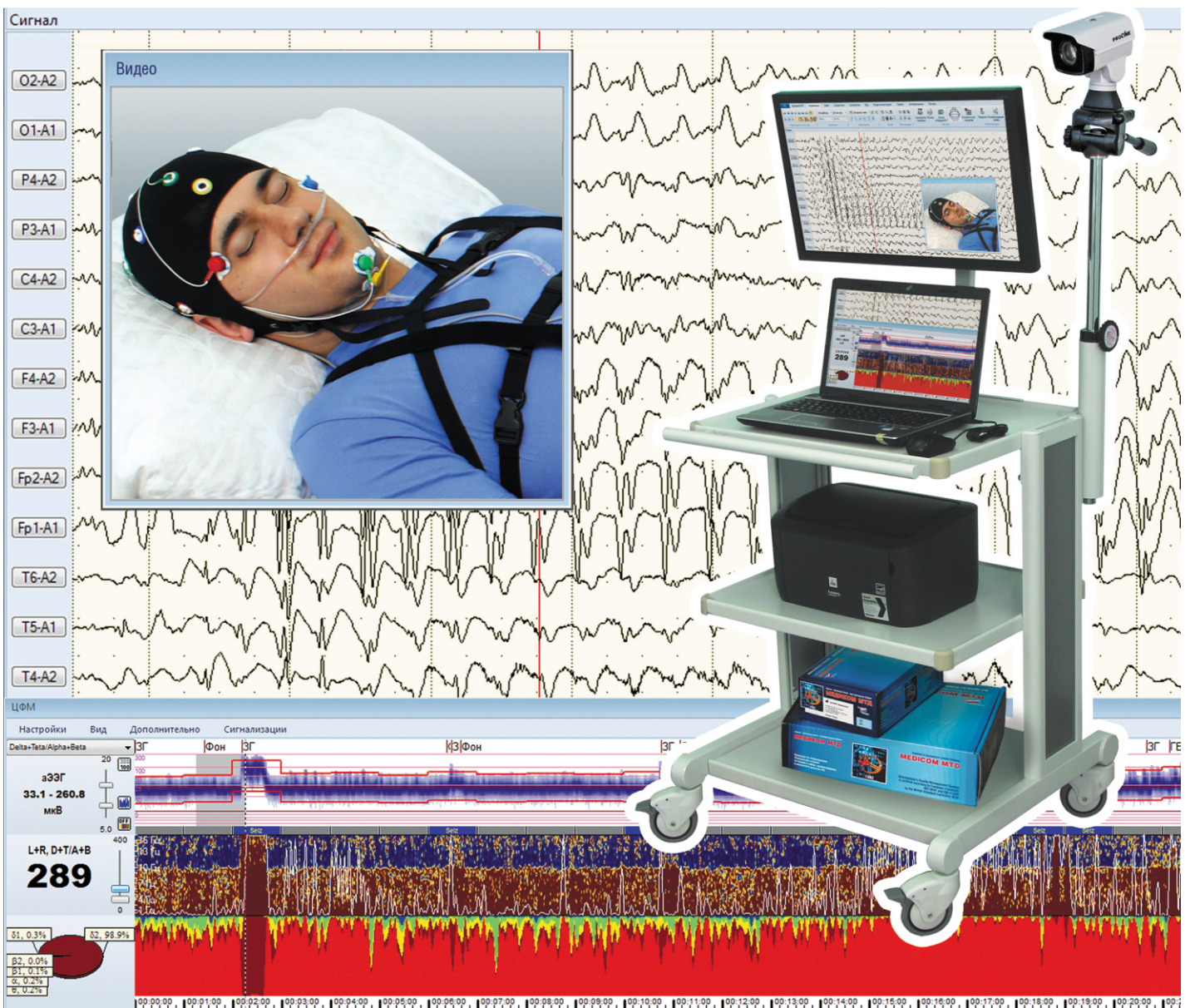


EEG videomonitoring equipment for epilepsy diagnosis

Completely synchronized continuous multichannel record of electroencephalogram and video on a patient's state is a "gold standard" for differential epilepsy diagnosis



Electroencephalographs "Encephalan" with kits of video equipment and "Encephalan–Video" software are the best tools for continuous EEG videomonitoring in different conditions of a study – in mobile, autonomous and stationary versions



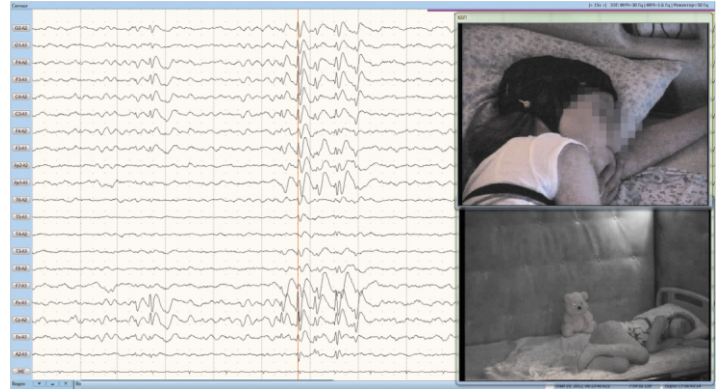
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Indications for continuous EEG videomonitoring

- Diagnosis of epilepsy and epilepsy syndromes.
- Idiopathic paroxysmal states, raising suspicion of epilepsy.
- Drug-resistant seizures (in order to identify pseudoepileptic paroxysms or specify the form of epilepsy).
- Monitoring the effectiveness of treatment.
- Pharmacological remission (objective statement of remission).
- Preparation for the cessation of anticonvulsant therapy.
- Pre-surgical assessment.
- Subclinical seizures.
- Progressive cognitive and behavioral disorders in children.
- First convulsive seizure.

"EEG videomonitoring in modern diagnosis and monitoring the treatment of epilepsy"
Avakyan G., Anisimova A., Ayyazyan S., Generalov V.



The essence of the method is a continuous EEG record, synchronized with the video recording of the patient.

Electroencephalographs "Encephalan-EEGR-19/26" are effective for continuous EEG studies with a kit videomonitoring equipment and software "Encephalan-Video"

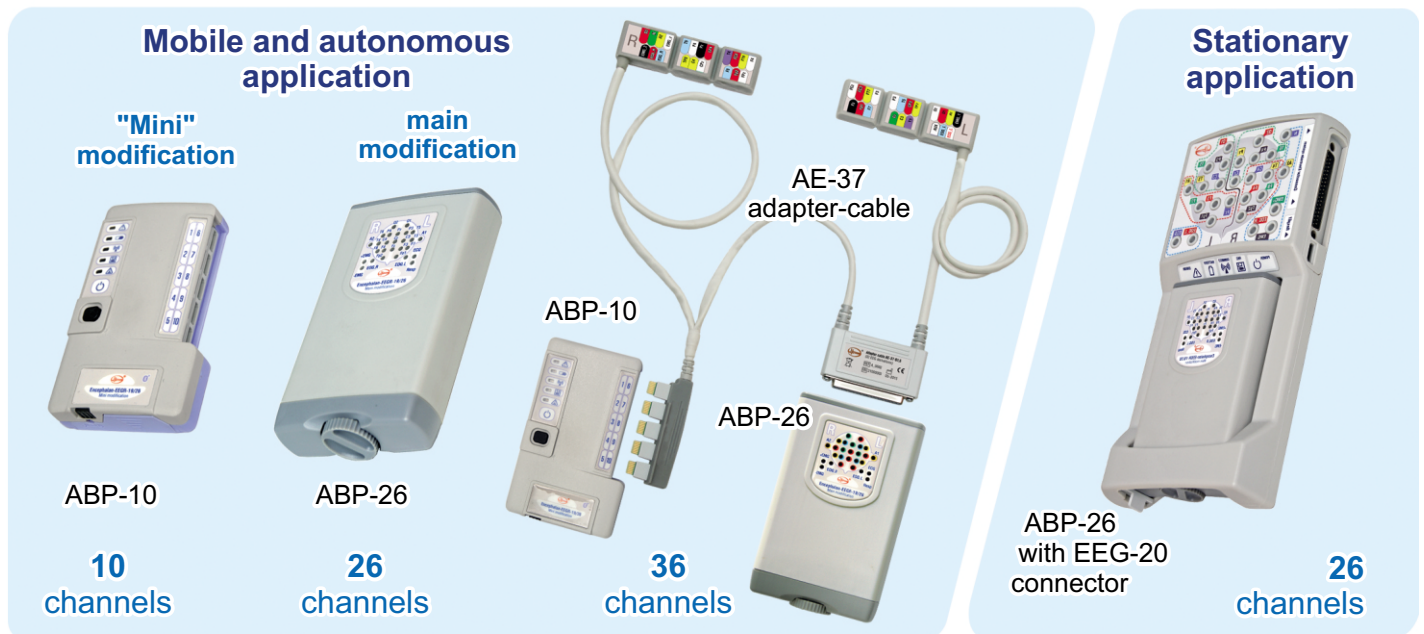
Applications:

■ **Continuous telemetric EEG monitoring** when autonomous patient transceivers-recorders ABP-10, ABP-26 or ABP-26 together with ABP-10 (in the "Poly-10" mode) are placed on the patient's belt.

■ **Continuous EEG monitoring with the patient cable** (6 meters) for electrode systems from the "Encephalan-ES" kit attached to the connector EEG-20 with patient transceiver-recorder ABP-26.

Conducting and repeating (during the study if necessary) provoking functional tests (phono, photostimulation, hyperventilation, medical test, etc.) followed by the continuous EEG monitoring are available for all applications.

EEG electrodes of various types with touchproof connector can be connected to the EEG-20 connector and AE-37 adapter-cable in **stationary application** of patient transceiver-recorder ABP-26 and **mobile application** of ABP-26 together with patient transceiver-recorder ABP-10.



Set of EEG electrodes ES-EEG-10/20 "Encephalan-ES"

Low level of high-stable EEG electrodes and fixing slots for their attachment, and comfortable elastic net cover caps ensure **high quality of EEG record and patient's comfort at continuous studies.**

Electrode system and electrode cap may be separated, which makes their cleaning, service and maintenance much easier. Each type of electrode system has **three versions – adult, children, and baby.** Each version has five corresponding sizes of caps (15 sizes in all — from 34 to 66).

Variants of electrode systems with cup adhesive EEG electrodes are provided.

Mobile

Meant for continuous EEG videomonitoring in usual patient's environment – both in a hospital ward and at home

During the study, the patient can sleep, eat, read, watch TV, play, etc.

A doctor monitors the patient's state and the quality of EEG recording.

Due to the compact size of the equipment, mobile kits for EEG videomonitoring can be easily placed in the intensive care units or resuscitation department and will not cause difficulties for staff in caring for seriously ill patients.



Autonomous

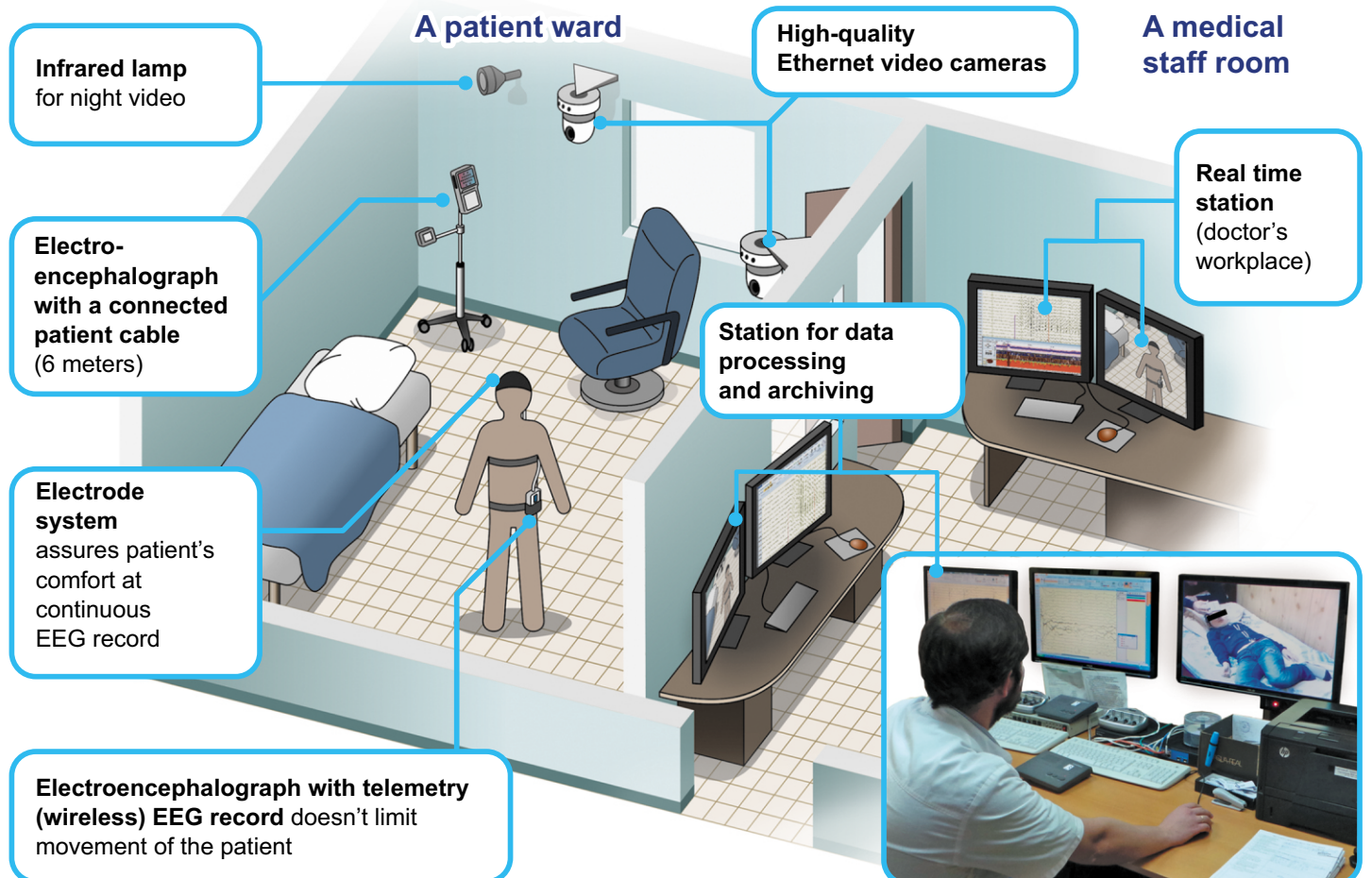
Original autonomous video recorders provide recording of video data on a memory card and its synchronization with EEG recorded by electroencephalographs "Encephalan-EEG-19/26", which sets up an innovative level in ambulatory video-EEG / PSG studies.

EEG is recorded on the built-in memory card of the electroencephalograph-recorder. When conducting a study, timestamps are saved on the memory card of the patient transmitter-recorder, and also transmitted via bluetooth wireless channel to video recorder for synchronization with the video data.

Copying synchronized data from the electroencephalograph memory card and video recorder to a computer provides processing and analysis of the results of autonomous EEG videomonitoring.

Kit of equipment for autonomous videomonitoring provides unattended EEG / PSG / video studies during patient's sleep.

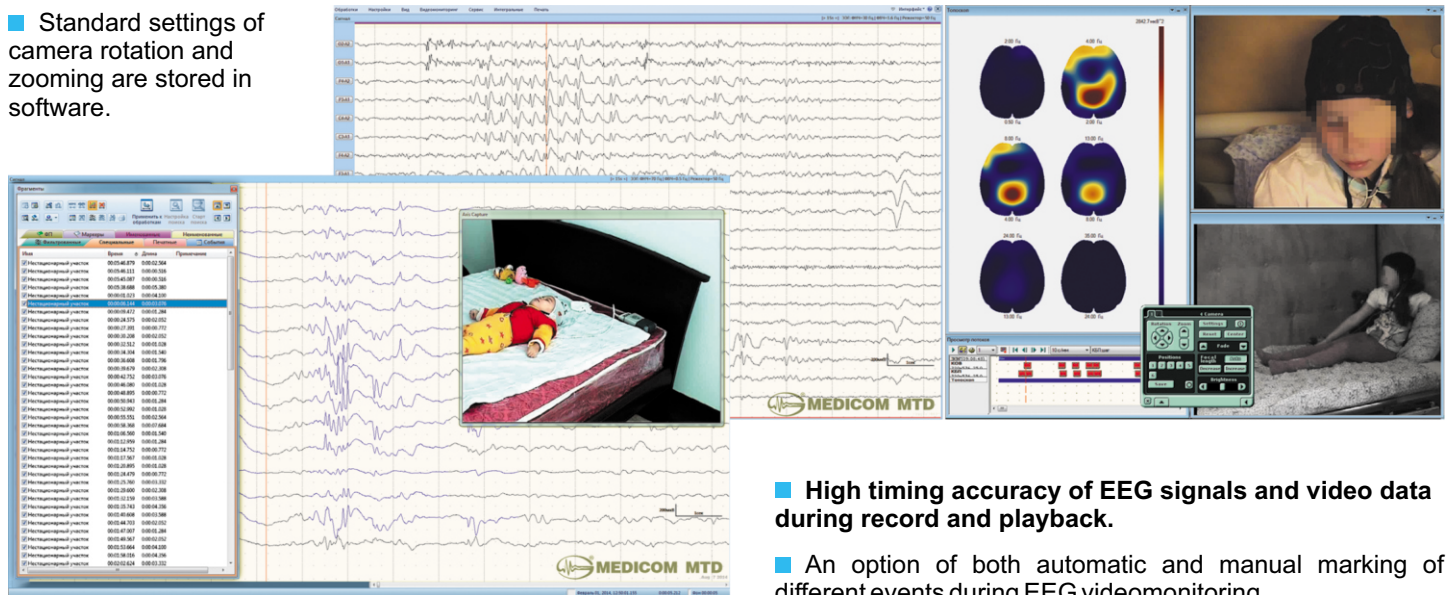
Stationary



Main options of "Encephalan-Video" software

- View of EEG and video record during monitoring or analysis can be carried out on 1 or 2 monitors.
- Variants of video speed – normal, speeded-up or slowed-down, and freeze-frame.
- Video camera rotation and zoom – software-controlled, from a PC keyboard.

■ Standard settings of camera rotation and zooming are stored in software.



- High timing accuracy of EEG signals and video data during record and playback.
- An option of both automatic and manual marking of different events during EEG videomonitoring.

■ Quick access to the video frame corresponding to the selected time on EEG record, and any EEG fragment corresponding to the selected video frame is provided. Access is also possible by markers or timestamps.

■ Automatic detection and marking of fragments of non-stationarities or epileptiform activity is performed during EEG recording and processing. Detected fragments are highlighted, saved and available for quick search.

■ Record of ECG, EOG and EMG synchronously with EEG provides automatic suppression of possible artifacts associated with cardio signal, eye movements and muscle activity, and helps to distinguish these artifacts from the manifestations of paroxysmal activity.

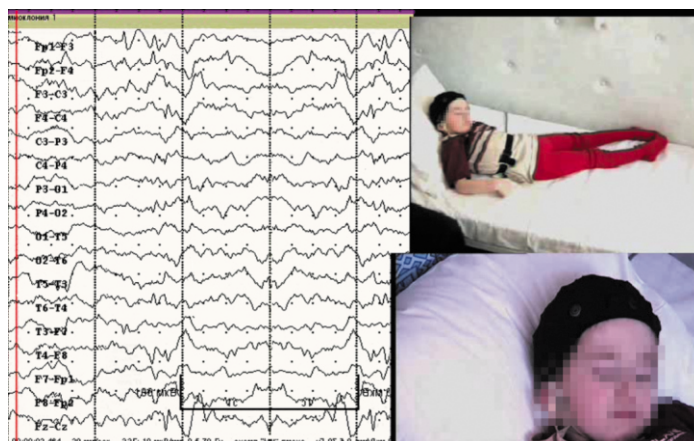
■ Automatic report generation based on the description of the selected background fragment and comparison of its characteristics with the selected EEG fragments. An option of editing the report and forming neurophysiological conclusion using the function of built-in text editor and a glossary containing common phrases used by a doctor.

Special functions for viewing results on a third-party computer

■ Specialized application "Encephalan-EEG-Viewer" to view EEG and video data

Provides main functions of visual EEG analysis such as data review, referential montage, zoom, selection of EEG signals and printing out required files.

Application and study results are recorded onto any data-storage device – removable hard drive, CD-DVD or USB drive.



■ Making up video clip with diagnostically significant study fragments

The software "Encephalan-Video" allows presenting results of EEG videomonitoring as a video clip in the common *.avi format.

The video clip can be viewed with standard Windows Media player or any similar one.

The video clip can contain diagnostically significant EEG fragments, video data of one or two video cameras, audio data from patient's and doctor's microphones, and a timer.

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