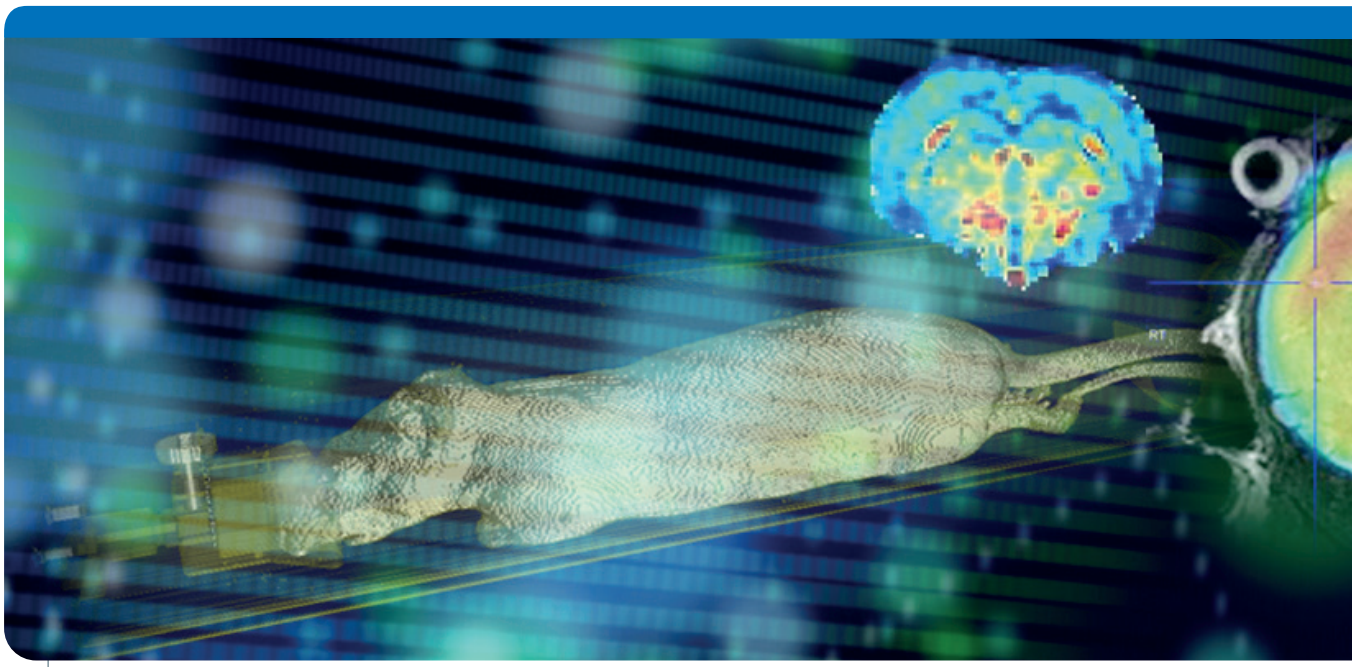


ParaVision 360 3.3

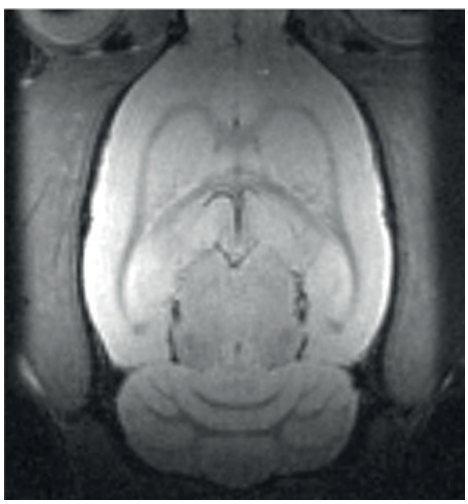
Highlights

Greater RARE Flexibility

RARE phase encoding now supports freely selectable TE within the echo spacing, providing greater freedom of RARE factors and TE, notably simplify T2-weighted imaging of anatomical regions and providing more signal retention options for those performing hyperpolarization.

Very high RARE factors are now possible with the newly introduced RAREvfl method, which uses variable flip angle refocusing pulses to achieve long echo trains. This enables extremely fast high resolution T2-weighted 3D isotropic *in vivo* imaging allowing arbitrary plane reconstruction. It has the additional advantage of reduced flip angles and thus a significantly reduced RF deposition load.

- Freely selectable TE in standard RARE method
- RAREvfl



RAREvfl enables extremely fast T2-weighted isotropic images: Rat brain, resolution: 175 µm³, scan time: 2:24 min

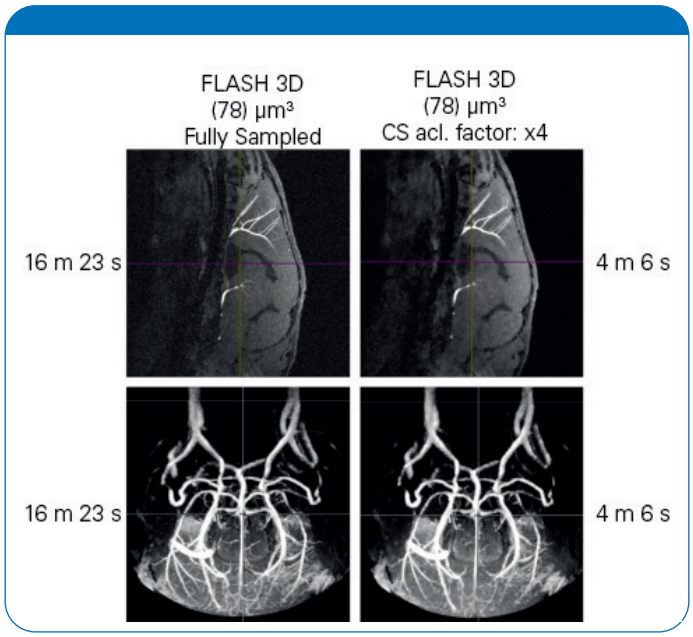
Acceleration Suite Extension

ParaVision 360 3.3 continues to expand the Acceleration Suite from ParaVision 360 3.2 (Simultaneous Multislice Imaging, Partial Fourier with homodyne reconstruction, and 3D GRAPPA with CAIPIRINHA).

Compressed Sensing is now fully integrated into ParaVision 360 3.3 in a multitude of methods. This acceleration technique, which is particularly suited for acquisition of sparse data, i.e. such as in angiography, has an easy to use one-click activation within ParaVision, while providing access to all relevant reconstruction parameters if desired.

In addition to homodyne reconstruction, the partial Fourier acceleration technique now features the Projection Onto Convex Sets (POCS) reconstruction algorithm for even greater reconstruction freedom.

- Compressed Sensing
- POCS reconstruction for Partial Fourier



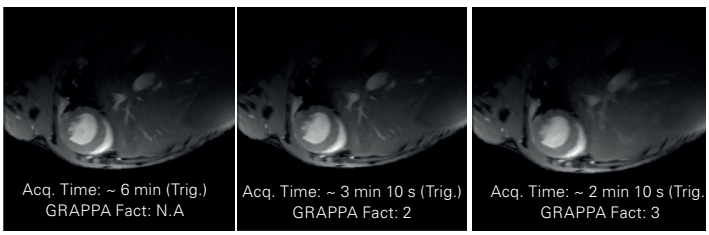
Compressed Sensing image acquisition of rat brain angiography at 7 Tesla is possible at a fraction of the original acquisition time

Improved Cardiac Imaging

Accelerated imaging is also extremely valuable in cardiac studies, where the length of individual measurements is often limited by the instability of disease models. Shorter measurement times for these models can often lead to less study dropouts and in turn higher study quality or can be used in time sensitive studies such as first pass analysis. Should the models be stable, resolution can be increased within the same measurement time as without acceleration, leading to visualization of even more finite details.

In addition to Compressed Sensing, a further acceleration option, that provides all the time saving aspects, is PEAK GRAPPA (Parallel MRI with Extended and Averaged GRAPPA Kernels). This method makes use of phased array coils. Furthermore, another powerful acceleration method that uses phased array coils is SPIRiT, which combines parallel imaging with Compressed Sensing. Bruker provides optimized phased array cardiac coils for both mice and rats.

- PEAK GRAPPA
- SPIRiT



PEAK GRAPPA enables acquisition of high-quality mouse CINE data in a significantly reduced measurement time. FcFLASH with (156 x 156) µm² in plane resolution using a mouse cardiac 2x2 array recieve coil at 7 Tesla

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