



**Title:** EHTNA - E-Health nella Terapia Neuromotoria Assistita  
(E-Health in assistive neuromotor therapy)

**Duration:** 15 months

**Start date:** september 2019

**Closure date:** november 2020

**Admissible costs:** 446.725,00 €

**Co-founder:** PO FESR SICILIA 2014-2020 - Azione 1.1.3

**Partner:** MCS srl  
KATAMEDICA srl



**Project description:**

This project has the specific goal of creating an integrated and modular technological platform, capable of delivering and at the same time evaluating and interpreting different types of rehabilitation therapy. In particular, this system will provide for the acquisition of a series of biomedical signals in real time from the patient, together with the execution of exercises aimed at improving the patient's health.

For this purpose, the platform will include the following components:

1. exoskeleton designed for neuromuscular rehabilitation and facilitating the recovery of walking of patients affected by paresis and hemiparesis;
2. dynamic analysis system of posture and gait;
3. wireless helmet for the acquisition and transmission of electroencephalography (EEG) signals;
4. acquisition system of surface electromyographic signals (EMG);
5. monitoring of biomedical parameters closely related to the patient's psycho-physical state;
6. user interface on PC for patient management and integration and processing the various acquired signals;
7. classifier that, based on the parameters calculated on the acquired signals, provides an overall assessment of the effectiveness of the rehabilitation session, thus providing suggestions for the definition and possible optimization of the rehabilitation path of the patient.

The proposed overall system will allow patients to attend rehabilitation sessions by receiving real-time biofeedback, obtained through the measurement of various physiological systems. A control system will analyse the measured data to verify the correctness of the rehabilitation procedure. The system will also allow the remote transmission and evaluation of the acquired data to facilitate consultations between structures and provide the patient with continuity of therapy.



**Regione Siciliana**  
Assessorato Regionale delle Attività Produttive  
Dipartimento Regionale delle Attività Produttive

