

# Amira 5.6

Advanced Visualization and Data Analysis

Release Notes  
Version 5.6

## Release Notes Amira 5.6

Dear Amira User: This document informs you about the most important changes in this version. Please read these Release Notes carefully. We would appreciate your feedback regarding this version. If you encounter problems but also if you have suggestions for improvement, please contact us at [vsghotline@fei.com](mailto:vsghotline@fei.com). We would like to thank you in advance for your efforts.

April 2014, the Amira and Avizo team

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## New Licensing

### New License Activation

A new license management system has been introduced in Amira 5.6, which greatly simplifies operations such as upgrading or transferring licenses. Upon receiving activation codes corresponding to purchased licenses, simply copy/paste the activation keys into the License Manager to complete the on-line activation. Please refer to Amira License Manager Help for more details about license activation, transfers, and upgrades.

## New and Enhanced Modules

### New modules *FFT* and *InverseFFT*

The new modules *FFT* and *InverseFFT* replace the deprecated *FourierTransform* module (still supported in scripts for compatibility though). The *FFT* module now supports the following result types: magnitude, phase, power spectrum, logarithm of magnitude, logarithm of power spectrum, and complex. The results are centered (lowest frequencies at the center).

The backward transform is now performed by module *InverseFFT*. It produces a simple real scalar field instead of a complex scalar field when the result imaginary part is not significant relative to the real part (see Tcl command *threshold* for details).

### New *FFTFilter* module

Available with Quantification+ Option, the new module *FFTFilter* for frequency domain filtering of 2D and 3D images is based on fast Fourier transforms. This module is a powerful tool for filtering periodic noise or structures. Filtering large structures (low frequencies) can be used for shading corrections. Filtering small structures (high frequencies) can be used for smoothing. Two modes are available in this module. The Spatial mode exposes simplified parameters for setting structure size or stripe orientation and tolerance relative to the input image. The Frequency mode exposes extended parameters for band filtering, notch filtering (spots), and directional filtering relative to the Fourier transform image. This latter mode allows export of the filtered FFT magnitude image for visual control in the frequency domain.

### Enhanced *SpatialGraphStatistics* module

This module now computes the orientation of each segment in a *SpatialGraph* object and presents it as two additional columns *Theta* and *Phi* in the output spreadsheet.

## Bug Fixes

Besides adding new features and improvements, we have fixed issues and bugs. The following section presents a selection of those issues.

3281	<b><i>CalculusMatlab</i></b>	The module now works with MATLAB 2013b release.
4008	<b><i>DICOM Reader</i></b>	For some DICOM files the voxel size was not read correctly.
4014	<b><i>InterpolateLabels</i></b>	The module now works when the resulting label field is larger than 2GB.
4070	<b><i>Crash with some networks</i></b>	Certain complex networks with many objects and display modules were crashing.
4090	<b><i>MaterialStatistics</i></b>	[Mac OS] The MaterialStatistics module no longer causes a crash when created from the Segmentation Editor.
4103	<b><i>Create menu</i></b>	[Mac OS] The non-functional submenus of the Create menu have been fixed.
4106	<b><i>Clipping issues</i></b>	[Mac OS] It is now possible to clip surfaces correctly on Mac systems with NVIDIA graphics cards.
4107 4123	<b><i>VolumeEdit</i></b>	The padding value is now correctly set on voxels replaced by the cut tool of VolumeEdit.
4113	<b><i>Crop Editor</i></b>	A crash occurring when connecting the Crop Editor to a MultiChannelField has been fixed.
4115	<b><i>Volren</i></b>	When rendering large volumes sometimes artifacts could be seen. This has been fixed.
4119	<b><i>DICOM Reader</i></b>	[Mac OS] The Stack Break Criteria dialog was not usable.

## Technical Information

### Supported Platforms

Windows – Windows XP (SP3 or newer), Windows Vista, Windows 7, Windows 8, 32-bit and 64-bit editions

Mac OS X 10.7, 10.8 64-bit

Linux – Red Hat Enterprise Linux 5.5 for x86\_64 or compatible. The software may work on other distributions too, but it has not been tested and is not supported.

### Developer Option Requirements

#### Windows

- XP/Vista/7, 32-bit: Microsoft Visual Studio 2005 (VC++ 8), with Visual Studio 2005 SP1
- XP/Vista/7, 64-bit: Microsoft Visual Studio 2008 (VC++ 9)

#### Mac OS

- GCC 4.2.x for all supported versions of Mac OS X

#### Linux

RHEL 5.5: GCC 4.1.x

### Recommended Hardware

CPU: Multi-core CPU with  $\geq 2$  GHz

Main memory:  $\geq 4$  GB

Graphics card: A current desktop card from one of the main vendors (NVIDIA or ATI) with at least 512 MB video RAM. If OpenGL stereo support is needed (e.g., stereo projection or AmiraVR), an NVIDIA Quadro or an ATI FireGL / FirePro card with the appropriate driver must be installed.

For more information, please refer to:

[http://www.vsg3d.com/sites/default/files/related/AvizoAmira-hardware\\_recommendation\\_fei-vsg\\_br.pdf](http://www.vsg3d.com/sites/default/files/related/AvizoAmira-hardware_recommendation_fei-vsg_br.pdf)

### Installation Notes

**Windows runtimes installation** The installer for both Microsoft Windows distributions provides a mechanism to install the appropriate runtime libraries.

**License Manager** Due to security mechanisms in modern operating systems (e.g., Microsoft Windows User Account Control), the Amira installation procedure needs to run with administrator privileges in order to be able to install the new License Management system (right-click the Amira installer icon, select “Run as administrator” from the context menu).

**Note:** Some virus scanner software can significantly slow down installation. If you observe stalling during installation, this is likely to be caused by a virus scanner program. Turning off the virus scanner when installing Amira usually solves the issue.

## Manufacturer Information

Manufacturer Address	FEI Visualization Sciences Group 3, Impasse Rudolf Diesel, Bât A - BP 50227 Mérignac Cedex F-33708 <a href="http://AMIRA.COM">AMIRA.COM</a>
Support Contacts	Web: <a href="http://vsg3d.com/technical-support">http://vsg3d.com/technical-support</a> Email: <a href="mailto:vsghotline@fei.com">vsghotline@fei.com</a>