Release Notes

V 1.11.1 (release on 2020-12-17)

Bug fixes

- Fixed an non functioning '?' help sign in several dialogs in encevis viewer and viewer for low electrode setups.
- Fixed an inconsistency between button states for notch filter in encevis viewer and viewer for low electrode setups.
- Fixed an issue when setting the EEG page movement setting to 1%.
- Fixed an issue in viewer for low electrodes where a newly created patient was not selected in the patient overview table.
- Fixed an issue in viewer for low electrode setups that was causing unexpected behavior when moving the splitter between EEG area and trending area when reviewing a patient and when maximizing the window.
- Fixed an issue that caused incorrect initialization of montages when starting the encevis viewer in HIS mode.
- Fixed an issue in encevis viewer that prevented the opening of BDF files.
- Fixed an issue in viewer for low electrode setups which caused the request for the system log files from UNEEG ProConnect (3rd party) be requested for the wrong patient.
- Fixed an issue in viewer for low electrode setups which caused a slight overlap of the y-axis labels in the spectrogram when scaled to a low height.
- Updated the viewer for low electrodes and EpiSight Server to use a new SSL certificate from UNEEG ProConnect
- Corrected several typos in viewer for low electrode setups
- Added the patient comment editing possibility to the review area of viewer for low electrodes to make the meaning of the patient comment in patient management clearer for the user.
- Fixed an issue which prevented the configuration of a local drive for the file cache in EpiSight Server.
- Fixed an issue when reading EEG data with a large DC offset which caused a filter ringing at the beginning of a file.
- Fixed an inconsistency in naming of 'Open patient' button within in viewer for low electrode setups.
- Fixed issue in reading XItek EEG data supporting new amplifier types.
- Fixed an issue where reading EEG files with an empty electrode name but available reference name failed.
- When changing a patient information in viewer for low electrode, the user can now use the ESC key

to reset the edited field back to its initial value.

- Fixed an issue in viewer for low electrode setups, resulting in a progress dialog when exporting many encrypted EEG files.
- Fixed an inconsistency when checking for unique patient information when editing a patient in viewer for low electrode.
- Fixed an issue in viewer for low electrode which allowed deletion of pattern markers generated during EpiSight analysis
- Changed the default time duration for the spectrogram in viewer for low electrode setups to three minutes.
- Increased visibility of the rating buttons to better separate them from the unclickable disabled state
- Fixed inconsistent wording between reporting user interface and generated report PDF in viewer for low electrode setups.
- Fixed an issue where EEG images generated for the PDF report in viewer for low electrode setups were not deleted when deleting the patient.
- Fixed an issue which restricted generation of EEG images for the report to some marker types only.
- Fixed language inconsistency with am-pm labels within viewer for low electrode setups.
- Fixed an issue in viewer for low electrode setups which caused wrong entries in the encevis database when download of a system report file from UNEEG ProConnect failed.
- Fixed an issue which prevented EEG to be fully analyzed within EpiSight Server when a dataset contained corrupted files.
- Fixed an issue in viewer for low electrodes where the amount of available data was not always shown correctly in the patient management view.
- Fixed an issue causing the migration of databases of encevis 1.9 to current version to fail.
- Fixed a layout issue in viewer for low electrode setups when language was set to German.
- Fixed an issue where extending the element selection in the marker list did not work using the shortcut Shift+ArrowUp/ArrowDown in viewer for low electrodes setups.
- Improved log messages within EpiSight Server

V 1.11.0 (release on 2020-10-23)

Features and improvements

- The patient management for the viewer for low electrode setup has been completely overhauled and is now presented in a new, cleaner design.
- The viewer for low electrode setups provides now the possibility to rate markers generated during the analysis of data.
- The recycle bin functionality of viewer for low electrode setups was removed.
- The pattern markers generated during analysis are now displayed in the marker list in the viewer for low electrode setups.

- The viewer for low electrode setups provides now a spectrogram when reviewing a patient's EEG.
- The viewer for low electrode setups provides now the possibility to create a report and export it to PDF format.
- The viewer for low electrode setups can now download data from an external source using a specified external interface. It can also register patient patients, send log files, request a system log and display information using this interface.
- An administration tool was introduced to configure the external interface
- Analysis in the viewer for low electrode setups now starts automatically without user interaction. A windows service is provided to keep the analysis components up and running.
- An encrypted transaction logging was introduced in the viewer for low electrode setups.
- The viewer for low electrode setups is now able to read and display encrypted EDF data.
- The external interface to the Moberg EEG was adapted to also support the new interface version.
- Logging messages where improved
- The viewer for low electrode setups is now also available in German language.
- Support for windows 7 was removed and only Windows 10 is supported in encevis.

Bug fixes

- Fixed a crash in encevis when specifying a zero-value for display calibration.
- The viewer for low electrode setups now always uses the distributor in the installation directory.
- Fixed issue in viewer for low electrode setups, where panning the EEG caused a marker to slightly move visually.
- Fixed an issue, where encevis viewer closed with an error when trying to add the same files to a recording multiple times.
- Fixed an issue, which could lead to an error during database creation due to a timeout.
- Fixed an issue in viewer for low electrode setups, which caused an unexpected movement of the trend widget plots when the user clicked the zoom drop down and moved the mouse over the trending area before.
- Fixed an issue, where NihonKohden data where concatenated if the file contains gaps.
- Time axis labels in viewer for low electrode setups at midnight are not shown in bold any more.
- Fixed an issue in viewer for low electrode setups which allowed to set a marker after the end of the recording.
- Fixed an issue, which allowed the user to disable the toolbar in viewer for low electrode setups
- Fixed an issue in encevis viewer where the spectrogram showed a discontinuity for certain non-integer sampling rates in case where several subsequent values in the EEG where identical.
- Fixed an issue, where moving within the EEG data in the viewer for low electrode setups did also apply the page movement setting defined in encevis viewer.
- Corrections and update of AITIntefaceDLL documentation for integration

V 1.9.2 (release on 2020-02-14)

Bug fixes

- Fixed an issue where adding new files to a recording that already contains files that have a later recording time and have already been processed could lead to an incorrect display in the result visualization of plugins.

V 1.9.1 (release on 2019-12-20)

Bug fixes

- Fixed issue where encevis NeuroTrend did not show its 20 uV and 400 uV tick label.
- Fixed issue in encevis Viewer where the plot grid was not displayed properly when changing the x resolution to a higher value than 0.33 sec/cm.
- Fixed issue in database migration tool which caused spike detection results not to be fully migrated to new database.
- Fixed performance issues in encevis spike detection GUI when many spikes are detected in a short time period.
- Fixed issue in encevis Viewer with negative video offsets in Micromed EEG files.
- Fixed issue in encevis Viewer and Viewer for low electrode setups where display calibration could lead to a crash of the Viewer.
- Fixed issue in Viewer for low electrodes where insertion of a new marker in EEG plot did not immediately trigger an update in the trending and global time area.
- Fixed issue where sometimes "no EEG data available" was displayed in Viewer for low electrodes within the EEG plot when there were EEG data available.
- Added missing runtimes to deployment.
- Fixed issue in Viewer for low electrode setups where the analysis progress was not reset on patient change.
- Fixed issue, where Distributor did not send a proper acknowledge when a plugin was exiting because of time out.
- Fixed issue which caused an unclean exit of the calculation process when analyzing data within Viewer for low electrode setups.
- Fixed issue in Viewer for low electrode setups where the informational overlays sometimes did not show up when clicked on the information icon in the plots.
- Fixed issue in encevis Viewer where it was possible to change a marker type to type "Impedance".
- Fixed issue where the red indicator line was not displayed in encevis Viewer when starting spectrogram for for a marker
- Fixed issue were the Viewer for low electrode setups was scrolling by default 100% instead of 90 % of the current displayed range in plots.
- Fixed issue in Viewer for low electrode setups where it could have happen that unnecessary, empty

recordings where created within encevis database.

V 1.9.0 (release on 2019-10-23)

Features and improvements

- encevis is now available in 64 bit
- The spike detection runtime performance increased significantly
- encevis Viewer provides now video support for Micromed and DICOM files
- Plugins for spike detection and for trending analysis in encevis for low electrode setups are now able to load EEG data on their own, increasing runtime performance significantly
- encevis Viewer supports now DICOM EEG file format including the visualization of annotations
- encevis Viewer and Viewer for low electrode setups now allow the configuration of a custom letter for marker types
- Micromed Interface is now able to work without access to the Micromed database
- Micromed Interface is now analyzing previously recorded data much faster
- The EEG navigation in encevis Viewer was improved
- Increased stability of Micromed Interface when files are archived while they are processed
- Viewer for low electrode setups allow now to go to begin and end of a recording by using the keys 'Home' and 'End'
- Montage definitions for Viewer for low electrodes setups where optimized
- Marker list in Viewer for low electrode setups cannot be undocked anymore
- Viewer for low electrode setups provides now an EEG data overview
- The high pass filter is now disabled by default in Viewer for low electrode setups
- Windows 8 is not longer supported by encevis
- Support for Neurofile/ITMed/Deltamed Interface was removed
- Support for reading ITMed and Nicolet EEG files was removed
- Removed marker type "Segment" for micromed files

Bug fixes

- Fixed issue in encevis Viewer where a marker filter in the marker list appeared without functionality.
- Fixed issue in encevis Viewer for low electrode setup where markers imported from EEG files were not sorted correctly when sorting in ascending order of column 'Comment' in the marker list was selected
- Fixed issue where impedance markers where not selected in the marker list type filter when selecting "All types"
- Fixed misleading error message when the database can not be accessed
- The "About" window in encevis viewer for low electrode setups is now stating the correct build number
- Fixed issue where it was possible to start the spectrogram while no EEG data where loaded
- Fixed crash in Trends&Seizures during exit of the plugin when using a review only license

- Fixed crash of encevis Viewer when changing the reference electrode in EEG Patient Management and immediately activating PureEEG

- Fixed issue which caused plugins to start without window frame when using Micromed Interface

- Fixed performance issue in spike detection GUI when the average spike plot was activated. The restriction to 500 spikes now also applies to the average spike plot

- Fixed crash of encevis Viewer when configuring upper and lower frequency borders to the same value

- Added consistency checks to encevis Viewer spectrogram when configuring a start time before the begin time of the recording

- Fixed issue when Spectrogram was immediately started a second time.

- Fixed issue in Source localization where 'jump to EEG' did not bring the encevis viewer window to foreground

- Fixed issue where Distributor TCP connection fails if the Distributor runs on a different machine than the client

- Fixed issue where a click on a seizure marker in Trends&Seizures GUI seizure plot can show EEG that was some seconds before the marker time

- Corrected various error messages to be more user friendly and more informative

- Fixed issue where not all annotations from EMS files might be loaded when annotations were stored within the event database of EMS files

- Fixed issue were annotations imported from EEG files might not show the time in the marker list of Trends&Seizures

- Fixed issue in the spectrogram calculation of encevis Viewer when the spectrogram was not calculating from a marker and the whole displayed EEG page is used for calculation

- Fixed issue in HIS mode of Viewer where a dummy entry was shown in an empty database in EEG Patient Management

- Fixed issue where not all impedance measures from EMS files where loaded

- Fixed crash of Micromed Interface if an second instance was started

- Fixed issue for small screens, where marker list of encevis viewer scrolled to the last entry instead of begin during startup

- Fixed issue where it was possible to configure an invalid reference electrode withing encevis Viewer

- Introduced a migration option for old spike detection results that are not compatible anymore with the current version

- Fixed issue in Micromed Interface where wrong configuration might lead to a crash of the application

- Fixed issue in Micromed Interface where it can happen that to too many errors where shown in a dialog. Now the number of shown error messages are restricted

- Fixed issue where marker type 'EDF annotation" was missing as type filter in marker list of Viewer for low electrode setups

- Fixed issue in Viewer for low electrode setups causing a crash when undocking and redocking the markerlist
- Fixed issue in Viewer for low electrode setups where it could have happened that trending results where "out of sync" with EEG when continuing a calculation.
- Fixed issue in Viewer for low electrode setups where the import of patient may have caused a database error
- Fixed issue where spike detection plugin was sending empty results in case it was configured to return results via XML over AITInterfaceDLL
- Fixed issue where it was possible to change the marker type and begin time of a marker within the marker list of Trends&Seizures

V 1.8.3 (release on 2019-09-26)

Bug fixes

- Fixed issue where the unit of the ECG signal stored within Sigma EEG files was not taken into account.

V 1.8.2 (release on 2019-07-03)

Bug fixes

- "Direction of Use" and "Gebrauchsinformation" delivered with encevis are now containing an issuing date
- The software manual for encevis Viewer and encevis Viewer for low electrode setups contains now an issuing date and the address if the manufacturer
- Correction of invalid product SVN number in About window of Viewer for low electrode setups.

V 1.8.1 (release on 2019-04-30)

Bug fixes

- Fixed issue where distributor prevented startup of encevis.
- Improved usability when new files for an already existing patient are imported into EEG Viewer for low electrode setups.
- Fixed issue where a change of the marker type was not immediately applied within the EEG Plot of the EEG Viewer for low electrode setups.
- Fixed issue where movement of a marker to recycle bin was not immediately applied within EEG Plot of the EEG Viewer for low electrode setups.
- Fixed issue where changing the coloring of marker type "EDF Annotation" was not properly stored and recovered in EEG Viewer for low electrode setups.
- Fixed issue where help texts in the EEG Viewer for low electrode setups were cut off in case the

windows display scaling was higher than 100%.

- Corrections in default montages for encevis Viewer for montage Referential Alt Cz R-L and Referential Alt A1/A2 R-L.

V 1.8.0 (release on 2019-04-10)

Features and improvements

- A new EEG Viewer for low electrode setups was introduced, which is optimized to display EEG signals for a low number of electrodes. It includes frequency filtering of the data, the scaling of the data in x and y direction and the visualization in different montages. The EEG viewers can start an automatic analysis of the EEG signal. The analysis results are presented in the EEG viewer which shall aid the user in the examination of EEG recordings. The analysis includes the seizure detection, detection of rhythmic pattern, background frequency and aEEG.
- encevis Viewer can now open an EEG files without creating a patient entry in the database system. In this "Read-only" mode the user can quickly open any files without the need to register a new patient. The "Read-only" does not have the possibility to start plugins or modify markers
- encevis Viewer can now to be started using a given XML-file that defines files that will automatically be opened in a "Read-only HIS" mode. In this mode plugins are not available and marker can not be modified.
- encevis Viewer is now able to visualize impedance measurements stored in Micromed and EMS files
- storage of encevis settings was optimized
- encevis Viewer can now start the Spectrogram from an arbitrary time point in the EEG plot

Bug fixes

- Fixed issue where spectrogram throw error if all filters where disabled
- Fixed issue in encevis viewer where EEG file Management forces a unique patient name although the patient label is already different. (Fixed in 1.7.3 and upwards too)
- Fixed issue in NeuroTrend that might cause a time shift in the AEEG plot for uneven or non-integer sampling rate of the input data after longer recording times of several hours. (Fixed in 1.7.3 and upwards too)
- Fixed issue in Micromed vendor interface where Micromed vendor interface throws an error if tables are missing in the encevis database. (Fixed in 1.7.3 and upwards too)
- Fixed random crash on exit of Micromed vendor interface (Fixed in 1.7.3 and upwards too)
- Fixed issue where prefixes set in channelPrefix.txt were not applied to plugins (Fixed in 1.7.4 too)
- Fixed crash loading EMS files
- Fixed issue where SSL certificate could not loaded successfully when integrating AITInterfaceDLL
- Fixed issue in NeuroTrend causing an invalid database opening when the database name is empty

for a local Firebird database

- Fixed issue where end of recording in NeuroTrend was not properly visualized
- Fixed memory leak on opening EDF files

V 1.7.5 (release on 2019-04-11)

Bug fixes

- Fixed issue in NeuroTrend when the database name for a local Firebird database was empty.
- Fixed issue where the end of a recording in NeuroTrend was not properly visualized.
- Fixed issue where the SSL certificate could not be loaded successfully when integrating the AITInterfaceDLL.

V 1.7.4 (release on 2019-01-17)

Bug fixes

- Fixed issue where prefixes set in channelPrefix.txt were not applied to plugins.

V 1.7.3 (release on 2018-11-23)

Bug fixes

- Fixed issue in encevis viewer where EEG file Management forces a unique patient name although the patient label is already different.
- Fixed issue in NeuroTrend that might cause a time shift in the AEEG plot for uneven or non-integer sampling rate of the input data after longer recording times of several hours.
- Fixed issue in Micromed vendor interface where Micromed vendor interface throws an error if tables are missing in the encevis database.
- Fixed random crash on exit of Micromed vendor interface

V 1.7.2 (release on 2018-10-02)

Features and improvements

- The replacement mechanism in Micromed vendor interface for path changes when EEG files are moved to another destination was improved and now works after restart of the vendor interface
- Micromed vendor interface is now more robust against database and network loss
- The validation of the configuration in Micromed vendor interface was improved. The results are now easier to read
- The configuration dialog of Micromed vendor interface does now only open when user clicks on the configuration button
- aEEG visualized within NeuroTrend now shows a tick and a label at 5 uV

- encevis is now raising a security awareness hint for the user when configuring a remote database
- The communication between AITInterfaceDLL and Distributor is now secured by an SSL connection
- The support for reading EMS files and available annotations was improved.
- encevis now supports the reading of NihonKohden EEG data.
- Import of annotations of type 'DVideo' from Micromed files to the Viewer marker list was removed.
- The distance between EEG channels visualized in the EEG plot can now be configured by the user
- encevis now allows to open files containing up to 260 channels
- encevis now handles review licenses correctly.
- encevis Viewer, NeuroTrend and SeizureDetection are now storing the current marker type selection

Bug fixes

- The synchronization mechanism of the marker lists between encevis Viewer and plugins (NeuroTrend, EpiSpike and SeizureDetection) was rewritten.
- Fixed an issue where the AITInterfaceDLL sometimes returned an error without reason
- The button "Jump to EEG" is now working properly in all circumstances
- Fixed a crash occuring in SeizureDetection when the configured MySQL database was not reachable
- Fixed an issue where encevis Viewer showed "-1%" as status below a plugin icon
- Return values in functions are now properly evaluated
- Distributor is now aware when a plugin crashes and sends an error back to the AITInterfaceDLL
- Fixed an issue where a table field within encevis Viewer marker list stayed in edit mode after finishing editing
- The display calibration dialog is now smaller and should also work on display height of minimum 800 px.
- The speed of PureEEG was improved within encevis Viewer by removing unnecessary interface calls to PureEEG
- SeizureDetection GUI is now started properly by vendor interfaces without needing further user interaction
- Fixed an issue, where vendor interface Micromed started a dead NeuroTrend Review plugin process when only a seizure detection license was available
- A single click instead of a double click within NeuroTrend now leads to a 'GoTo' message causing encevis Viewer to show the EEG at the clicked position
- Fixed a crash in encevis Viewer when importing annotations from EEG files when using a Firebird database.
- Fixed an issue in encevis Viewer where the wrong marker within the EEG plot where highlighted when more than one marker occurred within one second.
- Fixed a crash of Micromed interface when files were moved away for archiving

- Distributor is now automatically restored by vendor interfaces Micromed, Neurofile/ITMed/Deltamed if Distributor gets killed
- Fixed an issue where plugins did not recover themselves after database loss when using a MSSQL database
- Fixed memory leak within NeuroTrend when inserting results into the encevis database
- Distributor now kills all orphaned plugins after start up
- Fixed a crash in encevis Viewer when th user tried to switch a montage using the context menu over a marker
- Fixed a crash in encevis Viewer randomly happening when clicking trough markers within the marker list
- Fixed an issue where states of markers where not properly updated for all running instances reviewing the same recording
- Fixed an issue in encevis Viewer where it could have happened that the patient management shows the wrong file list for a recording (the correct files were always opened, though)
- Annotations imported from EEG files by encevis Viewer are now not editable or deletable in the plugins
- Spectrogram is now blocking EpiSource plugin and vice versa
- Fixed issue that two red indicator lines where displayed in the plot when starting Spectrogram if two markers where overlapping
- Removed "Kill a plugin" from Distributor, as it was an obsolete feature
- Starting the Spectrogram now requires a marker with a minimum duration of 100 ms.
- Fixed issue in encevis viewer where marker type filter sometimes showed "All types" although some filter where not active.
- Fixed an issue within Micromed vendor interface which showed an empty error message box to the user.

V 1.7.1 (release on 2018-05-17)

Features and improvements

- Micromed vendor interface: All user input made in the configuration dialog is now verified. The result of both positive and negative checks are collected in a message box and shown to the user.
- Micromed vendor interface: The configured Micromed database is opened right after configuration change, or by restarting of vendor interface. The timeout for opening of the database is independent of the database server settings and is always 3 seconds.
- Micromed vendor interface: The database user of the Micromed database does no longer need write access.

Bug fixes

- Micromed vendor interface: User name and password of the Micromed database over ODBC data source can now be configured by the user in the configuration dialog.

V 1.7.0 (release on 2018-02-16)

Features and improvements

- An online interface to Neurofile/ITMed/Deltamed is introduced
- Seizure-Detection now possible with NeuroTrend (EMU and ICU license), providing a marker list displaying detected seizures, and further a new plot showing the markers over time
- new Seizure Detection plugin for reviewing detected seizures detected by NeuroTrend
- Removal of plugin EpiScan (as replaced by new seizure detection capability of NeuroTrend and Seizure Detection Review plugin
- Introduced a spectrogram in encevis viewer, allowing a channel wise time frequency analysis of EEG data.
- encevis viewer supports now the EMS data format
- encevis viewer imports annotations stored within files automatically. The following data formats are supported: Micromed, ITMed/Neurofile/Deltamed, Xltek
- encevis viewer provides now the possibility to calibrate the screen for correct EEG display. This has also effect on the EEG display within plugins.
- encevis viewer provides now user defined montages stored within files of data format Xltek.
- vendor interface Micromed allows now jumping in traces which includes pauses in offline mode
- encevis viewer does now allow review of results of plugins during a running recording monitored by vendor interfaces Micromed and Neurofile/ITMed/Deltamed
- plugins are now storing their settings when closed over AITInterfaceDLL
- marker synchronization between encevis viewer and NeuroTrend and EpiSpike was improved
- vendor interface Micromed and Neurofile/ITMed/Deltamed uses now user name and password from the configured ODBC object
- encevis viewer and online interface to Neurofile/ITMed/Deltamed supports now pause and continue within Neurofile/ITMed/Deltamed files.
- a new plugin specific XML message was introduced, called "isFinished", allowing to tell plugins when they do not have to await more data
- Plugin EpiSpike deletes now empty clusters on recalculation
- GUIs of plugins started by vendor interfaces (Micromed, Neurofile/ITMed/Deltamed) are not opened automatically anymore
- reduced the minimum allowed sampling rate of plugins from 200Hz down to 100Hz
- optimized error handling within Micromed interface
- encevis EEG player scrolls now page wise instead of second wise in auto play mode
- speed up of license check

- new icons in encevis viewer and vendor interfaces (Micromed, Neurofile/ITMed/Deltamed)

Bug fixes

- Fixed issue with reading EDF EEG files, on long channel labels it could have happened that the reference label was not correctly read in
- Fixed issue within NeuroTrend were it could have happened that some result data was not loaded and displayed
- Fixed issue where EEG data only containing zeros as values caused burst detections by NeuroTrend plugin
- Fixed issue with colormap nomalization within EpiSource plugin
- Fixed issue which could cause a crash of EpiSource plugin caused due a wrong internal calculation
- Fixed crash in encevis viewer when user tried to open an defected EEG file
- Fixed issue of slow database insertions of markers within encevis viewer
- Misconfiguration of the database within the vendor interface can now be resolved by the user
- Fixed issue in encevis viewer, sometimes the configured database settings were not transmitted to the started plugins
- Fixed issue were it could have happend, that the control UI of a vendor interface gets outside the visible screen space
- Installer properly sets now properly user rights for Group of "Users" within %PROGRAMDATA%/AIT also in Windows 10
- Fixed distorted black triangle (indicating the currently selected marker) within encevis viewer if loaded EEG has very much channels
- Fixed an issue with PureEEG that could lead to a crash in case of electrode setups with very low electrode numbers and irregular configurations.
- Fixed issue with snap to marker functionality within NeuroTrend plugin
- Marker list in encevis viewer is now not loosing focus anymore on deletion of a marker
- Fixed issue in encevis viewer causing a crash when markers were highlighted
- Moving left/right with cursor keys withing the "Goto" field in encevis viewer is now possible again
- Fixed database delete and update issue on BLOBs (causing an query fail on prepared statements when the statement got to big)
- Fixed issue where auto start up could never be deactivated if no valid license was available
- Fixed issue in encevis viewer within the montage editor. Sometimes spaces were not handled correctly.
- Updated logging of operating system for Windows 10
- Fixed crash of vendor interface Micromed on file import in Micromed System Evolution Plus
- Fixed crash of Distributor caused by an opened "running plugins" debug widget
- Fixed issue within plugin EpiSource causing a abort of calculation when the input had an non integer sampling rate

- Fixed issue in encevis viewer where the plot in viewer always jumped back to the first EpiSpike/NeuroTrend marker during analysis of plugins
- Fixed issue where the "Associate files" dialog stayed opened in encevis viewer after adding a new patient/recording/file
- Fixed issue when a not apply able montage was set within plugin EpiSpike during analysis it could have happened that a warning dialog was appearing over and over again.
- It was not possible to add comments to spike markers generated by EpiSpike within the plugin during analysis. Adding comments is now not allowed anymore during analysis.
- Fixed issue which caused duplicate markers in a specific case on import of markers into a new database

V 1.5.6 (released on 2017-05-17)

- Fixed an issue were none-EEG data were were handled like EEG in MicromedInterface. Data read from the archive database is now filtered by the file ending "TRC", other files like video are ignored.
- Fixed an issue when reading Xltek files that could lead to the wrong start time shown in encevis viewer if a file contained more than one study entry.
- Fixed a crash of encevis Viewer when importing data into a new database was canceled by the user.

V 1.5.5 (released on 2017-04-27)

- Height of encevis NeuroTrend GUI elements was optimized.
- Fixed an issue where NeuroTrend showed BG Frequency and burst suppression when zero-data were sent to the plugin.
- A numerical instability in PureEEG for data with high dynamic range was solved.
- EpiSpike GUI now adapts the review time range automatically to the moving analysis end during online processing.
- Fixed an issue where detection results were not equal when produced with encevis Viewer and MicromedInterface.
- Improved support of EEG data with large DC components.
- Found a bug in micromed's SCORE interface when EEG files contain a pause. This bug causes Micromed SystemPlus Evolution to show the wrong time point in the EEG viewer. encevis now detects if EEG files contain a pause and blocks the "jump to EEG" command. The user gets informed when this case occurs.
- Sigma and Xltek files can now be opened by double click or drag and drop in encevis Viewer.
- Montage editor in encevis Viewer is now blocked when plugins are running.
- The recording date read in by a recording in encevis Viewer is now the default value for the Recording label.
- An issue was fixed in AITDistributor causing an unexpected error send to the caller when sending

EEG data.

- Montage editor in encevis Viewer now allows the definition of electrode names that contain any ASCII characters.
- A mechanism was implemented which checks the calculation flag for all plugins and all recordings in a regular interval.
- Improved an error message in encevis Viewer if Nicolet COM objects are not properly registered.
- Fixed an issue in AITInterfaceDLL which prevented plugins from starting properly.
- Markertypes defined in encevis Viewer are now deletable.
- encevis NeuroTrend now loads the background frequency results if other license than the full NeuroTrend license is present.
- encevis MicromedInterface is not creating a new recording when a patient is moved in Micromed SystemPlus Evolution.
- Fixed issue when encevis MicromedInterface was running in offline mode and the user started settings immediately after startup of encevis MicromedInterface.
- BSF files below file format version 1.04 are now supported again.
- Fixed an issue where encevis MicromedInterface was not able to reliably detect if the encevis Distributor is still reachable.
- Montage editor in encevis Viewer now does not allow the creation of a montage without name.
- Editing a marker gets aborted if the user changes a setting in a plot.
- "Jump to EEG"-messages from plugins are now ignored while the user is editing a marker.
- A crash was fixed when editing a marker in encevis Viewer.
- Fixed an issue where deletion of results did not work when sending a BeginTime message after startup of a plugin.
- Improved analysis time range suggestions in encevis Viewer when starting encevis EpiSpike.
- Fixed an error message in encevis EpiSource when the first electrode in the channel setup is not an EEG channel.
- Marker selection triangle in encevis Viewer works now properly for markers near the end of a recording.
- Fixed an issue in encevis AITInterfaceDLL which returned an invalid pointer when a plugin was already exited.
- Name of reference electrode in encevis Viewer is now restricted to 15 characters.
- Fixed an issue during patient deletion in EEG file management when the user closes the dialog with the window closing cross
- Fixed a crash occuring when the user tries to close EpiSpike before the GUI is fully initialized.
- Improved validation of selection time range in encevis EpiSpike GUI.
- Fixed a crash in encevis Viewer when a file was removed from the list of files while adding a patient.
- Fixed an issue which caused a jump of the timeline in encevis EpiSpike when calculating online.
- Fixed an issue in encevis MicromedInterface that caused jumps to wrong time points in Micromed

SystemPlusEvolution.

- Fixed a query in encevis EpiSpike which did not work properly when using a MS SQL database.
- Fixed an issue in encevis EpiSpike if no EEG electrodes are available after building the montage.
- Close button off split plot in encevis Viewer is now aligned with the remaining menu items.
- Fixed issue which caused a freeze of encevis Viewer when inserting a patient using MS SQL database.
- Changed default reference sent by encevis MicromedInterface from "Remote" to "Unknown".

V 1.5.4 (released on 2017-03-14)

- Fixed an issue with micromed online interface that could lead to instabilities of encevis
- Path to EEG files in micromed online interface now does not expect "micromed archive" in path name.
- Fixed issue where raised license warning dialog was blocking micromed interface
- Issue fixed in NeuroTrend which sometimes caused a crash on start up of the plugin when GUI was enabled

V 1.5.3 (released on 2017-03-06)

- Improved the process of adding new bundle licenses.
- Changes in the database handling of Micromed SystemPlus Evolution, based on the experiences in a hospital.
- Fix an issue that plugins might show "active" state after disconnection of network.

V 1.5.2 (released on 2017-02-24)

- Increased stability of file loading (problem with open file handles fixed, solved possible crash when loading Nicolet files)
- Fixed an issue where the scrollbar in encevis NeuroTrend could stop working
- Fixed an issue where encevis viewer sent two times the same data block to plugins
- encevis EpiSpike is now only setting the reference electrode for channels which are declared as EEG type
- Changing multiple values of a marker in encevis viewer works now properly
- Nicolet files can now be opened via drag an drop from the explorer onto the plot area of encevis viewer
- Significant perfomance increase for high number of results in the database. This was especially an issue on a heavy use of encevis EpiSpike
- Acknowledge for exitPlugin is now always properly sent by encevis Distributor
- In the montage editor of encevis viewer the order of montage chains can now be properly changed
- Fixed an issue, where it might happen that encevis NeuroTrend was sending its acknowledge for the plugin intial config message before sending the result info message

- Fixed an issue in encevis MoberInterface where the plugins where not properly exited on patient change

V 1.5.1 (released on 2017-01-30)

- Autostart mode of MicromedInterface can now be disabled
- Distributor can now locate plugins when MicromedInterface is started in autostart mode
- All NeuroTrend results will now be deleted in case of recalculate
- A bug was fixed causing a crash of NeuroTrend in connection with MySQL databases
- In case of database loss, EpiSpike displays a proper process range in the GUI

V 1.5.0 (released on 2017-01-23)

- Introduced encevis MicromedInterface, for real time calculation of EEG data currently recorded with Micromed System Evolution Plus
- User Interface for MicromedInterface providing information about the current calculation state of encevis plugins
- Added support for Nicolet EEG files
- encevis EpiScan can now be started with a user interface
- encevis Help is now provided as convenient PDF
- If a license is missing, encevis Viewer provides now a direct way to register a license
- Significant performance improvments on hight amount of spike markers detected with EpiSpike
- EpiScan is now not dependent anymore on reference electrode Pz
- Introduced a database loss mechanism, allowing to continue calculation of plugins without any interruption during runtime when the database is not reachable.
- NeuroTrend provides now a heart rate plot (only in NeuroTrend full version)
- The user interface of the LicenseTool was improved
- It is now possible to license and start plugins explicitly for purpose of calculation or for review or for both
- Bugfixes

V 1.4.1 (released on 2016-10-24)

- Bugfix, black cursor was not correctly displayed when starting NeuroTrend first without shown GUI and then later show GUI

V 1.4.0 (released on 2016-06-21)

- NeuroTrend aEEG plot improved
- Windows 10 now supported

- Performance significantly improved on high amount of markers in the marker list in EpiSpike and encevis Viewer
- Improved runtime of EpiSource in spike mode
- added XLTEK EMU40 headbox support
- Bugfixes

V 1.3.2 (released on 2016-05-19)

- Fixed error, when artifact removal was not working properly on EEG including DC component

V 1.3.1 (released on 2016-04-26)

- Bugfix LicenseTool

V 1.3.0 (released on 2016-04-11)

- Improved EpiSpike
- GUI for EpiSpike
- Neurofile (ITMed/Deltamed/Coherence) dataformat support
- Network licenses (floating licenses)
- encevis Viewer supports import of data from encevis databases
- encevis Viewer supports MS SQL
- Bugfixes

V 1.2.2 (released on 2016-02-12)

- NeuroTrend supports now new flags in configureWindow message
- Bugfixes (keep alive MySQL, table creation MySQL)

V 1.2.1 (released on 2015-11-11)

- DatabaseMigrationTool for transferring data between encevis databases of type Firebird Embedded, MySQL and MS SQL Express
- AITInterfaceDLL allows now string concatenated database configuration
- NeuroTrend has now MS SQL Express support

V 1.2.0 (released on 2015-09-07)

- overworked user interface in encevis
  - Markerlist in encevis

- Main UI in encevis
  - added possiblity for montage editing
- Introduced Burst Suppression feature in NeuroTrend
- overworked user interface in NeuroTrend
- Moberg Online Support
- Xltek file format support (beta version)
- allowing usage of central MySQL Server
- Bugfixes (increasing stability)

V 1.1.1 (release on 2015-08-27)

- Bugfixes (increasing stability)
- added CE

V 1.1.0 (released on 2014-10-03)

- Bugfixes (improving stability)
- general performance improvements
- Sigma file format support
- Moberg file format support
- Introduced BG EEG features in NeuroTrend

V 1.0.0 (released on 2014-02-24)

- first release of encevis