PRODUCT RELEASE SUMMARY
AVEVA LFM Server 5.0.0.8

Release Date: 17/05/2019

This document outlines all changes made in the above release of AVEVA LFM Server.

Document Prepared by: Praveen Vankdoth – Application Consultant
Document Approved by: Jennifer Copple – Senior Application Consultant
Superseded Software Version: LFM Server 5.0.0.5

1. AVEVA LFM Version Numbers

AVEVA LFM version numbers take the format X.X.X.X.

- First version field denotes general software series number.
- Second version field is incremented to track major new feature implementation.
- Third version field is incremented to track minor new feature implementation.
- Final (fourth) version field is incremented to track error fixes.

2. Recommended CAD Machine Specification

COMPONENT	RECOMMENDATION
Processor	Intel Core i7 Processor. 8MB cache 4/8 Cores
Operating System	Windows 10 Pro x64
Memory	DDR3 1600 MHz 8GB RAM 1600 MHz
Graphics	NVidia Quadro K2200 with 4GB of GPU memory
Data Storage	500GB SSD (Operating System & local project storage – if required)
Network	1GB Ethernet Card

For further information about AVEVA LFM machine specifications please click **here**.

3. Recommended Graphics Cards

LFM Server is tested with a range of graphics cards. Below is a list of graphics cards that work successfully with LFM Server.

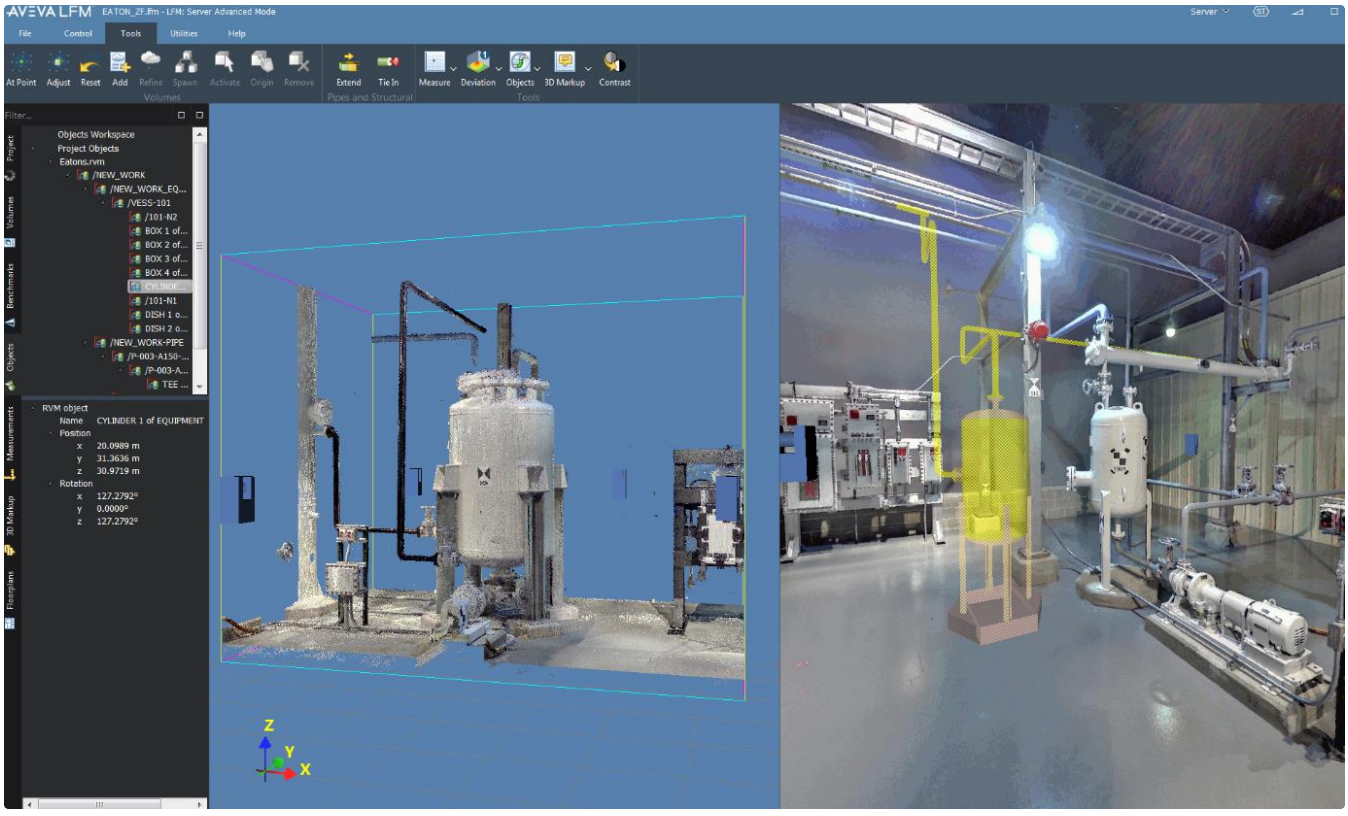
GRAPHICS CARDS	GPU MEMORY
NVIDIA Quadro P5000	16 GB GDDR5X
NVIDIA Quadro K6000	12 GB GDDR5
NVIDIA Quadro M6000	12 GB GDDR5
NVIDIA Quadro M5000	8 GB GDDR5
NVIDIA Quadro P2000	5 GB GDDR5
NVIDIA Quadro M2000	4 GB GDDR5

4. Enhancements for this Series

4.1. New User Interface and Improved User Experience

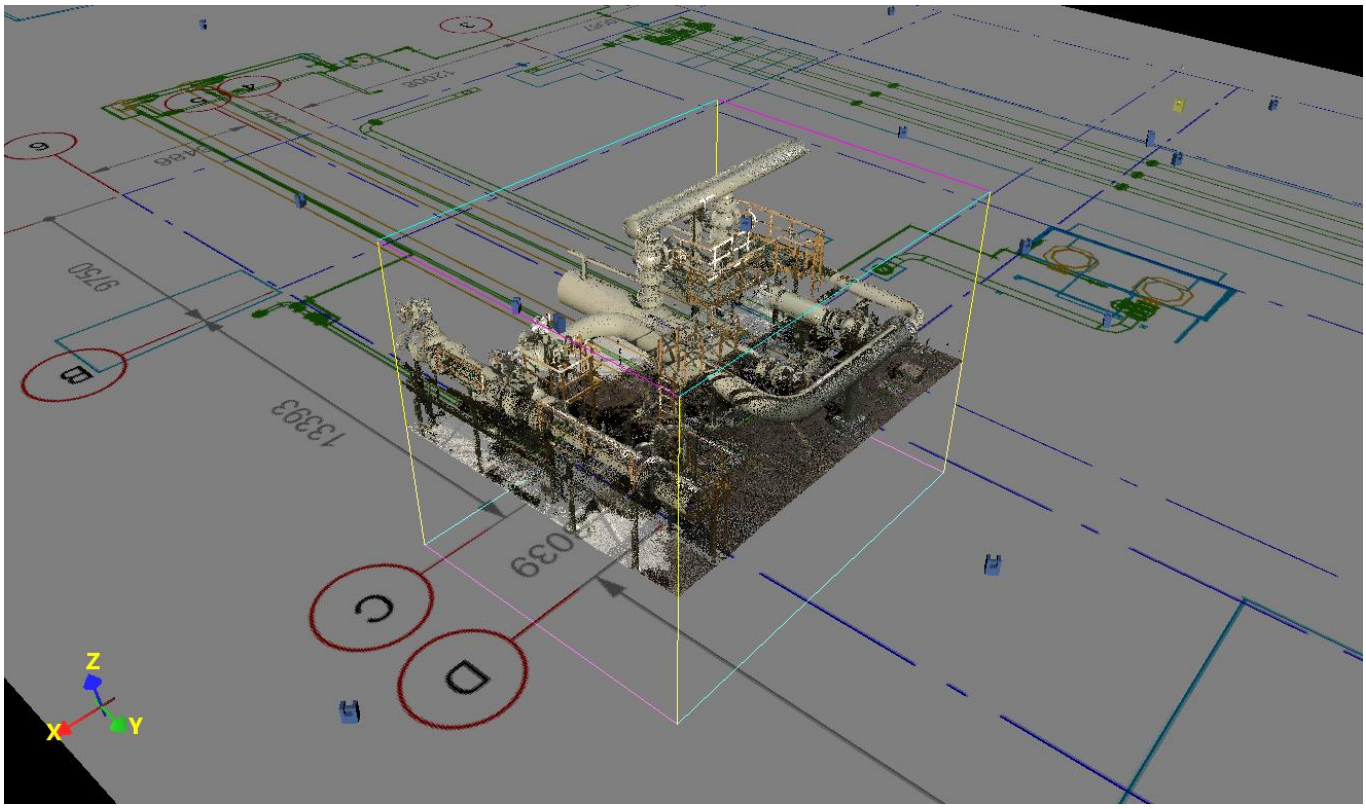
In this latest version of AVEVA LFM Server, significant changes have been made to the User Interface; with a particular focus on ensuring the product delivers a consistent look and feel to match other AVEVA products. Additionally, under-the-hood improvements and upgrades have been made when delivering the new user interface, making the product more responsive than ever before.

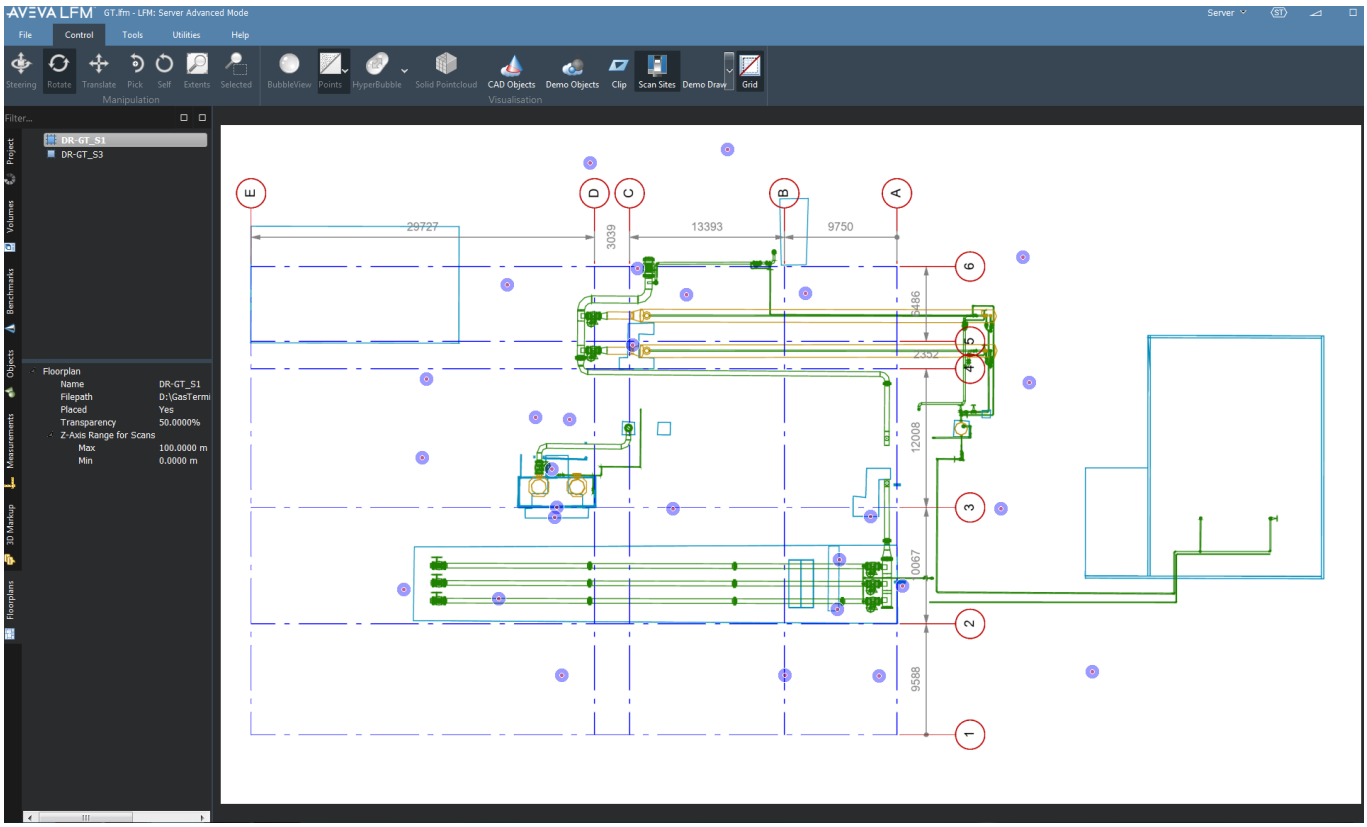
AVEVA LFM Server's new and improved intuitive interface allows users to work as efficiently as possible. At the same time as designing the new user interface, the User Experience was another area of extensive development. Menus, buttons, hierarchies and more, have all been redesigned and enhanced to ensure your data is front and centre within an easy-to-work environment. Customers upgrading from previous versions of AVEVA LFM Server should find the move a straightforward process as all design changes have been made with intuitive use in mind.

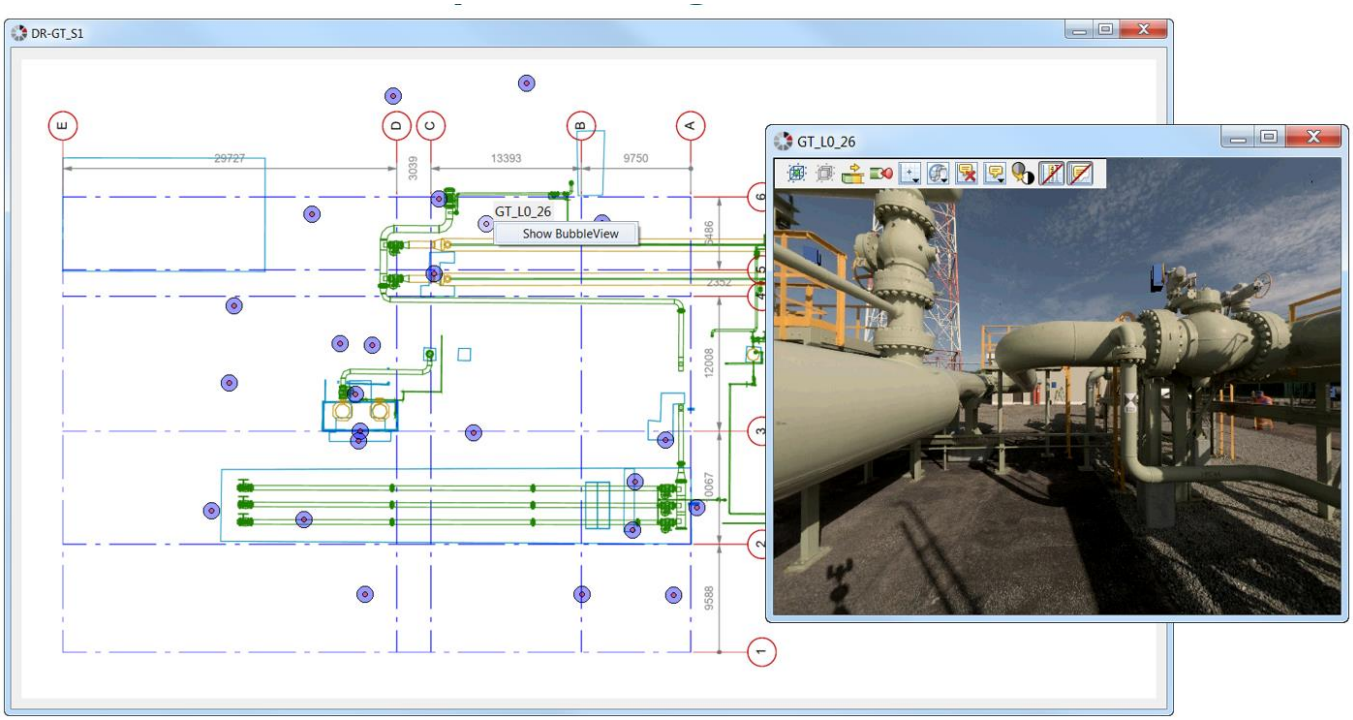


4.2. PDF Floorplans (inc. AVEVA LFM NetView)

Many of AVEVA LFM Server's users have detailed drawings they want to make use of for navigation around complex assets. Now in AVEVA LFM Server 5, users can import drawings in PDF format which can then be positioned within the asset. Once imported, users can expect to view drawings alongside their 3D data helping them to navigate to specific areas of an asset, and be able to open a BubbleView straight from the floorplan. Additionally, PDF floorplans can be viewed in a separate window for when AVEVA LFM Server is linked to a 3rd party CAD application.


Z
X
Y

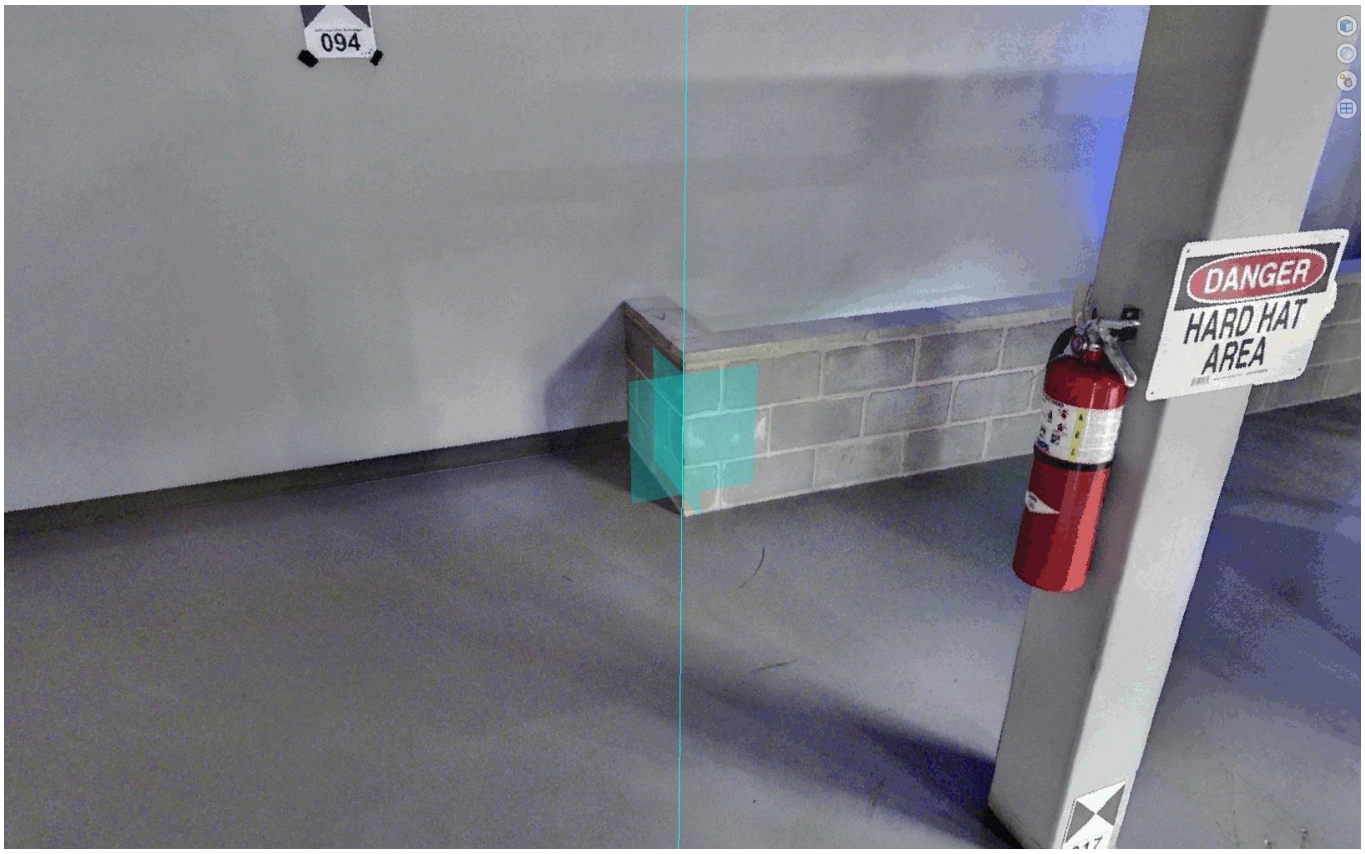

AVEVA LFM
GT.lfm - LFM: Server Advanced Mode
File
Control
Tools
Utilities
Help
Steering
Rotate
Translate
Pick
Self
Extents
Selected
Manipulation
BubbleView
Points
HyperBubble
Solid Pointcloud
CAD Objects
Demo Objects
Clip
Scan Sites
Demo Draw
Grid
Visualisation
DR-GT_S1
DR-GT_S3
Floorplan
Name
Filepath
Placed
Transparency
Z-Axis Range for Scans
29727
13393
9750
3039
12008
9588



PDF floorplans are not only tremendously useful for navigating around AVEVA LFM Server projects, they are a key way of navigating AVEVA LFM NetView projects – so it is now possible to publish PDF floorplans as part of the AVEVA LFM NetView publication process.

4.3. Measurements - Edge Detection

One of AVEVA LFM's goals is to continuously improve and update the many ways users can interact and gain value from their 3D data. In AVEVA LFM Server 5 users can now make use of Edge Detection when performing measurements.

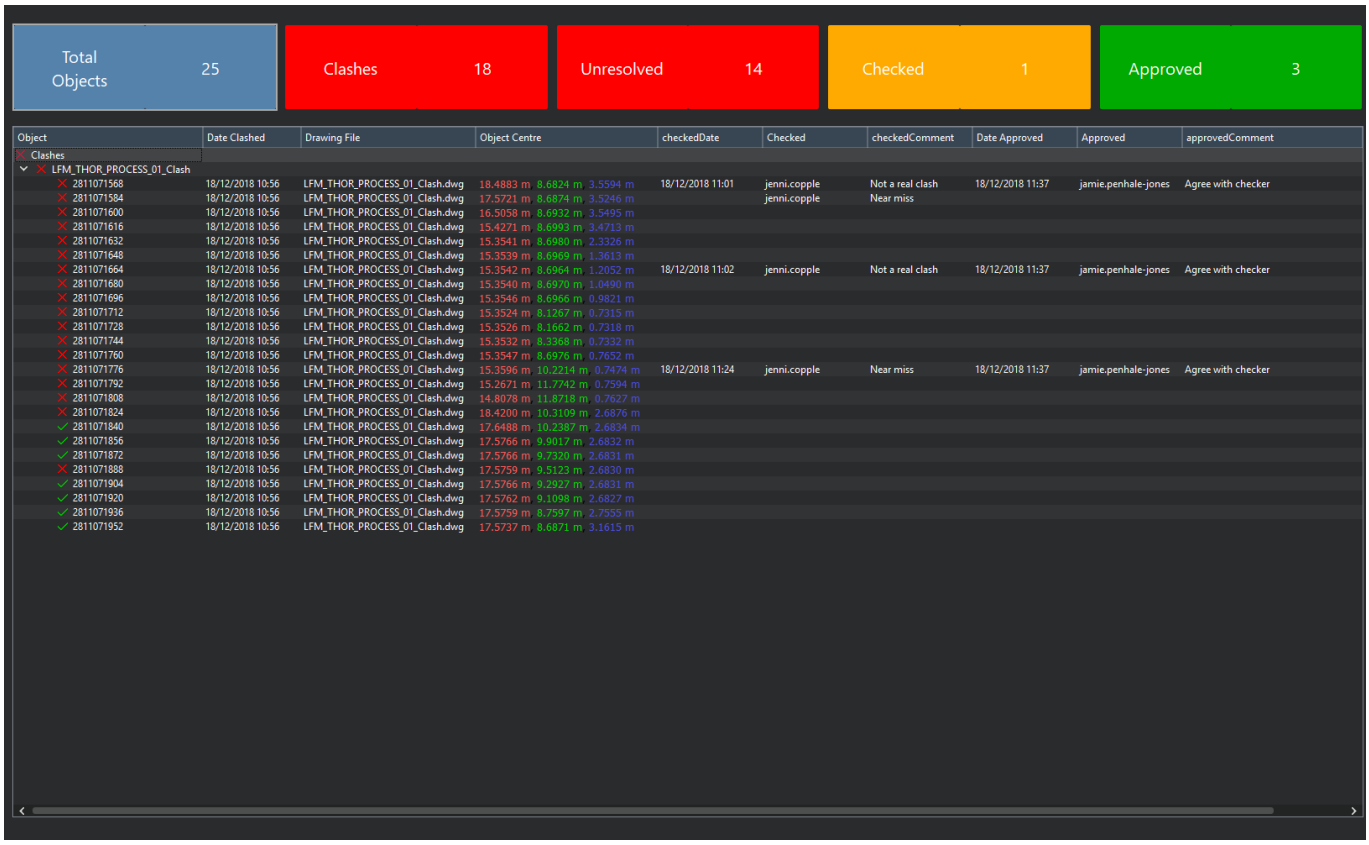


This is experienced when using either the BubbleView or Solid Point Cloud, allowing users to visualise the planes they can potentially pick against. This is useful for when a user is trying to measure from a specific edge or corner. Users should expect their efficiency to improve when using measurements as even in areas with missing or low data coverage – the edge detection quickly shows them where they are trying to snap to even if there is no supporting data as nearby patches of data are used to perform the calculation.

4.4. Clash Dashboard with Improved Clash Filtering

In parallel with the new User Interface created for AVEVA LFM Server 5, the Clash Dashboard has been redesigned to ensure clash information is easily visible for improved efficiency working with 3rd party CAD applications.

The Clash Dashboard now shows five separate tabs to easily view various statuses of objects and clashes, allowing users to easily work with the specific type of clashes they're interested in: Total Objects, Clashes, Unresolved, Checked, and Approved. Once a tab is selected, the clash list will then detail only objects or clashes for that specific type. Giving users the ability to sort and filter between clashes so quickly with a simple User Interface design reduces mistakes and improves efficiency. Users can expect to find working within the Clash Dashboard a much more user-friendly experience allowing them to focus on the task at hand rather than wasting time sorting through complex information.



4.5. New Interactive UCS

The Universal Coordinates System (UCS) is a tool used for quick navigation and orientation within AVEVA LFM Server. Before the UCS, users would rely purely on their knowledge of the asset to orientate themselves – within large assets this can be a challenging task and leads to delays in work due to the extended time required for each task.

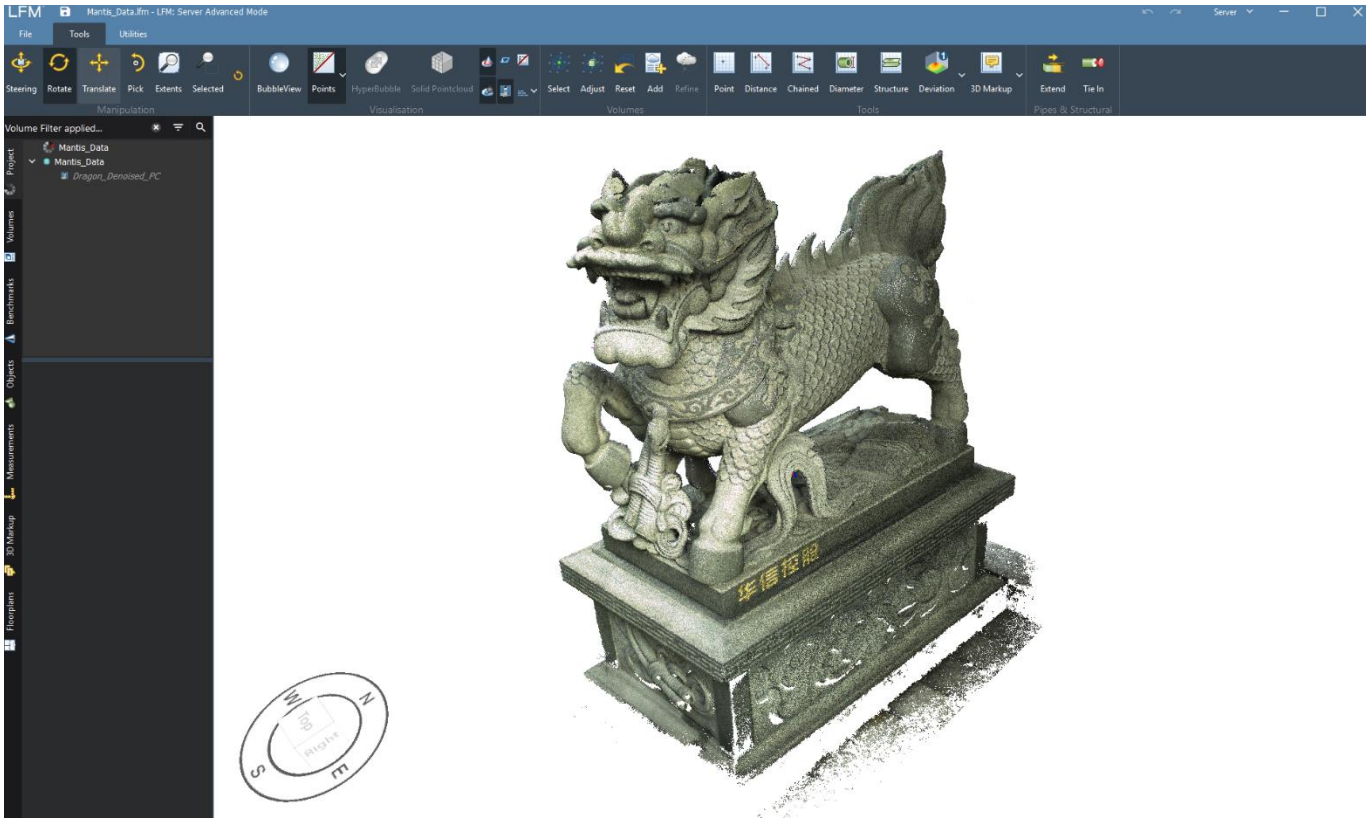
With the UCS in AVEVA LFM Server 5, users can rotate a point cloud and HyperBubble view based on the 3D cube within the UCS controls. Additionally, users can snap to set viewpoints by clicking on the UCS in key areas e.g. North.

The UCS will continuously update itself based on the user's interactions with the point cloud and HyperBubble, meaning that the UCS will always show an accurate representation of view direction and orientation.

4.6. Interoperability Improvements - Mantis Import

One of AVEVA LFM's goals is to continuously update and expand on the scan source formats AVEVA LFM Server can import. Currently, AVEVA LFM Server can import an extensive range of formats, from a variety of scanner manufacturers. To further expand on this core functionality, import improvements have been made to handle scans from Mantis Vision handheld scanners.

These continuous improvements give users an even wider range of laser scanners to choose from when scanning their assets. Knowing AVEVA LFM can handle a variety of scan formats allows users to use the right tool for the job – service providers use their extensive expertise to capture the as-built condition of their asset with their scanner of choice, confident that AVEVA LFM is ready to handle their data.



5. Known Issues

INTERNAL REFERENCE	DESCRIPTION
LFM-4059	Not all points are visible in the Ortho View after selecting Register All on a group of scans in Gateway Mode. This is expected behaviour for scans at certains positions if the Options > Orthographic View Depth setting is set to Automatic. To resolve this issue, please change the Options > Orthographic View Depth setting to Medium Range or Long Range.
LFM-2223	Edge mode does not work in SmartPlant Review 2017.
LFM-2196	Clashing PDMS objects are not displayed in LFM Server on selecting CAD OBJ button after performing an exact clashing.
B3692	Importing an .lfm project file into another .lfm project file gives the wrong target positions resulting in red traffic lights for all targets. To get around this please update the scan headers in the source projects and add the updated .zfc files to a new project. This will result in one project containing all scans that are registered correctly.
B5195	LFM Server: Gateway Mode expects and supports the following variant of .ptx file: 20222 X size 8623 Y size 785.884915 534.863432 43.552212 Position -0.086158 -0.996281 0.000973 3x3 orientation 0.996280 -0.086159 -0.001912 0.001988 0.000805 0.999998 -0.086158 -0.996281 0.000973 0 Homogenous matrix of position and orientation 0.996280 -0.086159 -0.001912 0 0.001988 0.000805 0.999998 0 785.884915 534.863432 43.552212 1 0.000176 0.539844 -1.156689 0.056916 36 35 33 x,y,z, intensity(0.0 -> 1.0), r,g,b (8-bit) 0.000175 0.537848 -1.151469 0.056931 36 35 33 AVEVA are aware of some instances of ptx files that do not match the format above. AVEVA will look to incorporate support for these variants as and when they become known. However, any variations on this format are susceptible to problems (including crashes or failure to convert). This includes failure to convert with the error "Failed to create a .zfc file, Intensity and Image files PATH.int ! Disk Full?"
LFM-3018	LFM NetView publishing creates the cache file containing any 3D objects in the wrong location and with the wrong name for the LFM Connect Uploader. Before uploading please follow the two steps below: 1. Inside the published LFM NetView project folder will be a sub-folder called objects. Please move this folder under the Project folder. 2. Within this objects folder please rename the cache file from ProjectName.cache to objects.cache.
LFM-3015	When storing the LFM Server project data in an SQL database, exporting volumes to an.lfx file and then importing the volumes file will crash LFM Server.
LFM-4216	Generation Recovery fails
LFM-4678	The previous version of the PDMS CAD link still exists when installing the new version of the PDMS CAD link. Please manually uninstall the existing PDMS CAD link before installing the new version.

6. Error Fixes

6.1. General/Server Mode error fixes for this release: 5.0.0.8

INTERNAL REFERENCE	DESCRIPTION	SOLUTION
LFM-4653	LFM NetView publish with "copy dataset" option checked doesn't copy all the required files.	Fixed – LFM NetView publish with "copy dataset" option checked now copy all the required files.
LFM-4521	Clashed points don't change colour when clash is approved or checked.	Fixed – Now clashed points change colour to yellow when clash is checked and green when a clash is approved.
LFM-4500	Chained distance measurement in Ortho view doesn't display the measurement line tracking the mouse cursor	Fixed – The measurement line tracking the mouse cursor is now displayed when performing a chained distance measurement in the Ortho view.
LFM-4464	Points from a volume in Revit are poor quality compared to LFM Server.	Fixed – Points from a volume in Revit are now the same as in LFM Server.
LFM-4450	Unable to import IFC files from the object import pane of LFM Server.	Fixed – Now user can import IFC files from the object import pane of LFM Server.
LFM-4448	Entities sometimes show in the wrong Management Panel when storing data in Database multiuser mode.	Fixed – LFM Server Database multiuser mode now shows the correct entities in the correct Management Panel.
LFM-4428	In AutoCAD and MicroStation, toggle CAD objects is not working after closing the clashes.	Fixed – In AutoCAD and MicroStation, toggle CAD objects is working fine after closing the clashes.
LFM-4425	View zooms to the corners of the window when zooming in/out whilst adjusting a volume in the Ortho view.	Fixed – View always zooms in/out to the cursor position while adjusting the volume in Ortho view.
LFM-4415	Selecting "Reload file" on a zgl file for second time gives 2 copies of model.	Fixed – Selecting "Reload file" on a zgl file for second time shows same model.
LFM-4253	User control enabled project asks for user credentials even after disabling User Control.	Fixed – User control enabled project no longer asks for user credentials after disabling User Control.
LFM-4215	LFM Server doesn't start with same window size as previously closed.	Fixed – LFM Server is opening with same size at same location as previously closed.
LFM-3823	Selecting a volume around an object in Revit doesn't display points in it.	Fixed – Selecting a volume around an object in Revit now displays points in it.

LFM-2741	Point measurement in Ortho mode should show crosshairs like it does on distance and chained measurement.	Fixed – User can see crosshairs while point measurement in Ortho mode like it does on distance and chained measurement.
LFM-2698	Opening the project in Database multiuser mode leads to attributes shift in its positions in X, Y direction.	Fixed – Opening the project in Database multiuser mode no longer shift its attributes positions in X, Y direction.
LFM-2294	LFM Server doesn't toggle points on clicking toggle points button in MicroStation.	Fixed – Now clicking toggle points button in MicroStation toggles the points in LFM Server.
LFM-1942	Low resolution points are not turned off while clicking on Show volume.	Fixed – Now low resolution points are turned off while clicking on Show volume.
LFM-1627	No progress bar while restoring demolished volumes by using 'Restore All' feature.	Fixed – Now progress bar displays the status while restoring demolished volumes by using 'Restore All' feature.
LFM-4398	LFM Server application doesn't starts maximised rather it is pinned to top left corner.	Fixed – LFM Server opens straight away in maximized mode now.

6.2. Gateway Mode error fixes for this release: 5.0.0.8

INTERNAL REFERENCE	DESCRIPTION	SOLUTION
LFM-4453	"Mixed pixel" setting in Options tab of LFM Server Gateway Mode is ignored on scan import.	Fixed – "Mixed pixel" setting in Options tab of LFM Server Gateway Mode is no longer ignored on scan import.
LFM-4438	Ortho view goes into rotate state while picking targets.	Fixed – Ortho view behaves properly while zooming in/out or panning the view while picking targets.
LFM-4439	Registration report shows incorrect values for projects that have been saved and re-entered.	Fixed – Registration report now shows correct values for projects that have been saved and re-entered.
LFM-4494	"Register All" takes hours on a large project.	Fixed – "Register All" now completes in seconds.
LFM-4423	Radar lines for targets that are used for registration are displayed as dotted lines (which should be used to signify the target is **not** used for registration)	Fixed – Radar lines for targets that are used for registration are now displayed correctly as solid lines.

LFM-4352	Target prediction cycles back through already rejected targets if another target is rejected.	Fixed – Target prediction cycles no longer backs already rejected targets if another target is rejected.
LFM-3902	“Register All” resets the translation and rotation of pointcloud data.	Fixed – “Register All” no longer resets the translation and rotation of pointcloud data.
LFM-3010	"Register All" doesn't remove the registration of imported preregistred scans.	Fixed – "Register All” removes the registration of imported preregistred scans.
LFM-3009	Update ZFS scan headers doesn't update all scans.	Fixed – Update ZFS scan headers option now updates all scans.
LFM-2445	"Create INT files if not present" generates .int files even if they exist.	Fixed – “Create INT files if not present” is changed to 'Create additional scan resources”.
LFM-1259	In LFM Server – Gateway Mode, spherical target type is changed to checker board upon updating scan headers.	Fixed – Spherical target type no longer changes to checker board upon updating scan headers.
LFM-1231	In LFM Server – Gateway Mode, Targets under scan node are not displayed in expanded way when picked a target.	Fixed – Targets under scan node are automatically displayed in an expanded way when picking a target.
LFM-4038	“Dead angle” setting in options tab of LFM Server Gateway Mode is ignored on scan import.	Fixed – “Dead angle” setting in options tab of LFM Server Gateway Mode is no longer ignored on scan import.

6.3. General/Server Mode error fixes for previous release: 5.0.0.5

INTERNAL REFERENCE	DESCRIPTION	SOLUTION
LFM-4260	LFM Server crashes if the user tried to attach a floating BubbleView window opened via the SmartPlant3D CAD link.	Fixed – LFM Server no longer crashes while attaching BubbleView to LFM Server which is opened in SmartPlant 3D
LFM-4371	LFM Server crashes when displaying an .fbx object file that was loaded in a previous session of LFM Server.	Fixed – LFM Server no longer crashes when displaying an .fbx object file that was loaded in a previous session of LFM Server.
LFM-4351	CAD link uninstallers are all placed in C:\Windows\ with the same file name. This means that only the last installed CAD link can be successfully uninstalled.	Fixed – CAD link uninstallers are now placed in the CAD link install folder.

LFM-4258	Publishing LFM NetView resources by checking color and intensity checkboxes does not create colour .dds files for all scan formats.	Fixed – Publishing LFM NetView resources by checking color and intensity checkboxes now creates colour .dds files for all scan formats.
LFM-4256	Right clicking on a Measurement group and selecting “Show BubbleView” fails to display a BubbleView.	Fixed – Right clicking on a Measurement group and selecting “Show BubbleView” now displays a BubbleView.
LFM-4241	LFM NetView/HyperBubble publish does not work for non-standard scan resolutions.	Fixed – LFM NetView/HyperBubble publish is now working fine for non-standard scan resolutions.
LFM-3943	User interface sometimes displays incorrectly when project data is stored in File (Multi-user) mode. E.g. Markups are visible in the Volumes tab or Measurements are shown in the Project tab.	Fixed – The user interface now displays correctly when project data is stored in File (Multi-user) mode.
LFM-3865	E57 export produces an .e57 file with much fewer points than the .zfc.	Fixed – Now the E57 export produces file with similar number of points to the source .zfc.
LFM-3790	Markups are displayed as solid 3D objects, they are no longer transparent like they were in older versions of LFM Server.	Fixed – Now Markups are transparent in the 3D window.
LFM-3417	Clicking on *Show Objects* leads to Fatal Error for some drawings from Plant 3D.	Fixed – Clicking on *Show Objects* now successfully shows the 3D objects inside LFM Server from Plant3D.
LFM-2920	Solid Point Cloud data generated for .rsp & .rxp scans is all white.	Fixed – Now Solid Point Cloud data generated for .rsp & .rxp scans is displayed in it’s correct colour
LFM-2424	Selecting View Clash Screenshot from the clash report right click menu selects a volume around the clashed object.	Fixed – Selecting View Clash Screenshot from the clash report right click menu no longer selects a volume around the clashed object.
LFM-4278	The order of entities (e.g. volumes, markups and measurements) is not stored when storing project data in either File (multi-user) or Database mode.	Fixed - The order of entities (e.g. volumes, markups and measurements) is now stored correctly when storing project data in either File (multi-user) or Database mode.
LFM-2777	Importing, cropping and placing floorplans is accessible by non-advanced mode users.	LFM Server now needs to be installed in Advanced Mode in order to import, crop and place floorplans.
LFM-1229	Show/hide 3D object files also shows/hides the 3D scan markers	Fixed – scan marker display is now no longer affected by showing/hiding 3D object files.
LFM-4203	Toggling CAD demolition objects requires the user to click in the 3D view to update the view.	Fixed – the 3D view is now updated automatically when toggling demolition CAD objects.

LFM-2862	CAD objects and clashed 3D points are shown outside the bounding box of a volume based clash.	Fixed – Only CAD objects and clashed 3D points inside the clash volume are displayed during a volume based clash.
LFM-1062	Showing the HyperBubble for the first time after producing the HyperBubble resources displays an error “initHyperBubble failed”.	Fixed – The HyperBubble now displays without error the first time showing it after the HyperBubble resources have been produced.
LFM-2860	Showing the context on a demolition CAD object does not select a volume around the full object	Fixed - Showing the context on a demolition CAD object now selects a volume around the full object.
LFM-4250	Hiding a clash does not hide the 3D clash object when storing project data in Database mode.	Fixed - Hiding a clash now hides the 3D clash object when storing project data in Database mode.
LFM-2362	Showing a clash in the BubbleView does not highlight the clashed area in yellow or display the clashed 3D object for clashes run from AutoCAD.	Fixed - Showing a clash in the BubbleView now highlights the clashed area in yellow and displays the clashed 3D object for clashes run from AutoCAD.
LFM-2859	Some 3D points are missing after generating a dataset with the “min/max corners” clipping option on the dataset generation wizard set.	Fixed – All relevant 3D points are now present after generating a dataset with the “min/max corners” clipping option on the dataset generation wizard set.
LFM-4010	Several small empty windows are created when connecting LFM Server to SmartPlant Review.	Fixed – Small empty windows are no longer created when connecting LFM Server to SmartPlant Review.
LFM-4009	The tooltip for the “Show Integrated BubbleView” button in the SmartPlant Review CAD link incorrectly says “Show HyperBubble”.	Fixed - The tooltip for the “Show Integrated BubbleView” button in the SmartPlant Review CAD link is now correct.
LFM-1078	Some blocks of points appear hidden in Edge Mode.	Fixed – Points now display correctly in Edge Mode.
LFM-4357	Points in Revit from LFM Server display with the incorrect intensity values	Fixed – Points in Revit from LFM Server now display with the correct intensity values.
LFM-4266	Performing a clash on a child item that clashes with the 3D points from an .rvm or .zgl file does not show there is a clash.	Fixed - Performing a clash on a child item that clashes with the 3D points from an .rvm or .zgl file now shows there is a clash.
LFM-4399	Objects are not shown in the 3D window when the project is re-loaded if the project is connected to an SQL database.	Fixed - Objects are now shown in the 3D window when the project is re-loaded if the project is connected to an SQL database.

LFM-1000	Toggling between colour and intensity in the Parked HyperBubble does not reflect demolished data.	Fixed - Toggling between colour and intensity in the Parked HyperBubble now reflects demolished data.
LFM-4136	The 3D view flashes purple when demolishing data.	Fixed - The 3D view no longer flashes purple when demolishing data.
LFM-1427	3D points disappear when double clicking on a measurement in the Measurements tab when in the Orthographic view.	Fixed - 3D points no longer disappear when double clicking on a measurement in the Measurements tab when in the Orthographic view.
LFM-4141	The maximise and close window icons are incorrectly placed on Windows 7 machines.	Fixed - The maximise and close window icons are now correctly placed on Windows 7 machines.

6.4. Gateway Mode error fixes for previous release: 5.0.0.5

INTERNAL REFERENCE	DESCRIPTION	SOLUTION
LFM-4410	Coloured unstructured data loses it's colour during dataset generation.	Fixed – Coloured unstructured data now successfully generated with the correct colour.
LFM-2959	Registration Report includes colour information in the scan x, y and z columns.	Fixed – Scan x, y and z columns now only contan the x, y or z values.
LFM-2336	Undo and redo buttons are always greyed out in Gateway Mode.	Fixed – Undo and redo buttons are now activated when appropriate.
LFM-4421	Error value on a target pick is always reported as zero.	Fixed - Error value on a target pick is now reported correctly.
LFM-1015	Bundle errors of zero should not be included in the average bundle error calculation as this gives inaccurate results.	Fixed - Bundle errors of zero are no longer included in the average bundle error calculation.
LFM-4255	Draging and dropping a volume category into the 3D view does not show the volumes contained in that category.	Fixed - Draging and dropping a volume category into the 3D view now shows the volumes contained in that category.
LFM-4122	The dataset generation wizard suggests an intermediate folder location on the same drive as the destination drive.	Fixed - The dataset generation wizard no longer suggests an intermediate folder location on the same drive as the destination drive.
LFM-4353	Attributes Window includes colour information in the target position field.	Fixed - Attributes Window no longer includes colour information in the target position field.

LFM-4126	Dataset generation dialog keeps being minimized during dataset generation.	Fixed – Dataset generation dialog now remains maximized during dataset generation unless manually minimized by the user.

7. Product QA cycle:

The development philosophy used to produce AVEVA LFM Server applies AGILE principles to ensure a high-quality product which evolves to match customer requirements. Throughout the development cycle, test and evaluation is used to guide the process and minimise the final test overhead.

The final test process has three stages, and this document has been prepared after these have been completed. These stages are outlined below.

7.1. Individual Function Test

All LFM Server desktop functionality is examined for correct responses. Functions called from the Main Menubar, Main Toolbar, Modelling Toolbars, and Component Browser are tested in turn. This ensures that the functionality matches the design intent, and previously recorded errors have been fixed.

7.2. Destructive Test

This section of the test schedule is aimed at investigating to see if a software product exhibits proper behaviour when subjected to improper usage, or improper input. The tests are applied to different data samples, machines, and in a random manner to try to replicate 'real world' variations in user conditions.

7.3. Software Acceptance Tests

AVEVA concludes the LFM Server test cycle with a series of controlled examples aimed at simulating real life use situations. The finished models are QA checked against calibrated historical data, to ensure that the product maintains the previous output standard.