

# SMARTBEAT – SMART SYSTEM FOR THE MANAGEMENT OF HEART FAILURE IN OLDER ADULTS



## OVERVIEW

Heart Failure (HF) is a chronic condition associated with high mortality, morbidity, healthcare costs, and recurrent hospitalizations, especially due to the progression of the disease, poor adherence to diet and medical therapy, and limited patient support.

Clinical decompensation can be preceded by changes on several physiological parameters such as heart rate and rhythm, body weight, crackles, and blood pressure. Monitoring these vital signs may allow an early detection of decompensation episodes, providing a window of opportunity for timely interventions to prevent hospitalization. Addressing the needs of senior Heart Failure patients and their formal and informal caregivers, SmartBEAT offers an integrated solution to leverage patient self-care through autonomous condition monitoring and real-time feedback to their carers.

## OBJECTIVES

The SmartBEAT solution will be a mobile HF telemonitoring kit, which uses communication technologies and sensing devices to remotely monitor several clinical variables of HF patients considered essential by expert cardiologists, such as physical activity levels, weight, blood pressure, pulmonary congestion (identification of crackles), heart rate and rhythm, and therapeutic compliance.

The main aim is to create a user centred, integrated mobile solution to leverage patient self-care. Since many older adults do not recognize the value of self-care and daily condition monitoring, SmartBEAT will also motivate the user through integrated condition validation, tailored interfaces and health status questionnaires.

Another focus of this project is to include support applications for the communication between the patients and both their formal and informal carers. A system intelligence component will be capable of an overall approach where patients and caregivers can define their interests and receive valuable information from several information resources.

## IMPACT & CONCLUSIONS

This project is focused on developing useful and realistic services that encourage early discharge and reduce hospital admissions and institutional care. This will optimize quality of HF care, as well as provide an enhanced quality of life for senior HF patients. The project is still on an early stage of development. The first results are expected during the second half of 2016.

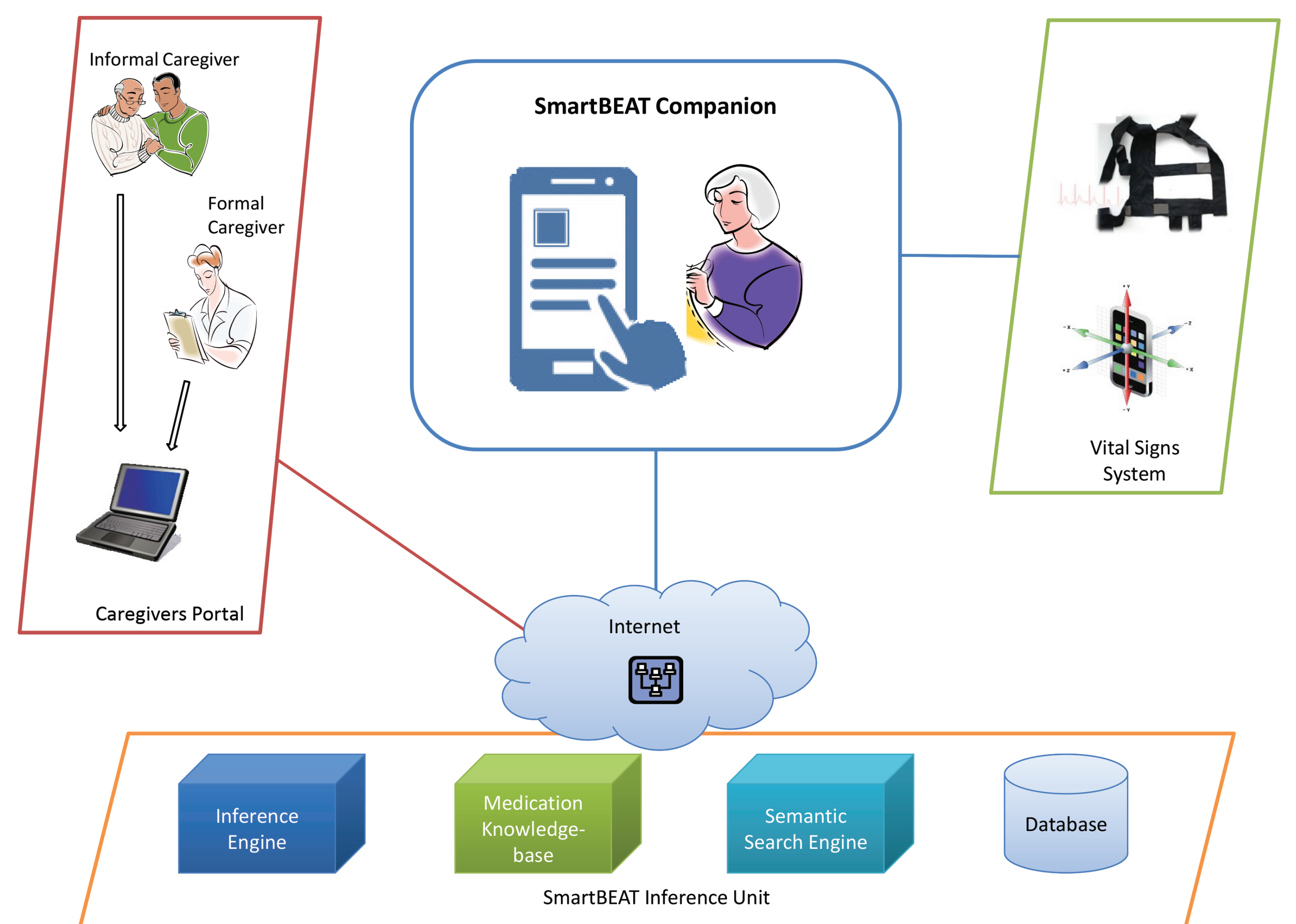


Fig1. Schema of the integration of the four components of SmartBEAT.

## PARTNERS

Fraunhofer Portugal (Coordinator) – Portugal; Centro Hospitalar São João – Portugal; Faculdade de Medicina da Universidade do Porto – Portugal; Remedus – Belgium; Verhaert New Products & Services NV – Belgium; Seniornett Norge – Norway; LifeonKey – Israel; VigiSense S.A. – Switzerland; KempenLIFE – The Netherlands; Stichting Smart Homes – The Netherlands;

## ACKNOWLEDGEMENTS

