



www.armor-project.eu
Grant Agreement no: 287720

**ADVANCED
MULTI-PARAMETRIC
MONITORING AND ANALYSIS
FOR DIAGNOSIS AND OPTIMAL
MANAGEMENT OF EPILEPSY
AND RELATED BRAIN
DISORDERS**



European Commission
Information Society and Media



ARMOR PROJECT

ARMOR combines clinical and basic neuroscience research with advanced data analysis and medical management tools for developing novel applications for the management of epilepsy.

ARMOR offers an ambulatory, diagnostic and long-term monitoring services achieving in-hospital quality standards, and addressing conventional "routine" clinic-based service purposes, at reduced cost and increased geographical availability, and with enhanced capability through multi-parametric data collection.

In ARMOR monitoring is flexible and optimized for each patient and is tested in several case studies and evaluated as a wide use ambulatory monitoring tool for seizures efficient diagnosis and management including possibilities for detecting premonitory signs and feedback to the patient.

OVERVIEW & ACHIEVEMENTS

ARMOR overview

Depending on the type of epilepsy, different brain and body parameters need to be assessed to have a better understanding of the patient's state of health and to adapt the medical treatment accordingly.

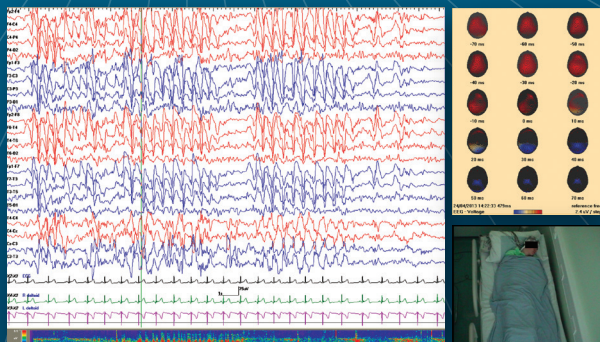


Fig. 1: Generalised spike-wave activity in stage 2 of sleep. Video EEG with voltage mapping analysis (St Thomas' Hospital, KCL)

Our goal is to develop a personalized system that assists in diagnosis, prognosis and treatment of the disease. Such a system should be non-invasive, mobile, continuous and unobtrusive and all possible security and privacy aspects should be taken into account.

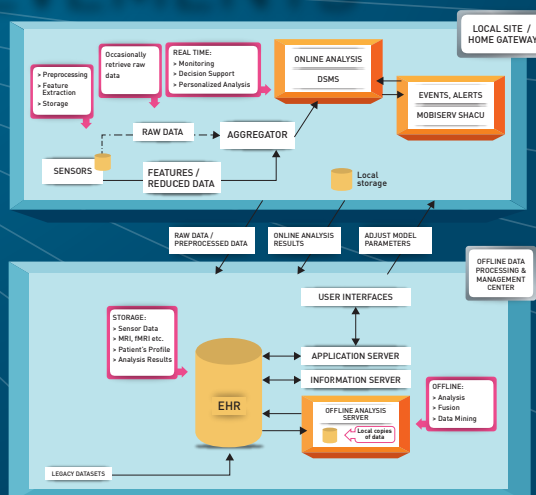


Fig. 2: ARMOR general view: ICT components.

EHR - Electronic Health Record

DSMS - Data Stream Management System

ARMOR achievements

Comprehensive analysis of seven possible scenarios of ARMOR usage:

1. Epilepsy or non-epileptic paroxysmal events
2. Delineation of clinical EEG expression of epilepsy types
3. Follow up – medication evaluation
4. Protection from seizures (on-line)
5. Research on signs of idiopathic generalized epilepsy
6. Pre-surgical evaluation
7. Nocturnal seizure

ARMOR sensors and middleware

- Define the most efficient and beneficial sensors for recording all required physiological data.
- Develop and implement HW security algorithms to guarantee the privacy and security of patient's data
- Develop procedures to collect and integrate real time data from various sensors
- Define middleware components and their interfaces

Services

- Access to, management and processing of medical data
- Real time alerts for critical situations by communicating necessary information to doctors and caregivers
- Patient ability to activate – deactivate ARMOR
- Central storage of collected data to the Offline Data Processing and Management Centre
- Data processing algorithms and database detect critical events

CONSORTIUM



SPAIN



GREECE



GREECE



U.K.



CYPRUS



GREECE



GREECE



GERMANY

Project coordinator: Dr. Narcís Avellana (narcis.avellana@sensingcontrol.com)