



PROJECT:

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PREVENTIVE CARE INFRASTRUCTURE BASED ON UBIQUITOUS SENSING - PRECIOUS

The PREventive Care Infrastructure based On Ubiquitous Sensing (PRECIOUS) project aims to develop a preventive care system to promote healthy lifestyles, which is comprised of three components: (1) transparent sensors for monitoring user's health indicators (food intake, sleep and activity) that deliver ambient data about current user behaviour; (2) users are represented by individual virtual models, which infer health risks and suggest behaviour changes; (3) state-of-the-art motivational techniques, originating from gamification and motivational interviews, to trigger a set of feedback tools to change user habits toward more healthy behaviour.

While related projects usually focus on developing specific sensors, middleware solutions, health monitoring systems, eHealth services, etc., both the individual virtual model, and the associated motivational tools will provide key innovation steps towards a preventive care system with measurable impacts on user behaviour. Thus, there is a clear potential for large scale commercialisation and sustainable societal footprint (e.g. with respect to cost saving in the public health sector, as well as quality of life improvements).

To reach these goals, the PRECIOUS consortium gathers partners from academia, SMEs and hospitals with comprehensive expertise in networking, pervasive sensing, cognitive analysis, nutrition research, semantic technologies, psychological theory and motivational techniques. We have chosen to focus on type II diabetes prevention as a central use case; however, our prototype will be easily adaptable to other lifestyle-induced diseases and their risk factors.

The system will not only detect and communicate detailed early warning signs, but also provide forecasts of future developments and secondary health-related complications (if change recommendations are not followed). Extensive lab and field-based user trials will demonstrate the efficacy of the PRECIOUS system and prove its positive and lasting impact on individual quality of life, as well as the public health sector by reducing the expenditure.

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