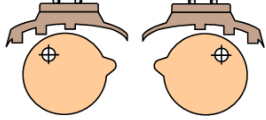
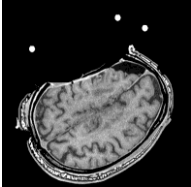


How to Scan MR Data with Brainlab Automatic Image Registration Siemens Scanners

Accurate navigation requires accurate images. Following these guidelines will provide scans with low geometric distortion. This will lead to better navigational accuracy. Deviating from these guidelines may result in less accurate or failed registrations.

<p>Patient Setup</p> 	<p>Install the registration matrix on the upper OR head coil.</p> <p>Note that the matrix is not symmetrical. Install the matrix so the marker array on the bottom best covers the area of interest.</p> <p>Position the coil and matrix as low as possible without touching the patient.</p> <p>Do not use the head coil or registration matrix if these parts are wet.</p>
<p>FoV (Field of View) Scan Range</p> 	<p>Slabs: 1</p> <p>FoV: 280 * 280 mm (minimum)</p> <p>Orientation: Transverse (axial)</p> <p>Phase Encoding: R>>L</p> <p>Slice Thickness: 1.25 mm</p> <p>Make sure the 14 markers of the registration matrix are completely covered by the FoV. For the best possible registration all 14 markers must be present in the scan data.</p>
<p>Sequence Parameters</p> <p>SIEMENS</p>	<p>Matrix size: 256 * 256</p> <p>MR Acquisition Type: 3D</p> <p>Flip Angle: 15.0 deg</p> <p>Bandwidth: 400 Hz/Pixel (minimum)</p> <p>Filters: Distortion Corr. 3D, Prescan Normalize, Raw Filter</p> <p>Shim mode: Standard (shim for FoV)</p> <p>Use T1-weighted isometric 3D scan sequence such as Siemens fl3d.</p> <p>Always use 3D distortion correction. This may require post-processing for some sequences or software versions.</p> <p>While lower bandwidths will improve the signal to noise ratio they will also increase geometric distortion. Do not use a lower bandwidth for registration scans.</p> <p>Slice thickness must not exceed the slice distance. Do not use angulation!</p>

* If you need additional information please contact your local Brainlab representative