



RadarFX Server 1.6.1 Release Notes

This release note contains release-specific information for RadarFX 1.6.1.

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Systems Supported

RadarFX 1.6.1 is built on VR-Vantage 3.1. It is available for Windows 64-bit VC15.

RadarFX uses MAK Data Package version 18. The data installation is separate from the product installation. MAK ONE applications can share the same data package, so you no longer need to install it separately for each product.

RadarFX does not use some newer VR-Vantage features and disables them by default, including:

- Indirect rendering for entities (terrain patches are supported)
- Reverse Z buffer for depth comparisons

Running RadarFX Server VC15

The VC15 version of RadarFX Server requires that the environment variable JRM_DATA_DIR be set to `%MAK_SHARED_DATA_ROOT%/18/latest/ModelData/sensorFX`. To ensure that this environment variable is set, the Windows Start menu shortcut runs *radarFX.bat* instead of *radarFX.exe*. If you start RadarFX Server manually or create your own shortcut, use *radarFX.bat*, not *radarFX.exe*.

Major Updates

These are the updates to RadarFX Server 1.6.1.

- The RadarFX Server now starts in SAR mode instead of out-the-window mode. There is no longer a need to switch to SAR mode when a client application requests an image, speeding up the response. This was enacted by editing the *default_ObserverModes.omcx* file such that SAR is listed first. Additionally, the *radarFX.bat* file now includes the `--disableTerrainObserverViews` command-line option to prevent the application from applying the default observer view state to the main observer, which further ensures that SAR mode is the default. Change these values if you prefer the previous behavior.
- Added the ability to cancel a SAR image request using the new message type, `DtREQUEST_CANCELLATION_TYPE`. In the RadarFX Simple Client, after the user clicks the Send Image Request button, it changes to a Cancel Image Request button, allowing them to cancel the request.
- Added an AGC Power check box to the RadarFX Simple Client, which controls whether Pre-AGC (AGC for Power) is enabled.
- When the Simple Client receives a response, the time that elapsed between the request and the response now displays in the Status Bar, along with the size of the image, type of image, and warning label.
- Modified the way culling/scale works for SAR to take advantage of the view magnification algorithm rather than simply using a normal LOD scale. View magnification culling is focused around the target location.

Fixed Bugs

Table 1. Fixed Bugs

Key	Summary	Release Notes	Fix Version/s
RFX-109	Procedural terrain has dark artifacts in SAR	Fixed the calculation and precision issues causing the artifacts.	RFX-1.6b
RFX-110	Noise missing on procedural terrain	Improved the noise in SAR images to be more realistic.	RFX-1.6.1, RFX-1.6a
RFX-111	Shoreline has dark artifacts / Z-fighting	The SAR shadow camera can now make use of the ocean heightmap. Added a generalized ocean rendering bias setting to combat Z-fighting due to projected meshes being different from shadow versus SAR rendering. Improved code maintainability in SarMode to make methods more modular.	RFX-1.6.1, RFX-1.6f
RFX-114	Gibbs-Ringing not working (non-entities)	Added Gibbs-Ringing effect support to the RadarFX indirect rendering path.	RFX-1.6.1, RFX-1.6e
RFX-123	Issues in RadarFX Server's Help menu	Fixed the documentation issues in the RadarFX Server and Client Help menus to ensure that it was available and displayed correctly.	RFX-1.6.1
RFX-124	Pre-AGC (AGC for Power) does not work with different coverage areas or altitudes	Updated the calculation to improve the estimated maximum return power for the scene.	RFX-1.6.1, RFX-1.6a
RFX-125	RadarFX Simple Client can get a response back with warnings and it is not super apparent	The warning is now explicit and permanent in the Simple Client status bar.	RFX-1.6.1, RFX-1.6a
RFX-127	Pre-AGC (AGC for Power) relies on the Emitter Power (W) sensor parameter when it should not	Added an AGC Power check box to the RadarFX Simple Client Server, which controls whether Pre-AGC (AGC for Power) is enabled.	RFX-1.6.1, RFX-1.6a
RFX-128	2D post-processes AGC not working	Expanded this AGC to account for more range.	RFX-1.6.1
RFX-130	Shader errors in console when taking a SAR image	Corrected use of checks to prevent the issue.	RFX-1.6.1, RFX-1.6a

Table 1. Fixed Bugs (continued)

Key	Summary	Release Notes	Fix Version/s
RFX-131	Crash when flying around Italy/ Swiss Alps in the MAK Earth Online terrain	Fixed a number of code issues that were responsible for the crash.	RFX-1.6.1, RFX-1.6c
RFX-133	IR atmospherics are not working	Fixed to ensure that EOIR-specific render paths in the shaders are correctly updated.	RFX-1.6.1, RFX-1.6a
RFX-134	Switching from a Radar Sensor to a EOIR sensor has issues	Fixed rendering issues experienced when switching from a radar sensor to an EOIR sensor.	RFX-1.6.1, RFX-1.6a
RFX-137	Potential crash when performing a factory reset of the sensor settings	Fixed to prevent an issue that could occur when a sensor was removed because it was not part of the factory settings.	RFX-1.6.1, RFX-1.6a
RFX-138	Minor memory leak during application startup	This is fixed.	RFX-1.6.1, RFX-1.6a
RFX-139	CullVisitor::apply() spewing to console	Fixed to ensure sun/moon direction does not introduce nan's during startup.	RFX-1.6b
RFX-140	RadarFX: Misaligned objects / SpeedTree shadows	Removed unneeded code that was in place to ignore SpeedTree updates for the SAR shadow camera.	RFX-1.6.1, RFX-1.6e
RFX-145	Server Crash when zooming into the Ala Moana inset and switching to SAR	Made improvements to the code to prevent issues that could cause crashes.	RFX-1.6.1, RFX-1.6b
RFX-146	Server turns dark upon terrain reload	Fixed to clean up all objects from all views and modes when an object is removed.	RFX-1.6.1, RFX-1.6d
RFX-147	Arrays could index out of bounds	Fixed a number of code issues that were responsible for the crash.	RFX-1.6.1, RFX-1.6a
RFX-148	On startup, you can get a crash due to a read and write out of bounds	Fixed a number of code issues that were responsible for the crash.	RFX-1.6.1, RFX-1.6a
RFX-151	SAR Responses can return SAR images not centered on requested target	When handling a SAR request, RadarFX now uses the target location in the SAR request. Fixed the calculations in the SAR camera setup to ensure that the target location is always in the center of the rendered SAR image.	RFX-1.6.1, RFX-1.6e

Table 1. Fixed Bugs (continued)

Key	Summary	Release Notes	Fix Version/s
RFX-154	Stall caused by DtSkyDrawable / Silverlining	Fixed by disabling the sky for the RadarFX Shadow Camera.	RFX-1.6.1, RFX-1.6e
RFX-156	Indexing logic error in SAR when accessing radar parameters in shaders	Fixed the indexing logic error in SAR.	RFX-1.6.1, RFX-1.6e
RFX-159	RadarFX takes a long time to load in views which causes a delay in SAR images returns	RadarFX now ignores the merges_per_frame setting in the terrain options file. (This is set to 1 to prevent stalls in paging terrains when moving the camera around in VR-Vantage applications, but is not needed for RadarFX and taking still images.)	RFX-1.6.1, RFX-1.6e
RFX-160	RadarFX SAR images sometimes missing shadows on procedural trees	Modified code to allow terrain view magnification with SAR orthographic views so as not to reject view magnification based on view-to-tile angles. With orthographic views, angle rejection is not desired or correct for the view magnification algorithm.	RFX-1.6.1, RFX-1.6e
RFX-161	Images too bright and have too much contrast when using AGC	Added more settings to the Sensor Settings page in Display Settings that grant users better control over the look of the final image when AGC is enabled. These are in the Effects tab for Electronics.	RFX-1.6.1, RFX-1.6f
RFX-162	Gibbs-Ringing should be configurable	Gibbs-Ringing effect (halo) is no longer controlled through the blur settings. In the Sensor Settings page of Display Settings, you can toggle the effect on or off in the Effects tab for Sensor Effects. You can adjust the threshold, radius, and intensity in the Effects tab for Optics.	RFX-1.6.1, RFX-1.6g
RFX-163	Entities do not appear in SAR with RadarFX	Entities now use indirect rendering and view magnification works correctly.	RFX-1.6.1, RFX-1.6f
RFX-179	Starfield updates when it doesn't need to	The starfield is now disabled in RadarFX. It is not necessary for SAR images and caused performance issues for RadarFX.	RFX-1.6.1, RFX-1.6g

Feature List

Table 2. Feature List

Key	Summary	Release Notes	Fix Version/s
RFX-149	Update RadarFX to conform to MAK's new log file conventions	RadarFX .log files now follow the same file naming convention as other MAK ONE products.	RFX-1.7, RFX-1.6.1
RFX-153	Rather than computing lodScale for each camera, apply the result to observer magnification	Modified the way culling/scale works for SAR to take advantage of the view magnification algorithm rather than simply using a normal LOD scale. View magnification culling is focused around the target location.	RFX-1.6.1, RFX-1.6e
RFX-165	Reduce time it takes for image return after clicking request image button	Improved performance on image requests to return the images more quickly.	RFX-1.6.1, RFX-1.6g
RFX-176	Add information to Simple Client GUI about how long an image request took to get a response	When the Simple Client receives a response, the time that elapsed between the request and the response now displays in the Status Bar, along with the size of the image, type of image, and warning label.	RFX-1.6.1, RFX-1.6g
RFX-177	Add more preset SAR image captures	The new preset parameters available in the RadarFX Simple Client are: Eiffel Tower, Seattle, San Diego, and San Diego Harbor.	RFX-1.6.1, RFX-1.6g
RFX-178	Remove LWIR Observer Mode and Sensor Configuration	Removed LWIR sensor configuration from RadarFX.	RFX-1.6.1, RFX-1.6g

Table 2. Feature List (continued)

Key	Summary	Release Notes	Fix Version/s
RFX-180	Add a 'Sensorized Objects Pending' to the F2 ImGui debug overlay.	The Sensorized Objects Pending is now available in the Performance Statistics Overlay. You can access this overlay by pressing F2 or selecting the Performance Statistics Overlay check box in the Render Settings page of Display Settings.	RFX-1.6.1, RFX-1.6g
RFX-182	Add support for cancelling image requests	Added the ability to cancel a SAR image request using the new message type, DtREQUEST_CANCELLATION_TYPE. In the RadarFX Simple Client, after the user clicks the Send Image Request button, it changes to a Cancel Image Request button, allowing them to cancel the request.	RFX-1.6.1
RFX-184	RadarFX start in SAR mode by default	The RadarFX Server now starts in SAR mode instead of out-the-window mode. There is no longer a need to switch to SAR mode when a client application requests an image, speeding up the response. This was enacted by editing the default_ObserverModes.omcx file such that SAR is listed first. Additionally, the radarFX.bat file now includes the --disableTerrainObserverViews command-line option to prevent the application from applying the default observer view state to the main observer, which further ensures that SAR mode is the default. Change these values if you prefer the previous behavior.	RFX-1.6.1

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 RadarFX Server and other MAK ONE products, access the MAK ONE Product Support Knowledge Base:

<https://www.mak.com/knowledge>.

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