

**VEADISTA: Remote watching and intelligent alert**

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**Purpose** The project entitled VEADISTA (Veille A DISTance et Alerte Intelligente) is based on information and communication technologies (ICT) and aims to develop a technological and low-cost solution to facilitate remote monitoring of heart rates and temperatures of frail elderly patients or patients with chronic diseases. This solution is characterized by an automated alert system, and is capable of analyzing physiological data, to provide early detection of health problems, and thereby limit the consequences of acute problems<sup>1</sup>. This technological solution will be presented as a single piezoelectric patch on the chest that will determine heart rate and temperature. **Method** The VEADISTA project includes several phases spread between project stakeholders. (Oberthur company, Entr’ouvert company, IM2NP laboratory, Stid company, CIU-santé). It has moved from the specification of specific uses to the development of sensors. It also includes RFID architecture as well as provides clinical validation and data analysis (Figure 1). RFID technology will be used to allow the power sensors to use radio waves. We will also take advantage of the progress of RFID in terms of retro-modulation for wireless communication from the transponder to the reader and use of integrated circuits. Specific cases selected for heart rate monitoring rely on various clinical situations ranging from management of a patient with chronic heart failure, to arrhythmia diagnosis, or atypical chest pain. **Results & Discussion** The first stages of the project have been completed, including selecting uses, determination of the current patient conditions and the technology used for the patch. This technology will use a resistive sensor (piezoelectric) for heart rate monitoring and a thermistor sensor (metal oxide) for temperature monitoring. The RFID transponder and the sensors will be integrated on the same patch. The dimensions of the patch will be 5cm×10cm and the weight of the order of tens of grams. The second stage will consist of a clinical validation of the VEADISTA technology, which will start in May 2015 and will be based on clinical experimentation on patients entire profile will encompass the selected uses. Subsequent results will be presented at the end of the project. This remote monitoring, if proven effective, creates many opportunities on a semiotic and epidemiological approach to fever, some that has never been conducted outside of an intensive care unit (ICU) and probably with present new findings and innovative perspectives.

**References**

1. Patel S. *Journal of Neuroengineering and Rehabilitation* 2012;20(April 20);9:21; doi:10.1186/1743-0003-9-21

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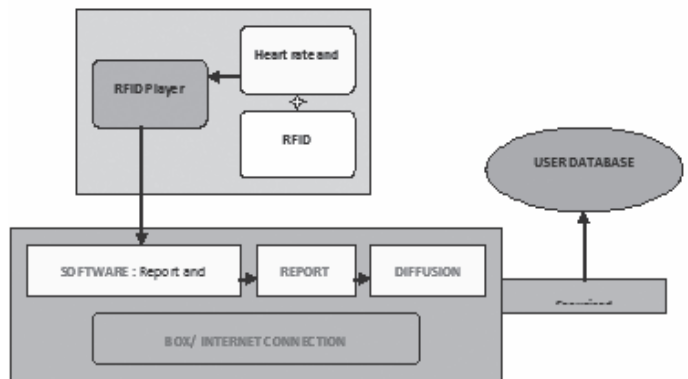


Figure 1: Scheme of the system architecture