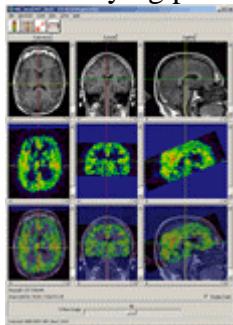


## Analyze 5.0 - New Features and Enhancements

### Major New Modules/Functionality

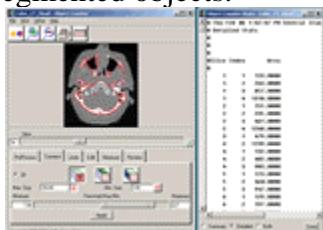
- ❖ **New 3D Volume Registration Interface:** Reintegration of the 3D volume registration algorithms in a more intuitive, interactive, exceptionally fast interface, including improved visualization of the fused registration results. A snapshot of the new interface is shown here - click on the image for a larger view. Note that the interface now includes Transverse, Coronal, and Sagittal images for both the Base and Match volumes and the registered and fused images. The linked cursor is available in any window for scrolling through the images or identifying particular points of interest.



- ❖ **New Surface Rendering Module:** Improved visualization and interactive manipulation of extracted surfaces integrated with the Analyze 'Object Map' concept for direct viewing of structures.



- ❖ **New Object Counter and Analysis Module:** Automated segmentation using connected component analysis techniques and integrated mensuration of characteristic properties for the segmented objects.

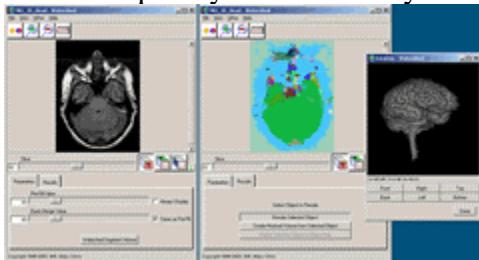


- ❖ **64-bit Analyze:** True 64-bit compatibility on 64-bit architecture systems to support visualization and analysis of very large volume images (>2Gb). This currently includes 64-bit support on Linux, Sun and SGI platforms.

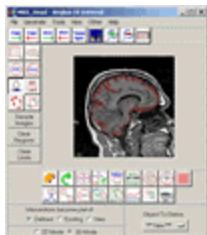
- ❖ **New Analyze License Manager:** As part of infrastructure support for Analyze, a new license manager application, BIRLic, has been developed by the BIR to provide better support for electronic license management and distribution. BIRLic replaces the current FlexLM license management system.
- ❖ **Improved Manual Object Segmentation Tools:** Enhancement of the manual segmentation tools (i.e., Image Edit, Slice Edit) to allow for multiple object definition as a single-pass operation. This means that users can switch between different objects in the object map while making edits on the same slice. In previous versions of these editing modules, only a single object could be defined in a single pass. Integration of 'Smart Edge' automated boundary definition functionality with Spline definition -i.e., movement of spline control points automatically regenerates 'Smart Edge' boundary. The 'Smart Edge' boundary detection algorithm was actually added with version 4.0 for traced regions. The technique has now been extended to the definition of spline curves as well.



- ❖ **Integrated Watershed Segmentation:** Direct integration of watershed segmentation techniques in Analyze segmentation modules, including Object Extractor and Morphology. Watershed Segmentation allows "skull stripping" of the brain from MRI datasets to be performed quickly and accurately.



- ❖ **Volume Render Presets:** User-definable presets for volume rendering parameters, including thresholds, colors and assignment to specific volume information dependencies.
- ❖ **Multiple Object Stereologic Measurement:** Improvements in Stereology to sample multiple structures as a single-pass operation (assigning sampled points to specific objects).
- ❖ **Improved ROI Region Definition:** New 'Split' option added to the Edit Tool to support direct manual tracing to split an existing region into two separate regions (objects). The 'Edit Region' tool now has a check box called 'Split' that allows the edit trace to be used to split a region into two new regions, rather than just editing the boundary of the existing region. Click on the images below to see a demonstration of this option.



Before Split



During Split



After Split

❖ **Continued enhancement to DICOM image support:**

Direct import of DICOM files into BIRPacs allowing the BIRPacs database to be populated with DICOM images transferred directly to the system via non-DICOM mechanisms (i.e., by direct copy rather than DICOM Send or Query/Retrieve); Generation of DICOM-compliant media using the DICOMDIR directory standard;

Additional supported image file formats:

Direct support for the standard AVI format for both input and output: primarily useful for output of rendered movie sequences direct to an AVI format file for use with other third-party products that support the AVI format (PowerPoint, etc.). (Note: PC Windows only)  
New support for Bruker MRI format (Paravision) integrated with a tool for volume identification and selection.

❖ **A much more ‘Colorful’ interface, and due to popular demand...color icons!!**