Portfolio

# Atlas-based Automation in Spine Surgery Planning

Brainlab Universal Atlas technology is based on a unique and patented Synthetic Tissue Model. This modality-independent virtual generic patient, which contains complete information about every tissue of the body, is mapped to a real patient's scans. The resulting digital model of the patient then serves as the basis for spine surgery planning with Brainlab Elements software.
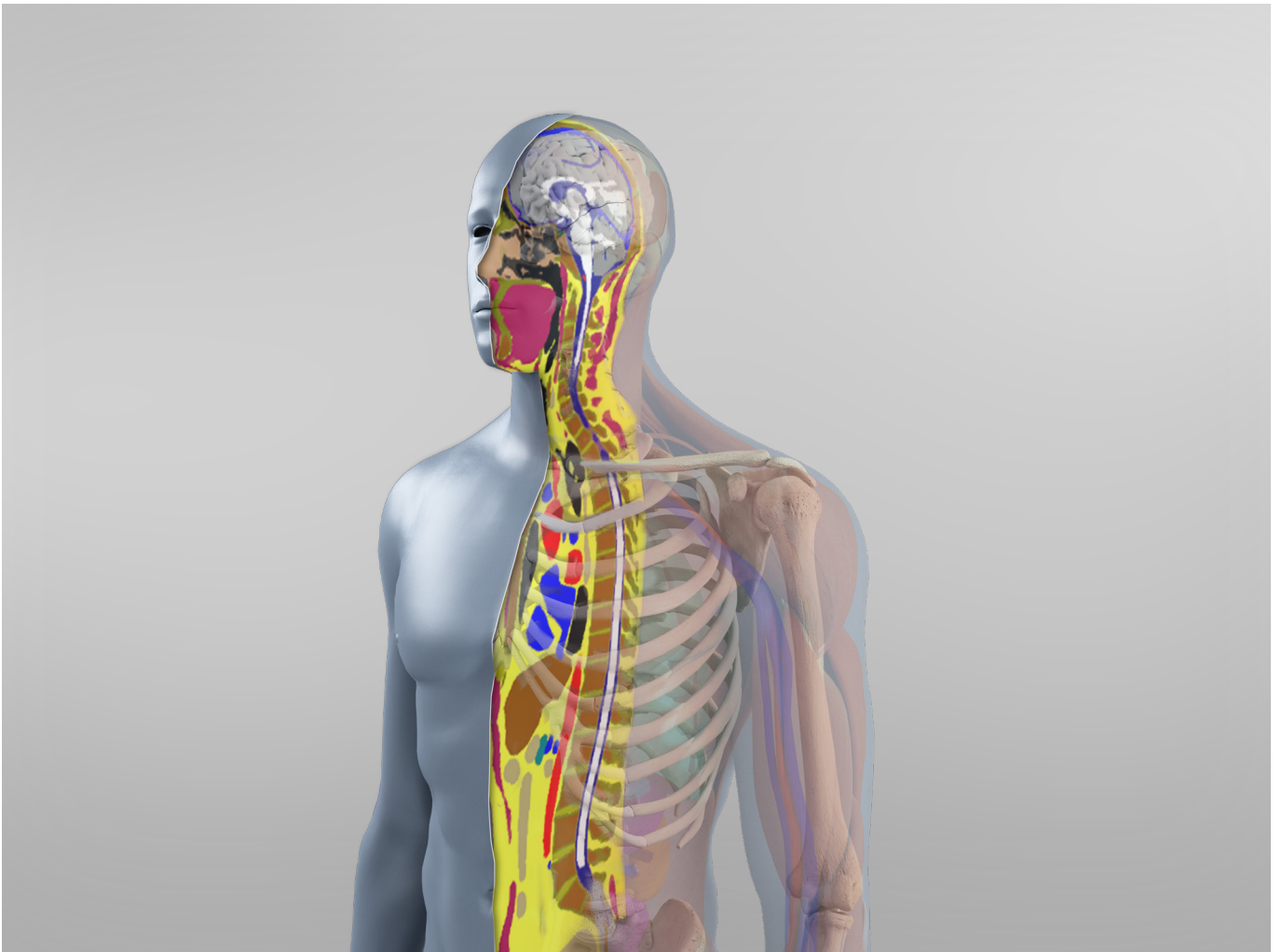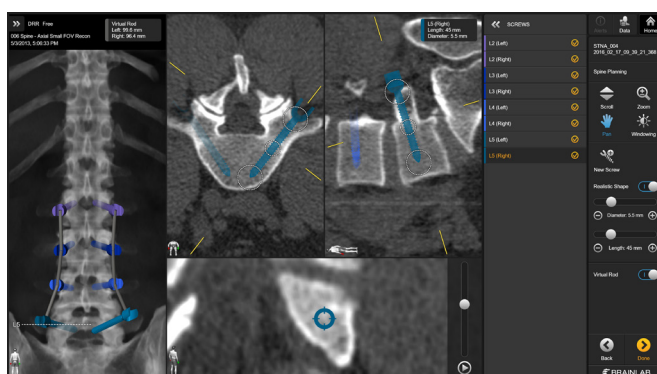
Review automatically planned thoracolumbar pedicle screws
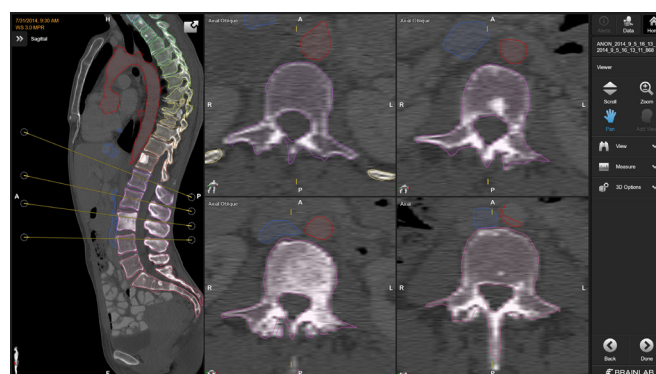
Observe automatically aligned, independent axial planes in one view layout

Elements Spine Screw Planning
Universal Atlas technology detects and labels relevant vertebral landmarks to determine the trajectory while literature values suggest the sizing of the screws. Adjacent vertebrae with planned screws are connected with a virtual rod to allow for rod measurement.

Elements Viewer Smart Layout Spine
Standard atlas functionality labels the anatomy and enables Segmentation Spine to contour anatomical structures such as the vertebrae and spinal cord. Visualize simple and complex anatomies for detailed planning, case discussion and augmented reality using Elements Viewer with Mixed Reality and Microscope Navigation.
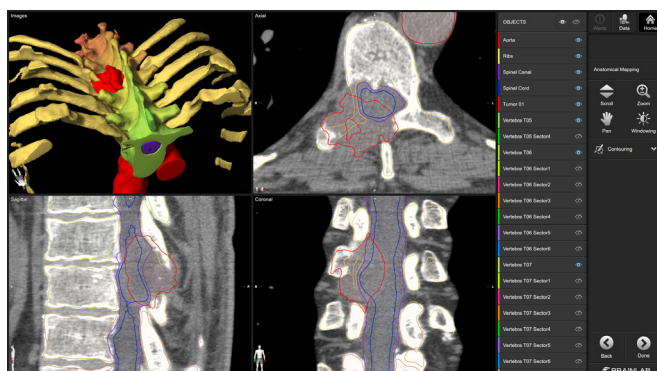
Add automatically created objects for spinal anatomical structures to surgical plans

Access image fusion that adapts to the patient's intraoperative position

Elements Segmentation Spine
Standard atlas functionality labels the anatomy and enables Segmentation Spine to contour anatomical structures such as the vertebrae and spinal cord. Visualize simple and complex anatomies for detailed planning, case discussion and augmented reality using Elements Viewer with Mixed Reality and Microscope Navigation.

Elements Spine Curvature Correction
Based on a multi-vertebra rigid fusion of CT and MR, the software automatically corrects the surrounding soft tissue, transferring all pre-planned objects to the new corrected dataset. Even intraoperatively, pre-planned screws and objects like tumors can be adapted.