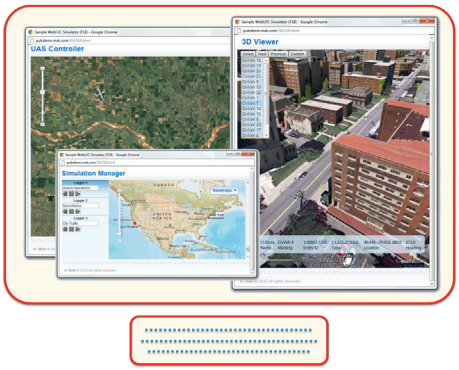
What's Up MÄK

MÄK Labs: Innovative Approaches to Simulation



As a leading simulation company, it is MÄK's goal to constantly contribute to the M&S community through new innovations and fresh ideas. MÄK Labs is the dedicated area of MÄK where we are on the lookout for new problems and solutions; whether it's applying our existing technology to new market problems or applying new technology to solve existing problems in inventive ways, our Labs team is pushing the envelope.

We're applying M&S in new ways.

Through a process of rapid prototyping and close collaboration with innovators and early adopters, we work to identify and vet new product ideas as quickly as possible. What we learn from these processes, we share with you. This is what we're working on:

- LVC Simulation on the Web: While exploring web deployment alternatives, we uncovered the need for a lightweight web protocol to convey M&S simulation activity. This led to the birth of WebLVC, a protocol designed specifically to support interoperability between web-based client applications and traditional modeling and simulation federations. From our WebLVC Server to our WebLVC Suite, we are continuing to expand the reach of your live, virtual, or constructive simulations. You can learn all about our WebLVC Initiative here.

- Web-Based Traffic Simulation: We are trying out simulation-as-a-service delivery models by putting web interfaces on existing simulation engines - in this case, for civilian traffic. With its intuitive web-based interface, MÄK's TurboTraffic lets non-experts quickly and easily create a traffic simulation to visualize traffic flows anywhere in the world. While other traffic sims are hard to configure and time consuming to set up, TurboTraffic lets you interactively enter traffic study results and immediately see the simulated traffic. Think your simulation could benefit from a similar "facelift", allowing web users to interact with the simulation model? Let's talk.

- DIS/HLA for Unity Game Engine: Game engines provide a compelling platform for first person simulation, but it often takes significant work to tailor them to support the interoperability protocols, terrain formats, and scenario concepts required by M&S projects. Known for our interoperability expertise, MÄK is developing an HLA/DIS interoperability module for the Unity engine: VR-Link for Unity.* But our vision extends beyond network connectivity: We're experimenting with a variety of tools and techniques that would ease the job of integrating game engine technology with traditional M&S assets.
* If you'd like to be an early adopter, sign up for our beta program here!

Our Smarts + Your Smarts = Better Simulations.

MÄK Labs is fueled by your ideas, input, and perspective. We invite you to work with us to find and develop innovative ways to improve the Modeling and Simulation community. To learn more about MÄK Labs, contact us at labs@mak.com or visit us at mak.com/labs.

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MÄK's Tech Tip by Fred Wersan

Changes to Move to Waypoint and Move to Location

Figure 1

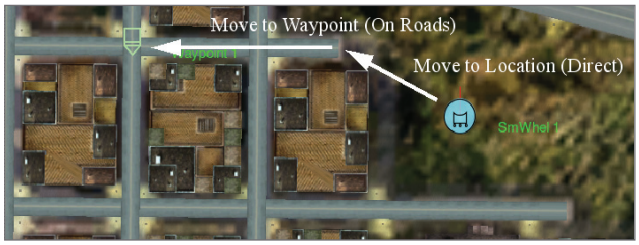

Figure 2

Figure 3

In a related blog, I discuss at a high level the changes to the Move to Waypoint and Move to Location tasks in VR-Forces 4.1. In this tech tip I drill down a little and provide some examples. To recap, the VR-Forces 4.0.4 and earlier Move to tasks let you specify that an entity move directly to the destination or plan a path that used road features, if available. Those options are no longer available in one task. There are now three Move to tasks: Move to (Direct), Move to (On Roads) and Move to (Plan Path). Move to (Plan Path) is a scripted task. It combines Move to (Direct) and Move to (On Roads) in a Lua script to provide path planning. Let's see how these tasks work.

Figure 1 shows how an entity will move given the Move to Waypoint (Direct) task. As you would expect, it moves directly to the waypoint without regard to the road network.

Figure 2 shows a Move to Waypoint (On Roads) task. Given this scenario, the entity will not move at all, because it is too far from a road to start a road movement task.

Figure 3 shows how the entity moves given the Move to Waypoint (Plan Path) task. It moves to the nearest point on a road and then moves to the waypoint. You will see that this is not the most direct way to move to the waypoint and still use roads. (Note: VR-Forces 4.0.4 would choose the same path for the entity.)

If you want the most direct movement you would have to tell the entity to Move to Location (Direct) and give it the endpoint of the nearest road, then give it Move to Waypoint (On Roads) for the rest of the trip (Figure 4).

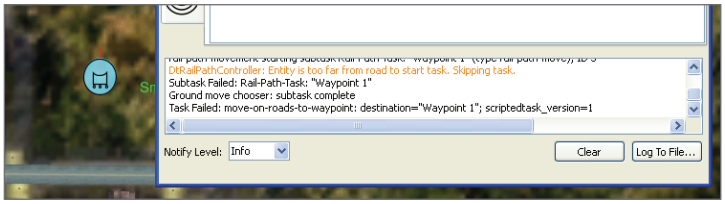

Figure 4

MÄK Webinar

Harnessing the Power of Lua: A Technical Tutorial

Wednesday, February 27, 2013; 9am EDT

VR-Forces 4.1 puts the power of Lua, the light-weight programming language, to work to help you script complex behaviors. Join Bob Holcomb, MÄK's Principal Engineer, New Technologies, and Lua scripting expert, to learn how you can put Lua to work for your simulation. This 90 minute tutorial will not only demonstate how to create scripts with Lua, but will also empower users to create great behaviors (including complex group behaviors).

Can't join us? Registrants receive a link to download the recorded webinar.

Want to join us? To register for the Lua Webinar, click here.

Product Updates

VR-Forces 4.1

- Users can now create scripted tasks for entities using the Lua language. This functionality opens up the power of VR-Forces. Now custom tasks can be created by people not skilled in C++ coding. Associated GUI elements are automatically created, further speeding up the creative process. Scriptable tasking can be used to create complex single entity and group behaviors. Additionally, the tasks can be written while VR-Forces is running allowing for rapid proto-typing and validation.
- The Entity Palette has been updated to allow any entity type to be assigned any force type at creation time and is now searchable.
- VR-Forces now supports arbitrarily large vector data (feature data), both streaming and local.
- VR-Forces will now import and export MSDL (Military Scenario Description Language).
- Users can now create tactical graphics in 3D as well as 2D environments.

VR-Vantage 1.5

- VR-Vantage XR functionality has been integrated into VR-Vantage Stealth. This allows customers with a VR-Vantage Stealth license to quickly switch to an exaggerated reality (XR) view mode to better understand their tactical situation from afar while preserving the 3D context.
- Any window's output can be directed into a video stream. That stream can be transformed (inverted, compressed, scaled, etc.) and then sent to a file, TCP socket, shared memory, or an encoded video stream (MPEG-2, MPEG-4, etc.).
- Users can add camera effects to any window (coloring, noise, gain, blur, etc.) to quickly and affordably simulate a sensor view. Instantly make an inset view look like NV, EO, or IR.
- VR-Vantage can associate Audio with any detonation or entity type.
- VR-Vantage distributes a tool to cut sites into .earth allowing for high fidelity hand modeled sites surrounded by streaming terrain.
- Track histories are now configurable; users can display tactical smoke and chemical clouds; particle effects are now scalable in XR mode, and more!

Contact info@mak.com for more information!

Free VR-Forces and VR-Link Training Course with Purchase of Maintenance!

Check out the MÄK Events Calendar to learn about our next training course! Have questions? Contact your sales person or info@mak.com.

MÄKer Spotlight: Nathan Kidd

Lead Architect for Simulation Products

We have a reputation at MÄK for being hard-working, fun-loving, and smart. What better way to back up this reputation than to tell you a bit about Nathan Kidd, MÄK's Lead Architect for Simulation Products.

Nate started at MÄK in 2000 – he's been here for quite a while and has spent roughly 10 years working on and perfecting VR-Forces. Before joining the MÄK team, Nate was a MÄK customer of VR-Link at Lockheed Martin – he just couldn't get enough of MÄK, so we hired him. At least that's what we tell ourselves. He even did a bit of recuiting and got his old college roommate, Jim Kogler, to hop on board (you may have heard of Jim – MÄK's Director of COTS Products).

Nate is an adventurer addicted to learning new skills. He earned his pilot's license flying a Piper Tomahawk around New England (want to see a pic? Check out his profile on our Community Forum.) He's taken part in an improv comedy group. Nate can show off on the blues harmonica. He's built a toolshed in his backyard and most recently, he's learning how to throw pottery. Of course, since the birth of his daughter, he and his wife spend most of their time figuring out how to raise her. (She's five month's old and he's working on getting her first complete sentence to be, "Correlation is not causality." MÄK wishes him the best of luck with this.)

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