

What's Up MÄK

Join MÄK at AUVSI's Unmanned Systems North America 2012

Learn how MÄK's software can work in the UVS market for scenario generation, visualization, and simulated sensor feeds!



MÄK is excited to exhibit again at AUVSI Unmanned Systems North America, the premier forum for reviewing, assessing, and discussing the current state of the unmanned systems market. On August 6-9 in Las Vegas, we will exhibit our suite of simulation software, configured as a UAS simulation environment emulating a ground control station that uses operational protocols to control simulated UAS's and sensor feeds.

We built the simulation on our scenario generation platform, VR-Forces. Our 3D visualization tool, VR-Vantage IG provides sensor simulation and streaming full-motion video. MÄK has also joined forces with our long-time partner, DiSTI, to provide a more complete simulation. DiSTI's GL Studio provides the human-machine interface (HMI) that frames the UAV simulation, tactical map and simulated video views within the ground control station. Using these tools, we've created a 3D virtual environment to plan UAS missions, execute those missions, simulate realistic simulated sensor video, and transmit that video to a live or virtual prototype ground station, with as much fidelity as your project demands.

MÄK's Simulated Video capability makes the UVS simulation environment possible. Simulated Video is a flexible alternative to live video for demonstration, development, testing, and embedded training of operational video exploitation systems such as UAS ground control stations, situational awareness systems, sensor fusion systems, and remote video terminals.

MAK's Pattern of Life capability, recently released in B-HAVE for VR-Forces, adds depth and realism to UVS simulation environments. Pattern of Life allows you to quickly create crowds of people and air, ground, and maritime vehicle traffic that behave in natural, life-like patterns — like children on their way to school in the morning, or worker's vehicles leaving buildings during lunch. The patterns are developed using only the GUI, allowing the user to compose patterns to model human behavior, taking simulation conditions (like time of day) into account. By manipulating patterns in the scenario, you can create rich, complex, and realistic background traffic in minutes.

Join us at **Booth #2911** to see how simulated video and MÄK's suite of software tools can help your UVS project.

AUVSI Preview : 1

MÄK's Tech Tip by Bob : 2

Early Adopters Program : 2

Product Update: VR-Forces 4.0.4 : 3

Partner Focus: ForwardSim : 3

Platform Support Changes : 4

MÄKer Spotlight: Stacey Hatfield : 4

MÄK's Tech Tip by Bob Holcomb

Proper Peter's Picking Plenty of Performing Plugins:

When selling toolkits, we run into the same kind of problems that people selling hammers have. Most people won't believe that the tool can build a house unless I show them a house built with the tool. With our software toolkits, many customers want to see the possibilities that the API is capable of. Because of this, many of the demos that we create have a touch of customization to them, some more than others. However, we always do it in a way that a customer can replicate when they are working with our APIs and we do it through the magic of plugins. Demos including dynamic terrain and video streaming are all implemented as plugins.

So what are these magical plugins and how do you start creating your own awesomeness? Well, I'm glad you asked. For our VR-Vantage based demos, our plugins create and install a driver in the VR-Vantage architecture. Drivers are the secret sauce in VR-Vantage that allow you to do what you do best during each frame in order to accomplish something magical. In actuality, virtually all functionality with VR-Vantage is implemented as a driver. Even our new HLA Evolved capability is a driver (implemented in plugins!). We just insert our customizations to the existing system and we're off and running. But wait - there's more! We're not just restricted to the VR-Vantage API within the plugins. In our streaming video plugins we are able to touch the underlying OpenSceneGraph API and modify the scene, then we go even deeper and play with OpenGL directly. The VR-Vantage architecture makes it easy to access everything at a very high level, but it doesn't prevent us from doing anything that we want under the covers.

Time is running out...

Don't forget about our limited time Pattern of Life offer!

With Pattern of Life, you compose your scenario at a higher level. You can now create time-variant flows of people and vehicles, in addition to plotting the locations and tasks of individual entities. The Pattern of Life GUI lets you manipulate patterns within the scenario – no programming required. Quickly create rich, complex, and realistic background traffic, whether it's people, road, maritime, air, or even animal traffic.

[Learn more!](#) Our offer ends on September 25, 2012.

Early Adopters Program

We are pleased to announce the introduction of the Early Adopters Program for MÄK COTS software.

These days, MÄK is moving full steam ahead with some exciting features in our product line - be ahead of the curve and learn about these upcoming features before their public release. As a member of the Early Adopters Program, you'll receive download links to pre-released software; this gives you the chance to provide critical comments about feature usability and direction that can influence a product's final release. These releases will also help you better understand the direction our products are going with regard to new features.

If you're an engineer who likes to live on the bleeding edge and always plays with the latest and greatest, then the MÄK Early Adopters program is for you. Customers with up-to-date maintenance can sign up to receive download links to Early Adopter release versions of MÄK products.

To sign up or get more details about the program, please contact Jim Kogler, Director of COTS Products, at jkogler@mak.com.

Product Update: VR-Forces

What's new in VR-Forces 4.0.4 and B-HAVE 2.0.4

VR-Forces 4.0.4 gives you Pattern of Life with B-HAVE, enabling you to quickly and easily add realistic background traffic into your simulation. But that's not all, folks. We've put together a (non-exhaustive) list of more additions and improvements we've made to VR-Forces! [Contact us](#) if you have questions or concerns.

Radar Modes - Being able to configure named modes for radar systems is an important part of electronic warfare (EW). VR-Forces now allows users to configure multiple named modes for radar systems. A named mode could be "off" or "low power" or "search". This is all done through configuration files. The F18 has two modes "Track" and "Search". Users can create new specific modes and then set them through plans.

Entity Editor Model Configuration - The Entity Editor has been significantly overhauled to allow users to configure 2D icons and 3D models directly from the Entity Editor GUI. You can also show the bounding volume of the entity in relation to the 3D model. If you select a sensor, you can show where the sensor is placed on the vehicle with relation to the model.

Flight Control/ATM Tasking - You can now task aircraft as an aircraft controller would through new commands such as Fly Heading, Fly Altitude, and Fly Heading & Altitude.

Radio Communication Lines - For users who want to visualize radio messages between any two entities, communication lines are now available in the GUI. This version will allow the user to choose between notional lines (which follow the curve of the earth), and line-of-site lines, which can be occluded by terrain (and curved earth).

Bounding Volumes - VR-Forces now visualizes the volume used to determine model shape, and hence, collisions etc., in the PVD. You can also see the bounding volume in the Entity Editor so you can make sure the Simulation Engine uses a collision volume that exactly matches your 3D Model.

Ruler - Often when creating a scenario, it's useful to determine the distance between two points. Or you may want to watch the distance on two closing entities. The ability to measure these distances have been added to VR-Forces 4.0.4, as well as VR-Vantage 1.5.

Terrain Profile - When creating a scenario with air assets and routes, it's particularly useful to understand a terrain profile to verify that your aircraft won't fly into mountains. Terrain profile is available for track histories, indivisibility lines, and routes.

Indirect Fire - Indirect Fire allows you to script times when various munitions will be fired into a certain area.

Range Rings/Threat Domes - You can now turn on threat domes/range rings for each entity. When turned on, a dome (if configured) or a ring will be displayed for each weapon on the entity. You turn this on for specific entities, and the configuration is saved to the scenario.

Toolkit Improvements - There were a number of significant improvements in the API geared towards specifically improving the ease of updating the GUI through the API. Some of these improvements include allowing the drawing of objects when they are not coming from the network, allowing the user to intercept object creation before sending to the network, and including a cross thread interface to the VR-Forces Remote Controller.

Scenario Descriptions - This version of VR-Forces completely overhauls the user interface for creating and storing scenarios: Users can now give a scenario a description. Additional advanced configuration is now accessible via a tab, so that the typical user experience is more streamlined and game-like.

Partner Focus: ForwardSim

ForwardSim's experience and background in modeling and simulation, mathematics, computer sciences, and project management is used on a daily basis to support customers with high quality products and services. Providing a suite of tools, personalized training, and consulting & programming services to the modeling and simulation community, ForwardSim improves customers' efficiency to generate results out of their simulations.

[The HLA Toolbox](#) is the MATLAB® interface to the High Level Architecture standards, HLA 1.3 and IEEE 1516 for distributed simulation; it accelerates federation implementation and enables the use of MATLAB® and its Toolboxes at the federate development level. [The HLA Blockset](#) provides a library of Simulink blocks designed specifically to integrate HLA services into Simulink; with it, you can connect your Simulink models to a distributed simulation using the High Level Architecture standard HLA 1.3 or IEEE 1516.

To learn more about what ForwardSim can do for your simulations, visit their [website](#)!

Platform Support Changes

This information might look familiar to you - Jim Kogler originally posted this as a [blog entry](#) on May 14th. We thought it would be good to re-emphasize since it's quite important.

Periodically, MÄK reassesses platform support for our product line. We consider a platform a paired version of compiler and OS. For example, Windows 7 and MSVC++ 8 is a single platform, while Windows 7 and MSVC++9 is a different platform. In order to support the most popular and stable platforms while maintaining commitment to quality products, we need to limit the total number of platforms we support as part of the standard product offering.

In general, when deciding to support or not support a platform we consider a number of factors:

1. Does the product have a heavily used API? – some of our products are generally used out-of-the-box with little API usage. In those cases we can support fewer compiler variations.
2. Do customers have to integrate our products and libraries into legacy systems, or larger systems that they are developing? – this requires broader compiler variation support.
3. How easy is it for us to build and test on a given platform?
4. How many customers are actually using the platform at all?

Even after considering all these factors, the decisions can be tough. Some customers still have requirements for legacy systems, which are running on platforms no longer supported by the OS or compiler vendor. For these customers we can often work out special arrangements to continue support on an as needed bases.

From our perspective, every platform we support adds considerable cost and time to the release process. More testing is required, more development resources are spent porting, and more questions are asked when supporting customers. This is coupled with increasing demand for more platforms: VC18 will likely be out shortly!

To this end, we will be discontinuing several platforms this fall for parts of our product line. We are actively soliciting customer feedback with regards to possible customer impact. If you believe these changes will negatively impact you, please let us know as soon as possible by calling or writing MÄK Sales at sales@mak.com. Based on customer feedback we may decide either to continue maintaining the platform, or work out a special agreement with the customer for a fixed period of time to support that platform privately.

The proposed platform changes will all start with a feature release – additional maintenance releases will maintain the platform support list for that series. For example, VR-Forces 4.0.x will support all of the platforms VR-Forces 4.0 was released on. Changes would only start with VR-Forces 4.1.

Want to see all the proposed platform changes? Read the [full blog post](#) and don't hesitate to [contact us](#) with questions!

MÄKer Spotlight: Stacee Hatfield

Quality Assurance Engineer



The bridge between end-users and programmers, Stacee Hatfield is a Quality Assurance (QA) Engineer at MÄK. Her goal, as counter-intuitive as it may seem to the rest of us non-QA people, is to try and break the software. This means anticipating problems by playing devil's advocate and trouble-shooting potential errors by putting herself in the shoes of a user. This is all done to catch problems or bugs before releasing anything to the public.

Stacee graduated from Oakland University in Michigan with a degree in Computer Engineering. Before joining MÄK, she was a Software Engineer at General Dynamics and a Computer Engineer in Modeling and Simulation at Tank Automotive Research, Development and Engineering Center (TARDEC). Stacee also served for four years in the U.S. Air Force while assigned to a Fighter Squadron.

In her free time, Stacee is an avid video game player – she has more than 7 video game consoles to choose from. This includes the console where she played her first video game – the Intellivision.

We hope we've piqued your interest in getting to know our MÄK team. Stay tuned to our [website](#) for the latest on MÄK!