



VR-Engage 1.4 Release Notes

This release note provides release-specific information for VR-Engage Release 1.4.

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System Requirements

This section lists supported platforms and software requirements.

Platforms Supported

VR-Engage 1.4 supports Windows 10. It has been built with Microsoft Visual C++ 15.0 (64-bit).

The VC 15 build is binary compatible with all MAK VC 14 products.

VR-Forces Compatibility

VR-Engage 1.4 is built against VR-Forces 4.7. However, it uses an updated data package. If you intend to use VR-Engage with VR-Forces, you should install the data package that comes with VR-Engage into VR-Forces 4.7. You do not have to uninstall the original VR-Forces 4.7 data. You can install the new data package on top of it. You should update the VR-Forces data package before you install the VR-Engage Add-ons for VR-Forces.

3D Video Cards Supported

VR-Engage 1.4 supports NVIDIA graphics cards that support OpenGL 4.5. VR-Engage does not support AMD (formerly ATI) graphics hardware.



VR-Engage strives to provide the best 3D scene quality possible and cutting edge visualization effects. To provide this functionality, VR-Engage takes advantage of OpenGL features that may not be supported on older video cards. When this is the case, you can disable these features, allowing VR-Engage to run in 3D modes.

For the best visual quality and highest performance you should use the most recent NVIDIA GeForce card. The minimum recommended card is the 9xx series.

Some laptops have an NVIDIA graphics card and an Intel graphics card. You must configure your computer to use the NVIDIA card. To do so:

1. Open the NVIDIA Control Panel (in the System Tray).
2. Select Manage 3D Settings.
3. Select Global Settings.
4. Select Preferred Graphics Processor.
5. Select High-performance NVIDIA Processor.



You should always try to use the latest drivers available for your video board.

Supported Input Devices

VR-Engage can support any device that Windows recognizes as a game controller.

VR-Engage has tested the following game controllers and has Direct Input configurations set up for them:

- ♦ Logitech F310.
- ♦ Logitech F710.
- ♦ Logitech G27 Steering Wheel.
- ♦ Logitech G29 Driving Force game steering wheel.
- ♦ Thrustmaster Hotas Warthog.
- ♦ Thrustmaster T-Flight Hotas X.

The mappings for these devices and for the keyboard are described in Chapter 11, *Mouse, Keypad, and Controller Mappings*, in *VR-Engage Users Guide*.

Please contact support@mak.com for assistance configuring other devices.

Oculus Rift and HTC Vive HMD Support

VR-Engage 1.4 supports Oculus Rift CV1, HTC Vive, and HTC Vive Pro.

Qt Compatibility

VR-Engage 1.4 uses Qt 5.10.1.

Licensing

The VR-Engage application requires a VR-Engage run-time license in order to run. Internally, VR-Engage relies on VR-Vantage capabilities for its 3D visualization, VR-Forces capabilities for its ownship simulation, VR-Link for its networking, and so on, but these capabilities are built into VR-Engage and do not require separate run-time licenses of these MAK products.

MAK License Management

To run VR-Engage, you must install license management software. The License Manager files are not part of the VR-Engage installer. You can download them at:

- ♦ <http://ftp.mak.com/out/MAKLicenseManager-win64-setup.exe>

License manager support is available at:

<http://www.mak.com/support/licenses>

VR-Forces Licensing Issues

With only a VR-Engage license, you can run VR-Engage, choose a terrain database to simulate on, create and place an entity, and control that entity. VR-Engage can only simulate and control a single entity at a time. When you "Change Role" and create a different entity to simulate, the entity you were previously simulating will be deleted and replaced by the new one.

If you are running a copy of VR-Forces on your network (which requires a separate VR-Forces license of course), then VR-Engage can interact with VR-Forces in a variety of ways:

- VR-Engage allows you to join a VR-Forces session and take manual control of one of the entities in the VR-Forces scenario. If you are controlling a VR-Forces entity, and then "Change Role" and ask to control a different entity, the original entity will still exist, as it is owned by VR-Forces.
- VR-Engage can initiate and receive changes to the terrain, for example, opening doors or destroying buildings. (VR-Forces acts as the dynamic terrain server).
- VR-Engage can reflect changes to time-of-day and weather that are published by VR-Forces.
- VR-Engage allows you to assign certain tasks to entities that are simulated by VR-Forces (for example, tell a subordinate to follow you, or move to a location you designate).

In order to simplify the startup workflow for certain use cases, VR-Engage gives you the ability to launch a VR-Forces back-end directly from the VR-Engage user interface, and to instruct VR-Forces to load and host a scenario of your choosing. This allows you to avoid separately launching VR-Forces from the start menu or command line, and automatically ensures that VR-Forces uses the same interoperability parameters as VR-Engage. A VR-Forces back-end license is always required to run VR-Forces, whether you launch it from the VR-Engage user interface, or launch it separately from the Start Menu or command line. If you do not have a VR-Forces back-end license available, VR-Engage will not allow you to launch VR-Forces and host a VR-Forces scenario.



When VR-Engage starts up, it looks for a running VR-Forces and if it finds one, it connects to it. If it does not find one, it offers you the option to host and load a VR-Forces scenario, or start an Unhosted session. If you host a VR-Forces scenario, you will consume a VR-Forces license, which will prevent you from starting VR-Forces independently if you only have one license. If you start an Unhosted session, you can start or join a session only as an individual player - you cannot load and run a scenario.

Network Compatibility

VR-Engage 1.4 is compliant with RPR FOM 1.0 and RPR FOM 2.0 and includes FOM mappers for many draft versions of the RPR FOM. It is compliant with RTIs that support the HLA 1.3 specification, the SISO DLC HLA API 1516 version of the IEEE 1516 specification (SISO-STD-004.1-2004), or HLA Evolved.

To use an RTI with VR-Engage, it must use the same operating system and be built with the same compiler.

VR-Engage 1.4 supports DIS 4, 5, 6, and 7, and can therefore interoperate with DIS applications of any of these versions.

New Features and Updates

This release of VR-Engage has the following updates and new features:

- ♦ Built against VR-Forces 4.7, VR-Vantage 2.5, and VR-Link 5.4.1.
- ♦ The M1A2 Abrams MBT includes a 3D model of the interior for use with virtual reality devices ([Figure 1](#)).
- ♦ Three new entities that can operate quadcopter drones: Civilian Female With Drone, Civilian Male with Drone, and Police Officer With Drone. For details, please see Chapter 8, [Controlling Drones](#), in *VR-Engage Users Guide*.
- ♦ Drone and sensor operators have the ability to stream video and take pictures. Please see Chapter 10, [Video Stream and Image Capture](#) for details.
- ♦ Entities are configurable, allowing for custom overlays. Please see Chapter 13, [Customizing Overlays](#).



Figure 1. M1A2 Interior

Documentation

VR-Engage Users Guide and *VR-Engage First Experience* are provided as PDF files in the `./doc` directory. Online help is available from the VR-Engage Help menu. Documentation has been updated for this release.

Fixed Bugs

This release fixes the following bugs:

- ♦ The Javelin operator roles now fire missiles of the correct munition type. Previously they were firing Hellfire missiles (DIS enumeration 2:2:225:1:3:4:1). They now fire Javelin missiles (DIS enumeration 2:2:225:1:8:0:0). 66035
- ♦ The M1A2 driver role no longer has a gunner view. If you want to control the weapons, take control of the tank in the gunner role. 65856
- ♦ UAV operators heard aircraft sounds. 65344
- ♦ When parachuting in a paratrooper role, users could not see all wind speed information because it displayed past the right edge of the screen. 65257

Known Problems

VR-Engage has the following known problems:

- ♦ Resetting an entity inside of a building repositions the entity on the roof. If this happens and you have VR-Forces, use the VR-Forces GUI to reposition the entity back at ground level (or at the desired floor, in the case of multi-story structures).
- ♦ It is sometimes difficult to precisely position a remote camera on an entity. The camera may jump to a nearby spot, rather than attaching to the desired location on the entity. If this starts happening, the workaround is to place a different entity (human or other entity) in an arbitrary location on the terrain. Then return to the process of creating a new remote camera on the desired entity.
- ♦ If you are in a spectator role for a human entity and that entity embarks on a vehicle, the your viewpoint as a spectator will be frozen.
- ♦ If using the VIVE or VIVE Pro HMD, you must power on the device before starting VR-Engage. Failure to do so will lead to a situation in which HMD mode appears to be available as a display option in the Choose Role panel, but nothing will happen if you select that display option and then engage an entity. Always ensure that the VIVE is up and running before launching VR-Engage.
- ♦ You cannot take control of a VR-Engage-controllable human entity that is currently performing a DI-Guy animation task indefinitely.
- ♦ It is possible to unexpectedly walk off a helicopter you're embarked on by walking on the ramp while it is airborne (you will sink down and end up in mid-air if the helicopter is airborne. Reset the entity and start moving around again.
- ♦ If you task the fire_team unit to perform a move to location task, the unit will spread out into a fairly widely spaced formation. Doing this in a constricted area such as the warehouse area in Hawaii will lead to unexpected results, as the entities struggle to get into formation.

- ♦ Occasionally, when you return to "Choose Role" mode after flying an aircraft, the UI gets into an unexpected state. The HUD stays visible and the observer attachment controls do not work as expected. If this happens, the workaround to return to normal operation is to click on the Reset View button.
- ♦ Multiple players should not try to control the same vehicle or person in the same role. If multiple players take control of an entity in the same role, and then one of the players relinquishes control by returning to the Choose Role Panel, the remaining player also loses control of that entity. If this happens, the remaining player can regain control of the entity by going through the Choose Role process. Note that two players can concurrently control the same vehicle if they are in different roles (for example, one player is Driver, and the other is Gunner or Commander).
- ♦ SensorFX does not work with virtual reality devices.
- ♦ When two players are simultaneously controlling a LAV, one as driver and one as gunner, and the driver disembarks or changes role, the gunner's controls stop working. The workaround is for the player in the gunner role to press **ESC** twice in a row. This effectively causes the player to re-engage in the gunner role, thereby resetting the controls. A similar problem exists with the M1A2, with the same workaround.

