



SLEEPRT

SLEEPRT is the successor of BrainlaB, the successful software that has been used for many years in hundreds of Sleep Labs in Europe. Year-long experience, continuous research and the useful contribution of customers have aided OSG to offer now even more efficient, precise and practical tools to help the clinician with his busy work in the Sleep Lab.

SLEEPRT is available in various, flexible configurations: from recorders with a limited number of channels up to complete polysomnography systems with more than 60 channels. This flexibility makes SLEEPRT suitable for research as well as for clinical work such as screening OSAS patients and full sleep studies with synchronized video and multi-signal analyses. SLEEPRT is developed for adult, pediatric and neonatal sleep diagnostics.

SLEEPRT gives you direct access to different operations and features *at the time of the registration*. This Real Time (RT) character of SLEEPRT maximizes the system's performance, enhances your productivity and ensures a high level of patient care.

SLEEPRT functions the same way during recording as during review.



Signals, trends, events and video can be viewed during recording on any remote computer of the workgroup.



Detailed reports in Microsoft Word can be made during the registration, with a combination of graphs, tables and texts, according to your needs.



Auditory and visual alarm for SaO₂ and heart rate allows prompt and quick intervention in case of risk situations.

You can import signals from other recorders into SLEEPRT. All rich possibilities of SLEEPRT can be applied to e.g. EDF files. Each time an EDF file is read, a customized SLEEPRT protocol is applied. This way you can work with EDF registrations the same way you do with SLEEPRT registrations.

Exporting registrations in EDF format is possible as well, which gives you the opportunity to exchange data with other sleep centers. Export to MatLAB and ASCII facilitates in-depth research.

With SLEEPRT, the sleep laboratory can reach high efficiency, since it is very easy to review a registration that has been automatically analyzed. Features extracted from EXG (REMs, SEMs, Blinks, % Delta, % Alpha, Spindles and Background EMG) are used for making an automatic hypnogram. The manual hypnogram then is a result of a copy of (parts of) the automatic hypnogram, completed with manual scoring. Arousals are detected and automatically linked to other events, such as movements and respiratory events. All automatic detections can easily be overruled.

Multi-timebase displayers form a powerful visualizer which helps to find relationships between different phenomena. Displayers, event browsers, event panels and video playback all work synchronically. Positioning the cursor in one displayer results in an automatic display of the corresponding signals in other displayers, and in a repositioning of the event browser and the video.

Displayers, event browser, panels and video can form several different screen organizations. The user defines a combination of trends, according to his needs. This way, the trends become part of the screen organization. A click on one of these Mondrian icons changes the way the registration is presented.



The trends are the result of the following analyses:



ECG Analysis

Detection of RRs, Artefacts, Tachy- and Bradycardia
Trends : Heart Rate, PTT (Pulse Transit Time), Heart Rate Variability



Snoring Analysis

Input : Microphone, Piezo, Db meter and Filtering out of Cannula or out of CPAP
Detection of Snoring Events and Snoring Periods



Respiration Analysis

Detection of Apnea/Hypopnea
Input : Flow Sensors (Cannula, Thermistor, Pneumotach, Sum Volume, Filtered CPAP Pressure) and Effort Measurement (Inductive or Piezo)
Trends : Respiration Rate, Phase difference between Thorax and Abdomen



EOG Analysis

Detection of REMs, SEMs and Blinks



EEG Rhythm Analysis

Detection of Delta and Alpha Events and Spindles
Trends : % Alpha, % Delta, Number of Spindles/Page



Analysis of chin EMG and left/right leg movements

Detection of Background EMG
Detection of LMs (Leg Movement) and PLMs (Periodic Leg Movement)



Automatic Hypnogram

Detection of Arousals



Analysis of SaO₂ and CO₂

Detection of SaO₂ Dips and Hypoxical States, End Tidal CO₂ Amplitude
Input : Transcutaneous Measured CO₂, Capnograph
Trends : SaO₂ Level, CO₂ Level, CO₂ Amplitude



Spectral and Hilbert Analysis on EEG channels

Trends : Spectrogram, Relative and Absolute Power, Alpha to Delta, Fast to Slow, Fast - Slow/Fast + Slow, Average Amplitude and Dominant Frequency

Other trends and analyses:

Temperature analysis, pH analysis, Oesophagus pressure

