

What's UP MÄK

PRODUCT NEWS :



“We are flattered and honored that the Canadian DND felt our suite of products best met their interoperability needs...”

Warren Katz,
COO, MÄK Technologies

MÄK Wins Canadian “War In A Box” Program

MÄK Technologies has been awarded the networking component of the Canadian Department of National Defense (DND) War In a Box program. Under the contract, MÄK will provide the wide area and local area HLA communications for the program, as well as associated visualization tools at eight DND sites across Canada. War In a Box is a federation of federations architecture comprising new and existing federations. As part of this award, the MÄK RTI was chosen as the standard for all of the program's new federations. This represents the largest sale to date of the MÄK RTI, IEEE 1516 version.

War In a Box is a definition phase activity for the Canadian Advanced Synthetic Environment (CASE) program. CASE will be used for concept development and experimentation, requirements definition, operational test and evaluation, and training and mission rehearsal for the whole of DND. This award represents an initial order. Additional licenses will be ordered once the final architecture requirements have been determined.

As part of the contract, MÄK's newest product, the VR-Exchange interoperability portal will be used by DND to bridge existing HLA federations that have different Federation Object Models (FOMs) and RTIs. VR-Exchange is a “Universal Translator” for distributed simulation allowing users to link together simulations using different HLA (High Level Architecture) RTIs (Run Time Infrastructure), different FOMs (Federation Object Model), and different protocols. Before VR-Exchange, HLA exercises needed to agree to use the same FOM and RTI in order to communicate.

“We are clearly pleased with this hotly contested IEEE 1516 win,” says Warren Katz, MÄK Technologies' chief operating officer. “We are flattered and honored that the Canadian DND felt our suite of products best met their interoperability needs from a field of high-quality commercial competitors, and we commend them for continuing to rely on commercial products in lieu of custom in-house development.”

Other MÄK tools to be used by the War In a Box program include:

- **MÄK Gateway** – The MÄK Gateway allows legacy DIS simulations to participate in an HLA exercise. The Gateway uses VR-Link, taking full advantage of the networking toolkit's FOM-Agile infrastructure.
- **MÄK StealthXR** – MÄK StealthXR combines the best features of traditional 2D and 3D visualization systems into a single “exaggerated reality” (XR) 3D display. Built as an add-on module to the MÄK Stealth, StealthXR provides both a big-picture understanding of a battlefield situation and an immersive sense of perspective, all in a single tool.
- **MÄK Data Logger** – The MÄK Data Logger records and replays networked simulations.
- **MÄK Plan View Display** – The MÄK PVD provides a 2D map view of the virtual battlefield
- **VR-Link®** – The best-selling networking toolkit for linking military simulations through both the HLA and DIS standards.

An RTI is a key component of the HLA networking architecture. The verified and fully compliant MÄK RTI has been chosen as the backbone of major simulation programs including: Northrop Grumman Mission Systems' US Air Force Distributed Mission Operations lab, Lockheed Martin's F-16 DMT Mission Training Centers, the NATO First WAVE exercise, the US Marine Corps Tactical Environment Network (TEN), and the Australian Defence Simulation Office Joint Simulation Capability program. The MÄK RTI is consistently proven in third party studies to be the most efficient RTI available. ■

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INSIDE THIS ISSUE

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MÄK Welcomes... David Hilf

David Hilf joins the MÄK team as Strategic Alliance Manager. His role will be focused on formalizing MÄK's partner and reseller relationships to maximize market opportunities and sales revenue. Hilf is a former partner manager from the MathWorks and has 20 years of high tech sales and marketing experience having started his sales career selling semiconductors in Silicon Valley. Since 1999 he has held various sales and marketing roles at The MathWorks and MathWorks partner Lyrtech Signal Processing. In his most recent role as Senior Manager of Business Development and Sales at Lyrtech, he managed Lyrtech's DSP Development platform and consulting offering aimed at the defense industry working on Software Definable Radio (SDR) programs such as the JRTS (Joint Tactical Radio System). "MÄK is very excited to have Dave onboard" said Marc Schlackman, vice president of Sales and Marketing. "We are at a critical point with our partners and resellers where we need to have a dedicated person working with them."

Min Zhang

Min Zhang has recently joined MÄK as our new Director of Software Quality Assurance, and will be responsible for all SQA activities at MÄK.

Zhang has an extensive background in software development, test engineering and SQA management on a variety of platforms in diverse environments. Zhang has an M.S. in Computer Technology from Purdue University.

Alan Dickens

Alan Dickens has recently joined the MÄK team as our new Manager of Engineering Services. Dickens will be responsible for providing managing, training and consulting support to our product customers.

Dickens started his career as an engineer on the original SIMNET team at BBN / Loral, where he spent ten years in R&D on large-scale distributed military training systems. He has also worked as an engineer, project leader and producer for several gaming and entertainment companies, and as a consultant, architect and developer on several web-based enterprise collaboration projects. Dickens has a B.A. in Computer Science from Brown University. ■

VR-Forces 3.9 and MÄK PVD 2.9

VR-Forces 3.9 is a major release with many new features and enhancements, including:

- Embarkation, including takeoff and landing from carriers
- A simple off-line terrain editor, for editing soil types and vector features
- Support for DIS and RPR FOM Simulation Management PDUs and interactions
- Better sensor support, including modeling radar cross section, and IR
- Undo button
- Geotiff support
- Ability to name and save selection groups
- Improved toolbar with combined entity list and echelon view
- Ability to internationalize text that is drawn on the canvas

MÄK Stealth 5.4.1

MÄK Stealth 5.4.1 is a minor release in terms of new visual features, but we have greatly improved scalability, making the Stealth easier to use in large distributed exercises. A pre-release of Stealth 5.4.1 is being used as the main Stealth Viewer for JFCOM's Joint Virtual Training Special Event at I/ITSEC 2005. Some of the improvements include:

- "Paging" of 3D entity models, based on which entities are closest to the eyepoint
- The user can choose a "model budget" based on their machine's performance characteristics, indicating a maximum number of models to keep in memory at once
- Improved overlay drawing performance
- Ability to reference entities by marking text instead of by name, in saved views
- Now uses less memory per entity, meaning higher entity counts can be supported
- Keyboard shortcut for scrolling through saved views

VR-Link 3.9.6

VR-Link 3.9.6 is a minor release with one main new feature, and many small enhancements or fixes. The main new feature is higher-level support for Data Distribution Management (DDM) in HLA. Entity Publishers are now capable of automatically associating entities with geographic DDM regions, based on their locations. Regions will be automatically updates as entities move. Similarly, you can specify an area of interest for a Reflected Entity List, and VR-Link will automatically make the appropriate DDM subscriptions.

MÄK RTI 2.4.1

MÄK RTI 2.4.1 is a minor release, containing numerous small, but important enhancements and fixes, including:

- Ability to auto-reconnect after a broken TCP connection, without resigning and re-joining
- RID parameter to enable service reporting, enabling federates to go through
- DMSO's federate compliance testing, using the MÄK RTI
- Improved performance when using asynchronous callbacks or asynchronous I/O
- Improved performance when sending or manipulating attribute updates in IEEE 1516
- Numerous small fixes resulting from the IEEE 1516 verification process.

VR-Exchange 1.1

VR-Exchange 1.1 is a major release, which includes the introduction of the VR-Exchange Toolkit API. The documented and supported API allows you to:

- Develop custom Brokers to support translation for protocols that are not supported out-of-the-box
- Extend the set of object & interaction concepts that the Data Exchange can support
- Extend the built-in HLA Brokers to support additional FOM classes
- Add filtering or data security

Also, a new SimpleBroker example is provided to demonstrate much of the API's functionality.

Contact Us

If you are a current **product customer with up-to-date maintenance**, please contact **Jean Giglio** at keys@mak.com for the latest product versions. You must have your MÄK invoice number available when requesting updated versions. **For additional information or pricing**, please contact the MAK sales department at info@mak.com or **617.876.8085 x2**. ■

BAE Systems, CNIR Saves 6 to 12 Months of Development Time Using MÄK Tools

BAE Systems, Communication, Navigation, Identification and Reconnaissance (CNIR) is using a suite of tools from MÄK Technologies on various Internal Research and Development (IRAD) projects and in support of major defense programs such as Joint Tactical Radio System (JTRS), Warfighter Information Network – Tactical (WIN-T), Future Combat Systems (FCS) and Airborne/Fixed/Maritime (AMF) – JTRS .

To simulate intelligent defense systems that are network centric and contain large scale sensor networks, BAE models and simulates different parts of these systems using a variety of different tools that combine the affects of battlefield communications networks, mobile ad-hoc networks (MANETs), UAV relays, etc. on traditional theatre of engagement scenarios. Their biggest challenge was integrating the diverse tools to create a comprehensive simulation. CNIR chose VR-Link, the MÄK RTI, VR-Forces, the MÄK Stealth, and the MÄK Data Logger to build the simulation and visualization solution they needed.

“MÄK’s products saved us the time of building our own custom applications without sacrificing any of our simulation requirements,” said Walter Whimpenny, Project Lead, Modeling & Simulation. “It would have taken anywhere from six months to a year to develop the capability we wanted on our own. MÄK’s off the shelf products have provided a well developed solution that still allows us the flexibility to customize it as we see fit.”

Using OPNET to model communications effects with VR-Forces, BAE is able to simulate the effects of communications on the result of a battle. For example, when an entity modeled in

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TECH TIP

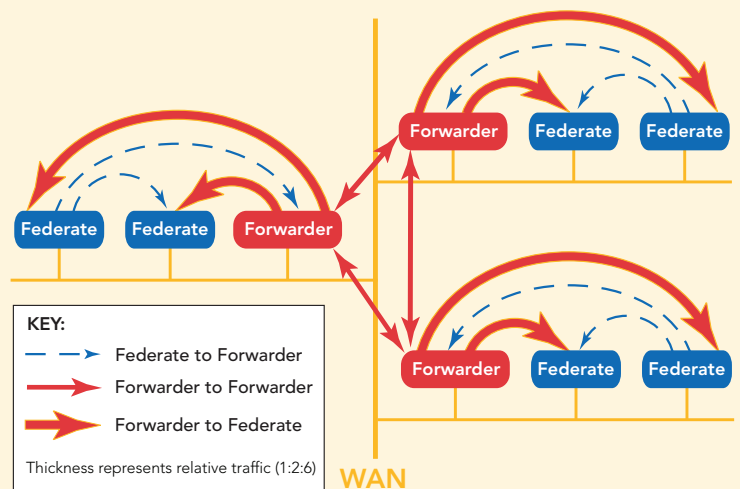
: Tech.Tip – Using the MÄK RTI’s TCP Forwarder to Optimize Bandwidth Over a WAN

TIP 2005.7.4

We are frequently asked how to optimize the MÄK RTI for use over a WAN. The basic answer is to use packet forwarding. The MÄK RTI includes a UDP Forwarder application for use with best-effort transport and a TCP Forwarder for reliable transport.

TCP Forwarding relieves individual federates of the need to maintain a connection to every other federate. However, the TCP Forwarder must still send all updates to all subscribing federates and can become a bottleneck under heavy traffic conditions. Additionally, latency may increase when updates make the round trip across the WAN to the TCP Forwarder and back to local federates. Therefore, the biggest performance gains come when you use Smart TCP Forwarding and Distributed TCP Forwarding.

Smart TCP Forwarding uses sender-side filtering to reduce the number of updates sent based on subscription information down to the level of each attribute instance, including taking HLA’s DDM into account. If federates do not need to subscribe to all published data, smart TCP forwarding can provide a significant reduction in traffic.



Distributed TCP Forwarding (available with the RTI Plus product), lets you set up a network of TCP Forwarders. It achieves optimal network bandwidth use by performing local forwarding between federates on the same LAN and reducing the number of message copies sent across the WAN from one per federate to one copy, or even none (in combination with Smart TCP Forwarding). It also reduces the likelihood that any Forwarder will become overloaded because each Forwarder only sends updates to federates on its own LAN and to the other Forwarders on the WAN. — For details about how to implement TCP Forwarding see the MÄK RTI Reference Manual. ■

VR-Forces needs to issue a call for fire to another entity, instead of just passing the call for fire message directly to the intended recipient, it sends a query to OPNET, through HLA. OPNET receives this query and calculates whether the message arrives at its intended destination and if so when depending on modeled factors which may affect the communications (e.g., distance, weather, terrain, line of site, routing algorithms, jamming, presence of relays, etc.).

"MAK's products were by far the most flexible and easily integrated tools we found," said Matthew Boyer, Modeling & Simulation Engineer. "The products provided us with the simulation and visualization solution we needed. The robustness of the tools, and the ease with which they were integrated with other tools was a huge time saver."

"With MAK's tools, we had immediate out of the box capability, but retained the flexibility we need to customize the software to fit our needs," said Walter Whimpenny. "With their quality technical support, we knew we had someone to turn to when integrating all the diverse tools we chose."

On multiple occasions BAE turned to MAK's technical support for help integrating the products with other simulation tools in their custom environment. MAK also provided technical experts at the BAE facility to both train and work with BAE engineers to address specific technical hurdles.

BAE Systems, Communications, Navigation, Identification & Reconnaissance (CNIR) is a unifying force with technically superior solutions that transform the armed forces' communication, situational awareness, mobility, and mission expertise. Their technical expertise includes: C3I systems, communications systems integration, guidance and navigation, electronic identification, airborne ground-based software development, and modeling & simulation. CNIR is at the forefront of innovation, working to develop the next generation of intelligent systems. ■

RESELLERS

For a full list of MAK's international resellers, please visit www.mak.com/s1ss14p1.php

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

WHERE WE'LL BE :

I/ITSEC

Nov. 28 – Dec. 1, 2005
BOOTH 718

Orange County Convention Center
Orlando, FL

FOR INFORMATION & ATTENDANCE VISIT:
www.iitsec.org

Spring SIW

April 2 – 7, 2006

The Von Braun Center Complex
Huntsville, AL

FOR INFORMATION & ATTENDANCE VISIT:
www.sisostds.org

ITEC 2006

May 16 – 18, 2006

ExCel
London, United Kingdom

FOR INFORMATION & ATTENDANCE VISIT:
www.itec.co.uk

Link – Simulate – Visualize