

## INTRODUCTION

Release Notes Avizo 7.1.0

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This document describes the improvements and new features in version 7.1 of Avizo, the 3D visualization Software for Scientific and Industrial data.

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## OVERVIEW

Avizo 7.1 includes some important new extensions and features, enhancements of the user interface, performance improvements and issues fixes.

## NEW PRODUCT IN AVIZO XLAB EXTENSIONS FAMILY

### XLab Diffusion (Molecular Diffusivity)

**XLab Diffusion**, a new extension of Avizo Fire software, provides numerical simulation capabilities to calculate molecular diffusivity of a porous medium from a scanned sample (CT, FIB/SEM, MRI, etc.).

XLab Diffusion directly computes material properties from the segmented 3D image. Fick's second equation is solved using a finite volume method, with no need to extract a 3D mesh.

Two new modules are provided with this extension:

- **Molecular Diffusivity Tensor Calculation**  
The diffusivity tensor is computed using a volume averaging method applied to Fick's second equation. The studied sample is considered representative of a larger scale material, thus allowing periodic boundary conditions to be imposed. The diffusivity tensor provides additional information about the intensity of diffusivity along any direction in space. It can reveal anisotropy of the porous media as the dependence of the diffusivity on the direction of the concentration gradient.
- **Molecular Diffusivity Experiment Simulation**  
An experiment is simulated by adding reservoirs with imposed initial concentrations at the two opposed input and output faces of the given sample, and by hermetically closing it on the four other faces to guide the diffusion along a single direction.

The calculation considers diffusion of a single species in a fluid phase filled with a solvent where there is no flow, with no diffusion in the solid phase.

See Avizo XLab User's Guide for more information. XLab Diffusion is available on Windows XP/Vista/7 64-Bit.

### XLab Electro (Electrical Resistivity / Formation Factor)

**XLab Electro**, a new extension of Avizo Fire software, provides numerical simulation capabilities to calculate electrical resistivity (formation factor) of a porous medium from a scanned sample (CT, FIB/SEM, MRI, etc.).

XLab Electro directly computes material properties from the segmented 3D image. Ohm's equation is solved using a finite volume method, with no need to extract a 3D mesh.

Two new modules are provided with this extension:

- **Formation Factor Tensor Calculation**  
The electrical resistivity (formation factor) tensor is computed using a volume averaging method applied to Ohm's equation. The studied sample is considered representative of a larger scale material, thus allowing periodic boundary conditions to be imposed. The resistivity tensor provides additional information about the intensity of resistivity along any direction in space. It can reveal anisotropy of the porous medium as the dependence of the resistivity on the direction of the potential difference.
- **Formation Factor Experiment Simulation**  
An experiment is simulated, by imposing a potential difference to two opposed input and output faces of the given sample and by insulating the sample from outside on the four other faces.

The calculation considers resistivity of a single fluid phase that is filled with a solution conducting electricity where there is no flow, within an insulating solid phase.

See Avizo XLab User's Guide for more information. XLab Electro is available on Windows XP/Vista/7 64-Bit .

See also below in this document improvements and new features for specific Avizo Editions.

### NEW FEATURES

#### New Animation Producer

The Animation Producer is a powerful replacement for the familiar Demo Maker module. It allows you to create and edit key frame animations and demos with an intuitive timeline panel. You can start the Animation Producer by pressing the *clap button* in the main toolbar, or by selecting *Animation Producer* in the *Window* main menu. With the default layout, the Animation Producer window appears docked below the viewer window. You will also notice *stopwatch icons* added next to components such as modules, ports, and viewers. You can compose an animation by moving the orange time cursor in the extensible timeline, then use stopwatch icons to add events in the key frame event tracks, and modify events in the event tracks once they have been added below the timeline. You can zoom and pan the timeline. The remote control buttons allow playing the animation, or setting the time cursor to the next or previous event.

To create a movie, you will toggle the *tape button* in the Animation Producer panel, near the 'remote control' buttons, which shows the Movie Maker interface.

You can create multiple new animations and select any as the *current animation*.

For more details, see the updated tutorial in Avizo User's Guide, in chapter *Animations, Movies and Presentations in Avizo*.

By default, when loading an existing project, the contained Demo Maker modules remain hidden in the project view and are automatically converted into Animation Producer content. This can be disabled in the Preferences General panel by checking the option *Use Legacy Demo Maker*.

### USER INTERFACE ENHANCEMENTS

#### Extended Colormap port, superseding Data Window port (linear mapping type)

The Data Window range slider port that was available in modules such as Ortho Slice, is now superseded by a Colormap port. Colormap port has been extended to support the same features as the former Data Window range slider port: histogram displayed in background (Avizo Fire edition only) and subrange buttons. Note that colormap port supports reversed ranges (left value bigger than right value). For instance, while dragging a subrange button, when crossing the other subrange button, the colormap appears reversed.

When loading a project saved with Avizo 7.0.1 and earlier, a Data Window port (Tcl *linearRange* or *range* port of type HxPortRangeSlider) is automatically replaced by an equivalent Colormap port. The colormap port is set with grayscale colormap, *local range* mode, and *auto-adjust* mode, tracking the input data window. For instance, if an Ortho Slice is attached to a data set, whenever the *data window* is changed for this data set, the Ortho Slice colormap will be adjusted accordingly, independently from other Ortho Slices modules in the project. Changing the colormap range will not modify the other displayed objects unless the *local range* mode is disabled.

If a display module doesn't show the expected intensity range, first check the colormap range and the input data

min-max range or the data window in the Properties Area. With Avizo Fire, the Range Calibration Editor can be used to adjust the data window of a data set.

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### Colormap Editor - selected data and colormap

Since Avizo 7, the display of the selected data object is updated when the colormap is modified in the Colormap Editor or when a new colormap is selected in the *Colormap* menu of the Colormap Editor. Now this also applies to LDA data.

To edit the colormap of a given display module or data object, simply select it in the project view or using the viewer's pick tool; the corresponding *Colormap* and *Data* menu items are set in the Colormap Editor.

If the data object shown in the Colormap Editor's *Data* menu has a shared colormap, all display modules attached to this data object are affected by the colormap change. Otherwise, the first display module that has been selected in the project view and is attached to the data object is affected by the colormap change.

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### Surface Simplifier – new option and port for intersection test strategy

A new option is available to choose the intersection test strategy. It supersedes the Tcl command *setIntersectionTestStrategy*.

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### Generate Surface enhancements

A new port *Smoothing extent* is available if the *Smoothing* port is set to Constrained Smoothing or Unconstrained Smoothing. This port allows you to control the amount of smoothing applied when generating the surface. It supersedes the Tcl variable *SmoothKernelSize* ("Generate Surface" setVar SmoothKernelSize <value>).

## FILE FORMATS ENHANCEMENTS

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### New reader for .vgi and .xtekct files

Two new readers have been added for volume description files such as created by GE Phoenix X-ray or Nikon Metrology CT scanners. All information items stored in header files are attached as data parameters (see Data Parameter Editor in Avizo User's Guide). Like other formats, when the input volume size exceeds a threshold that can be defined in Preferences (LDA tab), you can choose among three options:

- Read the complete volume into memory
- Read as external disk data, loading data on demand, for instance, for quick data preview with Ortho Slice display or sub-volume extraction
- Convert to LDA (Large Data Access) optimized multi-resolution format, allowing, for instance, fast roaming and visualization with arbitrary slices or volume rendering, selection of region of interest and sub-volume extraction.

## OTHER ENHANCEMENTS

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### Enhanced support for shadows

Most display modules such as Ortho Slice, (Oblique) Slice, and Isosurface now support shadowing.

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## New Surface View display mode – colorfield mapping type

Surfaces can now be textured by 3D volumes (uniform scalar fields).

A new port *Colorfield mapping type* specifies how colors are mapped onto surfaces, when the optional colorfield data input port is used. With *per-vertex* mapping, the input colorfield is evaluated at the surface triangle vertices and colors will be interpolated in between. Colorfield mapping precision is therefore limited by the vertex density of the surface. With the new *per-voxel* mapping, textures are used to sample the input colorfield and map it accurately within surface triangles, potentially at the expense of higher memory consumption and lower performance. Note that surfaces can be simplified by using the Simplification Editor.

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## Ortho Slice - new Alpha port

This port allows specification of the minimum and maximum opacity values when *Transparency* is *Alpha* and *Mapping Type* is *Histogram*.

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## Curve Editor enhancement: new auto-trace editing mode

A new editing mode option *auto-trace* has been added to the Curve Editor. When *auto-trace* option is enabled, the Curve Editor adds a *Module* input port that can be attached to an Ortho Slice module. Then, the edited curve path is automatically fitted to the image edges of the attached Ortho Slice. Curves can be created, for instance, by main menu *Create > Curve*, or by 3D images menu *Display > Curved Slice*.

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## Histogram module for point clusters

It is now possible to compute and display histogram for data values attached to point clusters.

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## Movie Maker new stereo recording modes

Two new modes have been added for stereo movie generation: *over/under* (horizontal half screen) and *stereo side by side half filled* (vertical half-filled screen, stretching images instead of preserving aspect ratio).

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## New module Copy Transformation

This module copies the geometric transformation (i.e., translation, rotation, scale) of a reference data set to another data set. Setting the auto-refresh toggle causes the connected data transformation to be continuously updated as the reference transformation is changed.

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## NEW AND UPDATED TUTORIALS

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### New tutorial on Animation Producer

In the User's Guide chapter *Animations, Movies and Presentations in Avizo*, the Demo Maker tutorial has been replaced by a new tutorial about the Animation Producer. The section *Creating movie files* has also been updated.

## PERFORMANCE IMPROVEMENTS

### Surface rendering optimized

Rendering performance of geometric surfaces has been dramatically improved. This impacts, in particular, the Surface View and Isosurface modules for shaded, outline, transparent, and shadowed rendering.

The previous rendering mode can be enabled in the Preferences, Rendering panel, by checking the *Legacy Surface Rendering* option.

The new surface rendering avoids memory consumption overhead and initial render delay tied to the previous *Optimize graphics performance* mode. At the same time, performance is higher, in particular, for large surfaces. Performance is even dramatically higher compared to the previous *Reduce memory consumption* default mode.

## TCL COMMANDS AND SCRIPTING - ENHANCEMENTS AND COMPATIBILITY CHANGES

### Custom script objects saved in pack&go project

When saving a project as pack&go (project and data files), the project's script objects files are now copied along with data in the pack & go files directory. This makes it easier to interchange projects including custom script modules. However, note that additional files that are loaded or sourced from the script module are not copied to the pack&go files directory. Also the .rc resource file possibly associated with a script object is not part of the pack&go archive; hence, the saved pack & go project will not redefine object menus.

### New Tcl commands for Surface Editor

New Tcl commands have been added for the Surface Editor: *flipEdge*, *fixIntersection*, *fixDihedralAngle*, *fixTetraQuality*, and *prepareTetraGen*.

### New Tcl commands setIconColor

A new Tcl command *setIconColor* has been added for modules and data objects (HxObject).

This command can be used at any time to change the color of the icon that represents an object instance in the project view and properties area. It can also be used in resource files to specify the color used for icons when creating objects of a given type.

### New Tcl command fileFormats

The new Tcl command *fileFormats* returns the list of all file formats used by Avizo.

### Changes affecting scripts compatibility

Since the ports *Data Window* of modules such as Ortho Slices are superseded by colormap ports, existing script modules using such ports may cause Tcl errors. These scripts should be modified so that Data Window ports (Tcl *linearRange* or *range*, *HxPortRangeSlider*) are replaced by colormap ports. The affected modules are: *HxBumpSlice*, *HxCurvedSlice*, *HxViewCursor*, *HxCylinderSlice*, *HxMultiSlice*, *HxFenceSlice*, *HxObliqueSlice*,

HxOrthoSlice, HxDspThreshold, HxObliqueSliceLDM, HxOrthoSliceLDM, HxSeismicSlice, HxFreeSlice, HxInline, HxCrossline, and HxTimeSlice.

Note that, when loading .hx projects script files, the linearRange ports are automatically replaced by equivalent Colormap ports (set with grayscale colormap and local range mode). However, this cannot apply to script modules.

See also above in this document the improvements and new features common to all Avizo Editions.

### NEW FEATURES

#### New module Ruled Surface

This new module builds a surface from two input curves that are joined together by a set of triangles. The input curves can be either Line Set or B-Spline data. The resulting surface is a ruled surface. Ruled Surface is available in the menu *Compute*. Volume data can be mapped on surfaces (see the *Surface new colorfield mapping type* above) and a new Extract Image module is available to create flattened images of ruled surfaces with mapped colorfield.

#### New module Curve Morphing

This new module interpolates two input curves of type Line Set or B-Spline. Curve Morphing is available in menu *Compute*. This can be used, for instance, in combination with Curved Slice or Ruled Surface modules for animating a surface with a mapped colorfield.

#### New module Extract Image for ruled surfaces

This new module can attach to a Surface View module displaying a surface that has been generated by the module *Ruled Surface*, with *per-voxel* colorfield mapping. *Extract Image* can then create a flattened 2D image of the input surface with mapped colorfield.

#### New module Filter Sandbox

This new convenience module can be used to preview the effect of an image filter on a part of an image, and then apply it on the entire image. It is available in the image object's menu *Image Filters*. The filter can be: bilateral, box filter, Gaussian, median, recursive, delineate, anisotropic diffusion, non-local means, and unsharp-masking. Filters can be applied in 2D or in 3D (anisotropic diffusion is 3D only, and non-local means may be preferred in 2D mode for performance). In 3D mode, for preview, the filter is applied to a slab on the region-of-interest. The effect of a filter on the thresholding segmentation can be visualized. You can display means, standard deviations and histograms before and after applying the filter.

See also the other filters available in Avizo Fire.

Advanced users that are familiar with Tcl scripting can extend this module for more filters or a specific purpose.

#### New Image Registration Wizard

This convenience module can be used for registration of image data sets. It can set up Ortho Views display, subsample and extract subvolumes from input data (e.g., for partially overlapping images), and handle pre-alignment and optimized registration.

### NEW TUTORIALS AND EXAMPLES

#### New tutorials on registration, alignment, and data fusion

A new set of tutorials has been added to the Avizo Fire user's guide (see section *Registration, Alignment, and Data Fusion*). The following tutorials and examples provide the basics for typical registration tasks:

- Getting started with spatial data registration using the Transform Editor
- Data fusion, comparing and merging data
- Registration with landmarks, warping surfaces and images
- Registration of 3D image data sets
- Registration of 2D image and 3D image data sets
- Alignment and correction of 2D images stacks - FIB/SEM and other cross sections
- Registration of 3D surfaces
- Registration of 3D image and surface, nominal-actual analysis

## OTHER ENHANCEMENTS

### Improved FIB Stack Wizard

The FIB Stack Wizard (in image object's menu *Compute*) has been improved to simplify going through steps and to support an optional input mask defining the region to be considered during automatic alignment. Note that the FIB Stack Wizard keeps intermediate copies of data hidden, to facilitate backtracking. For very large data and depending on available memory, you can show intermediate data (use menu Project > Show Object) and remove unneeded data.

### New `getMeasure` Tcl command for measure callouts

This new Tcl command is now available for measure objects, to retrieve the current value of the measure as displayed in the callout beside the title. Use "*Measurement*" GUI `getItemLabels` to retrieve the list of measure objects.

## AVIZO GREEN EDITION – ENHANCEMENTS AND NEW FEATURES

See also above in this document the improvements and new features common to all Avizo Editions.

### New module Embossed Surface

This new module displays an embossed slice (bump mapping) on an unstructured surface mesh.

### New module Bar Chart Surface

This new module displays a bar chart on an unstructured surface mesh.

### Earth module enhancements

The Earth display module has been enhanced:

- New port Texture Brightness
- New port Orography
- New port Orography Quality

## AVIZO XSCREEN - IMPROVEMENTS

### Avizo XScreen enhancements

Several improvements have been made in Avizo XScreen:

- Volume Rendering has been improved, in particular, for cluster configurations
- Molecule View legend and color editor work with XScreen cluster configurations
- Mouse cursor can now stay hidden on cluster slaves.

## AVIZO XPAND – ENHANCEMENTS AND COMPATIBILITY CHANGES

### Changed port constructors

**WARNING:** The method signature for port constructors was changed for localization support.

For instance, port initialization looked like this in previous versions:

```
portRange(this,"range",2) // two float fields
```

Now, you need to specify the port's label via Qt method as follows:

```
portRange(this,"range",QApplication::translate("MyModule", "Range"),2)
```

### Simplified Visual Studio requirements - OpenMP disabled in debug mode

The Avizo XPand debug libraries are no longer dependent on OpenMP, the reason that Avizo XPand previously required use of Visual Studio Professional Edition. You can now use Visual Studio 2008 Standard Edition or Visual Studio 2008 Express with Avizo XPand.

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**Announcement** for next major release: End of support for Microsoft Visual Studio 2008

After Avizo 7.1, the next major release of Avizo will no longer support Microsoft Visual Studio 2005/2008 (VC++ 8/9).

## LIST OF SOLVED ISSUES

Issue#	Title	Release notes
792	Custom script objects should be saved when saving projects as pack&go	When saving a project as pack&go (project and data files), the project's script objects files are now copied along with data in the pack & go files directory. This makes it easier to interchange projects including custom script modules. Note however that additional files possibly loaded or sourced from the script module are not copied to the pack&go files directory. Also the .rc resource file possibly associated with a script object is not part of the pack&go archive, hence the saved pack & go project will not redefine object menus.
795	Snapshot doesn't support multi-viewers display	An issue has been fixed on Mac OS.
1003	Segmentation Editor doesn't remember Data Window	The segmentation editor allows changing the displayed grayscale range from the initial 'data window'. Such change was lost when closing the segmentation editor. The segmentation editor's grayscale range associated with a data set is now persistent during an Avizo session. However this is independent from the actual initial data window attached to the data set. For making a permanent change to the data window for reuse after restarting Avizo, you can use the Range Calibration Editor and save the data with modified range.
1113	Shadowing not supported with display modules such as Ortho Slice, Oblique Slice, Isosurface	A number of display modules were not rendered consistently when shadowing was enabled. Most display modules now support shadowing.
1329	Incorrect lighting and color display when headlight and shadowing are enabled	An issue occurring on Linux was fixed.
2060	Avizo requirements for Visual Studio due to OpenMP support	Avizo XPand packages are no longer dependent on OpenMP by default, which required using Visual Studio Professional Edition with Avizo XPand. You can now use Visual Studio 2008 Standard Edition or Visual Studio 2008 Express with Avizo XPand.
2139	TIFF conversion to LDM problem	In some cases on Linux, TIFF files could not be converted to LDM. This is now fixed.
2199	OrthoSlice data window doesn't support left value bigger than right value	The Data Window range slider port, that was available in modules such as Ortho Slice, is now superseded by a Colormap port. Colormap ports support reversed ranges (left value bigger than right value) and have been extended to support the same features as the former Data Window range slider port: histogram displayed in background (Avizo Fire edition) and subrange buttons. When dragging a subrange button, the colormap appears reversed once crossing the other subrange button. See " <i>Extended Colormap port</i> " in release notes for more details.
2271	The desktop background can be seen through the segmentation editor viewers when enabling the composite option of the X server	This issue occurring on Linux was fixed.
2275	Tcl command addMolecule crashed in some cases	This issue was fixed.
2279	Transform Editor abnormally slow with surfaces	Interactions with the Transform Editor of a surface data set are now faster.
2288	Molecule View legend window displayed on cluster slaves could not be closed in VR	Molecule View legend window is now only displayed on XScreen master node.

	environment	
2289	The color editor of Molecule View doesn't update atoms colors on cluster slaves (XScreen)	This issue was fixed.
2311	Changing module colors with "module -color" in .rc. files doesn't work	Since "module -color" could not apply to script objects, a new Tcl command 'setIconColor' has been added for modules and data objects (HxObject). This command can be used at any time to change the color of the icon that represents an object instance in the project view and properties area. It can be used in resource files to define the icon color of specific object type, so once it is created it has the defined icon color.
2312	Tcl script module port commands documentation	Documentation has been completed (see Alphabetic index of Ports).
2704	Surface menus changes for consistency	The modules "Apply Deformation" and "Vertex Morph" moved from the "Surface Transforms" menu to the "Geometry Transforms" menu.
2767	Cannot reload project loading files with [] in path	File paths containing square brackets are now saved properly in project scripts (using \ to prevent unwanted Tcl evaluation).
2989	Option "Show port interconnection in Project Graph View" (Preferences/Layout) is always checked	Fixed.
3057	Convert Image Type doesn't update resolution of output when resolution of input has changed	Fixed.
3124	Console completion issues	Automatic completion when pressing TAB key in the console has been improved.
3129	Changing the colormap in the Colormap Editor doesn't affect the representation from which the editor has been opened	Since Avizo 7, visualization of selected data object is updated when modifying colormap in the Colormap Editor or selecting a new colormap in the Colormap menu of the Colormap Editor. This now also applies to LDA data sets. See release notes section "Colormap editor" for details.
3190	The segmentation editor could crash in some cases when changing slice after selecting the Pick&Move tool	Fixed
3192	Menu Save or hotkey Ctrl+S on new data should trigger Save As	Fixed.
3240	Measurement module fails when user clicks on volume rendering	Measure tools can now work with Volume Rendering and Isosurface Rendering display modules.
3252	Arithmetic module is not safe if bad expression is entered and may crash in some cases	Fixed handling of illegal expressions. Note that warnings about incorrect expressions are issued in Avizo console.
3254	Watershed tool in segmentation editor doesn't work directly with unsigned 16-bit or 32-bit image.	This issue has been fixed. Gradient is computed from data converted to signed 16-bit.
3294	Crash with reading DICOM file	Some DICOM files using non-uniform slice location (irregular spacing) were not supported. They are now properly imported as scalar fields with stacked coordinates.
3320	Projection update on unstructured mesh display does not work properly	Fixed. Display is now correct when changing the projection type on an unstructured mesh.
3409	Tcl command "dso unloadPackage" has no effect	unloadPackage is now fixed. unloadPackage <package> unloads (if possible) the specified dynamic library. This allows replacing a dynamic library when developing a custom module without restarting Avizo. The command now also displays a diagnostic message when given

		library was not loaded or if library cannot be unloaded because it is currently in use.
3440	Calculus MATLAB cannot load MATLAB 2010/2011 dlls on RHEL5	In order to use the Calculus MATLAB module, that establishes a connection to MATLAB (The MathWorks, Inc.), some installation steps must be followed. The LD_LIBRARY_PATH environment variable should be set to MATLAB_INSTALLATION_PATH/bin/glnx86 on Linux 32-bit and MATLAB_INSTALLATION_PATH/bin/glnxa64 on Linux 64-bit. The PATH environment variable should be also set to MATLAB_INSTALLATION_PATH/bin. If after doing this you still encounter troubles starting Calculus MATLAB, it might be because the GNU Standard C++ Library (libstdc++) installed on your platform is older than the one required by MATLAB. You can check MATLAB's embedded libstdc++ version in MATLAB_INSTALLATION_PATH/sys/os/glnx86 on Linux 32-bit and MATLAB_INSTALLATION_PATH/sys/os/glnxa64 on Linux 64-bit. If needed, add this path to LD_LIBRARY_PATH. .
3480	Resample module wants to allocate a huge amount of memory	An issue was fixed for abnormal memory consumption in Resample module.
3511	Creating new lights has no effect on Volume Rendering	This issue has been fixed. It is now possible to change the lighting direction for volume rendering by creating a light from the menu View > Lights. Make sure to disable the headlight in menu View > Light, or viewer's popup menu. Only the first active light object with directional light type is considered for volume rendering.
3547	Crash when removing a MultiChannelField connected to "Volume Rendering" in the project	This issue was fixed.
3564	Crash when loading in memory or converting to LDA a 64-bits raw image 48000x48000	An issue when reading large 2D slices has been fixed. Note however that, when reading an image file or an image stack, the current Avizo release still requires at least twice the memory occupied by a single slice.
3566	The Tcl command getVoxelSize doesn't use the current display unit	The returned voxel size is now converted from working to display coordinates unit if this is enabled in the Preferences (menu Edit > Preferences, Units tab). Please see User's Guide for more detail about Units in Avizo.
3610	The directory port (Tcl newPortDirectory) doesn't return folder names when selecting several folders in the browser	All selected folders are now available in the port (default label "Folder Selection").
3614	Crash when enabling the new Measurement tool in VirtualGL environment	Solved. This bug was due to VirtualGL and has been fixed with the latest version of VirtualGL.
3629	Avizo Green cannot load netCDF curvilinear dataset with coordinates in some cases	Fixed. The netCDF reader was extended to support some Coordinate Attribute Convention.
3644	Point Cluster View performance issue	Rendering performance for Point Cluster View was dramatically improved, in particular for large number of points.
3757	Avizo cannot import .im6 files using signed 16-bit (short integer)	.im6 signed 16-bit files are now supported, loaded as signed 16-bit grayscale scalar fields.
3774	Shading correction and FIB Stack Wizard script not working	A regression in Avizo 7.01 has been fixed. In addition, the FIB Stack Wizard has been further improved and a tutorial is now available in the Avizo Fire User's Guide.
3776	When closing Avizo with Align Slices in edit mode, viewer decoration are removed at next start	In some cases, the viewer decorations could be disabled at Avizo restart. This is now fixed.
3795	No pack&go option for the global command saveProjectAs	The packAndGo option has been added to saveProjectAs Tcl command

3835	DICOM import failure on PC with 'Traditional Chinese (Taiwan)' in regional settings	This regression has been fixed.
3848	Crash in applying Arithmetic on two image	An invalid expression caused the crash. Syntax such as {A}-{B} is now accepted, and non-existent variables no longer cause a crash.
3856	Remesh Surface seems never ending	Fixed. In some case Remesh Surface could take an abnormally long time to finish.
3869	Menu Project > Show Object doesn't work in some cases	Fixed. The Project > Show Object menu did not expand before using the pop-up menu once in Project View.
3870	Precision with Measurement tool.	In some cases measurement sampling was incorrect. This has been fixed.
3888	Some CATIA V5 files could not be read with Avizo XReader option	Solved. The files were saved from an incomplete CATIA session (still opened in Sketcher workbench).
3891	Erroneous error message in the console when loading some .am file	Fixed. An .am file with incomplete header was not properly interpreted and considered as Raw as External Data.
3892	An Avizo 6.3 project or .am file cannot be correctly loaded in Avizo 7	Fixed. An .am file with incomplete header was not properly interpreted.
3893	Segmentation Editor - Remove Islands corrupts label field	Since Avizo 7.0.1 the Remove Islands tool did not work correctly in 3D volume mode without the option that allows merging connected component. This regression has been fixed.
3899	XLab Hydro should display dialog boxes at the beginning or end of the computation.	When calculating multiple directions at once, warning dialog boxes are now displayed only once at beginning or end of the full run.
3902	Missing time per iteration for XLab Hydro compute modules.	Time per iteration is now displayed in the console, for each direction possibly calculated.
3943	Surface View on large surface crashed	The display driver was interrupted due to initial rendering exceeding the Windows Time-Out limit. This issue is solved since surface rendering with Surface View has been dramatically improved for performance. See "Surface rendering optimized" section in release notes.
4017	The header size in the Raw Data Parameters dialog is limited to signed 32-bit int	Fixed. 64-bit integers are now supported for header offset on 64-bit machines.
4048	Data Window port (linearRange/range) no longer available in Avizo 7.1	The Data Window range slider ports, which were available in modules such as Ortho Slice, are now superseded by Colormap ports. See release notes section "Extended Colormap port" for more details. While .hx project files compatibility is preserved, the .scro script modules may need to be modified to replace the Data Window ports by colormap ports. See release notes section "Changes affecting scripts compatibility" for more details.
4145	Landmark file extension incorrect	Incorrect file naming for Landmark files has been fixed.
4150	Anisotropic Diffusion filter crash on large data	This has been fixed.
4182	Abnormal Closing filter allocation failure	This issue has been fixed.
4227	Need for side by side stereo movies with stretched images instead of preserving aspect ratio.	A new stereo mode was added to Movie Maker "stereo side by side half filled".
4236	Mouse cursor appears on slave nodes when active stereo is enabled	In some case, hidden cursor was unexpectedly restored when switching the stereo mode. This is now fixed.