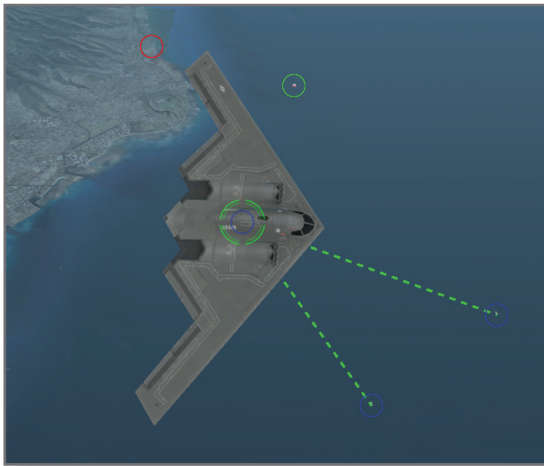


What's Up MÄK

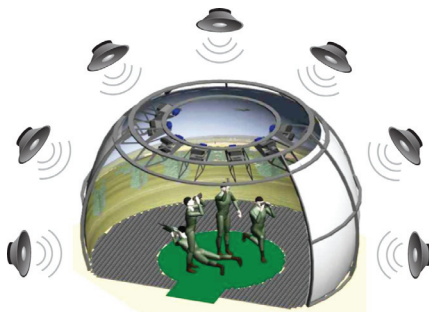
MAY 2014: VOL 16: NO. 5

Add 3D Sound and Synthetic Interactive Voice Comms to Your Simulation Scenario

VT MÄK and ASTi have teamed up to bring you interactive voice and sound



Synthesized voices enhance communications between VR-Forces' entities and trainees



High-quality 3D sounds help create an immersive training experience

Is it possible to crank up the realism of synthetic training environments while reducing exercise setup and runtime overhead? *Absolutely!*

MÄK and **Advanced Simulation Technology inc. (ASTi)**, a predominant provider of sound modeling and virtual communications products, know it's possible. To prove it, we combined ASTi's highly realistic and fully automated 3D sound modeling and interactive voice communications with MÄK's **VR-Forces**.

What does this mean for you?

Immersive 3D Sound

MÄK worked with ASTi to integrate **ASTi's Earshot** into VR-Forces to automatically add highly realistic 3D sounds to each VR-Forces entity. Out of the box, Earshot knows standard entity types and has built-in sound models tuned to match the sound of real-world vehicles, weapons fire, and detonations. All it takes to bring enveloping, high fidelity, directional sound to your simulation environment is simply connecting Earshot to your network. With this low-overhead approach, Joint Terminal Air Controller (JTAC) domes and other training systems come to life with activity created by VR-Forces and sound created by Earshot.

Reduced Exercise Overhead through Synthetic Voice Comms

Historically, subject matter experts (SMEs) have served as role players to listen and interpret the voice communications in collective exercises. This is a very costly, labor-intensive approach and SMEs are a limited resource. Instead of relying on human role players, what if entities in your scenario could interactively speak with synthetic voices? **ASTi's Construct** makes this a reality. When integrated with VR-Forces, Construct enables entities to interact verbally with human trainees by adding radio modeling, speech recognition, text-to-speech, and natural language processing. These technologies are tightly integrated in Construct to allow for rapid customization while also tailoring the speech models to specific domains, such as close-air-support, to produce optimal speech recognition rates.

Bring It All Together

The combination of MÄK's VR-Forces with ASTi's Construct and Earshot provides an enhanced synthetic training environment and reduces the time and manpower required to perform collective training. 🌸

Got questions? We've got answers.
Get in touch at info@mak.com.

The Interoperability Corner

Live and Virtual Training Comes Together:

Bridge simulated systems into live environments to help soldiers train as they fight

Military training is important and exists for one purpose: to prepare soldiers to be successful on the battlefield. To achieve success, training must include experiential learning where students are exposed to realistic battlefield conditions before they experience actual combat.

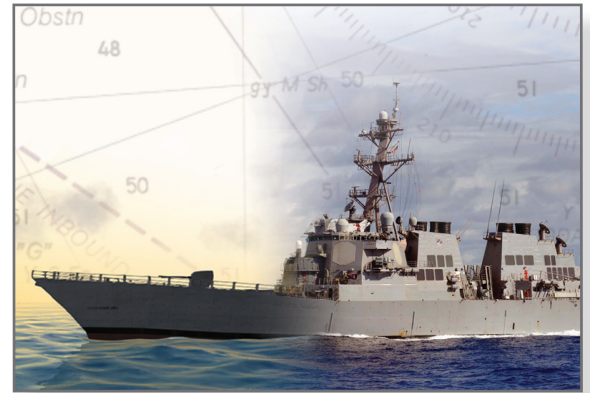
For the military to train as they fight, they should have access to their own systems when they train. After all, training on real equipment is most realistic. But instead of using their own live weapons, fuel, or other resources during training, connect their live system to a simulated environment and let it interact with a simulated environment with injected threats and targets.

On one hand, they're using real combat equipment; on the other, they're taking advantage of training simulation systems. Both have complex and important architectures. Combat systems often use sophisticated Data Distribution System (DDS) architectures to communicate and manage data within the system. Training simulation technologies use High Level Architecture (HLA) to distribute entity information and events. How can the two different systems and data management mechanisms be used simultaneously?

The most beneficial solution is to bridge these two systems together so that trainees get the best of both worlds: the realism of training with their own equipment and the flexibility and safety of simulated scenarios and weapons engagements.

MÄK's **VR-Exchange** has, for many years, been connecting disparate simulation architectures together and bridging between virtual training systems and live systems. Unlike most gateways, VR-Exchange can translate many different protocols, not just DIS and HLA. We are proud to introduce DDS to its long list of supported brokers. Using VR-Exchange, you can now connect training systems using DIS, HLA, TENA, or other supported protocols with real systems using DDS.

Interested in learning more about this approach? We're here to help. Get in touch at info@mak.com.



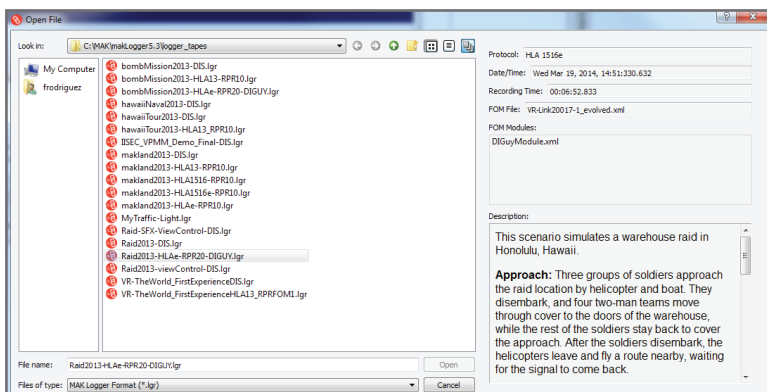
What is this Logger File?

Interoperability is hard. It is hard because there are myriad open standards out there, as well as multiple protocols, operating systems, and, of course, requirements. At VT MÄK, we understand this. To help, we have always tried to support the widest variety of configurations that we can. All of our products support four different DIS versions, three different HLA versions, and a plethora of FOMS, operating systems, and compilers. VR-Exchange expands this even further with DDS, TENA, and many other protocols.

Unfortunately, with this flexibility comes complexity. Take a Logger file, for example. A Logger file could be DIS, HLA 1.3, HLA Evolved, or HLA 1516. It could have been written in RPR 1.0, RPR 2.0, or any other FOM. It could be using VR-Link Revision 1 or 6. And now with HLA Evolved, it could have a lot of HLA modules on top of that.

So how can you tell? How can you configure your **MÄK Data Logger** to make sure that your file is loading correctly?

The answer in the new MÄK Data Logger version 5.3 is easy. You don't have to do anything. When you load a logger file, our Logger will automatically load the right FOMs and FOM Modules, as well as configure the right versions for you. So you can sit back and watch the traffic flow by. You can still, of course, reconfigure your file if you want.



And if you're interested, we have enhanced the loading screen for the MÄK Data Logger to show you all of this extra connection information, including the protocol, even if you are running a different protocol version of the Logger. No more guessing is necessary.

As you can see from the screen shot, we also include a description field in every Logger file. Filling out this field is entirely optional, but if you want more information about what you are seeing, the description is there for you. This isn't a large feature, but we hope that little things like this will make your life easier and your interoperability problems less challenging. After all, that's what we're here for. 🌸

Tips & Techniques

Embedded Entities:

Easily Create & Manipulate Compound Entities in VR-Forces

MÄK is always trying to make VR-Forces easier to use. This means that we are constantly looking for better ways to create and manipulate entity types – specifically, complicated ones. When we released VR-Forces 4.2, we added many new types of weapon systems and ships to the default VR-Forces model set. As we set out to use these new systems, we realized that most entities hosted not only many diverse weapon systems, but also other entities that could be viewed as an extension of the host ship.

Let's look at Anti-Submarine Warfare (ASW). Ships don't just fire torpedoes – they deploy a helicopter to fly toward the target, which then drops the torpedo. The helicopter eventually returns to the ship. We want to enable VR-Forces users to easily create this type of scenario by simply clicking on a ship, telling it to "Deploy torpedo here", and then have the ship automatically 1) deploy the helicopter, 2) have the helicopter fly to the appropriate place, 3) drop the torpedo, and 4) return to the ship. There are many types of scenarios where an entity hosts a separate entity that indirectly performs routine tasks. This is where our newest "Embedded Entities" come into play.

Want the nitty gritty on VR-Forces' Embedded Entities? Of course you do! Go check out [Jim's full blog post](#).

Psssst! Hey.
Over here.

Just a little bit more
interoperability news.
We made the MÄK
RTI faster than ever.
Want to know more?
[Give us a buzz.](#)

ITEC 2014 Snapshot

Stop by MÄK's ITEC 2014 booth (C140) to see our complete line of simulation software, with a focus on simulation interoperability and our newly acquired DI-Guy human simulation software. You'll also see the MÄK WebLVC Server and MÄK WebLVC Suite in action, which enable web-based federates to participate in distributed simulations, and our new web & mobile apps, including the [Training System Demonstrator](#). Get more details about our ITEC 2014 demos [here](#)!

MÄKer Spotlight: Cullen McElroy



Software Engineer, Link Team

This month the spotlight shines on Cullen McElroy! Cullen is one of MÄK's very talented Software Engineers on our Link team. As a software engineer, Cullen develops new features for MÄK products and fixes bugs. He handles support for MÄK's VR-Link and occasionally performs development work on our Battle Command and QuickStrike products.

Cullen attended DigiPen Institute of Technology in Seattle, WA where he developed four year-long game projects! In 2010 he graduated with a Bachelor's Degree in Real Time Interactive Simulation with a minor in Mathematics. A perfect fit for a successful career at MÄK!

An avid pug enthusiast, Cullen has recently become the proud owner of a beautiful black pug named Rupert. With Rupert by his side, Cullen enjoys a number of hobbies - Cullen is teaching himself German and also how to play the guitar. He enjoys watching European soccer (Go Arsenal!) and hockey (Yeah Bruins!), but also appreciates the value of more mindful exercises. For example, to keep body and mind in check, Cullen practices the art of yoga almost daily - it's the perfect counter balance to a desk job! Rollerblading and long boarding are Cullen's preferred modes of transportation around town. In what's left of his free time, Cullen likes to play video games (preferably with Rupert on his lap).

We hope we've piqued your interest in our MÄK team! Stay tuned to all things MÄK at our [blog](#) and [Twitter!](#) 🌸