



Project Profile

ESTABLISH

Converting sensor data into actionable information to improve quality of life

Smart adaptive services that provide real-time feedback and are tailored to specific user and application needs – this is the aim of the ITEA project ESTABLISH that will close the complete chain from sensor to application: collecting, enriching, interpretation, extrapolation and feedback.

ADDRESSING THE CHALLENGE

Sensors are becoming abundant in our environment and have a huge potential for application in tailored, specific and even individualized services to improve the quality of life. However, smart adaptive services based on IoT technologies are still in their infancy, rendering their full potential untapped. The objective of the ESTABLISH project (Environmental Sensing To Act for a Better quality of Life: Smart Health) is to convert environmental (sensor) data into actionable information for users to provide a healthier and safer environment, thereby improving their quality of life.

PROPOSED SOLUTIONS

ESTABLISH will propose smart adaptive services that provide real-time feedback tailored to specific user and application needs. These services will be developed by combining networked sensors and other data sources. In this way, ESTABLISH closes the complete chain from sensors to applications: collecting, enriching, interpreting, extrapolating and getting feedback. The main application scope of ESTABLISH is products, services and solutions for individuals. These applications will utilise environmental sensors (e.g. air quality, noise, heat, temperature) and combine the environmental data with other data sources. The main technological innovations will focus on developing reliable alignment and deployment methods for



Improving the quality of life by going from monitoring to managing the environmental conditions

self-awareness and self-adaptability tuned to the specifics of the sensor data collection domain. This includes true application of prescriptive analytics; design of data formats and protocols applicable to cloud management to enable the creation of a data platform for sharing all relevant (sensor) data; and meta-models that take sensors into account in the modelling of the business processes and transforming these models into SaaS applications.

PROJECTED RESULTS AND IMPACT

ESTABLISH will enable a shift from monitoring the indoor and outdoor environment to managing the environmental conditions for individuals

and thus improving their quality of life. The technological developments in ESTABLISH will lead to a wide range of new services and products that are all based on environmental sensors like 1) Optimized city and mobility planning, 2) Developing smart HVAC (Heating, Ventilating, and Air Conditioning) systems that ensure a healthy indoor environment, and 3) Promoting independence of specific vulnerable groups. Therefore, ESTABLISH will create new business opportunities for sensor manufacturers, service providers, software developers, health organizations, health insurance companies and HVAC manufacturers.

**Project start**

September 2016

Project leader

Kaisa Vehmas, VTT

Project website<http://www.vtt.fi/sites/ESTABLISH>**Project end**

December 2019

Project email

kaisa.vehmas@vtt.fi

ITEA is the EUREKA Cluster programme supporting innovative, industry-driven, pre-competitive R&D projects in the area of Software-intensive Systems & Services (SiSS). ITEA stimulates projects in an open community of large industry, SMEs, universities, research institutes and user organisations. As ITEA is a EUREKA Cluster, the community is founded in Europe based on the EUREKA principles and is open to participants worldwide.