



COMPUMEDICS NEUROSCAN™

# CURRY® 9

EEG/MEG Recording, Review,  
Multi-Modal Integration Software

# CURRY<sup>®</sup> 9

Uniquely designed from a whole new perspective - *yours!*

Compumedics Neuroscan's CURRY<sup>®</sup> software is FDA-cleared and CE-marked. It features a complete set of tools for efficient EEG/MEG/ERP recording, review, and multi-modal integration - presented in a modern and clean user interface. Over three decades of research and collaboration with leading brain research laboratories and Epilepsy units around the world have resulted in proven features and functionality that continue to advance the field.

## Compumedics Neuroscan CURRY<sup>®</sup> One software, modular architecture

- Record EEG, ERP, MEG, fMRI-EEG from Compumedics Neuroscan USB, network, and wireless amplifiers
- Review and process data recorded on Compumedics or third-party systems in time, space, and spectral domain
- Integrate with MRI, CT, PET, SPECT, fMRI, DTI
- Localize brain activity in individual head and brain anatomy
- Visualize results and integrate modalities in an interactive 3D environment
- Available configurations range from small lab edition (for up to 48 EEG channels and 4 kHz sampling rate) to fully featured clinical epilepsy analysis (up to 512 EEG channels and 20 kHz sampling rate).

## Optimized for Efficient Workflow

- Adaptive user interface helps focus on the tasks at hand by hiding currently unused options
- Scopes manage application area-dependent presets
- Flexible data display shows single or combined aspects such as waveform views, spectral and time-frequency displays, topography maps, image data cross-sections, and 3D renderings
- Workflow manager shows open tasks, presents user interfaces and data displays to get things done quickly
- Reporting tool collects images and text from ongoing analysis
- 64-bit software architecture with multi-core optimization and unlimited memory access for highest performance standards.

## Study Management

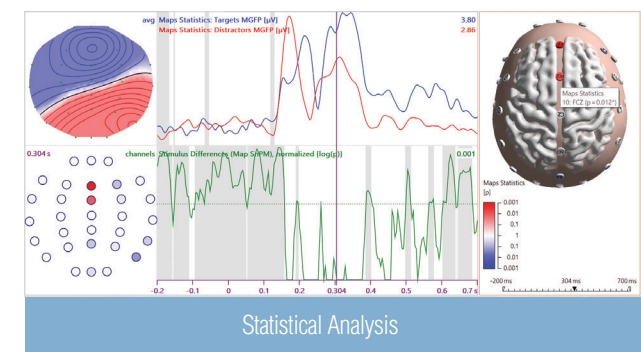
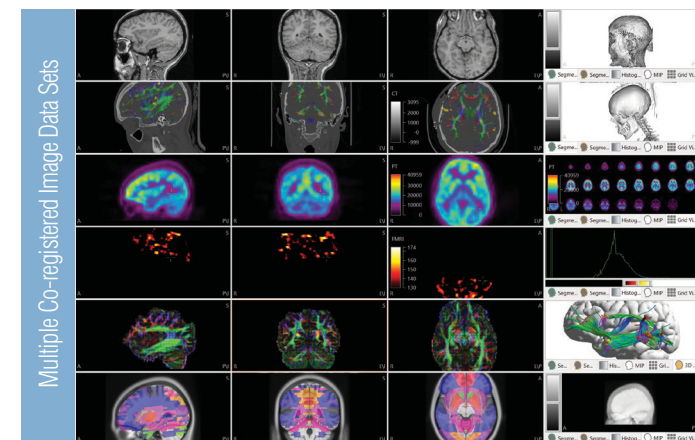
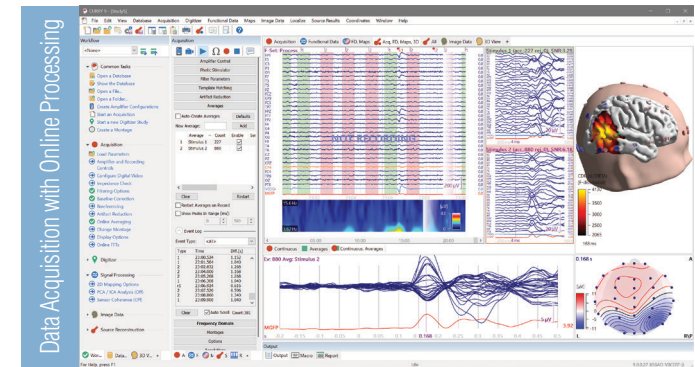
- Local or network databases keep track of all input data, processing options, and results
- Multiple studies can be opened in parallel, synchronized, and compared.

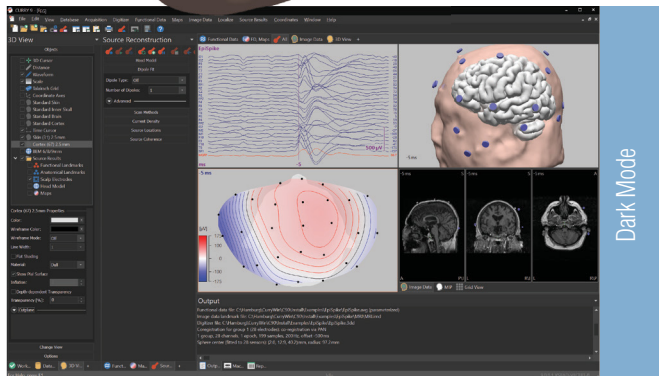
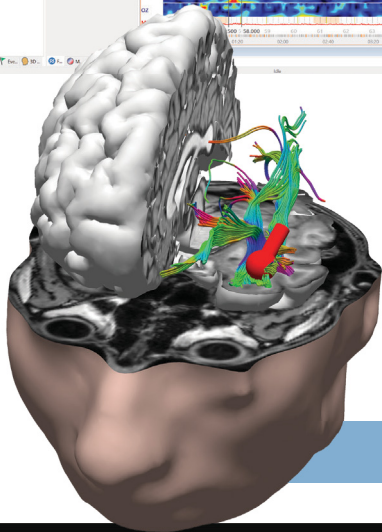
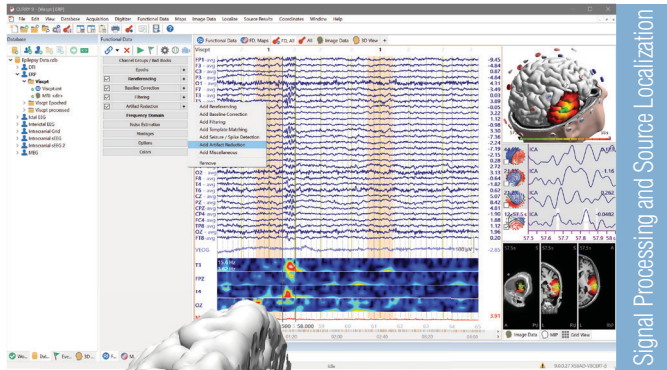
## Automation

- Macro Recorder captures and replays simple or complex processing sequences, no programming skills required
- Batch processing applies recorded macros to multiple studies.

## Recording

- Intuitive setup with support for scalp or intracranial recording and multi-subject hyperscanning
- Electrode digitization for measuring the real-world electrode locations
- Up to 512 channels at 20 kHz, 5K video
- For quality control and neurofeedback applications, filtering, artifact reduction, averaging, source analysis are available in real-time during recording
- Data can be streamed as they are recorded for BCI and network access.





## Signal Processing

- Interactive data processing from raw recorded to epoched and averaged without the need to save intermediate files
- Intuitive montage editor and display
- Stacked and channel waveforms, butterfly and time-frequency plots by wavelets or short-term FFT, spectral amplitude and power plots
- Artifact and feature identification using thresholding, templates, spike and seizure detectors, PCA and ICA
- Artifact reduction based on averaging, covariance, PCA, and ICA measures
- Event and epoch editor for data- and experiment-driven epoching and averaging
- Configurable processing pipeline for advanced users offering full control over processing steps and order.

## Image Processing

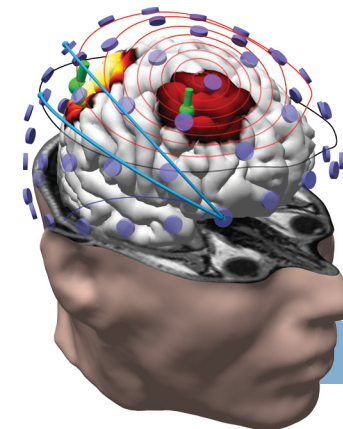
- Individual or built-in image data
- MRI, CT, PET, SPECT, DTI automatic co-registration for up to ten simultaneous image data sets
- Talairach coordinate support and built-in anatomical/functional atlas
- Modality comparison, overlay, and difference displays
- Orthogonal and arbitrarily re-sliced cross-sectional views that can automatically adapt to intracranial electrodes or coordinate axes
- Display of electrodes and source results in anatomical context
- Automatic creation of all anatomical representations required for visualization and source localization, including BEM and FEM head models, high-resolution scalp and cortex, with and without cerebellum
- DTI-based fiber tracking
- Manual image processing for advanced users offering full control over processing steps and order.

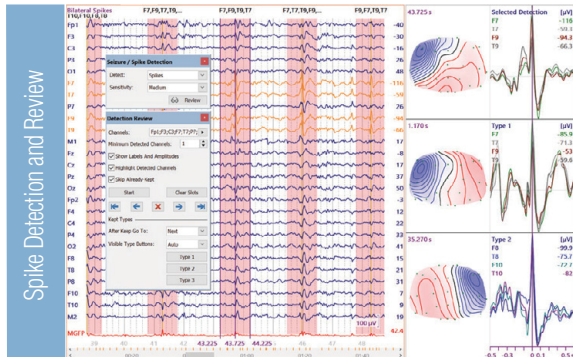
## Source Localization

- Source localization of time and frequency data from scalp EEG, intracranial stereo-EEG, grid and strip data, and MEG
- Dipole models for single and multiple focal sources, where temporal dynamics can be modeled using moving, fixed, rotating, regional, MUSIC, ICA assumptions; dipole confidence ellipsoids (spatial error bars); magnetic dipoles
- Dipole and Beamformer scans
- Current density analysis calculates simultaneous activity throughout the brain or in the cortical gray matter layer only - algorithms include sLORETA, SWARM, Minimum Norm, Lp Norm, L1 Norm, FOCUS, dSPM, swLORETA, eLORETA, LORETA, LAURA; regularization informed by automatic noise analysis
- Spherical, realistic template-based, individual realistic BEM and FEM head models with skull and white matter anisotropy, fiber orientations derived from DTI
- fMRI-constrained source localization.

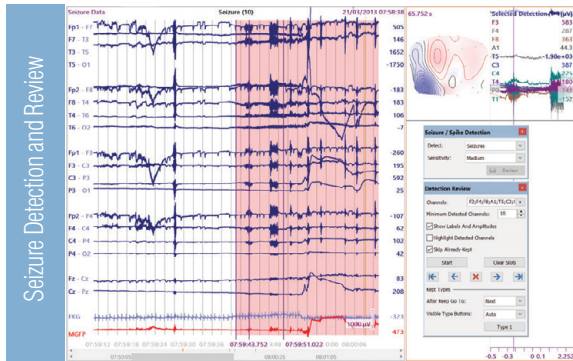
## Tools and Algorithms

- Sensor and source coherence analysis
- Statistical analysis of sensor data, voltage topographies, source results.

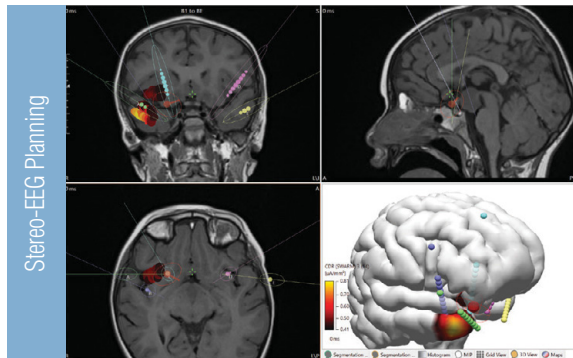




Spike Detection and Review



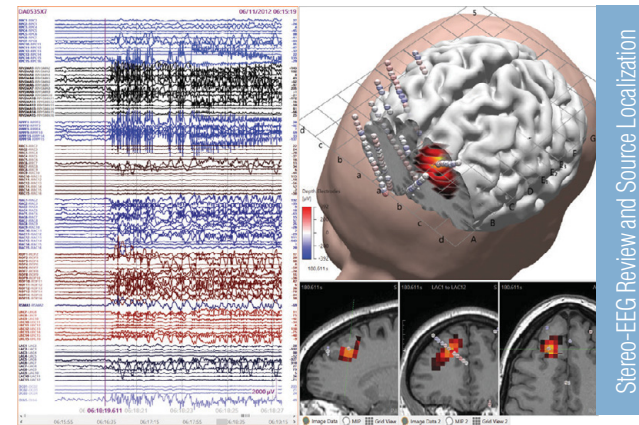
Seizure Detection and Review



Stereo-EEG Planning

## CURRY® for Epilepsy Applications

- Combined review of waveform data and scalp topographies
- Automatic spike and seizure detection based on machine learning
- Accurate manual marking of spikes and interactive spike type editor
- Search for further occurrences of manually marked spikes
- Source localization of spikes and seizure onsets
- Dipole clustering shows localization variability of spikes per type
- Cortical localization of spike onset using extended patches of inward-flowing currents shows candidate generating gray matter
- Automatic co-registration and overlay with MRI, CT, PET, SPECT, DTI
- DTI fiber tracking for exploring connectivity between foci
- Intracranial stereo-EEG, grid and strip electrode placement planning and export to surgical navigation systems and robots
- Intracranial electrode contact localization from post-implant CT or MRI
- Review of intracranial data in anatomical context
- HFO analysis helps identifying contacts-of-interest
- Source localization of intracranial data for foci not covered by contacts
- FDA-cleared and CE-marked.



Stereo-EEG Review and Source Localization

## CURRY® Connectivity and Compatibility

- Record from all Compumedics Neuroscan amplifiers
- Record from network and USB video cameras
- Directly connect to Polhemus and NDI digitizers
- Data streaming for BCI applications in LSL, MATLAB®, and Netstreaming
- Read third-party EEG and MEG data and directly open Compumedics Profusion™ studies
- Read medical imaging data from files or PACS
- Export image data to PACS or in DICOM, Nifti formats for surgical planning software
- Export waveform data to MATLAB, EEGLAB, Python
- Export results to Microsoft Excel® and MATLAB
- MATLAB API for rapidly prototyping your own research ideas.

## IT Environment Integration

- Local and network licenses allow flexible allocation of users and seats
- Password protection options for implementation of access restrictions
- Citrix® virtualization environment support
- Audit trails enable tamper-proof tracking of data access and manipulation.

## Training and Support

- Regular CURRY® schools in your part of the world, on-site and online trainings
- Contact the helpdesk from within the software
- Phone and email technical support.



[www.compumedicsneuroscan.com](http://www.compumedicsneuroscan.com)  
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Your Local Distributor:

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