

# SoFTaxic 3.0

*Neuronavigation System*





SofTaxic 3.0 is a sophisticated system for image-guided stereotaxic neuronavigation.

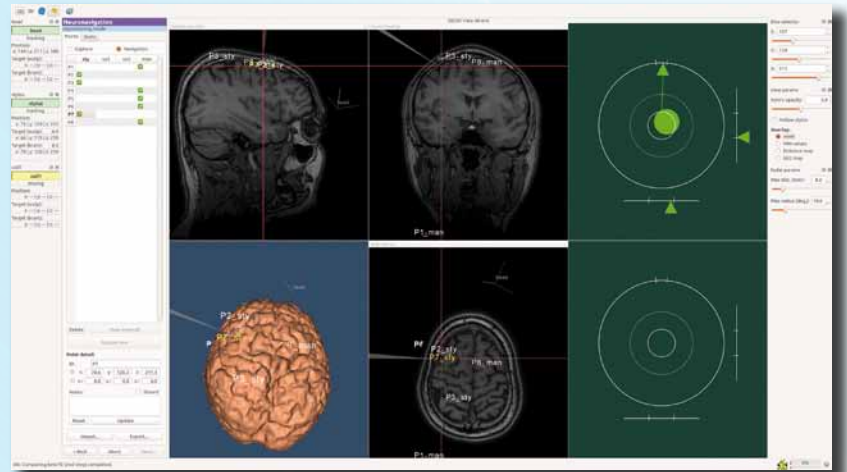
It includes an integrated and intuitive setting for Transcranial Magnetic Stimulation (TMS), with particular attention to TMS- EEG studies. The system is suited for the majority of magnetic stimulators on the market.

## Features

- High spatial accuracy in the localization of the target
- Import of DICOM series, NiFTY, Analyze files
- Individual or estimated MRI, using an innovative and accurate individualized probabilistic head model computation
- Fast, automatic and reproducible guided procedures
- 3D MR-constructed scalp and brain models, quick & efficient brain extraction procedure
- MRI and Talairach coordinate system
- TMS Induced electric field maps
- Up to 2 tms coils, simultaneously tracked
- Integrated TMS-EEG studies
- Visual aided coil repositioning
- MEPs data maps
- Cross platform: runs natively on Windows, Mac OS X, Linux, written in Fast & robust C++ code
- Multi-facet tracking tools

## Complete TMS Spatial Information

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

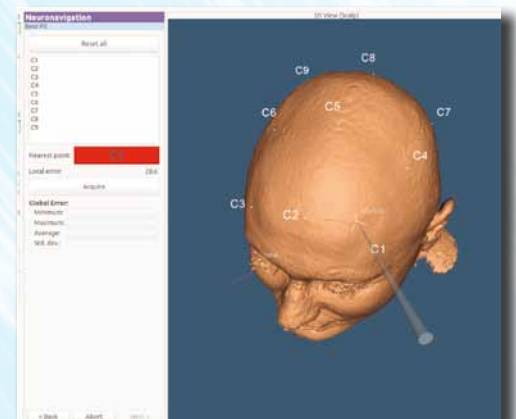


## Focus Map

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

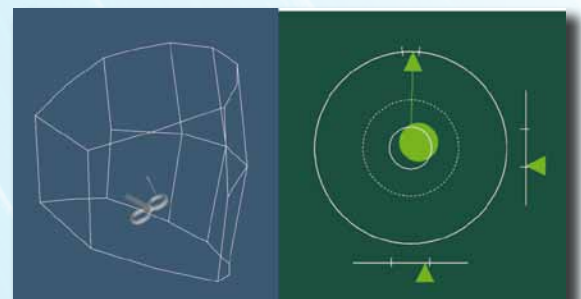
## High Spatial Accuracy

A best-fit algorithm can be applied in order to improve the global spatial accuracy of the neuronavigation system.



## Two coils tracking

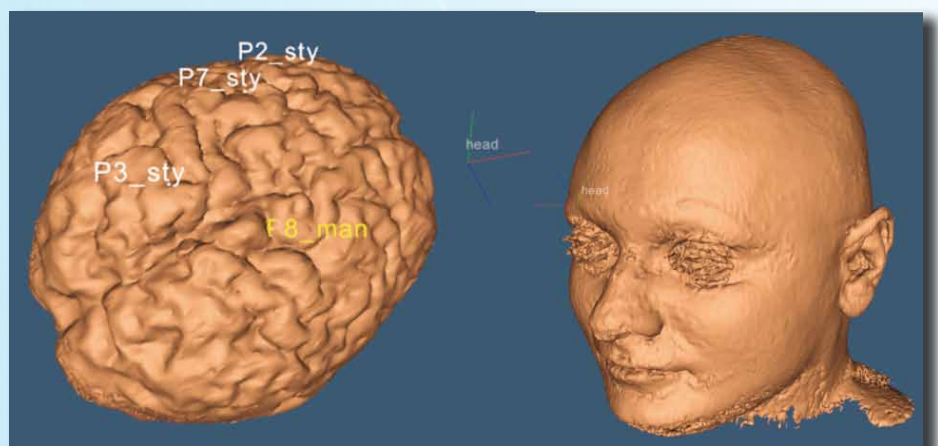
The SofTaxis system is able to handle up to 2 TMS coils, simultaneously. The calibration of a coil can be made manually or automatically using a special 1-click calibration procedure.



## Individualized probabilistic head model computation

The SofTaxis system is unique in generating an individualized probabilistic head model that can be used to guide 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, with an accuracy of 4.69 mm (SD  $\pm$  2.21).





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

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 brain target areas, manually and in advance, 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 coil-target distance.

An export facility lets the user export spatial locations used for the TMS stimulation in XML format. There's also the possibility to export the stimuli locations in NIfTI format suitable to be used by neurosurgeons with a 3rd party navigation system for OR; in this way the surgeon can stimulate with cortical probes (electrical stimulation) the precise locations previously identified by the physician during the TMS session. The image based export can be used for obtaining a fast and complete iconographic documentation.

## Leading Technology

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

New Multi-facet tools allow for an easier and stable coil tracking, improving the navigation experience and the handling of the coil.

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Rev. D