



VR-Engage 1.7 Release Notes

This release note provides release-specific information for VR-Engage 1.7.

System Requirements	2
Platforms Supported.....	2
VR-Forces Compatibility	2
3D Video Cards Supported	2
Input Devices Supported	3
Qt Compatibility	3
Licensing	3
Network Compatibility.....	5
New Features and Updates	5
Documentation	6
Fixed Bugs	6
Known Problems.....	7

Copyright © 2021 MAK Technologies, 10 Fawcett Street, Suite 204, Cambridge, MA 02138.
All rights reserved. VR-Exchange™, VR-TheWorld™, VR-Vantage™, DI-Guy™, and DI-Guy
Scenario™ are trademarks of MAK Technologies. MAK Technologies®, VR-Forces®, RTIsPy®, B-
HAVE®, and VR-Link® are registered trademarks of MAK Technologies.
Document ID: VRN-1.7-2-210903

System Requirements

This section lists supported platforms and software requirements.

Platforms Supported

VR-Engage 1.7 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 1.7 is built against VR-Forces 4.10. If you intend to use VR-Engage with VR-Forces, you should install the data package that comes with VR-Engage into VR-Forces 4.10.

3D Video Cards Supported

VR-Engage 1.7 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.

Disk Space Requirements

A full installation of VR-Engage requires approximately 40 GB of disk space.

Input Devices Supported

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 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.

HMD Support

VR-Engage 1.7 supports Oculus Rift CV1, HTC Vive, HTC Vive Pro, Varjo XR-1 and VR-2, and Windows Mixed Reality headsets. See Chapter 9, *Using Head Mounted Displays for Virtual Reality*, in *VR-Vantage Users Guide* to learn more.

Qt Compatibility

VR-Engage 1.7 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:

- ♦ <https://www.mak.com/support/license-support>

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), 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 1.7 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 1.7 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 4.10, VR-Vantage 2.8, and VR-Link 5.7.
- ♦ The HLA connection settings have been updated to match VR-Link 5.7's updated default FOM/FED files. This applies to all HLA connections (HLA Evolved, HLA1516, and HLA 1.3).

Ground Vehicles

- ♦ A player can take on the Gunner role for the M2A3 Bradley IFV while VR-Forces drives the vehicle.
- ♦ Players in the Gunner role on the M1A2 SEP Abrams can control the gun using the mouse.
- ♦ The new GTK Boxer CRV entity includes a main gun, and has roles for Commander RWS and Commander Hatch as well as Driver and Gunner.

The GTK Boxer APC model has been corrected and no longer has a large main gun, only the single machine gun turret. It has two roles: Driver and Commander RWS.

- ♦ The Commander RWS role can now take full control of the gun. See the section “Overriding the Gunner” in the Controlling Ground Vehicles chapter of the *VR-Engage Users Guide*.
- ♦ The Commander RWS role can also slew a gun to designate a target for the gunner. See the section “Slewing the Gun to Designate a Target” in the *VR-Engage Users Guide*.
- ♦ The Commander RWS role can now use the laser designator. See the section “Using the Laser Designator” in the *VR-Engage Users Guide*.
- ♦ VR-Engage now shows wheels rotating in conjunction with a vehicle's velocity and also angles the wheels as the vehicle turns.
- ♦ The visualization of tank treads now shows them moving at the correct speed based on the velocity of the entity.

Aircraft

- The multi-function display on fixed-wing aircraft now includes a TDL Common Operating Picture (COP). See the section “Using the Common Operating Picture” in the Controlling Aircraft chapter of the *VR-Engage Users Guide*.
- The virtual reality mask for the T-38 C has been updated.

Radio

- You can now specify the push-to-talk button for the MAK Radio standalone application. See the section “Audio Settings” in the Common Player and Entity Features chapter of the *VR-Engage Users Guide*.

Configuration

- When you install the VR-ForcesVR-EngageAddons.exe installer, it checks whether the version of VR-Forces where you are installing the plug-in is compatible with your version of VR-Engage.
- You can edit the Vortex collision manager’s settings to enable Vortex vehicles to collide with other simulation objects. See the section “Ground Vehicle Collisions” in the Adjusting Entity Settings chapter of the *VR-Engage Users Guide*.

Documentation

- The new chapter, Creating VR-Engage Scenarios in VR-Forces, in the *VR-Engage Users Guide*, provides guidance on creating and running your own VR-Forces scenarios for VR-Engage.
- The online help, accessed from the Help menu, is now in an HTML format with a more modern look and an improved search utility. The help is built into VR-Engage and does not require an internet connection.

Documentation

Documentation has been updated for this release. The guides are provided as PDF files in the `./doc` directory. Online help is available from the VR-Engage Help menu. You can also find the most current PDFs at <https://www.mak.com/support/product-user-guides>.

Fixed Bugs

Problems identified in previous releases have been fixed. For a summary, please see the `./doc/FixedDefectsVRE.csv` file.

Known Problems

VR-Engage has the following known problems:

- ♦ If a human character is executing a plan and a player engages and then disengages, the character does not resume its plan. VRE-1777
- ♦ The Plug-ins Loaded page of the VR-Forces Plug-ins dialog box has been suppressed. Look at the `./bin64/vrfSim.log` file for a list of the loaded plug-ins. VRE-1481
- ♦ You cannot take control of a VR-Engage-controllable human entity that is currently performing a DI-Guy animation task indefinitely. VRE-261
- ♦ There are a few issues that require you to add the application name to the *BlackApps.dat*:
 - Under certain circumstances, opening VR-Engage on a second display prevents the program from starting.
 - In addition, launching from the main display and then moving the mouse cursor to the other monitor causes the program to freeze and not respond.
 - You might also experience crashes when trying to engage rotary- or fixed-wing aircraft.

If you experience any of these issues, edit the Nahimic *BlackApps.dat* file and add the application name (for example, `vrengage.exe`) to the list. You can search `C:\ProgramData` for *BlackApps.dat* to locate it. This file might be found in `C:\ProgramData\A-Volute\A-Volute.Nahimic\Modules\Scheduled\Configurator`, or `C:\ProgramData\A-Volute\A-Volute.28054DF1F58B4\Modules\ScheduledModules\Configurator`, or something similar.

- ♦ 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.
- ♦ Some features do not work in VR and have been disabled: compass, binoculars, minimap, NVG, and third person view.
- ♦ SensorFX does not work with virtual reality devices.
- ♦ If you task the `fire_team` unit to perform a move to location task, the unit spreads out into a widely spaced formation. Doing this in a constricted area such as the warehouse area in Hawaii leads to unexpected results, as the entities struggle to get into formation.
- ♦ Articulated part smoothing does not work correctly with VR-Engage ground vehicles in this release. There are some visual anomalies when the vehicle starts moving. The workaround is to choose **Settings** → **Display Settings**, select the Entity Display Settings page, and then clear the Enable Articulated Part Smoothing check box.

