



ROSA™ DBS

ROSA™ offers an integrated solution for DBS electrode implantation providing increased flexibility and control over the procedure.

Implantation of deep brain stimulation electrodes is undoubtedly one of the most challenging neurosurgical procedures. Even the most diminutive deviation from the planned targets can compromise treatment efficiency. Meeting such high level accuracy requirements is crucially dependent upon efficient combination of numerous devices and technologies, ranging from high resolution imaging modalities to micro-drive insertion systems.

ROSA™ ties all these elements together in a streamlined, much more flexible, solution. The system guarantees surgical accuracy through a simple, 3-step, planning, registration and guidance workflow.

Preoperative planning is performed on ROSA™'s dedicated software. The incorporated functional planning module allows all operations to be carried-out within the AC/PC anatomical reference. This enables easy definition of trajectories via AC/PC coordinates and therefore facilitates location of standardized targets such as the STN or GPi. Furthermore, a wide array of preoperative imaging modalities, e.g., T1 and T2 weighted MRIs, CT and Angio scans, can be automatically fused and overlaid to enhance visibility of the target anatomy.

Patient registration is performed using a stereotactic frame. This allows for registration accuracy as well as provides a rigid patient head support. ROSA™ is compatible with all major stereotactic frames on the market and can thus be configured to suit your current equipment.



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Once the registration is performed, ROSA™'s robotic arm automatically aligns the surgical instruments with the preplanned trajectories. This helps eliminate the potential hazards of human errors associated with manual setting of the stereotactic frame. For optimal electrode implantation control, all micro-drive insertion solutions can be easily adapted to the robotic system via custom-built and precision-engineered tool holders.



“ROSA™ used in combination with advanced intra-operative image device allows to modify easily and quickly the trajectory in increments the distance in millimeter by push of a button”.

Dr LEFRANC (CHU Amiens)

For additional safety, the final electrode placement can be verified using intra-operative imaging solutions such as 2D or 3D fluoroscopy and long range digital X-Ray systems. These image modalities are automatically co-registered with the preoperative planning. If necessary, the position of the robot arm can be corrected in increments of a fraction of millimeter, by the simple push of a button.



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