

## Analyze 9.0: New Features and Enhancements

If you are already familiar with Analyze or are considering upgrading, here's a list of some of the new features and enhancements that have been built in to version 9.0. (If you currently have an older version of Analyze, please also check out the [Analyze 8.1 enhancements](#), [Analyze 7.0 enhancements](#), [Analyze 6.0 enhancements](#), [Analyze 5.0 enhancements](#) and [Analyze 4.0 enhancements](#) sections).

### General Enhancements

#### Tabbed Analyze Workspace

The Analyze Workspace now has an intuitive "tabbed" interface for improved data management. Quickly organize your data in project-specific tabs that are accessible with the click of your mouse!

#### Organize Loaded Data

Not only can you organize data in project-specific tabs, but you can also control the order of loaded data in the Analyze Workspace. Place your data in a custom order using drag-and-drop, or sort by name, size, or modification time.

#### Multiple Volume Drag-and-Drop

Select multiple volumes in the Analyze Workspace and drag-and-drop them simultaneously into modules with support for multiple inputs.

#### Improved window/subwindow position control

- Subwindow positions can be stored and recalled when module is invoked again
- Smarter subwindow management to keep from opening on top of primary window

#### Load Volume Images from the Command Line

Analyze can be started with a volume image to be loaded on the command line (invoked Load to then load that volume at startup)

#### Enhanced Documentation

Quickly find the answers to your most common Analyze questions in the updated Analyze User's Guide and Help documentation. More comprehensive than ever, this updated documentation is now searchable!

## Module Specific Enhancements

### Display/Visualization Modules

#### New "Volume Compare" Module

- Direct comparison of two volume images and associate object maps
- Allows more effective comparison between registered volume images
- Permits direct viewing of objects between the two volumes, such as for comparison of segmentation results

#### Multiplanar Sections

- Scroll bars added to the Scan Tool to support very large or magnified images

#### Volume Render Module

- Tissue map color bar and associated scale can be displayed with the rendered image for direct viewing of image value to color mapping

### Registration Modules

#### 3D Voxel and Surface Registration

- Added full support to use 24-bit RGB volume images
- Registration based on specific RGB color channel or combined grayscale image
- Transformations applied to full 24-bit volume image
- New yellow/cyan comparison option

### Measurement Modules

#### Line Profile

- New tool for drawing two intersecting lines and measuring distances and angles between the lines

#### Region Of Interest

- Median value within sample region added as a sampled metric
- Individual voxel signal intensity plotting through another dimension (i.e., 2D images through time or 3D volumes through time)

#### Tree Analysis

- Added a 'Save All Stats' button to the Tree Plot option for efficient saving of tree metrics for all extracted trees

### SISCOM Module

- Statistical significance for activation detection now allows a variable range from 0.1 STD to 5.0 STDs
- All registration transformation matrices for any combination of registrations between SPECT and MRI inputs can be saved for use outside of SISCOM

## Mayo 3D Brain Atlas Module

- New Coordinate Query Options: Coordinate query now includes options for transformation into four new coordinate reference systems: MNI, SPM, ICBM and FSL coordinates

## Diffusion Tensor Imaging (DTI) Module

Computation of axial diffusivity and radial diffusivity

Object map output for ROI-localized fiber bundles

Output eigenvalues/eigenvectors from computed DTI maps ( $\lambda_1, \lambda_2, \lambda_3$ )

Improved control of fiber track window (mouse movements for volume orientation and scale control)

Fiber metrics (both global and ROI localized) are computed, including:

- Total number of fibers tracked
- Number of fibers in a given ROI-derived bundle
- Fiber length - max, min, average
- FA values for specific fiber bundle (max, min, mean)

## File Management

Full DICOM JPEG 2000 compression support

User-selectable naming convention for volumes loaded by DICOM Tool

AnalyzeAVW file format output includes automatic .avw extension on output file for better recognition of files in this format

Support for SUV conversion when loading PET volume images

## Supported Platforms/Distribution Enhancements

### Platform support

The Analyze 9.0 release is supported across all platforms to the latest OS technologies including:

- Windows - XP / Vista (32/64-bit)
- Linux - CentOS 5.0+ or compatible (32/64-bit)
- Mac OS X (Intel) - OS X 10.5+ (32/64-bit)
- Sun Microsystems - Solaris 10+ (32/64-bit)

## **Software Infrastructure**

The Analyze 9.0 release has been updated to Tcl/Tk 8.5x and has a significantly improved look-and-feel across all platforms.

## **Integrated Analyze Bug Report Tool**

Analyze now has an integrated Bug Report Tool for rapid reporting to our support team and quicker fixes.

## **Improved license expiration warning options**

Ensure that your Analyze usage is never interrupted with early notification of license file expiration.