



Projet FP7 – COMMODITY 12

Nom du projet	COtinuous Multi-parametric and Multi-layered analysis Of Diabetes Type 1 & 2 – COMMODITY 12
Call	ICT-2011.5.1 Personal Health Systems
Type de projet	Collaborative project
Rôle de la HES-SO	Participant
Chercheur impliqué	Michael I. SCHUMACHER (HES-SO Valais Wallis)
Participants	Deutsches Forschungszentrum für Künstliche Intelligenz (Germany) – Coordinateur; Hospices cantonaux CHUV (Switzerland) ; Centre national de la recherche scientifique (France); Royal Holloway and Bedford New College (United Kingdom); Portavita (Netherlands); Uniwersytet Medyczny W Lodzi (Poland); Bodytel Europe (Germany); Imperial College of Science, Technology and Medicine (United Kingdom) ; Haute Ecole Spécialisée de Suisse occidentale (Switzerland).
Budget global	5.05 mio euro / financement UE : 3.72 euro
Durée	36 mois, début le 1.10.2010
Résumé	<p>In COMMODITY12 we will build a multi-layered multi-parametric infrastructure for continuous monitoring of diabetes type 1 and 2. The COMMODITY12 system will exploit multi-parametric data to provide healthcare workers and patients, with clinical indicators for the treatment of diabetes type 1 and 2. COMMODITY12 will focus on the interaction between diabetes and cardiovascular diseases. To address the 5.1b) Challenge under the FP7 ICT 7th, we propose a four-layered platform structured as follows:</p> <ul style="list-style-type: none">• Body Area Network Layer (BAN): this layer will employ sensors from the BodyTel PHS and additional Bluetooth sensors to monitor the patient physiological signals. This layer will perform multi-parametric aggregation of data for the Smart Hub layer.• The Smart Hub Layer (SHL): the BodyTel PHS at this layer receives aggregated data from the BAN and applies machine learning to classify the signals and provide indications about abnormalities in the curves. SHL will communicate with DRR over

the cell-phone network.

- The Data Representation And Retrieval Layer (DRR): this layer, based on the Portavita PHS to manage EHR, interfaces to the SHL and utilises existing medical data to perform information retrieval and produce structured information for the agents at the AIL.
- The Artificial Intelligence Layer (AIL): this layer uses the DRR layer to retrieve structured background knowledge of the patient for intelligent agents applying diagnostic reasoning to the patient's condition.

The system will be validated with diabetes (type 1 and 2) with a pilot in the form of a trial. The project outcome will aim to curb diabetes hospitalisation costs and to curb the percentage of diabetic patients experiencing cardiovascular complications. The main focus of our platform in Challenge 5.1 b) will be on correlating the multi-parametric data with established biomedical knowledge to derive clinically relevant indicators.

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