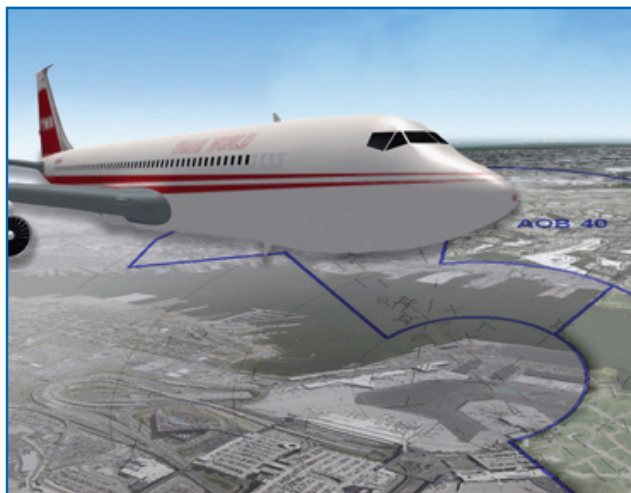


What's UP MÄK

MÄK takes on Air Traffic Management!



MÄK can help you apply distributed simulation to ATM visualization and simulation systems

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The U.S. Federal Aviation Administration is embarking on an ambitious project to upgrade the nation's air traffic management (ATM) systems. Each team under the FAA Systems Engineering 2020 (SE2020) IDIQ will need an integrated, distributed modeling and simulation environment to try out their new systems and concepts. The major aircraft manufacturers will need to upgrade their aircraft engineering simulators to model the new ATM environment. The avionics manufacturers need to test out their equipment in a realistic synthetic environment.

MÄK can help your company in this process. Many players in the aviation space already use MÄK products for simulation, visualization, and interoperability. For the ATM community we offer:

- **Interoperability** – The US has standardized on the High Level Architecture (HLA) for simulation interoperability and the MÄK Run Time Infra-structure (MÄK RTI) is already in use as a core part of the Aviation-SimNet. The FAA and NASA Langley have also chosen the MÄK RTI to

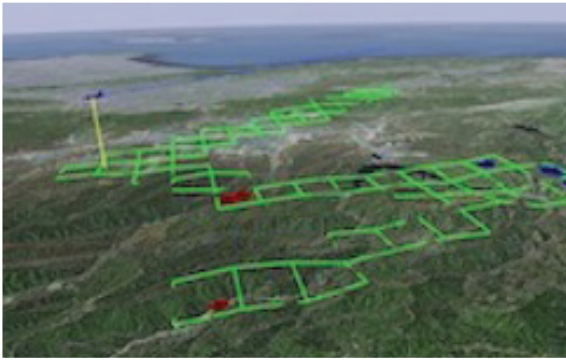
network together their Air Traffic Management simulations. MÄK provides distributed simulation interoperability services over and above HLA expertise, including streaming terrain (VR-TheWorld), networking middleware (VR-Link), gateways to operational systems (VR-Exchange), and simulation debugging and monitoring (HLA Traffic Analyzer).

- **Visualization** – VR-Vantage, MÄK's Visualization line of applications and tools, is used to create 2D and 3D representations of the airspace from the big picture down to ground operations on an individual airport. MÄK's VR-Vantage toolkit is being used at the FAA Tech Center for Human Factors studies and MÄK's VR-TheWorld Server is being used as a source of streaming terrain and map data by the Tech Center's Target Generation Facility.

- **Simulation** – VR-Forces, MÄK's simulation scenario generator, is used to develop specific models for non-commercial aviation entities such as UAVs, emergency aircraft, rogue aircraft, people on the ground, ground vehicles, etc. In addition, as an open toolkit, VR-Forces may well be preferred in many labs over the closed ATC simulators.

MÄK saves our customers time and effort, and reduces risk by applying our distributed simulation expertise and suite of tools to ATM simulation. We are proud to provide cost effective, open solutions to help our customers build ATM visualization and simulation systems.

For more information, please contact info@mak.com or view our Air Traffic Management brochure.



MAK Introduces VR-inTerra: Terrain Agility for Your Simulation

We are excited to announce that VR-inTerra, MAK's Terrain Agility toolkit, will be available on July 22nd, 2011! This solution brings Terrain Agility to simulation applications and solves problems that occur when multiple simulation and visualization applications operate in distributed simulation environments.

Terrain interoperability problems stem from two major challenges facing simulation applications users when determining their terrain needs - acquiring terrain that has the required resolution and scope (coverage area) and acquiring terrain that their applications can load and comprehend. Terrain Agility allows new simulations to use a wide range of terrain formats that are already in use by existing simulation and visualization systems, thereby extending the life and utility of legacy simulations.

Through its Terrain Agile approach, VR-inTerra enables simulation applications to natively take advantage of new terrain approaches like dynamic composition, direct-from-source terrain, and Open Streaming Terrain. Due to Terrain Agility, simulation applications are able to play in synthetic environments without having to support the myriad terrain formats and to convert other terrain to their own proprietary formats.

VR-inTerra takes care of loading or streaming the terrain and provides the simulation with access to a collision graph and a feature graph. VR-inTerra's collision graph allows for efficient height above terrain and line of sight intersections at extremely high rates which are required by today's increasingly complex simulators. The feature graph provides the data needed for navigation and route planning along, and through, this terrain.

Using VR-inTerra, a simulation can be Terrain Agile and can achieve high degrees of correlation with other Terrain Agile visual and simulation applications, as well as Command and Control systems that use the same geospatial formats.

For more information and details on pricing, please see the VR-inTerra Page or contact info@mak.com.

VR-Vantage PVD is here!

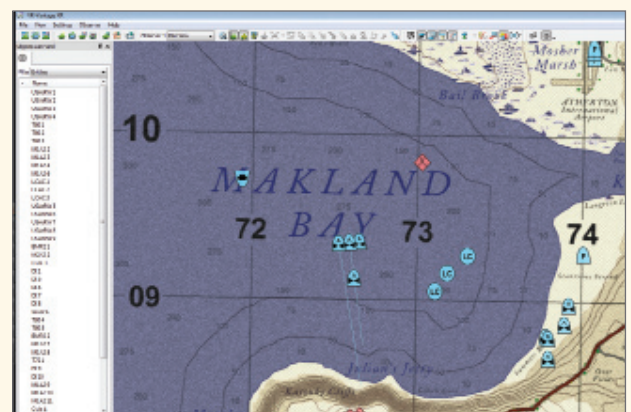
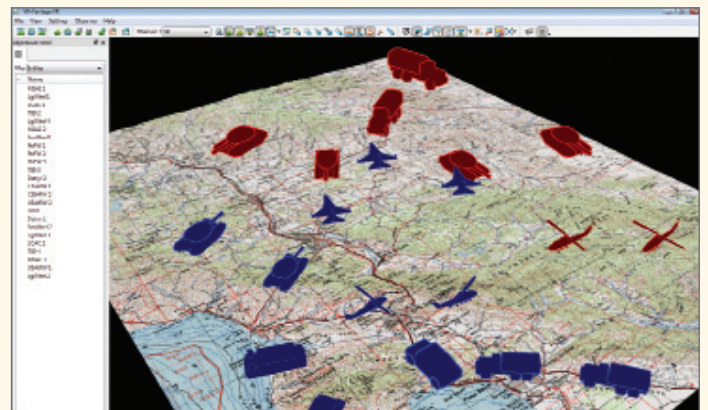
MAK is pleased to present VR-Vantage Plan View Display, the newest addition to our line of VR-Vantage products. PVD is a 2D visual solution that provides a tactical map view of the virtual world for use in mission planning and After Action Review.

By overlaying High Level Architecture (HLA 1.3 or IEEE 1516) or Distributed Interactive Simulation (DIS) entities and information onto 2D views of tactical, strategic, and visual databases, VRV-PVD gives new insight into the virtual battle. Standard map formats and an intuitive user interface facilitate the placement of forces and how terrain might affect the engagement.

The PVD displays line-of-sight information, track histories, sensor coverage areas, and fire and detonate lines. Use tactical graphics, such as lines, points, areas, symbols, and text to understand and analyze a simulation. The fast map view allows quick and easy navigation to any desired section of the terrain database.

VR-Vantage PVD is part of the VR-Vantage 1.3 product release (see Product Updates on page 3), which brings improvements to the full line of VR-Vantage solutions. VR-Vantage Plan View Display and the full line of VR-Vantage products are available immediately.

For more information and details on pricing, please visit the VR-Vantage PVD Page or contact info@mak.com.



Product Win!

MÄK's VR-Vantage chosen over Open Source Graphics

The Aeronautic Systems division of the Council for Scientific and Industrial Research (CSIR) in South Africa has selected MÄK's VR-Vantage Toolkit as its image generator for rendering out-the-window (OTW) displays.

As one of the leading scientific and technology research organizations in Africa, the CSIR focuses on multidisciplinary research and technological innovation for socio-economic growth. The CSIR's expertise in the defense, peace, safety, and security domain covers various topics including aeronautic, optronic sensor, radar and electronic warfare systems; landwards sciences; safety and security; command, control, and information warfare; and technology for special operations.

The CSIR's Aeronautic Systems division will integrate VR-Vantage, a commercial off-the-shelf (COTS) product, into an existing Helicopter Ship-board Landing Simulator.

At the start of a project, integrators can choose to start from scratch or use a COTS product as a baseline. The Aeronautic Systems division of the CSIR decided to leverage the capabilities of VR-Vantage Toolkit so they can focus their attention on the tasks related to ship-board helicopter landing.

The CSIR also plans to use the VR-Vantage Toolkit in its UAS Systems Integration Lab to provide sensor information to evaluate the effectiveness of an UAS platform in a given scenario. These scenarios can include sensor coverage, platform stability, hardware-in-the-loop evaluation, mission planning, and possibly extending to hi-fidelity sensor modeling with the addition of the JRM Technologies SensorFX plug-in.

For more information, please visit the VR-Vantage page or view the original press release.

PRODUCT UPDATES

We are happy to announce the release of several MÄK products. Boasting new features and noteworthy enhancements, these releases include:

VR-Vantage 1.3

- **VR-Vantage PVD.** MÄK's PVD provides a 2D view of simulated terrain and objects to provide the "big picture" of a simulation.
- **VR-Vantage FreeView.** FreeView is a free model and terrain viewer available with any VR-Vantage product or via download from www.mak.com/freeview. With FreeView, users can view their existing terrain databases and models. FreeView also allows users to experience the VR-Vantage user interface and terrain composition capabilities and the VR-TheWorld Online terrain server.

MÄK RTI 4.0.3 - Maintenance

- **HLA Evolved Java Bindings**
- **Time Management**

For more information, please contact info@mak.com.

MÄK Webinar Series

Loading Large Area Terrain Databases using MetaFlight Wednesday, July 27

Simulations that operate over large geographic areas often have terrain databases that are tiled to support terrain paging. MÄK's Simulation and Visualization products, VR-Forces and VR-Vantage, support several terrain paging approaches; one of them is MetaFlight.

Join MÄK's director of visualization products, Brett Wiesner, as he explains how MetaFlight is used to within VR-Forces and VR-Vantage applications. He describes some of the different ways MetaFlight databases are organized to support terrain, virtual texture and cultural feature datasets. Brett will cover some tips on how to configure the MetaFlight for use in MÄK applications and how to optimize the databases for best results.

Registration will be open at mak.com/community soon!

Can't make it? Registrants will receive a link to download a recording of the webinar.

Customer Success!

Czech Air Defense Technical Institute develops a helicopter mission rehearsal system using MÄK products

The Czech Air Force and Air Defense Technical Institute, known as VTÚLaPVO Praha, works to integrate communication and information systems to aid decision-making in support of air and army forces command and security crisis management.

When they were tasked to develop a new Mi-171 helicopter mission rehearsal system for the Army of the Czech Republic, they chose VR-Vantage as their visualization tool and VR-Forces to develop their simulations and act as a threat generator. The system required two versions, one to be implemented nationwide at military bases and another version deployed to units stationed in areas of conflict. For these new trainers - the Squadron Operation Centre (SQOC), the Deployable Squadron Operation Centre (DSQOC), and the Wing Operation Centre (WOC) – the project team at VTÚLaPVO needed 2D and 3D visualization for mission rehearsal of upcoming flights and interactions with enemy defense forces.

“Thanks to the out-of-the-box functionality of VT MÄK tools, VTUL was able to set up a prototype solution in a short amount of time and immediately begin working on details and customizations with the VR-Forces API. Using the flexibility of the programming interface, VTUL was able to prepare the XML bi-directional communication and use it to its advantage in connecting VR-Forces to their logistics system,” said Michal Cilek from the Millennium Gate Company, MÄK’s reseller in Czech republic, Slovakia and Poland.

If you would like MÄK to publish your success story, contact marketing@mak.com.



The systems for the SQOC, DSQOC, and WOC have been deployed to three Czech Army sites, including the Czech Army Helicopter Expeditionary Unit that supported NATO in Afghanistan. The system was used to fly over 700 missions in Afghanistan last year alone.

“The development of the SQOC, DSQOC, and WOC addressed a new level of complexities in mission rehearsal,” explains Stanislav Novak, Project Team Leader of the SQOC project. “Now, as part of the deployable version, DSQOC, MÄK tools are helping to fulfill everyday procedural training for the HELI units on mission in Afghanistan today.”



Have you checked out the MÄK blog?

MÄK’s product managers and business development team are blogging about industry news, changing standards, product updates, and even passing along technical tips. Our latest entry features Fred Wersan as he discusses how to start VR-Forces by connecting to a DIS or HLA exercise.