Making a choice to undergo a neurosurgical procedure is a significant decision.

Now patients have an option to choose a minimally invasive approach to brain surgery. Using the innovative ROSA™ assistive surgical robot, the surgeon is able to plan the surgery in advance based on presurgical images, and perform the procedure through small drill holes in the skull. This is much less invasive than the traditional approach of removing a portion of the skull to create access to the patient’s brain.

**ROSA™ for Neurosurgical Applications**

The ROSA™ is a surgical robotic assistant designed to increase the safety and reliability of various neurological procedures by using an integrated multi-application console and robotic arm to control the movement of surgical instruments and allow minimally invasive neurosurgical approaches.

Comparable to a “GPS” for the brain, the robot can be used for any type of cranial procedure requiring surgical planning with preoperative data, patient registration and precise positioning and handling of instruments such as depth electrode placement for stereotactic EEG, brain biopsies, and DBS.

**Minimally Invasive Brain Surgery with ROSA™**

**A Patient’s View**

My son loves going to the beach.

But as a mom of a child with epilepsy, I was always nervous that he would be in the water and have a seizure. Then my son’s neurologist recommended we try a minimally invasive approach to locating the focal point of his seizures. The neurosurgeon was able to perform an SEEG procedure with just small drill holes in his scalp, and locate the spot in his brain where his seizures started, then use a laser ablation procedure to remove that area of his brain.

Now he is seizure-free, and we’re able to go to the beach without fear!
How can ROSA™ be used?
ROSA™ may be used to support many neurosurgical procedures, including stereoelectroencephalography (SEEG), thermal ablation of seizure foci or tumors, deep brain stimulation (DBS) and surgical treatment of movement disorders.

What is SEEG with ROSA™?
Electroencephalogram (EEG) records the brain’s electrical activity and provides useful information about the location and type of epileptic activity. Stereoelectroencephalography (SEEG) is the minimally invasive surgical procedure used to map the seizure activity suspected of being the seizure focus area. The electrodes are placed through tiny holes drilled in the skull without the need for a craniotomy, which usually requires removing a larger area of skull bone. Using the trajectories created and guided by the ROSA robot, the surgeon is able to accurately place the electrodes in the desired areas of the brain, to determine seizure focal points.

Where is ROSA™ being used?
Innovative epilepsy centers and neurosurgical programs across the US currently offer ROSA™ surgical programs. For specific programs and locations, visit ROSAsites.com

Benefits of Minimally Invasive Brain Surgery with ROSA™
• Simplify neurosurgical procedures with the ability to remove the usage of a cumbersome Stereotactic frame as well fixed fiduciaries during the patient registration process
• Provide patient with minimally invasive procedure options
• Increase access to the surgical area due to the robotic arm that mimics human arm movements
• Provides precise instrument guidance through the robot arm’s high dexterity
• Reduces operating time* due to increased efficiencies, particularly with placement of multiple electrodes for SEEG
• Cover a broad range of Neurosurgical indications
• Replaces procedure performed previously through removal of a portion of the skull

* Robotic Placement of Intracranial Depth Electrodes for Long-Term Monitoring, Cleveland Clinic, 2012

ROSA™ supports over 80% of neurosurgical applications

medtechsurgical.com