



News release

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Start of European project in cardiology for chronic patients Portuguese and German consortium initiates development of innovations in wearable technology

Heidelberg, 16th of August 2016 - The European consortium composed by IncreaseTime, Inova DE GmbH, the Institut für Textiltechnik of RWTH Aachen University (ITA) and the Cardiovascular Research and Development Centre of the Faculty of Medicine, University of Porto (UniC) has initiated the CAST project, funded within the framework of the Eurostars Programme. The project has begun June 2016 and it will tackle the vast and growing chronic cardiac patients market with an innovative wearable shirt and telemedicine service.

Heart diseases are the leading cause of death for both men and women of all ages. In particular chronic atrial fibrillation in the current aging population is an evident problem which will become a crisis in the next 5 to 10 years. Furthermore, patients prefer both personalized healthcare and independent self-monitoring, and wearables are becoming increasingly common. Undetected cardiac issues due to the lack of post-hospitalization monitoring demands relevant innovations in healthcare.

The consortium of four Portuguese and German organisations has joined in this project to develop solutions for cardiology. The two SMEs and two research institutes intend to create a shirt to analyse cardiac signals for continuous real time monitoring of patients that positively impact risk assessment and hospitalization. The *CAST - Cardiac measuring Shirt for Telemedicine* - project will address the growing cardiac problem with a seamless solution to facilitate the interaction between patients and cardiologists, while regarding the high standards of quality in medicine that the consortium adheres to.

The beneficiaries of electrophysiological measurements include patients that require the monitoring of long term, chronic conditions (e.g. atrial fibrillation); Patients in rehabilitation following trauma/surgery; and general patients in need of assistive technology. Cardiology and healthcare institutions are the patrons of the product and service as they can continuously monitor their patients remotely, effectively discharging them home from the healthcare institution. Patients will benefit from greater autonomy and shorter hospitalization; and healthcare givers can continuously monitor the patient regardless of their location, with adequate emergency signalling and recording.



In short the objectives of the project are:

- Creation of a wearable shirt with adequate ECG monitoring sensors;
- Extraction of relevant parameters for storage and on-line transfer;
- Real-time monitoring of the health status;
- Creation of telemedicine and assistance system.

The CAST project will therefore create a novel product and service geared towards patient comfort without neglecting the cardiologists needs of quality ECGs and assistance options. The shirt contains in fabric embedded state-of-the-art ECG sensors and a device to collect, pre-process, save and send data to a web-platform for intelligible visualization of health information telemedicine and assistance options. With the shirt and service we will positively impact the patients' quality of life in a more effective and efficient way than other methods or systems available on the market. It is perceived that this technology has a big market potential and high positive impact to patients of both chronic cardiac as well as temporary maladies.

The project will run until the end of 2018, by which the consortium is expected to make a market presentation of their innovative product.

The project is supported by Eurostars (E!10291) and the national funding agencies BMBF and ANI.



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About the partners:



Inova DE GmbH is an R&D company specialized in medical software and hardware development. Inova develops software for multiple applications in medicine and healthcare, working close with medical doctors and end users to achieve the best results. With this transversal approach to the healthcare market we achieve the highest degree of usability and user satisfaction. Other projects in which Inova DE pursues include software for oncology, automated solutions for hospital logistics, Web platform for Ambient Assisted Living, Orthopedic Robots and Image-guided surgery solutions. The Inova DE personnel are experts in medical software development following the appropriate norm (DIN EN 62304), while over five years of experience in the R&D field. Our service of Innovation Management offers small and medium sized companies additional support for managing innovation projects such as this project. Please find further information at www.inova-de.eu



IncreaseTime core business is to promote the quality of life of the general population, with special focus on patients with chronic diseases and on the independent, active and quality ageing. IncreaseTime develops healthcare solutions based on ICT and wireless sensors networks for the domestic market or care homes. Whether the elderly person is living in the institution or is staying at home, their solutions allow a permanent monitoring of patient health state and through a leading edge alarm system allows a quick intervention in case of an emergency. At the moment, the targets are Institutions such as nursing homes, day care centers and senior residences, home care companies and elderly or disabled persons. Please find further information at www.increasetime.pt



The *Institut für Textiltechnik (ITA)* belongs to the elite university RWTH Aachen. Its core expertise consists of textile related production technologies and high performance materials. With the Centre for High Performance Materials ITA offers small and medium sized companies direct access to scientific research especially in the fields of high modulus fibres and composites. ITA provides research and development services and advanced training and creative workshops in cooperation



with its partner company ITA Technologietransfer GmbH. Furthermore, ITA graduates students in various textile related courses.

Please find further information at www.ita.rwth-aachen.de



The *Cardiovascular R&D Centre of the faculty of Medicine, University of Porto* (UnIC) was created to fill the gap in translational research of cardiovascular (CV) disease. UnIC assembles investigators from several Departments of FMUP and Centro hospitalar de São João (CHSJ) combining basic and clinical sciences to achieve a solid translational and integrative perspective, in a bench-to-bedside-to-bench approach. CV diseases are a highly relevant medical and socioeconomic research topic since they are the first cause of death in Portugal and one of the main causes of deterioration in quality of life, particularly amongst the elderly. UnIC is the unique Centre devoted nationwide to this topic. Our goal is to focus in particularly new and highly relevant medical issues in the CV disease field, such as the development of biomarkers for heart failure, the application of new cardiac imaging modalities and technologies to the early diagnosis of CV, the understanding of the pathophysiology, and prognosis of CV in general, as well as the contribution to new treatment strategies based on innovative technologies, as a result of a joint effort of basic, clinical and engineering researchers. UnIC also hosts a Doctoral Programme in Cardiovascular Sciences and a Master's programme in Cardiovascular Pathophysiology.

Please find further information at <http://unic.med.up.pt/>