



VR-Engage 2.0.3 Release Notes

This release note contains the following release-specific information for VR-Engage 2.0.3, which is compatible with VR-Forces 5.0.3.

Systems Supported and System Requirements	2
Compiler Compatibility on Windows	2
Disk Space Requirements	2
The makData Package and Product Compatibility	2
License Manager	2
New Features and Updates	3
Entity-Specific Changes	3
Known Problems	11

Copyright © 2023 MAK Technologies 10 Fawcett Street, Suite 204, Cambridge, MA 02138 USA. 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-2.0.3-2-230619

Systems Supported and System Requirements

For information about platform and system support, see the Product Specifications & Dependencies page on the MAK website at: <https://www.mak.com/mak-one/support/help/specs>.

For hardware requirements, see <https://www.mak.com/mak-one/support/help/hardware-recommendations>.

Compiler Compatibility on Windows

MAK provides versions of product releases that have been compiled with different versions of Microsoft Visual C++. MAK ONE products built with VC 14 and later are binary compatible and will work together. Products compiled with VC 12 and earlier can experience instability when used in conjunction with products built with different compiler versions. When you run MAK ONE products together on the same computer, for example, VR-Vantage, we strongly recommend that you run versions compiled with the same compiler or binary compatible compilers.

Disk Space Requirements

A full installation of VR-Engage requires approximately 4 GB of disk space and an additional 69.8 GB for the complete makData 16 package, including the supplemental data package.

The makData Package and Product Compatibility

VR-Engage 2.0.3 is built against VR-Vantage 3.0.3, VR-Forces 5.0.3, and VR-Link 5.8. They use the shared makData 16 package.

MAK applications can share the same data package. For instructions on installing the data, see "[The makData Package](#)" in the *VR-Engage Users Guide*.



The MAK data package contains data that VR-Engage requires. See the *Installing VR-Engage* chapter of the users guide.

License Manager

VR-Engage 2.0.3 uses FLEXlm 11.17.1. You must install the license management software to run VR-Engage.

The MAK License Manager files are not part of the VR-Engage installer. You can download them from the MAK ONE Product Downloads page (<https://www.mak.com/mak-one-downloads>).

Installation of the license manager is covered in the *MAK ONE Installation Guide*, available online at <https://mak.com/mak-one-installation-guide>. Support is also available at <https://www.mak.com/mak-one/support/portal>.

New Features and Updates

VR-Engage 2.0.3 has the following updates and new features:

- Users are now encouraged to install PDBs. If the application crashes, a "mini-dumper" generates a callstack.log file that is useful for debugging the crash. For more information, see the "Squashing Bugs" blog entry on the website: <https://mak.com/learn/blog?view=article&id=255:squashing-bugs&catid=17:technical-blog>.
- You can now choose to access Admin mode while running in Lockdown mode by starting it with the `--enableAdminMode` command-line option. This only applies when you start VR-Engage using the `--appMode Lockdown` option.

Entity-Specific Changes

Human Characters

- The Javelin launcher has been drastically improved to make it more realistic. This is available by default for the US Army Javelin entity. You can equip other soldier and police officer characters with any of the rocket or missile launchers that are in VR-Forces. See the "Rocket and Missile Launchers" section of the [Controlling People](#) chapter in the *VR-Engage Users Guide*. (Please note that the tripod Javelin has not been updated and continues to work the way it did in previous releases.)
- Human characters can now kneel. When cycling through postures, this is between crouching and lying prone.

Aircraft

- You can now control an aircraft's flight using the keyboard. See the chapter on [Mouse, Keyboard, and Controller Mappings](#) in the *VR-Engage Users Guide*.

M2A3 Bradley

- The commander role now allows players to switch between the out-the-hatch viewpoint and the RWS viewpoint from the same role by pressing the **H** key. Players can also use binoculars when they are in the out-the-hatch viewpoint.
- Players in the Commander RWS position can now switch between the commander independent view (CIV) and the gunner sight by pressing the **G** key.

Gimbaled Sensors and Remote Cameras

- You can now control gimbaled sensors and remote cameras using the mouse. Move the mouse to slew the sensor or camera, and use the mouse wheel to zoom in or out.

For the features and fixes included in the 2.0, 2.0.1, and 2.0.2 releases, see the [VR-Engage 2.0 Release Notes](#), [VR-Engage 2.0.1 Release Notes](#), and [VR-Engage 2.0.2 Release Notes](#) (found in the `./doc` folder of the installation).

Table 1. Fixed Bugs

Key	Summary	Release Notes	Fix Version/s
VRE-2546	Cannot reposition engaged aircraft	VR-Forces users can now move aircraft by double-clicking the entity and moving it when a player is engaged in a role on that aircraft.	VRE-2.0.3
VRE-2598	Unrecognized human hand item doesn't init as expected	Fixed an issue with human weapon initialization. The first weapon is now selected and put in a stowed state when the starting hand item is not recognized or not present.	VRE-2.0.3
VRE-2612	Remove "vrengeage-controllable" parameter if truly obsolete	Removed the vrengeage-controllable parameter from entity files that are configured to be playable. It is no longer needed.	VRE-2.0.3
VRE-2621	Mouse wheel should not bring up binoculars while rifle is in firing position	Players can no longer use binoculars while aiming a weapon.	VRE-2.0.3
VRE-2629	Release VRE control on exit	VR-Engage was not releasing player control when the application closed or crashed. This is fixed.	VRE-2.0.3
VRE-2636	MFD Touch Screen does not work	Fixed to allow players in a pilot role to use a touch screen to interact with the multifunction display.	VRE-2.0.3
VRE-2674	Cannot aim precisely at high zoom levels (e.g., gun M2A3)	Instituted higher fidelity data to support fine-grained control at high zoom levels when a player is in the role.	VRE-2.0.3
VRE-2676	Cannot walk up and take control of LLDR after being destroyed and restored	Corrected an issue with the lasing code to allow players to take control of the AN/PED-1 LLDR after the character was destroyed and restored.	VRE-2.0.3
VRE-2678	Collective on rotary wing needs to be inverted	Inverted the collective control on VR-Engage-controllable rotary-wing vehicles. This corrects the default controls such that pulling back on the throttle triggers the rotary-wing up collective behavior in the controlled entity.	VRE-2.0.3
VRE-2679	Lase Target not lasing correct target location	There were issues with coordinates and the range of the lasing ability. These problems are fixed, allowing players to successfully lase targets from air entities at great distances from the target.	VRE-2.0.3
VRE-2692	Crash saving SMS	There was an issue with the basic VR-Engage SMS that ships with the application, where saving it would cause the Simulation Object Editor to crash. This is fixed. (The problem did not occur with an extended SMS.)	VRE-2.0.3

Table 1. Fixed Bugs (continued)

Key	Summary	Release Notes	Fix Version/s
VRE-2711	Disconnecting from an engaged entity causes error	Fixed an issue that occurred when disconnecting from the network while a player was engaged in a role.	VRE-2.0.3
VRE-2714	Rudder Pedals do not work for any aircraft. This is not a configuration issue.	Corrected the device type and mappings. In some cases, the attached device was misidentified and therefore didn't work.	VRE-2.0.3
VRE-2718	Indicated airspeed gauge not showing correct value	The airspeed gauge now displays the correct value for the indicated airspeed, matching the value shown in VR-Forces.	VRE-2.0.3
VRE-2721	Can't add mouse control to sensor operator	Users can now use the mouse for the sensor operator and other roles that change the name of the observer view.	VRE-2.0.3
VRE-2723	Add Keyboard Controls for pilot	You can now control an aircraft's flight with the keyboard. See the chapter on Mouse, Keyboard, and Controller Mappings in the VR-Engage Users Guide.	VRE-2.0.3
VRE-2734	Add a general-purpose shoulder mounted weapons sysdef and configure most entities with it	The Javelin launcher has been drastically improved to make it more realistic. Other RPGs and launchers are also available to human characters other than the US Army Javelin entity. See the "Rocket and Missile Launchers" section of the Controlling People chapter of the VR-Engage Users Guide.	VRE-2.0.3
VRE-2735	Prevent switching to 3rd person while aiming missiles	With the new functionality for firing shoulder-mounted weapons, players can no longer change to the third-person view when aiming those weapons.	VRE-2.0.3
VRE-2738	Reload Button should be removed for RPG and Javelin weapons - New Shoulder Weapon	You cannot use the Reload function for shoulder-mounted weapons like the Javelin or RPG.	VRE-2.0.3
VRE-2758	Remove VC8 redistributable from installation process	Removed from installer and cmake lists. This prevents risks of security/software obsolescence issues.	VRE-2.0.3
VRE-2821	Crash embarking on entity when not all roles are configured with slots	Fixed an issue that caused VR-Engage to crash when players attempted to embark on a custom VR-Engage-controllable entity when not all of the roles associated with the entity had a defined embarkation slot.	VRE-2.0.3

Table 1. Fixed Bugs (continued)

Key	Summary	Release Notes	Fix Version/s
VRE-2824	Make sure all diagnostics are directed to the log files.	The diagnostic print statements for VR-Engage that display in the console are now included in the log files. (This does not include DI-Guy, osgEarth, or Vortex.)	VRE-2.0.3
VRE-2833	Bradley wheels are not being associated to a component in the SOE	Added a new function that takes the vortexPart list and associates it with the simArtPartList (if it wasn't set previously). This fixes a problem that prevented the VR-Engage 6-Wheel Tracked movement system of the M2A3 Bradley IFV from associating the wheels with a Vortex component like other systems.	VRE-2.0.3
VRE-2836	Laser designator for GTK Boxer CRV commander not working	Corrected the entity file to give the Commander role access to lasing abilities. The player must be in the RWS position to use the laser designator. See the online help or user guide for more information.	VRE-2.0.3
VRE-2841	VR-Engage 25mm Gun has 2 ammunition parameters empty	The VR-Engage 25mm Gun system in the VR-Engage SMS was missing the Default Amount values for M791-AP-25mm and M792HEI25mm ammunition. This could cause a crash. Corrected the M2A3-25mm-gun.sysdef, vreGTK Boxer CRV.entity, and vreGTK Boxer CRV.entity files.	VRE-2.0.3
VRE-2843	LAV rubber-banding and dropping through terrain in Range 220	There was an issue where Vortex entities could fall through "holes" in the terrain. This occurred because DtTerrainInterface::trianglesInArea() did not always return all of the polygons needed for certain situations. To ensure that the application returns the correct data in cases where tiles have no sub-tiles with data, we have limited an optimization. This prevents problems that occurred when the application returned a tile and wouldn't search for other tiles, even ones that were needed. Note that the optimization does not operate for tiles that overlap a data resolution change.	VRE-2.0.3
VRE-2851	Update file path for Track6Wheels system	Updated the file path to allow for the addition of new Tracked6Wheel movement systems. This allows players to drive new vehicles with that movement system.	VRE-2.0.3
VRE-2852	VR-Engage crash when re-joining a scenario hosted by VRF in HLA1516e.	Not everything was being cleared out from the mappings when VR-Engage disconnected from a VR-Forces session, which appeared as corrupted data in the next session the user tried to connect to. Added a call to clear out that information.	VRE-2.0.3
VRE-2853	Remove MAK-VRLExt-1_evolved.xml so VR-Engage can work with Pitch RTI	Removed the module from the launcher for the time being.	VRE-2.0.3

Table 1. Fixed Bugs (continued)

Key	Summary	Release Notes	Fix Version/s
VRE-2860	VR-Engage not loading all or any entities when re-joining a scenario hosted by VRF in HLA1516e	Not everything was being cleared out from the mappings when VR-Engage disconnected from a VR-Forces session, which appeared as corrupted data in the next session the user tried to connect to. Added a call to clear out that information.	VRE-2.0.3
VRE-2862	Checkpoint Security Panel not displaying correctly	Fixed an issue that could cause rendering artifacts in sensor views because VR-Engage disables the Streaks option in High Dynamic Range Settings by default.	VRE-2.0.3
VRE-2863	CGF-controlled Apaches have impaired detection via sensors	This is fixed. There were issues with the spatial index. This caused it to potentially skip nodes in the index that it should not. The extent also had to be sufficiently large that the corners of the extent that were being skipped were far enough away from the corners that were not skipped when they were all projected onto the earth's surface. This meant that larger sensor ranges (like the 16km IR sensor of the Apache) were more likely to hit the problem.	VRE-2.0.3
VRE-2878	Rename fire_on_location.lua to vre_fire_at_target.lua	Changed the script named fire_on_location.lua to vrf_fire_at_target.lua. It is a wrapper around VR-Forces' fire-at-target task and is used by the shoulder-mounted launchers.	VRE-2.0.3
VRE-2880	(HLA) SIM crash after detonating the IED in First Experience scenario	When using HLA Evolved, there was a crash if a player exploded the IED under the technical truck in the VR-Engage First Experience scenario. Addressed the issues that were causing the problem.	VRE-2.0.3
VRE-2882	Documentation - Slew to Cue Bradley only works in two station setup.	The slew-to-cue feature is designed for use when there are two players, one engaged in the Commander role and the other engaged in the Gunner role. The documentation has been updated to make this clear to users.	VRE-2.0.3, VRE-IPB18
VRE-2885	Security Checkpoint Scenario crashing VR-Engage	Addressed a Vortex issue related to the spawn and sink points in the scenario that produce the traffic around the security checkpoint.	VRE-2.0.3
VRE-2887	Make Hosted/Unhosted session dialog boxes configurable.	You can now specify your directories for terrains and scenarios in the ./appData/scripts/playerStation.lua file if they are different from the defaults. These directories are where VR-Engage looks to populate the scenarios for the Hosted Session list or terrains for the Unhosted Session list. Refer to the file for details.	VRE-2.0.3
VRE-2891	Commander viewpoint is wrong in M1A2 SEP Abrams	There was a Commander role on the entity that positioned the viewpoint incorrectly. That obsolete role has been removed.	VRE-2.0.3

Table 1. Fixed Bugs (continued)

Key	Summary	Release Notes	Fix Version/s
VRE-2892	Three separate 50 cal systems listed in the Weapons menu	Added more information to disambiguate between the separate M2 50 caliber MG turrets available to add as weapon systems in the VR-Engage SMS.	VRE-2.0.3
VRE-2897	XTAL headset causes a crash when entering and exiting a VRE role	Fixed the crash that could occur when a user deactivated an XTAL HMD that they had been using with VR-Engage.	VRE-2.0.3
VRE-2905	With binos engaged and return to choose role, then back to same human, still posed with binos but not zoomed in to binos	In recent releases, players who were engaged while using the binoculars when they returned to the Choose Role panel would see the character in the pose for using binoculars but they would not be using them if they returned to the role. Now entities stop using the binoculars when the player disengages.	VRE-2.0.3
VRE-2907	commanderHatch role shouldn't limit sensor mode types	There was logic preventing players in the Commander role from changing the visual sensor. This is fixed.	VRE-2.0.3
VRE-2914	Bombing Run Fails - Bombs release, but fall straight down	Made updates to relevant files to allow pilot players to correctly lock the gimbaled sensor onto laser spots and then fire bombs that would then make a best effort to hit that target.	VRE-2.0.3
VRE-2922	Mismatch in observer elevation range and weapon elevation range in back-end	When players used a mouse to control the angle of a weapon, the observer elevation range and weapon elevation range did not match. This caused the simulation of firing the weapon to not match what the player saw in the application. This has been fixed.	VRE-2.0.3
VRE-2925	Kicked out of LLDR when embarking from Engage after Detonation	Fixed a crash that occurred for VR-Engage players. The problem arose when there were detonations in some terrains because they would force entities to reclamp. That action disembarked VR-Engage characters and could result in a crash.	VRE-2.0.3
VRV-4620	VRV Crashing when opening/closing/using multiple windows (related to multiple contexts and driver version > 527.56)	Fixed a crash caused by a driver bug released for NVIDIA drivers after November 2022. The crash was related to the use of multiple graphics contexts and showed up when using multiple windows in VR-Vantage-based applications. NVIDIA plans to fix the driver but has not yet released a fix, therefore we developed a workaround for the problem in our own code.	VRV-3.0.3
VRV-4628	CDB load GT/GS models sometimes seem to hang and sometimes takes time to shutdown	Intersections can be very slow. You can now disable intersections for certain model layers, as described in VRV-4653.	VRV-3.1, VRV-3.0.2b, VRV-3.0.3

Table 1. Fixed Bugs (continued)

Key	Summary	Release Notes	Fix Version/s
VRV-4652	Crash when loading CDB in VR-Forces GUI	Added a fix to remove sections that are not thread safe.	VRV-3.1, VRV-3.0.2b, VRV-3.0.3
VRV-4653	Enable users to disable intersections with certain layers on CDB terrains	In CDB terrains, intersections can be very slow. You can now disable intersections for certain model layers: This addresses a problem where it can take a long time for simulation objects to appear after they are placed. If you do not need to intersect with certain layers, enter <code><enable_intersections>false</enable_intersections></code> in the <code><model></code> block for that layer. This applies to geotypical as well as geospecific layers.	VRV-3.1, VRV-3.0.2b, VRV-3.0.3
VRV-4742	API level control for attached gimbaled sensor missing information in overlay HUD	Fixed the rendering so that the compass appears with multiple channels. Increased the font size to make it more readable.	VRV-3.0.2d, VRV-3.0.3
VRV-4750	XR Model set does not support particle systems	When the observer is in XR mode, you can now see smoke plumes, flames, and other particle systems.	VRV-3.1, VRV-3.0.2e, VRV-3.0.3
VRV-4764	Channels flicker when swapping to a SensorFX observer mode	Fixed the logic for initializing a channel sensor to prevent flickering in channels when the user selects a SensorFX observer mode for any of the existing channels.	VRV-3.0.2c, VRV-3.0.3
VRV-4766	Compress and Shared Memory Video Streaming broken	Fixed an issue that caused a crash when streaming video using Compressed and Shared Memory using the GPU encoding method and the compression type of JPG, PNG, or BMP.	VRV-3.1, VRV-IPB17, VRV-3.0.2e, VRV-3.0.3
VRV-4830	Gimbaled Sensor Window Overlay Information incorrect for camera boresight position	Corrected the display to show the boresight information in the lower right-hand corner. Previously it displayed the ownship information.	VRV-3.1, VRV-3.0.2f, VRV-3.0.3
VRV-4837	Gimbaled Sensor Window Overlay incorrect heading and azimuth scale	Corrected the numbers that display on the horizontal bar at the top of the window. The numbers on the horizontal bar that are associated with the arrow now show where the sensor is looking relative to the entity.	VRV-3.1, VRV-3.0.2f, VRV-3.0.3
VRV-4899	Crash on Loading NTC online terrain and clicking NTC Medina Wasl Overwatch	Fixed a crash caused by the application incorrectly parsing data on terrain models with switch nodes.	VRV-3.0.3

Table 1. Fixed Bugs (continued)

Key	Summary	Release Notes	Fix Version/s
VRV-4905	Crash in scenario with launchers on DIS	Fixed a crash that could sometimes occur with named DI-Guys.	VRV-3.1, VRV-3.0.3, VRV-IPB18
VRV-4908	When HDR streaks are disabled, visual artifacts can appear in sensor views	Fixed an issue that could cause rendering artifacts in sensor views when the Enable Streaks option in High Dynamic Range Settings is initially disabled.	VRV-3.1, VRV-3.0.3, VRV-IPB18
VRV-4909	Craters do not always reset	Fixed an issue where all craters would be reset in the sim engine but some were not cleared from the GUI.	VRV-3.0.3
VRV-4914	GUI: symbol missing for disembarked aggregate-level units	Corrected the order in which embarked flags were set to ensure that the icons for disembarked units display correctly in the window.	VRV-3.0.3
VRV-4922	VR-Vantage does not start correctly with Pitch pRTI when using MAK-VRLExt-1_evolved.xml	The default connection for HLA Evolved now uses the new MAK-VRLExt-2_evolved.xml. Previously, it used MAK-VRLExt-1_evolved.xml, but this caused crashes for users of the Pitch pRTI. The new file resolves that issue.	VRV-3.0.3

Known Problems

Problems can arise with any product. MAK has a knowledge base of the problems that we know about, which is always changing as new problems are identified and new solutions are found. To learn how to address known problems with VR-Engage and other MAK ONE products, click the Knowledge Base link on the Self Help Resources page: <https://www.mak.com/mak-one/support/help>.

If the problem you are experiencing is not addressed in the knowledge base, contact support for assistance: <https://www.mak.com/mak-one/support/portal>.