amira®
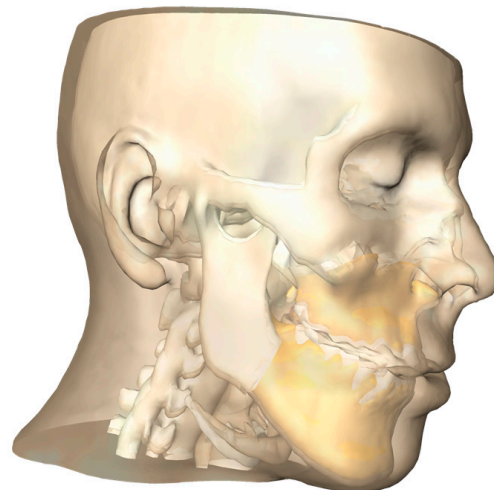
3D Analysis Software for Life Sciences & Biomedical Data

A single platform for all your visualization needs

IMPORT AND EXPORT

- Standard bitmap formats
- TIFF, BMP, JPEG, PNG, SGI
- Microscopy-specific formats
- Leica, Zeiss, BioRad, Olympus, MRC
- Medical image formats
- DICOM, Analyze 3D
- Neuroscience formats
- Nifti, HOC, SWC
- Finite element modeling
- FIDAP, I-DEAS, Fluent
- Geometric modeling and CAD
- DXF, STL, VRML, Inventor
- Flexible raw data import

PROCESS

- 2D and 3D image filtering
- Surface generation
- FEM grid generation
- Interactive and automatic segmentation
- Interactive and automatic slice alignment
- Image registration and morphing
- Tensor computation
- Skeletonization and tracing of neural and vascular networks
- Deconvolution and Z-drop correction
- Powerful scripting interface
- Dedicated editors for segmentation, tracing and fusion
- DTI tractography
- Multicore support for many modules

VISUALIZE

- Orthogonal and oblique slicing
- Volume rendering
- Surface rendering
- Isolines and isosurfaces
- Multichannel imaging
- Image fusion
- Vector and tensor visualization
- Support of structured / unstructured grids
- Molecular visualization

ANALYZE

- Volume, area, and distance measurements
- Densitometry (gray value statistics)
- Filament network statistics
- Co-localization analysis
- Component separation, counting and shape analysis
- Arithmetic operations on images, vector fields, and unstructured grids
- Direct integration of the MATLAB® compute engine

PRESENT

- Easy-to-use interactive 3D navigation
- Automation of complex animations and demonstrations
- Embedded tools for movie generation
- Active and passive 3D stereo vision
- Virtual reality navigation tools
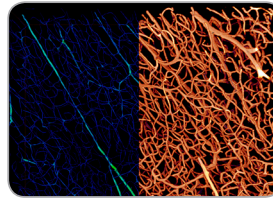- Single and tiled screen display

vsg
Visualization Sciences Group

amira®
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Optimizing Amira for your needs

The Amira software is organized in functional modules consisting of a base package plus optional add-on packages that allow you to optimize your investment by customizing the product to fit your exact needs.
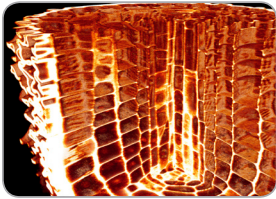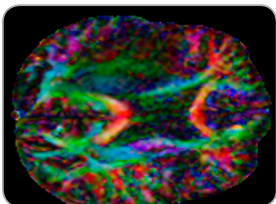
Microscopy Option

This package is for microscopy users including specific readers for microscopy data and deconvolution. Allows exploration of 3D imagery obtained from virtually any microscope. Edit and extract filament networks from your microscopy images.
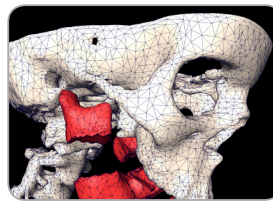
Neuro Option

The Neuro Option provides tools for Diffusion Tensor Imaging (DTI) experiments, including tensor visualization, directionally encoded color maps (DEC) and fiber tractography. In addition, this option supports brain perfusion analysis on MR or CT time series data.

Molecular Option

Adds advanced tools for the visualization of molecule models. Combines hardware-accelerated volume rendering with a powerful molecule editor and specific tools for complex molecular visualization.

Quantification+ Option

Delivers high-level tools for obtaining and visualizing advanced quantitative information on 3D images. This option offers the whole range of software tools needed to perform automated segmentation, convolution, object separation, and to extract statistical and geometrical information.

VR Option

Enables the visualization of your data on large tiled displays or in immersive Virtual Reality (VR) environments. Supports 3D navigation devices as well as fast multithreaded and distributed rendering.

Skeletonization Option

Adds tools for reconstruction, analysis, and skeletonized representation of neural and vascular networks and their quantification with regard to parameters such as segment length and diameter. Supports skeletonization of very large image stacks.
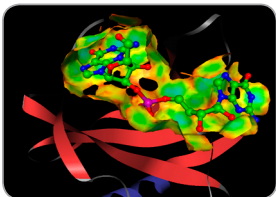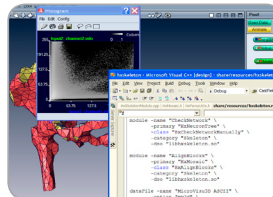
Mesh Option

Adds tools for the generation of 3D finite element (FE) meshes from segmented image data. High-quality visualization of simulation results using scalar, vector, and tensor field display modules.
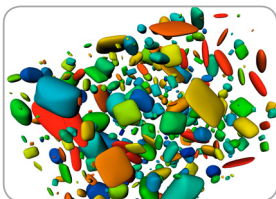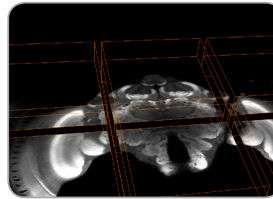
Developer Option

Lets you create new custom components for visualizing or processing data, file readers or writers, using the C++ programming language. Includes a development wizard for getting started quickly.
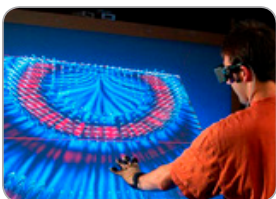
Very Large Data Option

Adds support for the visualization of image data that exceeds the available main memory of your computer using efficient out-of-core data management. Extends the use of many standard mo- dules such as orthogonal and oblique slicing, volume rendering, and isosurfacing.

Supported Platforms

- Windows® XP/Vista/7, 32-bit and 64-bit editions
- Mac OS® X 10.5, 10.6, and 10.7
- Red Hat Enterprise Linux 5.5 for x86_64 or compatible

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