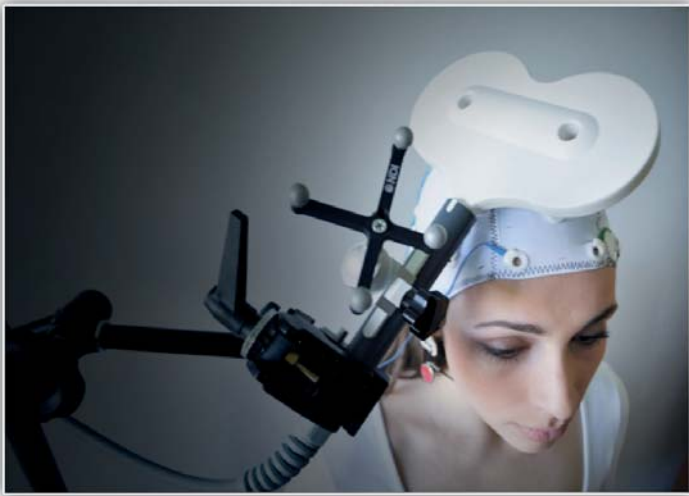




SofTaxic Optic 2.0

Advanced TMS Neuronavigation System

The SofTaxic Optic system is a sophisticated system for stereotaxic neuronavigation.

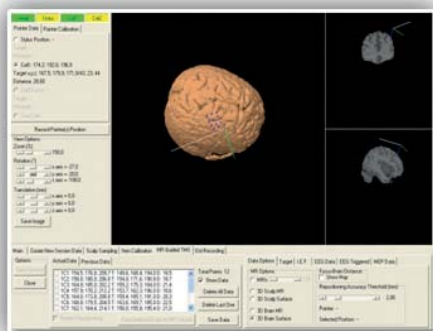


It includes an integrated and intuitive setting for Transcranial Magnetic Stimulation (TMS), with particular attention for the TMS-EEG studies carried out with the BrainAmp amplifiers family. The system is suited for the majority of magnetic stimulators on the market (Magstim, Mag& More, Magventure).

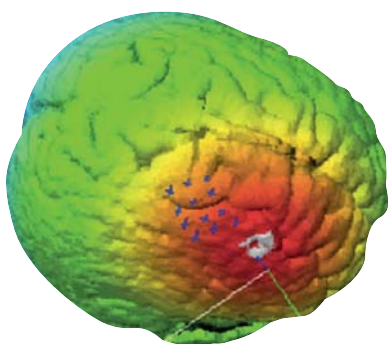
Features

- **High spatial accuracy in the localization of the target**
- **Individual or estimated MRI, using a Individualized probabilistic head model computation**
- **Fast, automatic and reproducible and guided procedures**
- **MR craniometric marker locations**
- **3D MR-constructed scalp and brain models**
- **Talairach space matrix**
- **TMS Induced electric field matrix**
- **Up to 2 TMS coils tracked simultaneously**
- **Integrated TMS-EEG study**
- **Assisted coil repositioning**
- **MEPs data**
- **Export for IOM localization**

Complete TMS Spatial Information

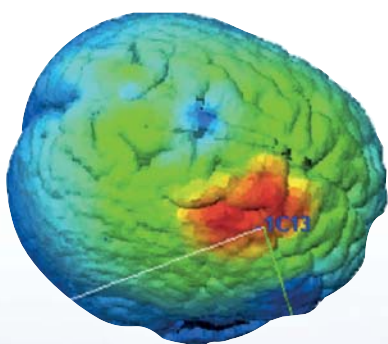


During a TMS session, the system shows and records all spatial information of interest, such as: coil focus position and brain target area (both referred to MR and Talairach spaces), coil focus-brain target distance. Previous recorded TMS data can also be imported.



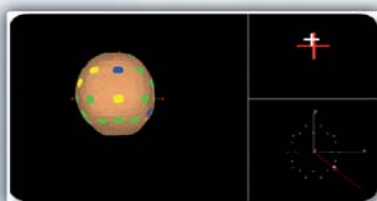
FOCUS MAP

As novelty, the system visualizes the 3D map of the focus-target distance, in order to improve the coil positioning accuracy



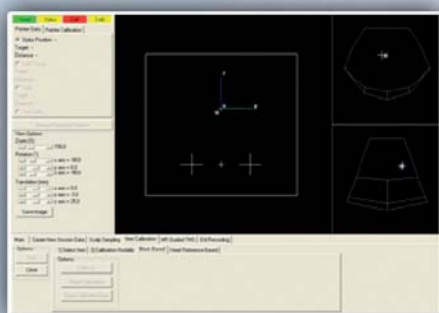
INDUCED ELECTRICAL FIELD (IEF)

Furthermore, the system estimates the 3D local induced electrical field map, by means of the Boundary Element Mathematic apply on the realistic MR-constructed brain model.



HIGH SPATIAL ACCURACY

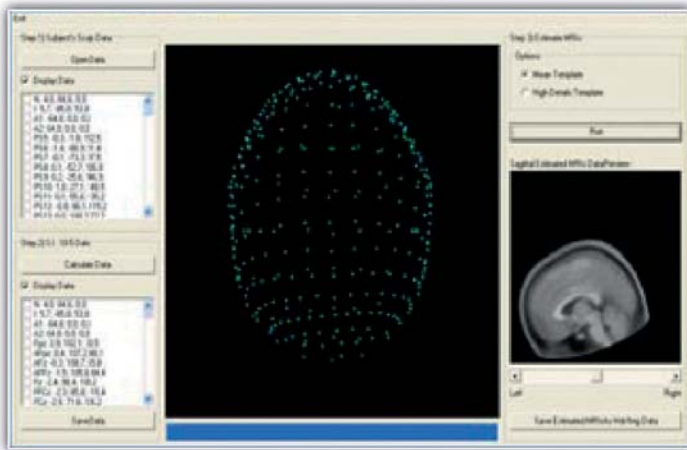
A best-fit algorithm can be applied in order to refine the registration transformation used to map the coil data and the structural information.



TWO COILS TRACKING

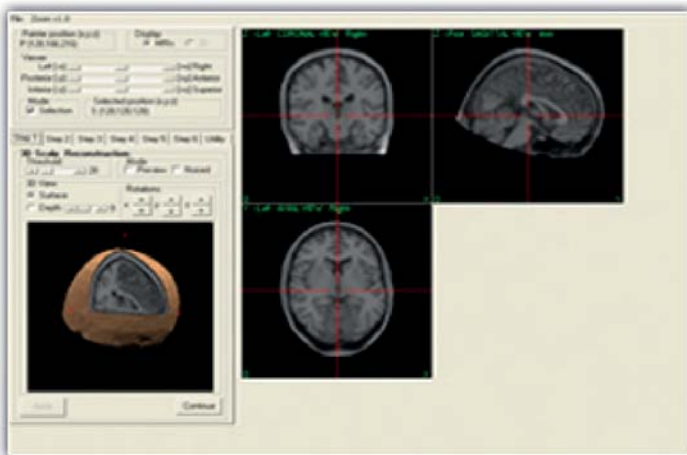
The SofTaxis system is able to handle simultaneously up to 2 TMS coils. The calibration of a coil can be made manually or automatically using a special 1-click calibration procedure.

Individualized probabilistic head model computation



The SofTaxic system is unique in generating an individualized probabilistic head model, that can be used to guide the coil positioning in absence of individual MRI data. This individualized head model preserves the anatomical scalp-brain correlates of a mean MR template, providing an accurate set of estimated MRI data, specific for the subject under examination.

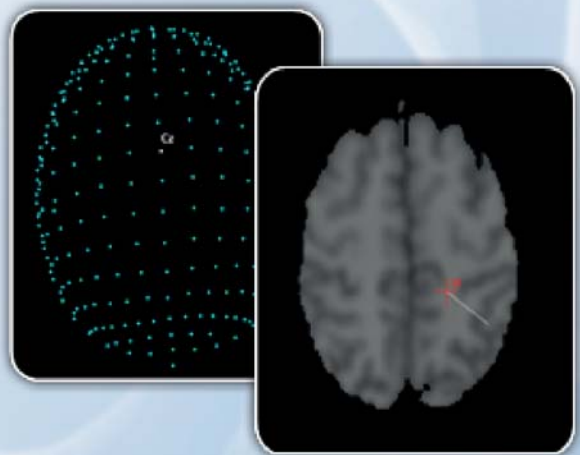
Fast, automatic, reproducible and guided procedures



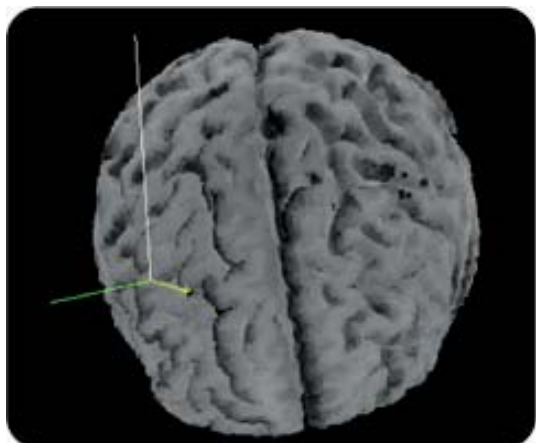
Individual or estimated MRI data is processed by means of a fast and step-guided procedure, in order to generate all structural information of interest for a TMS neuronavigation session:

- MR craniometric marker locations
- 3D MR-constructed scalp and brain models
- Talairach space matrix
- TMS Induced electric field matrix

The system can be used to compute the exact location of the 10-20 electrodes system (the 10-5 system is supported too), or to record existing electrodes layout, in order to use this data with 3rd party Source Analysis software. It is possible to locate, manually and in advance, brain target areas, directly onto the images. The location of these areas can be related to MR or Talairach space. The system shows optimal direction for the magnetic stimulus in order to reduce the coil-target distance.



Target Export for IOM localization



An export facility let the user export the spatial locations used for the TMS stimulation in DICOM format. Suitable to be used by neurosurgeons with a 3rd party navigation system for OR. This way the surgeon can stimulate with cortical probes (electrical stimulation) the exact locations identified previously by the physician during the TMS session.



Leading Technology

The system is interfaced with the industry leading Polaris Vicra or Spectra optical measurement system by Northern Digital Inc. (NDI)



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