Web : Persistent Online Simulation

The WebLVC Initiative

MÄK sees the entire Modeling and Simulation community working together to create interoperable web applications. The MÄK WebLVC Suite and Server are part of our WebLVC Initiative, building on our history of interoperability expertise to help bring Live, Virtual, and Constructive Simulation to the Web. Our initiative includes the following elements:

- **WebLVC Protocol** – A consensus-based open standard for communicating simulation data or live data feeds between a server and web-based client applications. WebLVC defines a standard protocol for encoding simulation object attributes and interactions as JSON (JavaScript Object Notation) messages, exchanged over WebSockets with built-in encodings for DIS/RPR FOM semantics.

- **MÄK WebLVC Suite** – Useful simulation and visualization applications that run in web browsers on your desktop or in mobile devices and phones. They can interact with existing simulations or be a platform for new applications.

- **MÄK WebLVC Server** – The linchpin that connects web-based applications to DIS/HLA federations and other environments, using the WebLVC protocol. The MÄK WebLVC Server can also host the MÄK WebLVC Suite, if you choose not to use an external web server.

MÄK WebLVC Suite

The MÄK WebLVC Suite is a collection of web-based applications that expand the reach of your live, virtual, or constructive simulations. Now you can observe, control, and participate in your simulation from any computer or mobile device with a compatible web browser and access to your simulation network.

A World of Possibilities

Engineers can setup and monitor simulations from their desks. Program managers can bring the simulation into staff meetings. Trainees can gain situational awareness while carrying out missions in the field. Instructors and observers can gain insight into live exercises on the range. Analysts can replay and study the results without going to the simulation lab.

The Time is Right

Web technology has matured to the point that all the necessary elements are available and installed on common desktop computers and mobile devices. Your phone is a powerful processing, networking, and graphics device. It's time to start using it. Even if you work in a secure lab on a secure network, you can take advantage of web-based applications by hosting servers inside your firewall.

MÄK WebLVC Suite Apps

- **2D-3D Viewer App** - 2D tactical map display and 3D display, side by side.
- **Detonate Now App** - Click on a map and cause a detonation to happen at the clicked location immediately. Detonation interactions are sent directly from the JavaScript app using WebLVC.
- **Close Air Support** - This is an example of a web-based role player station that can be built using WebLVC. It allows you to call for close air support using a standard 9-line interface.
- **VR-Forces Control** - This web app provides simple VCR-style controls for playing, pausing, and rewinding the current VR-Forces scenario.

Streaming Video

To include live or simulated video in MÄK WebLVC Suite Apps, you can connect to internet-capable cameras, or simulated video streams coming from an image generator that supports streaming video, such as VR-Vantage IG.

VT MÄK
A company of VT Systems

Terrain Options

Web applications need access to map and terrain data. If you are connected to the internet, MÄK WebLVC Suite Apps are designed to connect to cloud-based data sources. When you run behind a firewall, you can deploy a map or terrain server locally on your network - including Esri's ArcGIS Server, Google Enterprise Server, or MÄK's own VR-TheWorld Server.

FEATURES
- READY TO USE
- NOTHING TO INSTALL
- INCREASE COLLABORATION
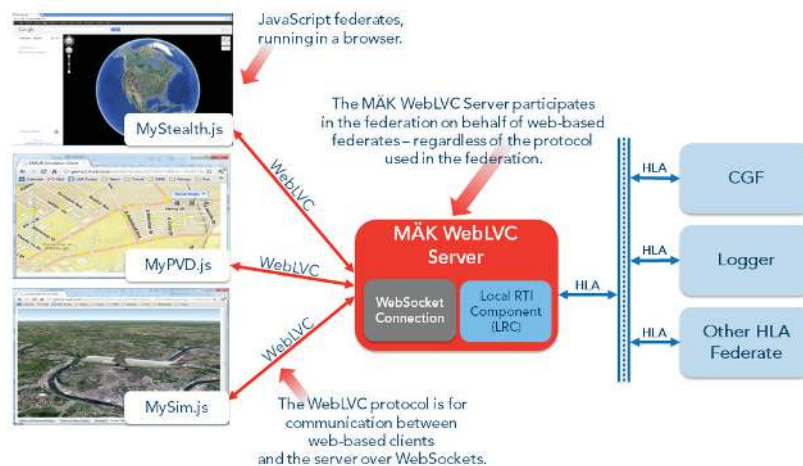- IMMEDIATE ACCESS TO UPDATES

USE CASES
- 2D/3D VISUALIZATION
- SIMULATION MONITORING
- SCENARIO GENERATION
- DEBRIEF / AAR
- SIMULATION-AS-A-SERVICE
- OPERATOR/ ROLE-PLAYER STATION

MÄK WebLVC Server

The MÄK WebLVC Server is the linchpin that connects web-based simulation federates to DIS/HLA federations using the WebLVC protocol. The MÄK WebLVC Server, based on our VR-Exchange interoperability portal, implements the server side of the WebLVC protocol so your web-based federates can participate in a distributed simulation. Your federation can use DIS, HLA 1.3, HLA 1516, HLA Evolved, or TENA. On the client side, we offer a set of JavaScript libraries we are calling VR-Link.js – a JavaScript implementation of some of the key functionality in VR-Link (our industry-leading C++ interoperability toolkit). VR-Link.js implements the client side of the WebLVC protocol, easing the job of building WebLVC-compliant JavaScript federates.

The MÄK WebLVC Server includes:
- The MÄK WebLVC Server application to connect to the DIS/HLA federation.
- VR-Link.js – JavaScript libraries that implement the client side of the WebLVC protocol.
- Sample JavaScript application code to get you started building applications that connect to a MÄK WebLVC Server.

FEATURES
- BRIDGES WEB AND DISTRIBUTED SIMULATION
- DIS, HLA, AND CUSTOM BROKERS
- SERVES REAL-TIME DATA TO WEB APPS
- RELAYS CONTROL MESSAGES FROM WEB APPS

USE CASES
- 2D/3D VISUALIZATION
- SIMULATION MONITORING AND CONTROL
- SCENARIO GENERATION
- DEBRIEF / AAR
- SIMULATION-AS-A-SERVICE

For more information about any of our products, please contact us at info@mak.com.