

visor2™

Functional Speech Mapping



ant neuro
inspiring technology

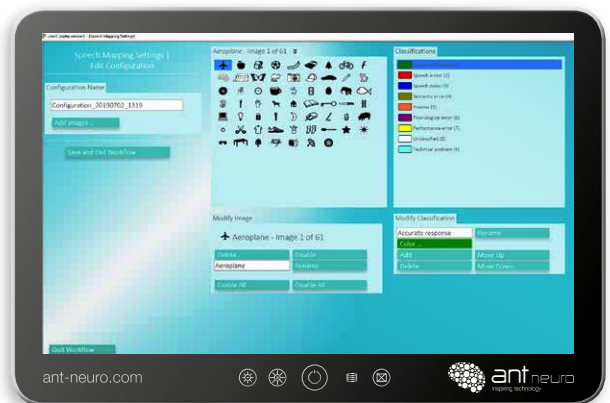
Functional Speech Mapping

Properly performed pre-operative identification of speech eloquent areas of the brain can provide neurosurgeons with crucial information for adequate surgery planning. By using navigated Transcranial Magnetic Stimulation (nTMS) when performing speech mapping pre-operatively, surgeons can plan and perform considerably safer, faster, targeted and smaller craniotomies. visor2 can be used to map language-eloquent areas via precisely defined linguistic tasks for use in presurgical evaluation in clinical research related to language comprehension and production.

visor2 delivers a dedicated three-step workflow to support the user in this complex procedure.

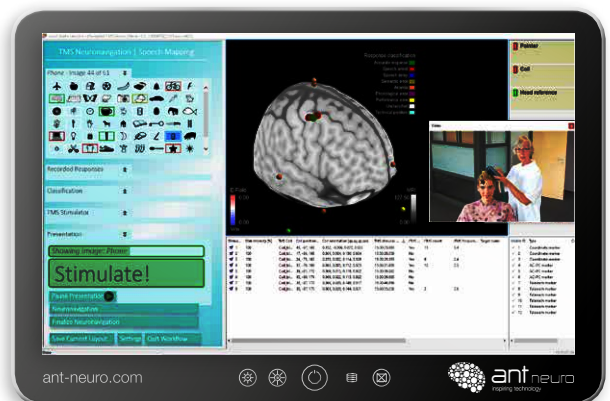
During the first step:

An easily customizable stack of images is presented to the patient in a naming task. The operator can freely import other images to configure, localize and personalize the task to target different levels of language. Also, the associated error classification and its color-coding can be modified with each task. In the preparation step, the patient will need to name the pictures or complete the task to have a baseline recording and to make sure that all the pictures are known to him or her. 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 a color or monochrome DICOM file for use in surgical procedures.

