

# Quick Start Guide

## encevis 1.8



Manufacturer: AIT - Austrian Institute of Technology GmbH;  
Giefinggasse 4; 1210 Vienna; Austria  
Date of manufacture: 2018



Serial Number:  
Version 1.8



Use-by date:  
01/2020



Notified Body:  
DQS GMBH; August-Schanz-Straße 2; 60433 Frankfurt am Main; Germany



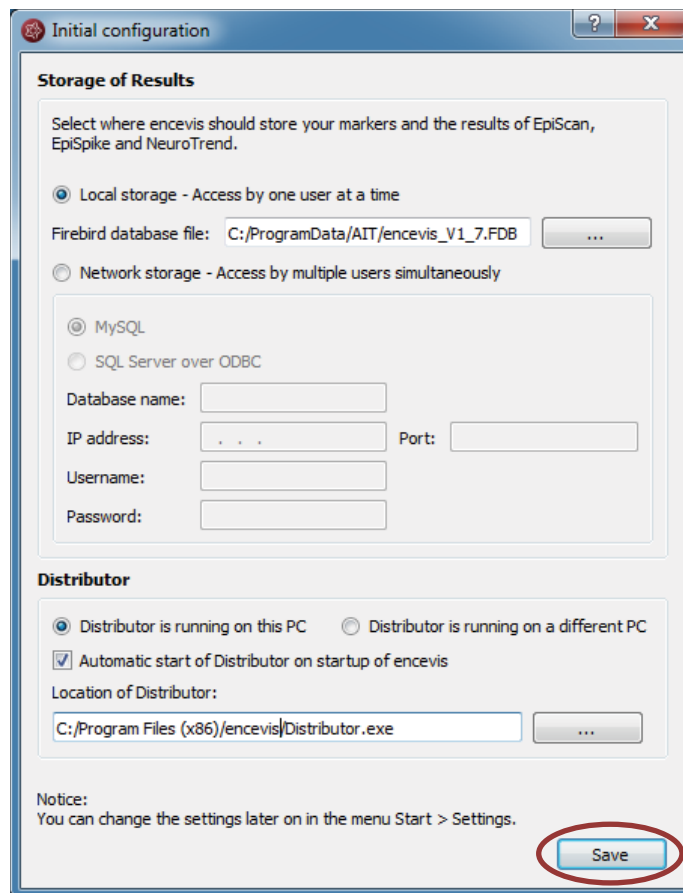
Caution: Please read paragraphs marked with this symbol carefully as they contain important safety information.

Issuing date of this document:  
2019-06-04

## Installation

Once you have downloaded **encevis**, continue with the following steps:

1. Start the **encevisInstaller**, this will guide you through the installation process.
2. Start **encevis**.
3. The initial configuration window will pop up.
4. Press “**Save**”, to keep the default settings.



**Initial configuration**

**Storage of Results**

Select where encevis should store your markers and the results of EpiScan, EpiSpike and NeuroTrend.

Local storage - Access by one user at a time

Firebird database file: C:/ProgramData/AIT/encevis\_V1\_7.FDB

Network storage - Access by multiple users simultaneously

MySQL

SQL Server over ODBC

Database name:

IP address:  Port:

Username:

Password:

**Distributor**

Distributor is running on this PC  Distributor is running on a different PC

Automatic start of Distributor on startup of encevis

Location of Distributor:

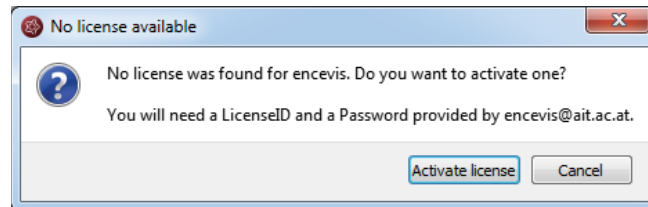
C:/Program Files (x86)/encevis/Distributor.exe

Notice:  
You can change the settings later on in the menu Start > Settings.

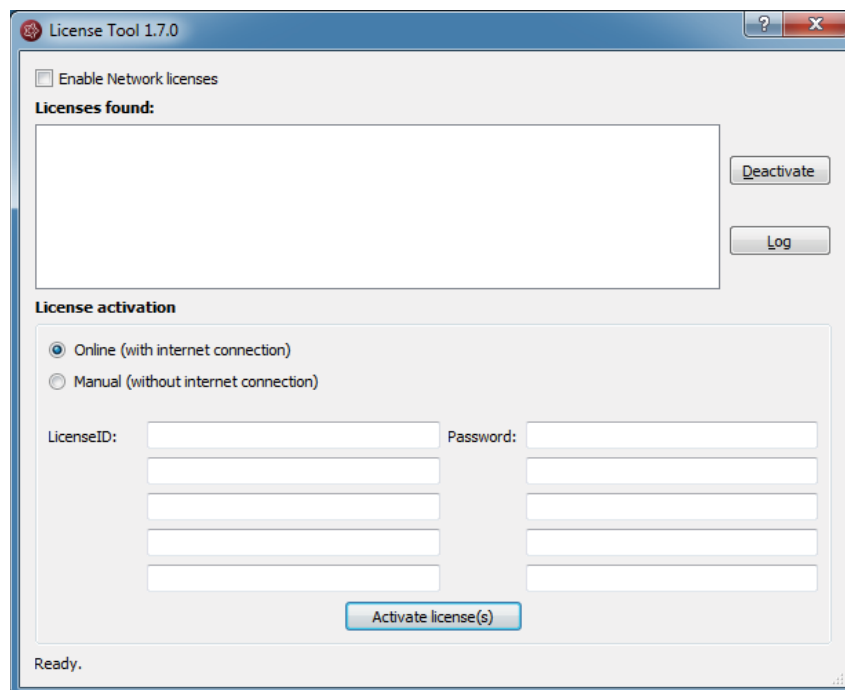
Save

## License activation

1. Start **encevis**.
2. Press the button “**Open EEG**”, the following window will pop up:

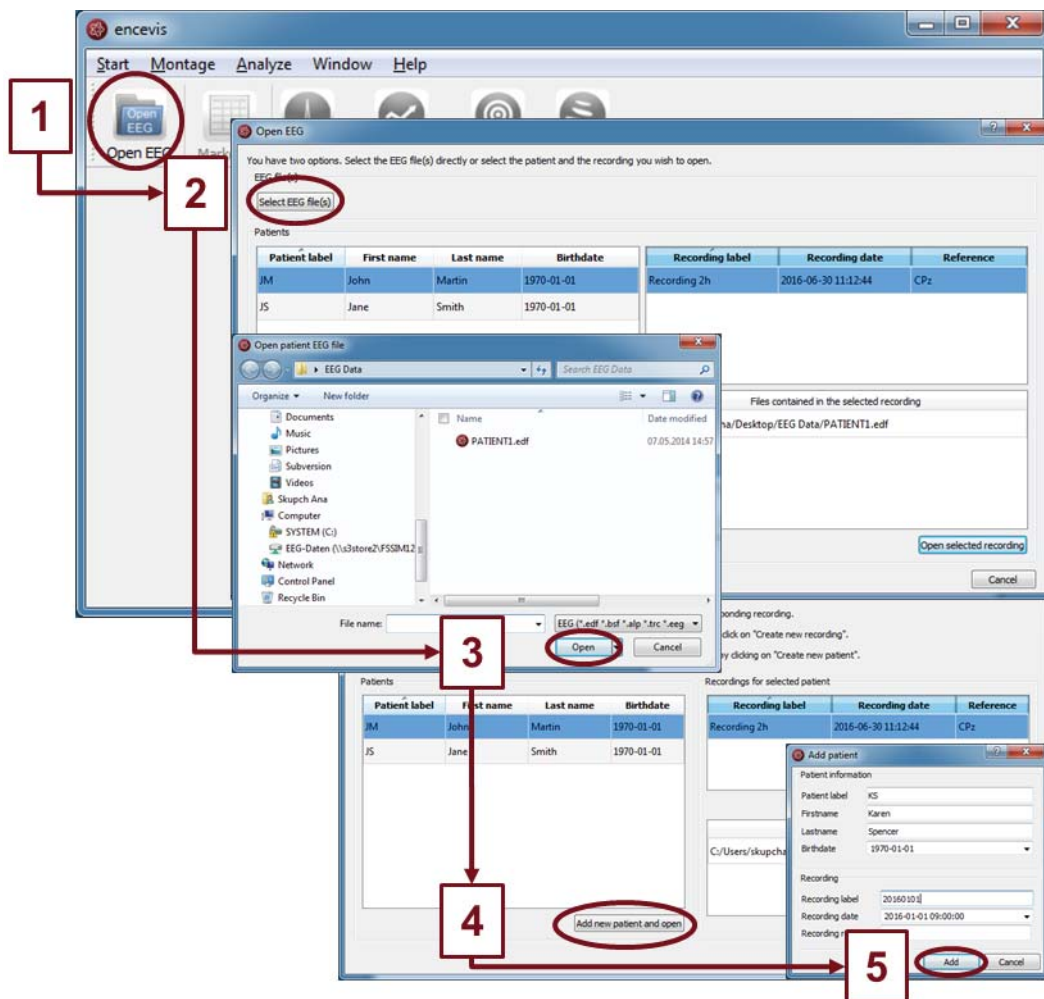


3. Press “**Activate license**”, the License Tool will pop up.



4. If you are connected to the internet, select „**Online**“ as activation mode. Otherwise, select “**Manual**” and contact your distributor in order to get the keys for the manual activation.
5. Enter the LicenseID and Password.
6. Press “**Activate license(s)**”.

## Open EEG file(s) in 5 steps

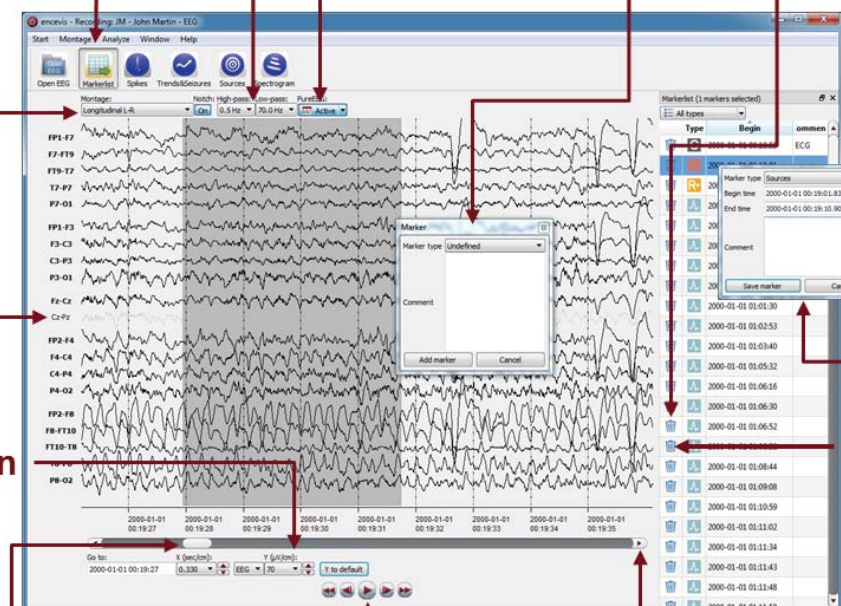


1. Press **“Open EEG”** or select the menu point **Start > Open EEG**.
2. Press **“Select EEG file(s)”**
3. Select the EEG file(s) that you would like to open.
4. If the file(s) are already registered in the EEG file management they will be opened immediately, otherwise a window will pop up. There, Press **“Add new patient and open”**, a new window will pop up.
5. Fill in the fields of the "Patient information". Fill in the recording label and the recording date and the reference used for the EEG recording. Press **“Add”**.



More information can be found under the menu point **Help > encevis Help**.

## Review EEG



The screenshot shows the encevis software interface for reviewing EEG data. The main window displays multiple EEG channels (e.g., FP1-F7, F7-F19, FT9-T7, T7-P7, P7-O1, FP1-F3, F3-C3, C3-P3, P3-O1, F2-Cz, Cz-Fz, FP2-F4, F4-C4, C4-P4, P4-O2, FP2-F8, F8-FT10, FT10-T8, F8-O2) over time. A 'MarkerList' window is open on the right, showing a list of markers with columns for 'Type', 'Begin', and 'End'. A 'Marker' dialog box is also visible, allowing for adding or editing markers. The interface includes a menu bar (Start, Montage, Analyze, Window, Help) and a toolbar with icons for 'Open EEG', 'MarkerList', 'Spikes', 'Trends&Seizures', 'Sources', and 'Spectrogram'. The bottom of the window features a navigation bar with a 'Go to' field and playback controls.

Key functional areas highlighted in the image include:

- Choose filters**: Located at the top of the interface.
- Remove artifacts**: Located at the top of the interface.
- Step through markers**: Located at the top of the interface.
- Add marker**: Located at the top of the interface.
- Hide markerlist**: Located on the left side of the interface.
- Select montage**: Located on the left side of the interface.
- Hide channel**: Located on the left side of the interface.
- Change resolution**: Located on the left side of the interface.
- Edit marker**: Located on the right side of the interface.
- Delete marker**: Located on the right side of the interface.
- Navigate through the EEG**: Located at the bottom of the interface.

You have now the possibility to use all functionalities of encevis:

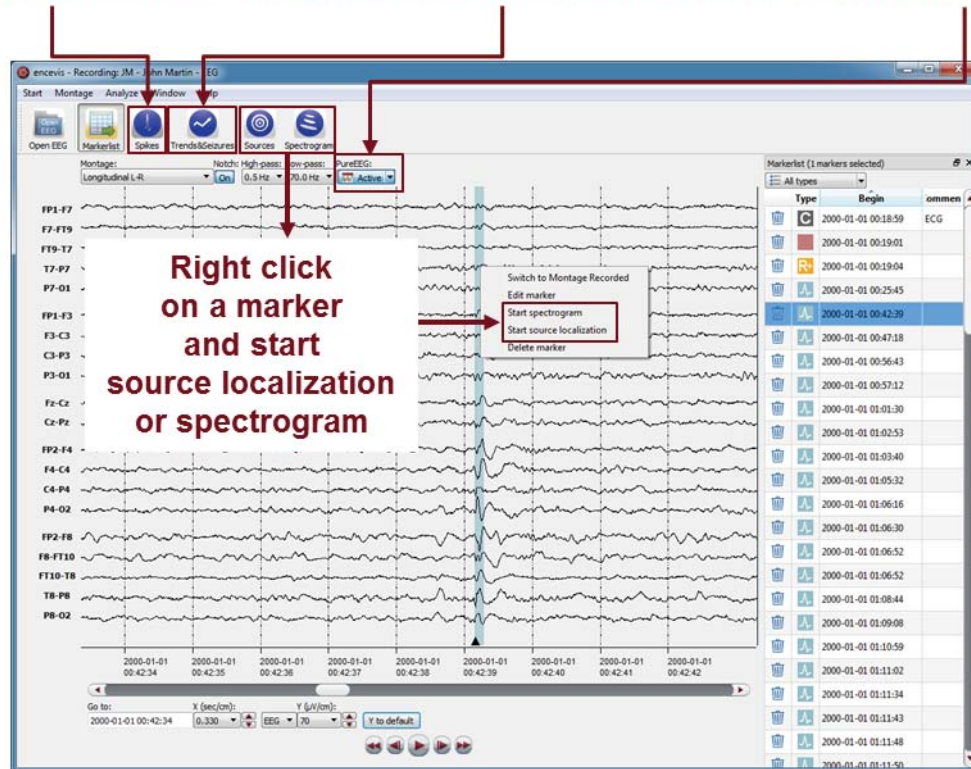
- Navigate easily through the EEG.
- Remove artefacts with PureEEG.
- Change the settings of the channels by selecting a montage and hide channels.
- Change the resolution in time and in voltage.
- Select notch, high-pass and low-pass filters.
- Watch the EEG in two windows at the same time.
- Create, review and change markers for special EEG events.
- Markers are saved in the marker list and can be reviewed anytime.
- Start automatic EEG analysis.



More information can be found under the menu point **Help > encevis Help**.

## Start automatic EEG analysis

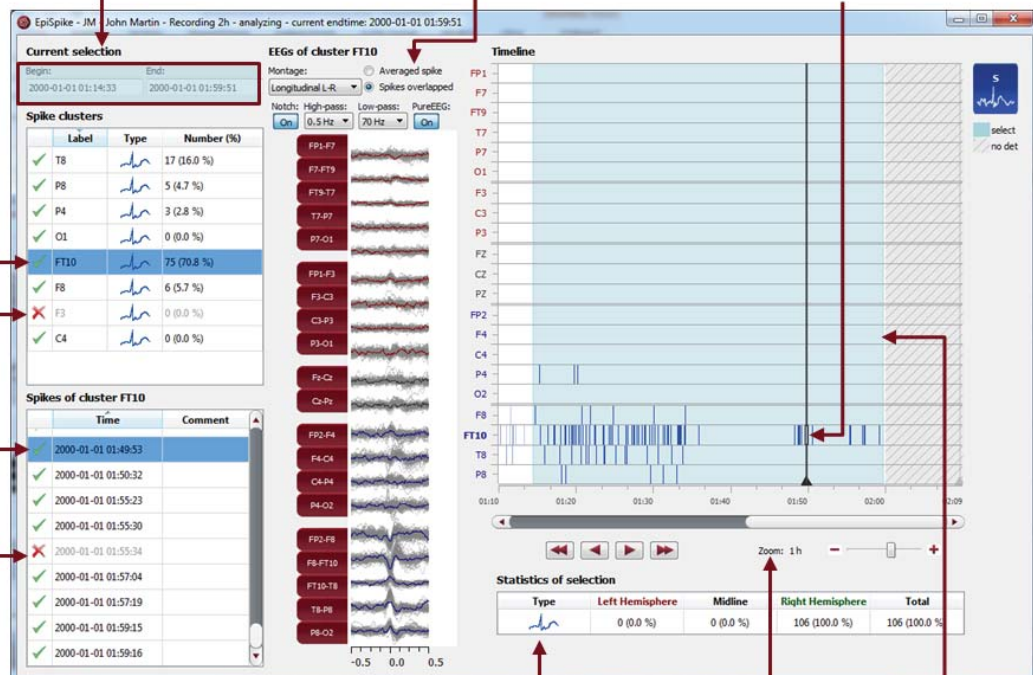
Start spike detection    Start trends and seizure detection    Start artifact reduction



encevis offers you a series of automatic EEG analysis tools:

- Spikes: the automatic spike detection detects spikes, clusters them by localization and visualizes the results for easy review in the EpiSpike window.
- Trends&Seizures: the advanced EEG trending calculates automatic detection of seizures, of rhythmic patterns, qEEG, aEEG, the heart rate and visualizes the results in the NeuroTrend window.
- Seizure detection: the detected seizures are shown in the marker list and have four different types: rhythmic, rhythmic+, tonic and tachycardia.
- Sources: you can easily start the source localization by right-clicking on a marker in the EEG traces. The results are shown in the EpiSource window.
- Spectrogram: you can easily start a time-frequency analysis by right-clicking on a marker in the EEG traces.

## Spike detection - EpiSpike



**Change selection**

**See EEG of spikes in cluster averaged or overlapped**

**Click on spike detections shown as colored bars**

**Check spike cluster**

**Delete cluster**


**Check spike**

**Delete spike**

**Read spike statistics**

**Zoom**

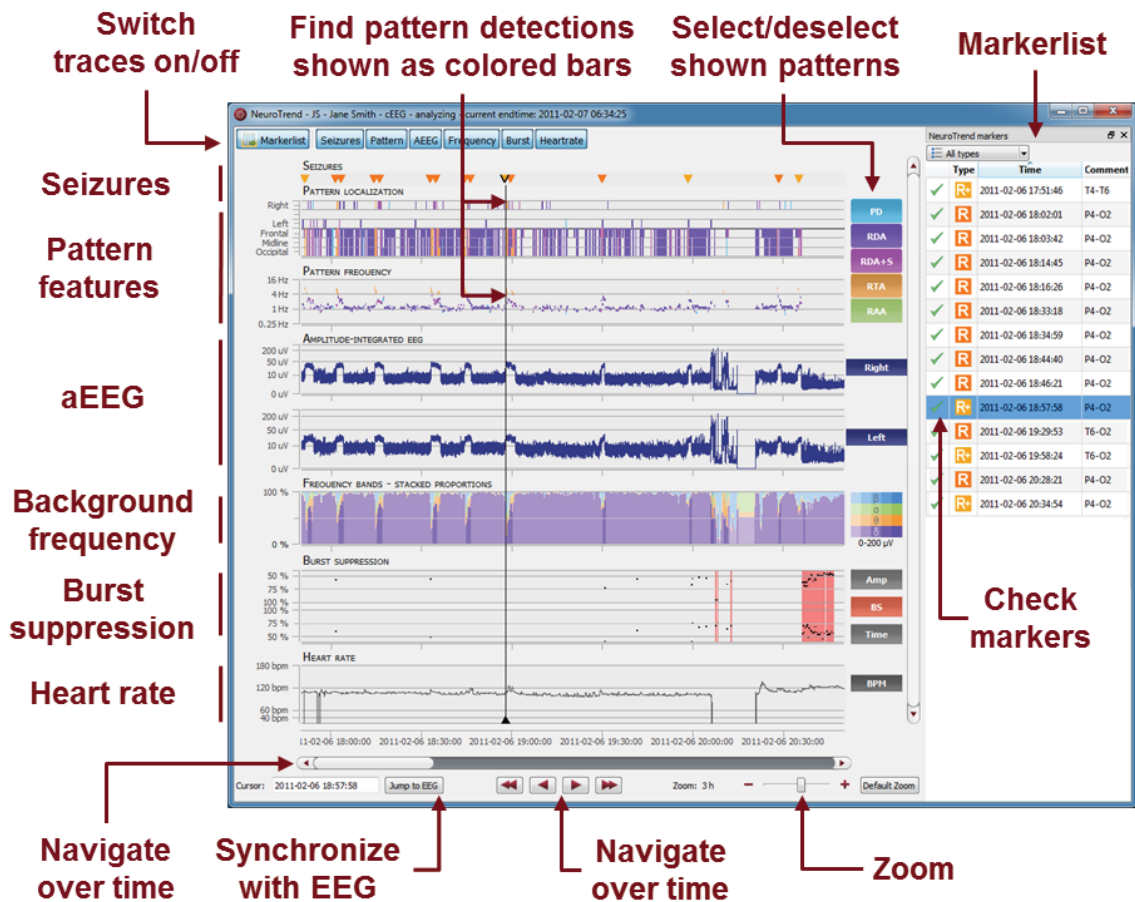
**Drag mouse to change selection**

Type	Left Hemisphere	Midline	Right Hemisphere	Total
	0 (0.0 %)	0 (0.0 %)	106 (100.0 %)	106 (100.0 %)

Start the spike detection EpiSpike and use all its functionalities:

- Start the detection on the complete time range or specify a time segment you are particularly interested in.
- Find the spike detections on a timeline as blue bars clustered and arranged by their localization.
- Zoom in and zoom out of the timeline using the mouse wheel.
- Click on a detection to see its EEG and find it in the spike list.
- Choose if you want to see the average spike EEG of the cluster or all spikes overlapped.
- Go through the lists of spike clusters and their spikes and remove detections you do not want.
- Change time of selection for review and statistics.
- Synchronize with the EEG in the EEG viewer.

## Trends and Seizures - NeuroTrend

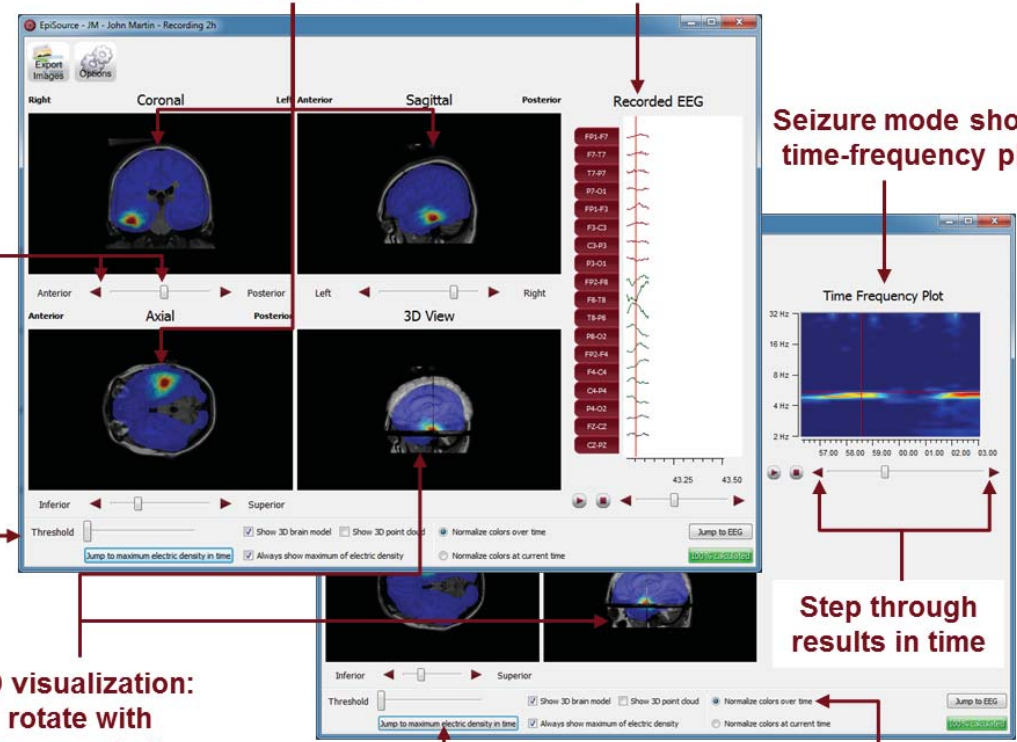


Start the trends and the seizure detection NeuroTrend and use all its functionalities:

- Find color-coded detection of four types of seizures: rhythmic, rhythmic +, tachycardia and tonic.
- Find the detection of five different patterns: periodic discharges (PD), rhythmic delta activity (RDA), rhythmic delta activity + spikes (RDA+S), rhythmic theta activity (RTA), rhythmic alpha activity (RAA).
- Read localization and frequency of the detected patterns.
- See the amplitude-integrated EEG and the proportion of the frequencies as continuous measures.
- Find burst suppressions and attenuations.
- Read the heart rate based on the ECG.
- Navigate in time and synchronize with the EEG shown in the EEG viewer.
- Zoom in and zoom out using the mouse wheel.
- Select or deselect patterns that you want to have shown or hidden.
- Switch on/off the traces you want to have displayed.



## Source localization - EpiSource



**Results shown color coded in 2D slices**

**Spike mode shows spike EEG**

**Use controls or the mouse to navigate through the brain**

**Reduce the color coded overlay**

**Seizure mode shows time-frequency plot**

**3D visualization: rotate with left mouse button**

**Jump to the moment of maximum activity**

**Adjust visualization settings**

**Step through results in time**

Start the source localization EpiSource and use all its functionalities:

- Choose between seizure mode (seizure markers: 1s-5min) and spike mode (spike markers: 20-500ms).
- See the results of the source localization as color-coded overlay to the structural MRI. High activity is red. Low activity is blue.
- Review the results in the three 2D slices (Coronal, Sagittal and Axial).
- Navigate through the slices using the controls or the mouse.
- Review the results in the 3D visualization.
- Zoom in and zoom out using the mouse on the screen.
- Step through the results in time or just jump to the time point of maximum activity.
- Adjust several visualization settings.
- Export the results as images.

## Warnings and Precautions



The modules from encevis for the automatic analysis of EEG cannot replace the examination by the physician. As for any other automatic procedure, there can be inaccuracies during the analysis with encevis. The original EEG still needs to be used for the evaluation and the results of encevis need to be confirmed based on the unaltered raw EEG trace.



encevis does not provide any diagnosis or diagnostic recommendations or predictions of the patient's state. It remains the responsibility of the physician to decide over the diagnosis or to induce treatment.



The use of the software cannot replace the real-time surveillance by medical staff particularly of the vital functions. The patient's safety remains the responsibility of the staff.



encevis EpiScan cannot be used as an alarm system, since there may be a delay of several minutes between the clinical onset of the seizure and the display of the detected pattern.



encevis NeuroTrend should not be used as an alarm system, since the visualization of patterns could be delayed by up to 1.5 minutes.



The heart rate trace shown in encevis can never replace an ECG monitor. The trace shown in encevis is only intended as an additional information that can help in the interpretation of the EEG. It must never be used to monitor the heart function of the patient. It must always be verified based on the original raw ECG trace.