

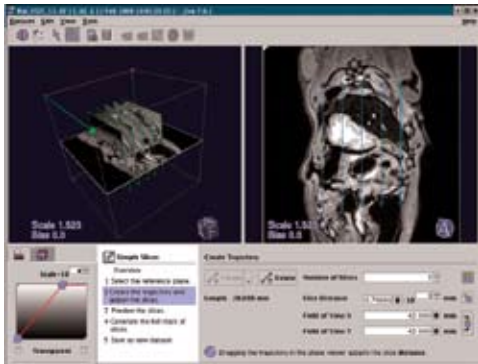
Ultimate MR-Acquisition and Processing in Clinical Research and Material Science

● ParaVision® 5.0

ParaVision is Bruker's intuitive routine user interface for multi-dimensional MRI/MRS data acquisition, reconstruction, analysis and visualization for its BioSpec, PharmaScan and MicroImaging product lines. It offers state-of-the-art, as well as cutting-edge techniques for animal MR imaging and spectroscopy, including a rich palette of powerful image evaluation and visualization tools.

ParaVision features:

- Intuitive routine workflow
- Application-oriented, ready-to-use protocols
- Self-acting, method-specific scanner adjustments
- Automatic hardware recognition
- Parallel imaging option for all suitable acquisition techniques with automatic generation of composed images/spectra
- Half-Fourier (Partial-Fourier) encoding
- Real-time display of acquired and reconstructed data
- Data archiving including DICOM export
- Development environment with powerful tools for rapid prototyping of user-defined experiments and professional method implementation



IntraGate™

Self-gated cardiac MRI using IntraGate enables continuous scanning in a steady-state condition.

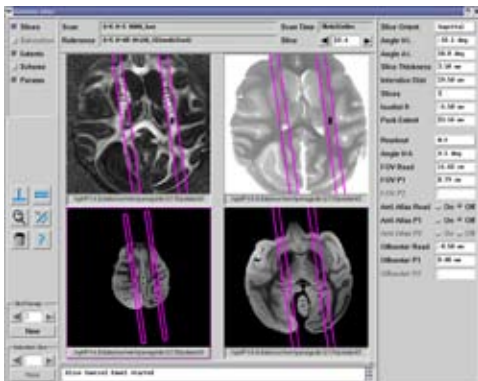
Since cardiac and respiratory cycles are detected by a navigator signal, no triggering hardware is required. The multifunctionality analysis tool displays cardiac, respiratory and time course movies in arbitrary phases with direct storage in presentation format.

New Reconstruction Features

- Push-button GRAPPA reconstruction for all parallel imaging methods
- Sum of squares and phase-sensitive array reconstruction strategies
- Array spectroscopy reconstruction
- Partial FOURIER reconstruction
- Online ghost-free EPI reconstruction
- Navigator techniques to reduce motion artifacts in EPI and SPIRAL

Geometry Editor

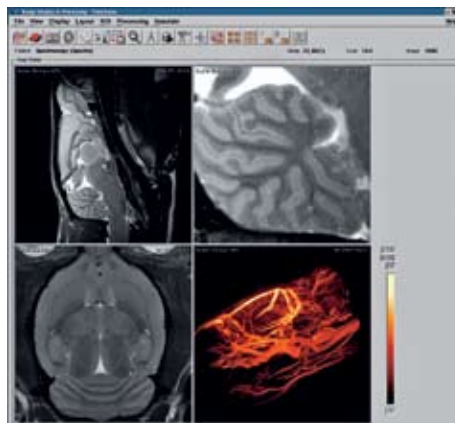
The Geometry Editor now supports all types of reference datasets for multi-oblique planning of the measurement slice package, even including post-processed datasets such as maps.



New Processing Features

A rich palette of image analysis and visualization tools allow the user to extract more complex information from 2D or 3D images. Besides basic functionality like magnification, ROI analysis and geometrical measurements the following features have proven to be highly valuable:

- 2D and 3D region growing
- Export of histogram values
- Display of time course data with the fitting tool "ISA"
- Sequence loading according to the selected frame group to display, for example, either movie frames or slices for a multi-slice movie dataset
- 3D visualization with surface rendering
- Mask inversion



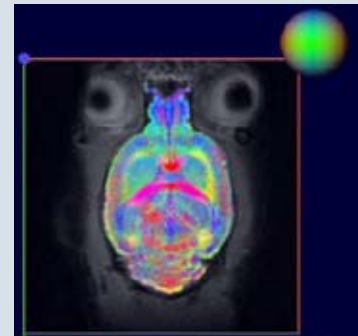
Coil Configuration with AVANCE™ III

- Automatic coil identification
- Restriction of RF power level to safe values
- Automatic nuclei selection
- Up to 4 simultaneously plugged-in coils are supported (e.g. ASL with additional transmitter coil)

New Techniques for ParaVision 5.0

In addition to the established 1D/2D/3D imaging and spectroscopy techniques ParaVision 5.0 includes the following new methods:

- UTE - Radial scan with Ultra Short TE
- FLOWMAP - Phase contrast angio and velocity mapping
- FIELDMAP - B_0 field mapping
- MAPSHIM - Fieldmap-based shimming
- RAREst - Single-shot RARE with minimum echo spacing
- Parallel EPI - Accelerated scanning to minimize geometrical distortions and TE
- DtiSPIRAL - Spiral scan-based diffusion tensor imaging with reduced TE
- STEAM - Localized spectroscopy with shortest TE
- ISIS - Localization for transmit/receive surface coils



Major principal diffusion directions in the rat brain acquired with DtiSPIRAL

Pre-requisites for ParaVision 5.0

- AVANCE™ AV, AVANCE™ II or AVANCE™ III
- Bruker standard workstation (incl. DVD reader)
- Red Hat Enterprise
- Linux 3, 4 or 5