

What's Up MÄK

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RPR FOM 2.0 is Here!

The long-awaited SISO standard has arrived, fully supported by MÄK products



(Clockwise from upper left) Brad Dillman, Aaron Dubois, Len Granowetter, Doug Wood and Jim Kogler all played a role in the development of RPR FOM 2.0.

After more than 15 years and 21 different drafts, RPR FOM 2.0 is finally a SISO standard! It's been a long road with periods of intense activity and years with little progress, but it is here. The RPR FOM is an incredibly important standard in our industry. It embodies the most widely used object model in our community. It was originally designed to allow the concepts of DIS to be used in HLA federations. Now with RPR FOM 2, there is a single official standard that is supported by all the flavors of HLA and is consistent with DIS version 6. Having this standard provides a clear way for our customers to maximize their simulation investments — with minimal incremental cost, simulations built for a single purpose can be connected to other simulators to form larger and more valuable federations.

Most of us have been using various drafts of the standard for a long time now, but they have all had various issues, not least of which has been the lack of support for HLA 1516-2000 and HLA 1516-2010 (HLA Evolved). This meant that different organizations have been using slightly different adaptations of the HLA 1.3 drafts when using HLA 1516. The final version unifies these variations and fixes a number of issues. The datatype naming convention is standardized and the descriptions in the accompanying guidance document (the GRIM) are more clear, complete and useful. RPR FOM 2 has also been made modular for users of HLA Evolved so that people who use part of the standard can use only the modules they depend on. Many federations use RPR FOM as the reference FOM on which to build even further functionality, something that is easier to support now than ever before thanks to HLA Evolved FOM modules.

MÄK is proud to say it has been working on the standard as part of the SISO community since its very first days. Long time MÄKers Doug Wood and Len Granowetter worked on RPR FOM 1, with Doug filling the role of secretary. Jim Kogler joined them in the early years of RPR FOM 2 and functioned as chairperson for a while. Brad Dillman was also an editor in the early days. When the RPR FOM effort was revived a few years back, Aaron Dubois jumped in as editor of the GRIM and worked with a talented group of other SISO volunteers to see it across the finish line.

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RPR FOM 2.0 continued...

The newly finalized standard is already supported in the full line of MÄK products. As new drafts have been released, MÄK has been updating its core Link products to ensure our customers can always use the latest and greatest version. But don't worry; we're not dropping support for any of the older drafts. So if you've built up your simulation on RPR 1 draft 17, we've still got you covered.

We encourage all RPR users to check out the official RPR FOM 2. You can find it on SISO's standards page [here](#) (note that it is officially two standards numbered SISO-STD-001-2015 (the GRIM) and SISO-STD-001.1-2015 (the FOM)). On to RPR 3! 🌸

The Bridge to Everywhere

Bridges are awesome, they connect us to the places we need to go and the people we need to interact with. Bridges come in a variety of shapes and sizes to match the traffic that crosses them. Bridges are strong so we can trust them to support us to our destinations. In the physical world, a new bridge needs to be built to connect two isolated destinations. When it comes to simulations, your friends at VT MÄK provide a single product, VR-Exchange, that can bridge many different systems, using many different protocols, on many different platforms.

VR-Exchange is the most comprehensive and inclusive simulation bridging software available.

Originally designed to interconnect realtime platform simulations using different versions of DIS and HLA, it has grown to include live/embedded systems (OpenSplice DDS broker), operational test ranges (TENA broker), command & control systems (COT Broker), web applications (WebLVC broker), air traffic management (ADS-B and AviationSimNet Brokers) and program specific training networks (MARTEX, MRF, ERF, AFMSTT brokers).

This month we released the latest version of VR-Exchange. Version 2.4 includes:

- More brokers including RPR FOM 2.0 and Cursor on Target (CoT) broker
- More translators including areal and linear object messages for DIS and HLA
- One-way translation so you can merge two independent exercises into one simulation as you see fit
- Better user interface to make sure such large entity counts are easy to understand and do not cause performance problems
- Geospatial Filtering allows your system to automatically select the data on the map that is relevant to you, rather than loading data that doesn't impact your simulation
- Performance improvements that allow you to connect to larger and larger simulation exercises

The reason VR-Exchange can bridge to so many destinations is that we designed it to be easy to extend. You can extend our brokers or write your own, or we can build one for you. Where do you want your bridge to take you today? 🌸

MÄK Product Updates

While you've been outside enjoying the summer, we've been working to enhance our software with new releases:

VR-Exchange 2.4 — a major feature release that reinforces our commitment to supporting the latest protocols, software platforms, and the largest exercises.

RadarFX SAR Server 1.0 — a brand new MÄK product that simulates a Synthetic Aperture Radar (SAR) system. A SAR system generates photograph-like still images of a target area by combining radar return data collected from multiple antenna locations along a path of flight.

VR-Forces 4.3.1 — a major maintenance release that greatly improves VR-Forces 3D visualization while simultaneously upgrading many minor features.

MÄK Events Calendar

FALL SIW — August 30th - September 4th, Orlando, FL

The SISO Simulation Interoperability workshop (SIW) is a forum where MÄK and other modeling and simulation practitioners meet to advance the interoperability standards that our community relies upon. Len Granowetter will be Chairing the WebLVC PDG meeting, and Björn Möller will be presenting a paper co-written with Aaron Dubois titled: "Towards RPR FOM 3: Revisiting the Datatypes". Pete Swan will be demoing WebLVC as well as Oculus Rift simulations. Felix Rodriguez will also be on hand to contribute to the development process.

DSEI — September 15th-18th, London

MÄK will be exhibiting with our European reseller Antycip Simulation in booth N2-267. Come see our Command & Staff Training presentation and the other great demonstrations Antycip has to offer. DSEI is a major defence and security industry conference in London, where people come to see the latest equipment and systems, develop international relationships, and generate new business opportunities.

Air & Space — September 14th - 16th, National Harbor, MD

The Air & Space Conference and Technology Exposition in National Harbor is a special event in which MÄK joins Air Force leadership, industry experts, academia, and current aerospace specialists from around the world to discuss the latest breakthroughs in air and space technology today. Danny Williams will be in attendance for MÄK.

Modern Day Marine — September 22nd - 24th, Quantico, VA

MÄK will be exhibiting at the Modern Day Marine Expo in Quantico on September 22nd-24th. Say hello to Danny Williams, who will be attending and representing MÄK.

MÄKer Spotlight: Marc Midura

Senior Software Engineer



This month, we'd like to introduce you to Marc Midura, a Senior Software Engineer at MÄK. He just transitioned into our VR-Vantage team from our DI-Guy team, where he spent four years. Marc is taking advantage of his DI-Guy expertise to help bring high-quality, high-performance DI-Guy human characters to VR-Vantage.

Before MÄK, Marc was a Senior Software Engineer at Boston Dynamics and Novint Technologies. At SensAble Technologies, he created the rendering engine for Freeform, a virtual clay sculpting application with force feedback that has been used for everything from industrial design to creating custom prosthetics. ([Check out this video](#) of Derby the dog running on 3D printed prosthetics). He also worked at Loral Advanced Distributed Simulation where his first job was to implement a SIMNET to DIS bridge.

Marc graduated with both a Bachelor's and Master's Degree in Computer Science at Northeastern University, where he later taught Computer Graphics.

Marc recently moved to Utah where his wife is a professor at Utah State University – he's now one of MÄK's remote employees, representing MÄK in the midwest! A fun fact about Marc: he's slept in two different ice hotels, one in Quebec and one in Sweden.

He enjoys spending time with his wife and 14 month old daughter, as well as playing video games, learning and exploring video game technologies and game design, sailing, and playing the ukulele.

We hope we've piqued your interest in getting to know the MÄK team! Stay tuned to our [blog](#) and [twitter](#) to get the latest on MÄK happenings! 🌸