrate SoarTech's intelligent, agent-based human behavior capability with MÄK VR-Forces. The finished module for VR-Forces, called Helo-Soar, will give users access to a custom, integrated human behavioral model. This is the first commercial integration of one of Soar Technology's human behavior models. It will provide the Army with intelligent, synthetic rotary wing capabilities that can be used in conceptual and performance trade studies, as well as training and other analysis applications, where man-in-the-loop simulations are used in conjunction with synthetic forces.

"This is an exciting and interesting project that has motivated the SoarTech-MÄK team into developing a truly commercializable product," said Al Wallace, program manager for the project and chief operating officer for Soar Technology. "We're excited. Our customers and potential customers are excited, and we know that in the end, we'll be delivering a capability to the Army that they've never had before." ■

## DiSTI VR-Link Class - June 7-10

DiSTI will hold a MÄK VR-Link training course in Orlando, Florida, June 7-10, 2004. Students will review DIS and HLA concepts and learn how to create applications using the VR-Link protocol-independent API. VR-Link allows developers to create simulation applications and virtual reality applications that can exchange simulation information with other applications through the DIS network or the HLA RTI. Students will learn how to install, configure, and customize VR-Link applications to work with the other MÄK products. The course will also cover FOM optimization, federation performance, WAN use, and strategies to help build modular, extensible federations.

To register, contact Ms. Johnny Blunt at 407.206.3390 or registrar@simulation.com. If emailing, please include your name, company, address, and phone number. For more information, please visit <http://www.simulation.com/training/training.html> ■



*SoarTech's intelligent, human behavior capabilities will be integrated with VR-Forces, shown above, under an Army contract.*

## PRODUCT UPDATES

### MÄK VR-Forces 3.6

- Support for the HLA 1516 API
- Display of trajectory histories for entities
- Display of fire and detonation lines
- Display of range and bearing for point-to-point intervisibility lines
- Ability to scale bitmap icons
- Support for terrain profiles

### MÄK Stealth 5.2

- Plug-in API
- Support for the HLA 1516 API
- Support for the Blueberry 3D module
- Display of intervisibility lines
- Inset views
- Pivot view mode
- Display of hazard clouds
- Support for geocentric databases
- Support for multichannel displays
- Improved ability to select entities in the 3D display
- Context-sensitive menus

### MÄK RTI 2.2

- Full implementation of all services in the HLA 1516 API

### MÄK Data Logger 3.9

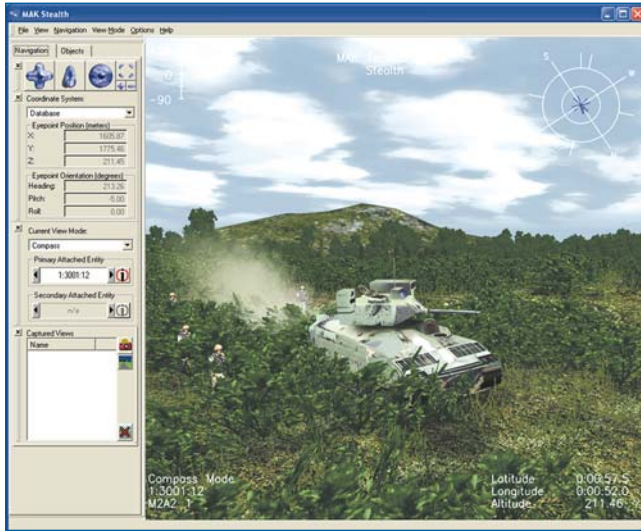
- Support for the HLA 1516 API

## Contact Us

If you are a current product customer with up-to-date maintenance, please contact Jean Giglio [ [jgiglio@mak.com](mailto: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](mailto:info@mak.com) or 1.617.876.8085 x2

# MÄK Embraces IEEE 1516 HLA Standard



*With the release of MÄK Stealth 5.2, all MÄK tools now support the IEEE 1516 HLA standard.*

With the recent release of MÄK Stealth 5.2 and MÄK Data Logger 3.9, all MÄK tools now support the IEEE 1516 version of the HLA standard. These releases reflect MÄK's commitment to 1516 that began last November with the releases of MÄK RTI 2.1, VR-Link 3.9, and MÄK Gateway 4.1. Since then, we have also released MÄK Plan View Display 2.6 and MÄK VR-Forces 3.6, which include support for 1516. Of course, all MÄK products continue to support DIS and the 1.3 version of HLA as well.

The IEEE 1516 version of HLA is the international standard that evolved from the 1.3 version of HLA developed by the US DoD. Most of the concepts and RTI services remain unchanged, but several services have been added, and the semantics of a few others have changed. In addition, the Object Model Template (OMT) format used to represent HLA FOMs is now based on XML.

Adding 1516 capabilities to all of our applications was relatively simple, due to their reliance on the VR-Link simulation networking toolkit. VR-Link provides 1516 support through the same protocol-independent API that is used to support DIS and HLA 1.3, allowing applications to support all three interoperability standards natively. Federate developers write their code once, and compile a separate executable for each protocol.

The MÄK RTI uses largely the same wire-protocol to implement both the 1.3 and IEEE 1516 versions of HLA. This means that most new federates written to the 1516 API are able to interoperate with existing 1.3 federates without bridges or gateways. MÄK tools also allow federates to switch to the new XML-based OMT format without switching to the 1516 RTI API.

MÄK RTI 2.2, released in April, 2004, implements the full 1516 API, including all RTI services.

## TECH TIP

### : Mix and Match RTI 1.3 & 1516 Federates

TIP 2004.6.1

The MÄK RTI 1516 and MÄK RTI 1.3 implementations largely share the same on-the-wire protocol for exchanging internal RTI information. This shared protocol allows a typical federate using the MÄK RTI 1516 to interoperate with a federate using the MÄK RTI 1.3. (If you are using the rtiexec with mixed 1.3 and 1516 federates, you must use the rtiexec1516.)

The flexibility of the MÄK RTI also extends to support for FOM data files. HLA 1.3 and HLA 1516 versions of the MÄK RTI each support both the 1516 FDD (FOM Document Data) and 1.3 FED (Federation Execution Data) file formats. FDD files must have a file extension of either .xml or .fdd. FED files are expected to have an extension of .fed or .mtl; however, any other extensions are assumed to be in the FED format.

For additional ease of use, you can automatically distribute the FED file or FDD file from the federate that creates the federation to all joining federates, instead of having to manually copy the file to each federate. When the first federate comes online and creates the federation, it passes the FED file to the rtiexec. As additional federates join, the rtiexec passes the file to them along with their join confirmation.

This feature is enabled with the RID file parameter `RTI_distributeFedFile`. The federation must also enable `RTI_useRtiExec` and `RTI_internalMsgReliable`. ■

# GeneSyS Project Uses MÄK RTI in Distributed Training Supervision System

The GeneSyS project (IST-2001-34162, see <http://genesys.sztaki.hu>) has started development and standardization on the MÄK RTI. GeneSyS is using the MÄK RTIplus configuration that includes the RTIspy, a debugging tool and plug-in API toolkit for the MÄK RTI. The GeneSyS project is tasked to develop a new generic, open and modular middleware for supervising distributed systems. One of the applications of this middleware is the supervision of space-related distributed simulation systems at different levels. The training activities of astronauts, ground controllers, and technical operators, based on an HLA application simulating the Automated Transfer Vehicle (ATV) and the International Space Station (ISS) Rendez-vous, will be supported by the multi-layer GeneSyS architecture. EADS SPACE Transportation is the project's coordinator, with the University of Stuttgart (HLRS), MTA SZTAKI of Hungary and NAVUS GmbH as partner companies.

"The MÄK RTIplus has been selected as the HLA RTI implementation because it provides openness for developers and high real-time performance," said Jean-Eric Bohdanowicz, Project Manager for GeneSyS.

At the European Simulation Interoperability Workshop (EuroSIW), representatives from the GeneSyS project will be presenting a paper discussing benefits and perspectives of using GeneSyS software in the International Space Station and ATV programs. EuroSIW, sponsored by the Simulations Interoperability Standards Organization (SISO), will be held in Edinburgh, Scotland from June 28 to July 1, 2004. For more information about EuroSIW, please visit the SISO web site at [www.sisostds.org](http://www.sisostds.org). ■

## RESELLERS

For a full list of MÄK's international resellers, please visit [www.mak.com/resellers.htm](http://www.mak.com/resellers.htm)

Australia  
China  
Czech Republic  
Cyprus  
Egypt  
Ecuador  
Finland  
France  
Germany  
Greece  
India  
Indonesia  
Israel  
Japan  
Korea  
Malaysia  
The Netherlands  
Norway  
Poland  
Portugal  
Russia  
Singapore  
Spain  
Sweden  
Taiwan  
Turkey  
United Kingdom

## WHERE WE'LL BE :

### Spring SIW

April 18-23, 2004 : BOOTH TBD  
Hyatt Crystal City  
Arlington, Virginia

FOR INFORMATION & ATTENDANCE VISIT:  
[www.sisostds.org](http://www.sisostds.org)

### ITEC 2004

April 20-22, 2004 : BOOTH 526  
ExCel Center, London

FOR INFORMATION & ATTENDANCE VISIT:  
[www.itec.co.uk](http://www.itec.co.uk)

### SimTecT 2004

May 24-27, 2004 : BOOTH TBD  
Canberra, Australia

FOR INFORMATION & ATTENDANCE VISIT:  
[www.siaa.asn.au](http://www.siaa.asn.au)

Link - Simulate - Visualize