

# Xensor

## electrode digitization made easy

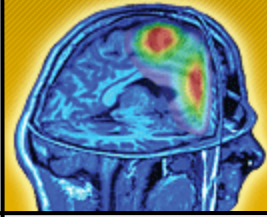
*Frank Zanow*



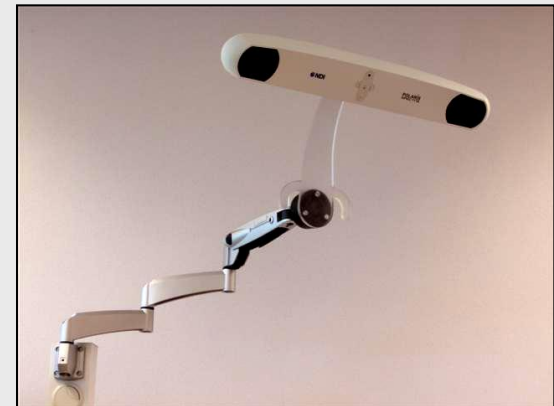
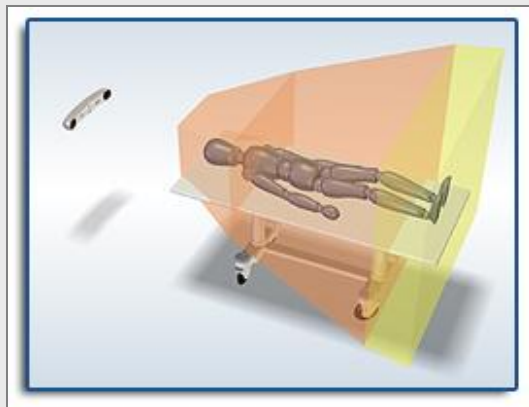
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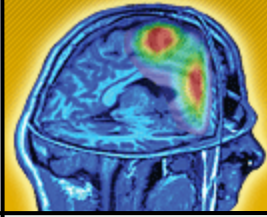
# The System



- Optical 3D tracking system
- Camera system positioned on cart or wall-mounted
- Large measurement volume with guaranteed accuracy



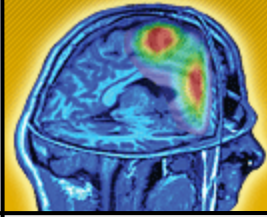
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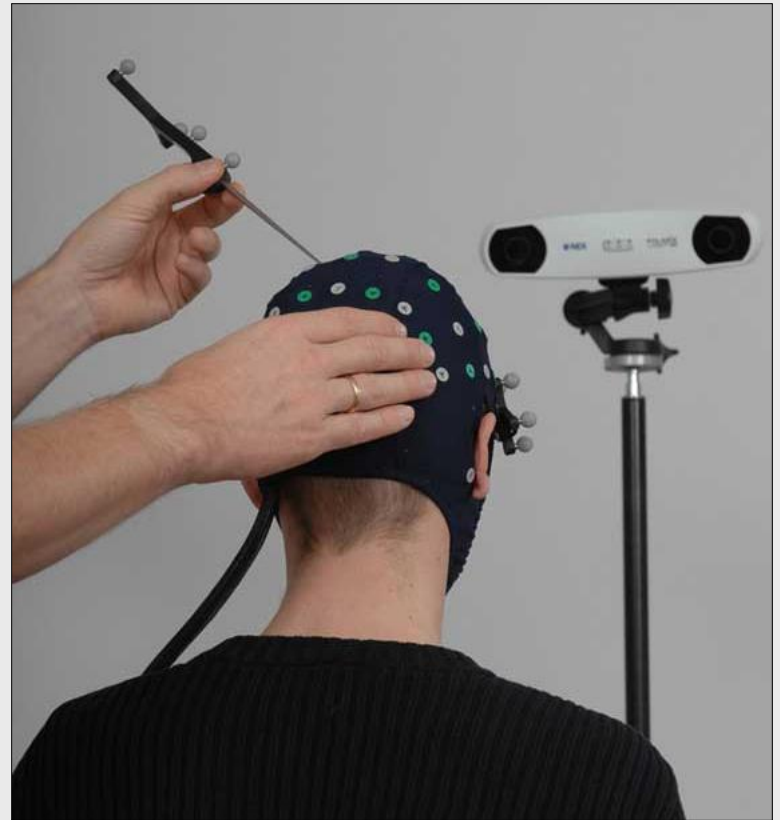
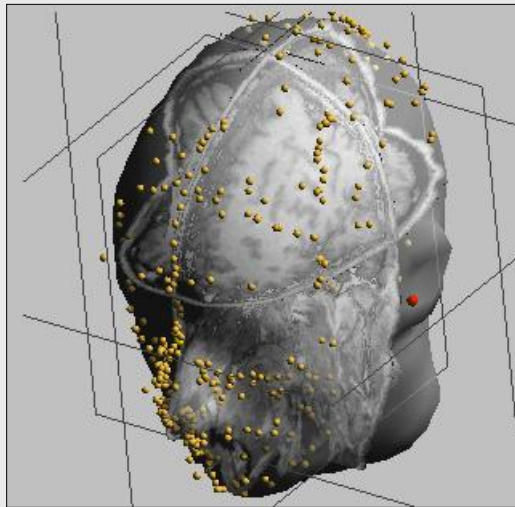
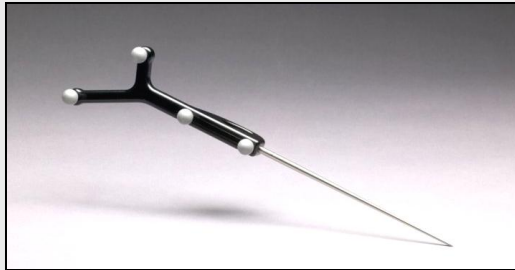
- Head tracker – monitor head movements
- Wireless reflector tools are used that are attached at the EEG cap or with a head band



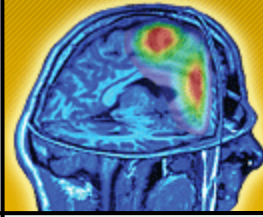
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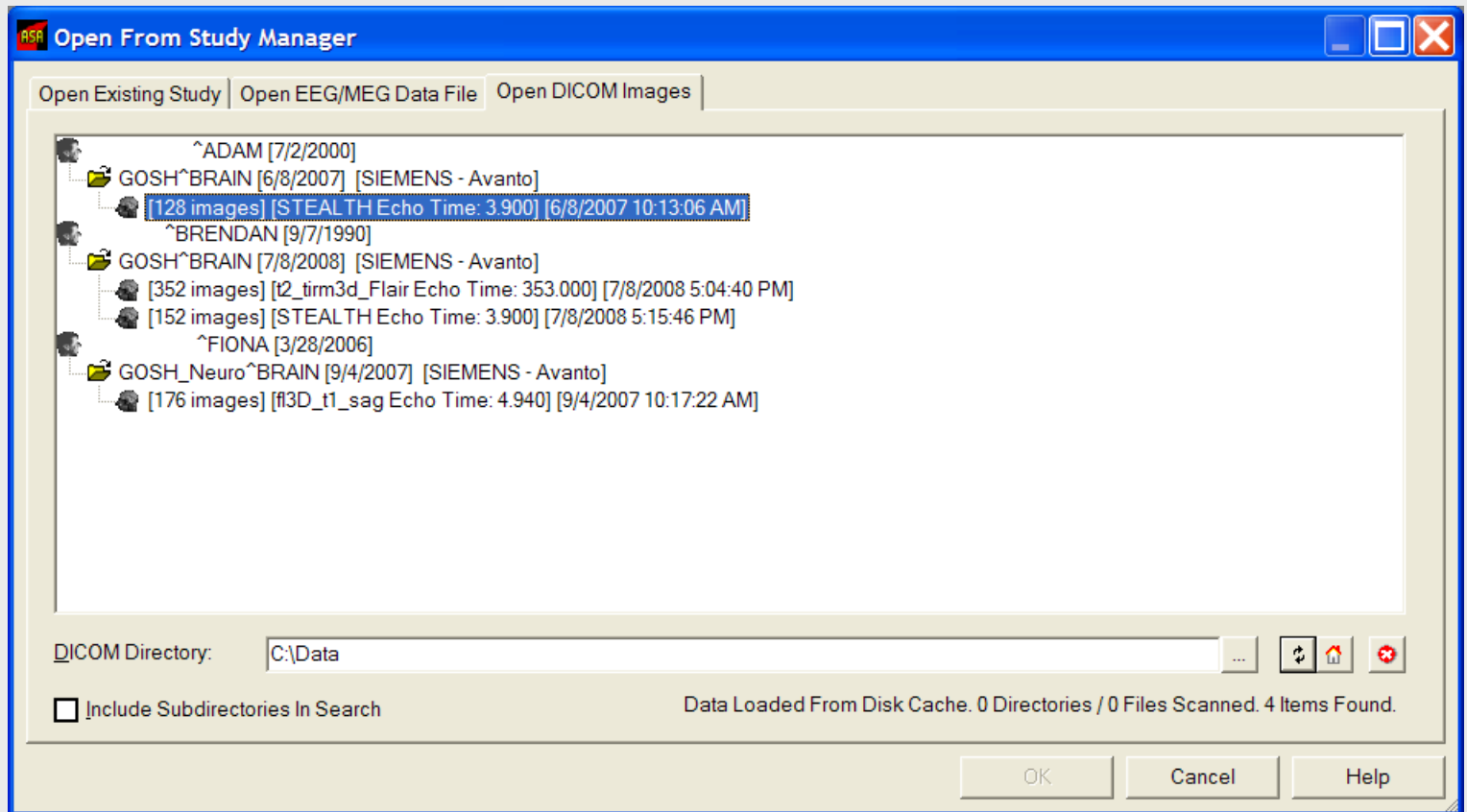
- Stylus – registration of points and fiducial markers



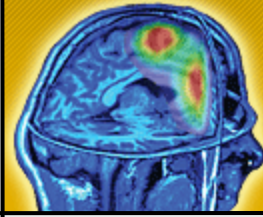
# Preparatory Steps: MRI



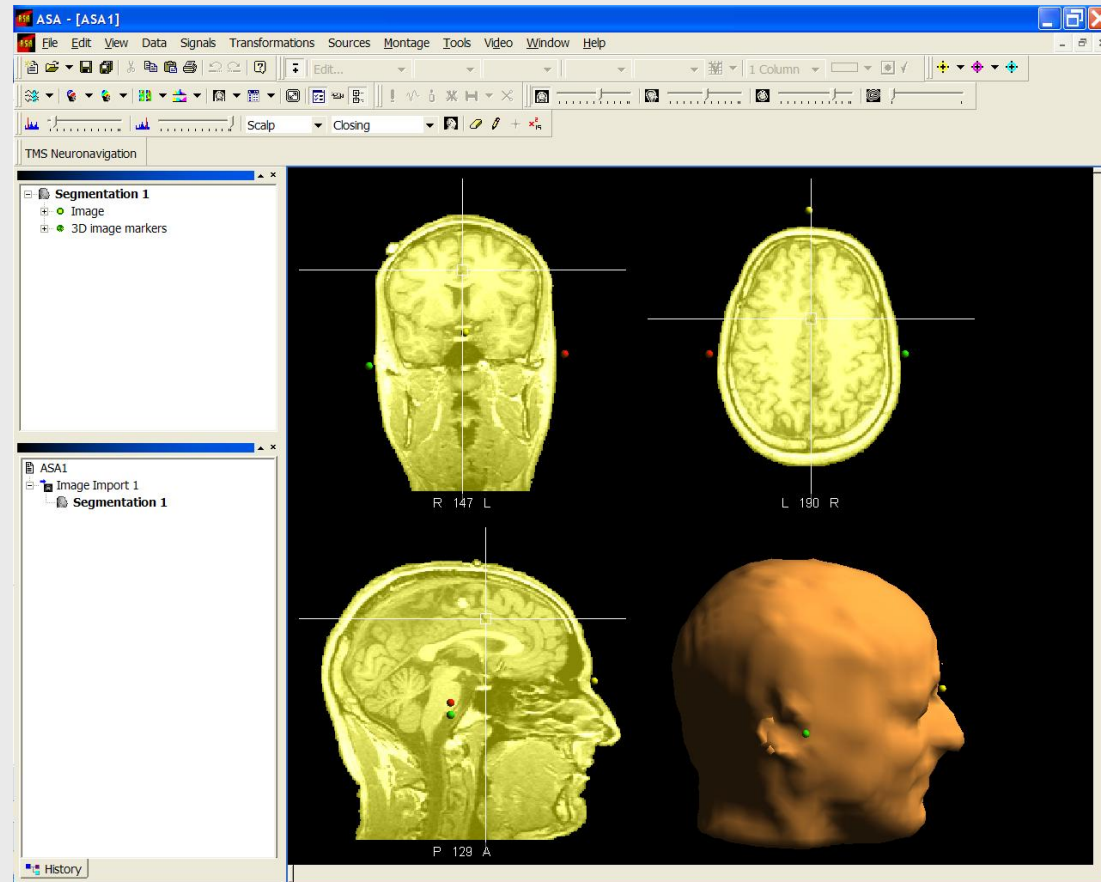
- MRI DICOM import (if head shape matching is to be applied)



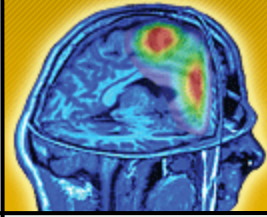
# Preparatory Work



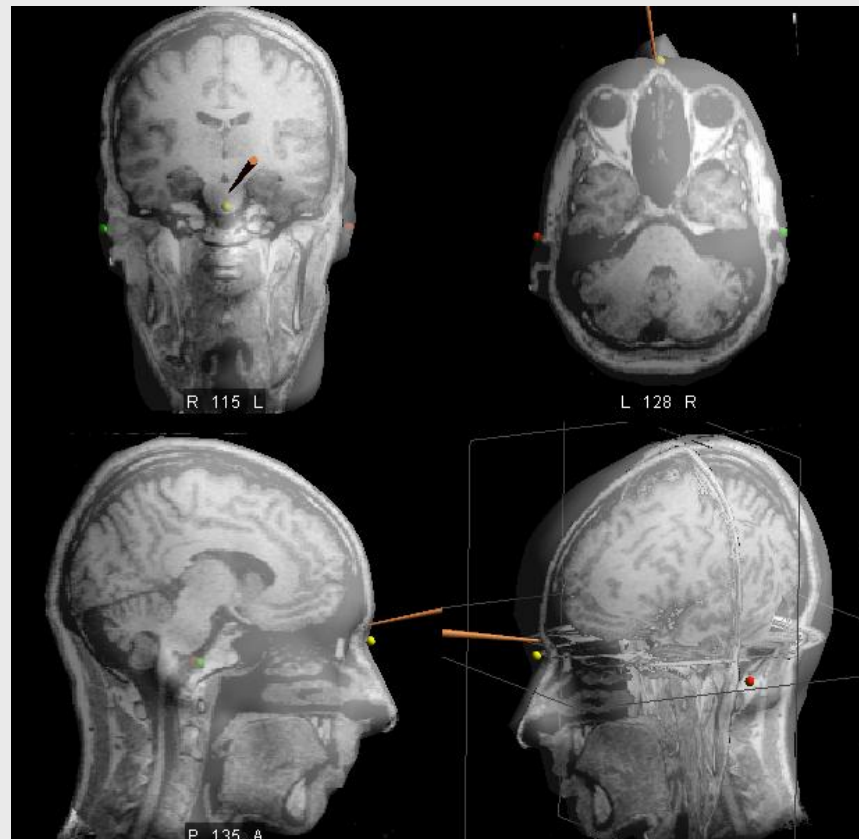
- Segmentation of scalp



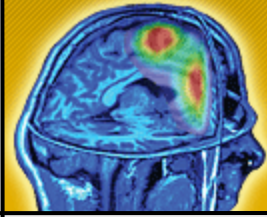
# Preparatory Work



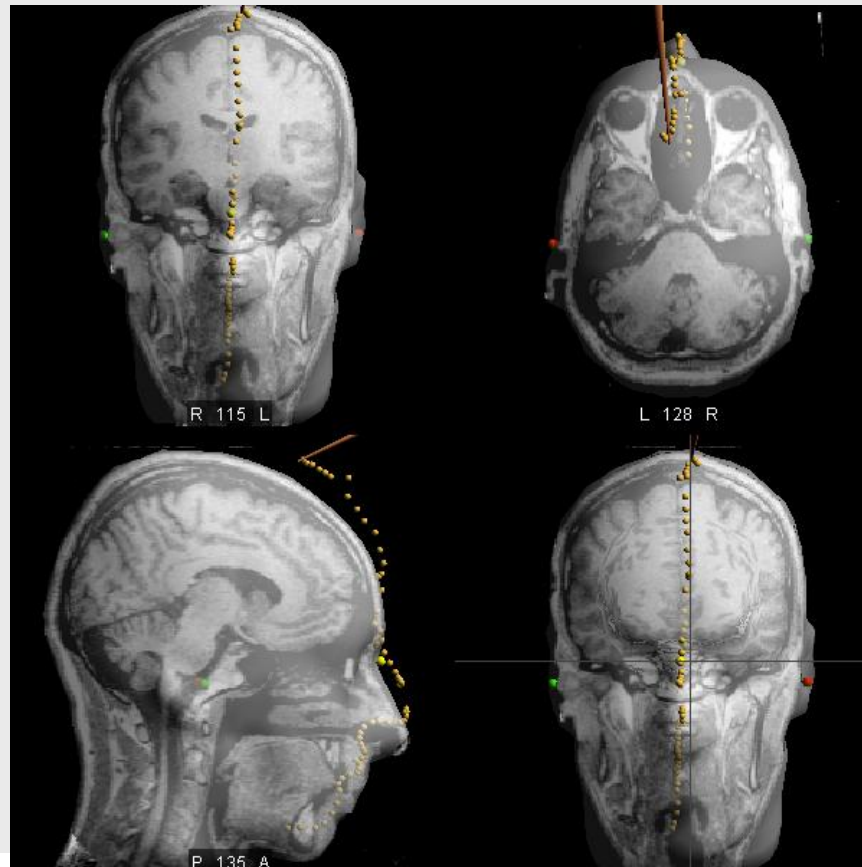
- The scalp is used to match geometry with head shape points as scanned prior to the electrode digitization session



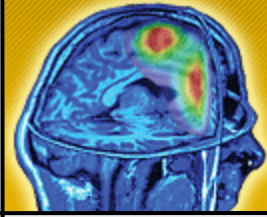
# Preparatory Work



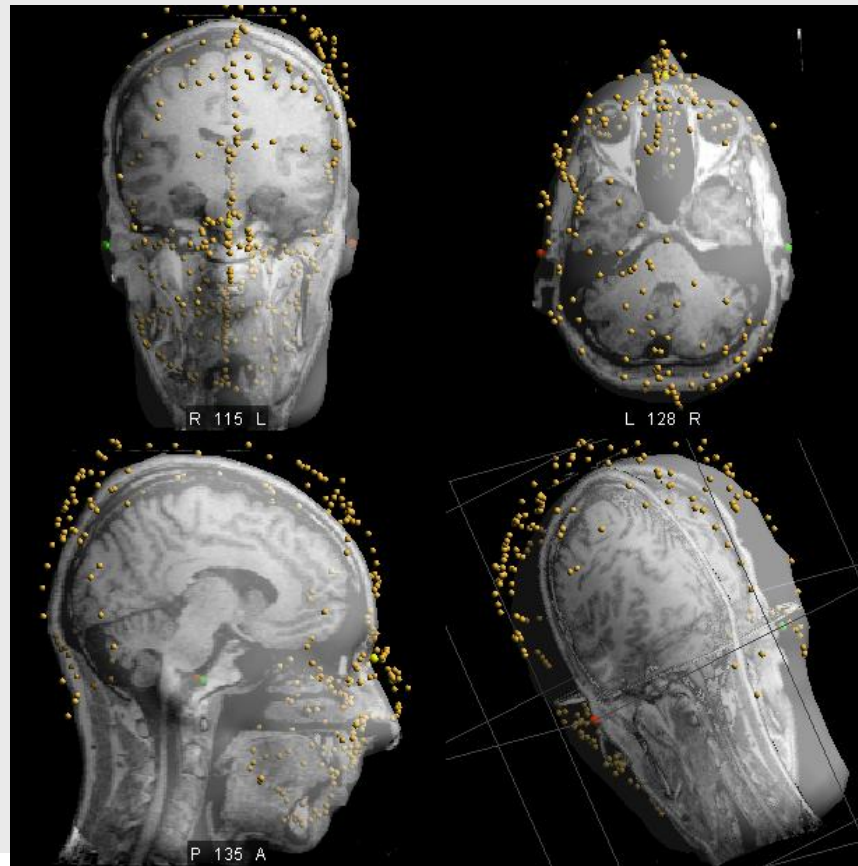
- Using the pointer, the scalp surface is scanned ...



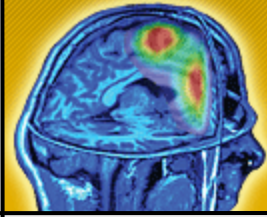
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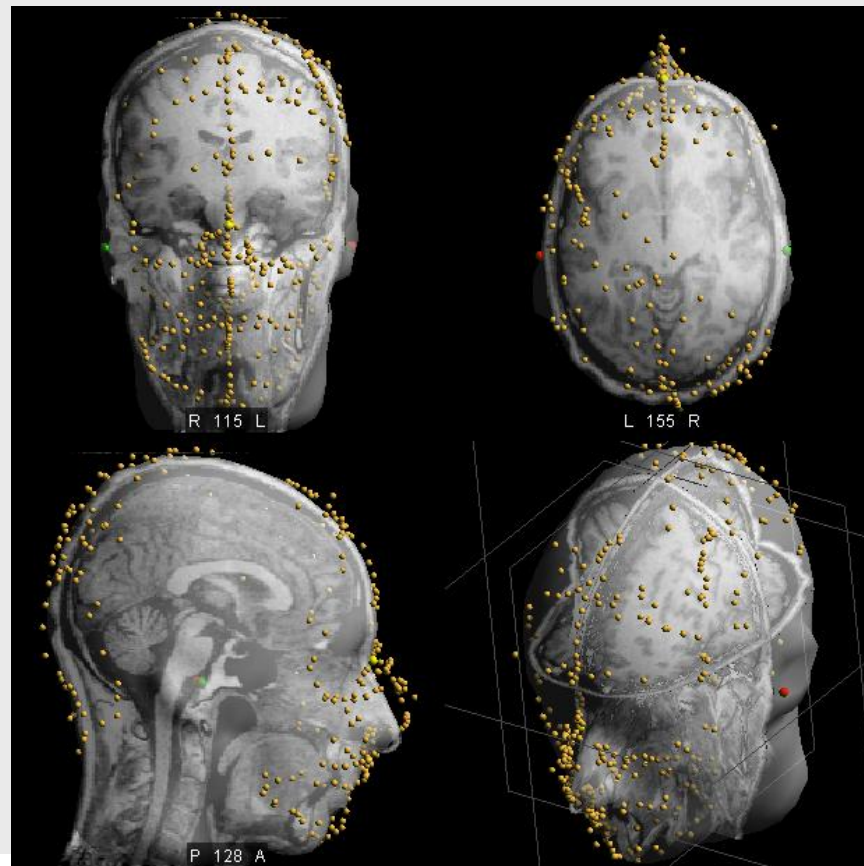
- The information is used to co-register 3D space with the MRI space



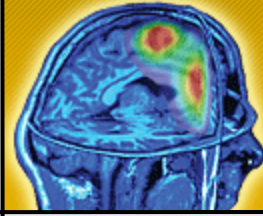
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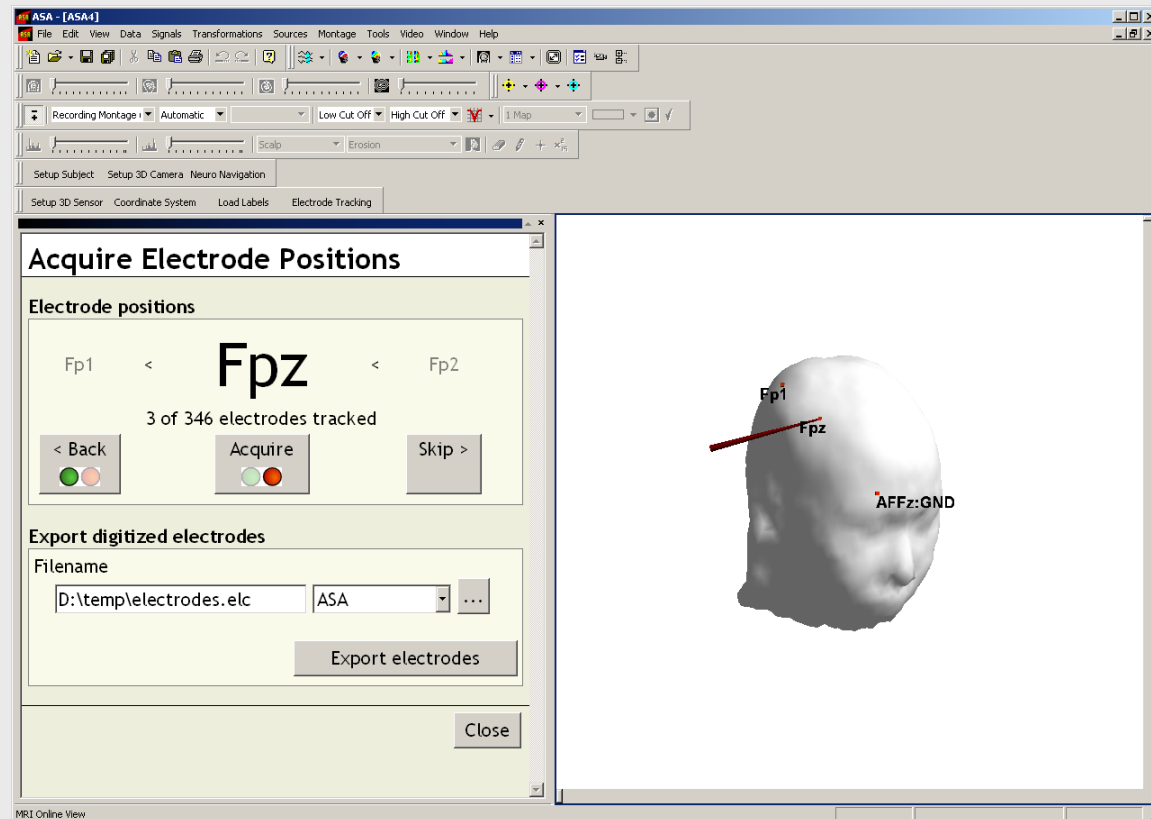
- The head shape matching provides optimal 3D co-registration (as opposed to using just nasion-ear markers)



# Digitizing electrodes

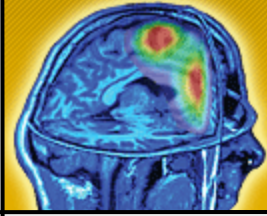


- The electrode labels are digitized in the order as imported from the file containing the labels.





# Summary



Xensor is the state-of-the-art 3D digitizer system.

Xensor

- adds precision (guaranteed  $< 1$  mm in the entire field of view),
- provides easy and intuitive user interfaces
- Is fully integrated in the ASA software

Xensor supports a variety of output file formats.