visor2™

navigated TMS solution for pre-surgical functional evaluation and brain mapping

Intuitive navigated TMS solutions with EMG & EEG.

ant neuro
inspiring technology

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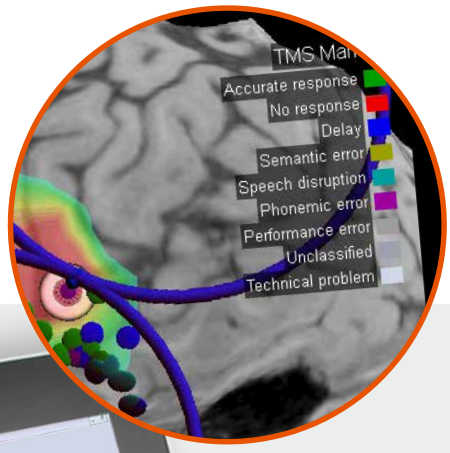
visor2 allows users to evaluate functional organization of the human cortex using non-invasive, navigated transcranial magnetic stimulation (TMS). This innovative solution comes with intuitive workflows and high-precision neuronavigation, supporting stimulators from all major TMS manufacturers.

While fMRI has often been seen as the standard tool in pre-surgical evaluation, it brings with it high costs and restrictions in application. The pre-surgical functional mapping of **vi**sor2, offers an easy-to-use and efficient alternative. It enables non-invasive, functional mapping of the motor and speech related brain regions with TMS. **vi**sor2 provides complete support in the preparation of image data and targets, execution of stimulation protocols and processing of brain mapping results.

New features and benefits

- Time-saving and cost-efficient functional mapping with navigated TMS.
- Intuitive step-by-step workflows for motor and speech mapping.
- Reliable high-precision optical tracking technology.
- Fully supports navigated single-pulse and repetitive TMS.
- Real-time visual feedback (e.g. MEP responses) overlaid upon 3D representation of either patient's own MRI or standard MRI.
- Highly flexible and configurable workflows (e.g. import of custom image stacks for object-naming protocols).
- Colored DICOM export of mapped functional hotspots for further review and processing in surgical navigation systems.

Speech reaction is evaluated and classified (e.g. accurate response, delay or semantic error).



Review of a speech mapping session in offline review mode.

Speech mapping

visor2 can be used to map speech areas via visual naming tasks for use in pre-surgical evaluation or in clinical research related to speech production. **vi**sor2 delivers a dedicated three-step workflow to support the user in this complex procedure. During the first step, an easily customizable stack of images is presented to the patient in a naming task. Both audio and video recordings of speech and facial reactions to each image are recorded. In the second step, the same naming task is repeated and recorded while navigated repetitive TMS (rTMS) is applied to the eloquent cortical speech area. When short bursts of rTMS are applied to cortical speech sites during speech production, either speech errors (e.g. speech arrest) or accurate responses are noted. In the third step, recordings from step one and step two are compared, and responses in step two are individually categorized according to the specific type of speech response. Categories can be customized to fit each user's specific needs. After classification, response maps can be overlaid onto the subject's anatomical MRI and exported in 3D image formats (e.g. DICOM) for use in surgical procedures.

The color-coded response map can be exported as a colored DICOM.

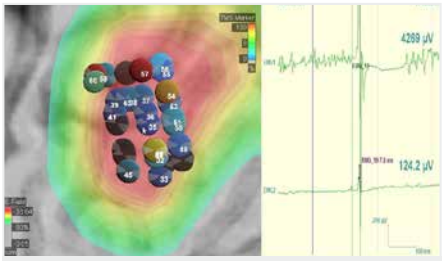
visor2 ST solution
(Image may contain optional items. Actual model may vary)

Motor mapping

visor2 integrates navigated TMS and EMG recording with real-time 3D visualization of stimulated brain areas. Evoked motor responses are projected onto patients' anatomical MRI to create functional maps relating to the relevant cortical areas. Supported by a real-time estimation of TMS-induced electrical fields, **vi**sor2 calculates and highlights targeted locations. The evoked motor responses are processed online and the calculated amplitude is projected onto an image of the stimulated cortical location to generate functional maps. The generated maps or single MEP responses can be exported in 3D image formats such as in DICOM for use in surgical navigation systems.

visor2 integrates navigated TMS and multi-channel EMG recordings.

Up to 64 EEG and 6 EMG channels are supported.



An EMG response map is generated on the MRI and can be exported in DICOM format.

visor2 solutions software features

	visor2™ LT	**vi**sor2™ XT	**vi**sor2™ ST
Pre-surgical speech mapping	✓ (as an extension module)	✓ (as an extension module)	✓ (as an extension module)
Pre-surgical EMG motor mapping	✓	✓	✓
EMG/EEG amplifier	2- or 6-channel EMG	64-channel EEG + 6-channel EMG	64-channel EEG + 6-channel EMG (optional 2- or 6-channel EMG only)
Individual MRI import	✓	✓	✓
Segmentation and head modeling	✓	✓	✓
Brain visualization	✓	✓	✓
Patient registration and digitization	✓ (dual-coil)	✓ (dual-coil)	✓ (dual-coil)
Coil management	✓	✓	✓
Targeting	✓	✓	✓
Offline analysis	✓	✓	✓
Induced electrical field calculation and display	✓	✓	✓
Export of image markers and stimulated sites	✓	✓	✓
Integrated EEG recording functionality **vi**sor2 in combination with EEG- for research purpose only	--	✓	✓
Software interface to PowerMAG ANT 100 rTMS stimulator*	--	--	✓

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