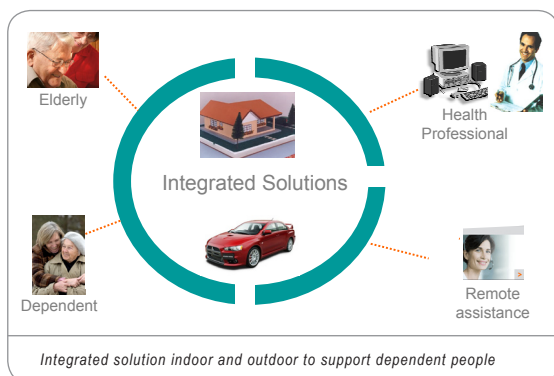


Project Profile

MIDAS: Multimodal Interfaces for Disabled and Ageing Society

Tailoring solutions based on friendly, adaptive interfaces



The primary goal of the MIDAS project is to develop complete and intelligent solutions, making use of different types of sensors, actuators and connectivity technologies to provide customised support to all people in need of assistance, according to their own specific situation – age, handicap, etc. – in a non-intrusive and respectful way. This will be achieved by means of friendly adaptive interfaces, both indoors and outdoors, designed to overcome the natural scepticism and unease of ageing people with respect to technology.

Population ageing was once a concern only of the most developed countries but now the process is set to accelerate. The proportion of older people is projected to grow more rapidly and the prevalence of disability increases significantly with age. Today it is clear that this transformation affects individuals, families, communities and nations, and may have profound consequences for European economies.

HOME AND DRIVING SCENARIOS

The increase in the age of population, on one hand, makes it more and more challenging for families to take care of an increasing number of ageing relatives and, on the other hand, impacts on costs of the medical and social-care system.

Accordingly, MIDAS will focus on home and driving scenarios, representative of the indoor and outdoor environments, respectively.

Functionalities in the HOME scenario include:

- Communications with environment and relatives:
 - Contributing to video-conference facilities, and
 - Providing access to content based on multimodal interfaces;
- Everyday assisting living:
 - Supervising important diary tasks in a user's life, and
 - Helping a user to shop, making it easy to send a shopping list to the supermarket over Internet and therefore increasing the user's autonomy; and
- Healthcare:
 - Determining and preventing accidents by measuring the activity of fragile people in their daily life, and
 - Providing localised assistance for the patient to allow him/her to move in safety.

Functionalities in the DRIVING scenario include:

- The acquisition of information with non-intrusive sensors about the health or behaviour of a car driver through the designed multimodal interface; and
- The simplification of the driver interface through multimodality.

MULTI-MODAL HUMAN INTERFACES

One of the major innovative challenges of MIDAS is related to multi-modal human interfaces. This includes:

- Combination of emotion and other modalities at the top of innovation;
- Integration of several modalities – never considered together before – in the context of home and driving applications for elderly aid;

MIDAS

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■ Partners

Apif Moviquity S.A.
 CEA LIST
 CITIC - Centro Andaluz de Innovación y Tecnologías de la Información y las Comunicaciones
 Energy Sistem Soyntec
 France Telecom
 Fico Triad S.A.
 CNRS - French National Centre for Scientific Research
 Geomobile
 I&IMS - Information & Image Management Systems S.A.
 Intuilab
 Kaletron
 KIT - Korea Information Technology Valley Co. Ltd
 LI2G-CHU Grenoble
 Morgan'Conseil
 Philips Research Europe
 Robosoft
 Robotiker-Tecnalia
 Siel Bleu
 Telefonica I+D
 Thales Alenia Space

■ Countries involved

France
 South-Korea
 Spain
 The Netherlands
 Turkey

■ Project start

October 2008

■ Project end

September 2011

■ Contact

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Project Profile

- Synchronisation and fusion of several modalities in the interface development; and
- Adequately taking into account the context and the adaptive interface.

SEVEN WORK PACKAGES

The project is structured in seven work packages (WPs):

WP1 - Understanding the system's model, identifying functional modules and interfaces between them, and studying business models as well as the definition of scenarios and use cases taking into account real market necessities;

WP2 - Design of the different environments, indoors (home), supervision centre and outdoors (cars) as well as the specification of the architecture involving modelling of service provisioning concepts;

WP3 - The platform based on the service-oriented architecture (SOA), aims at enabling industry to leverage existing investments by allowing reuse of existing applications and promising interoperability between heterogeneous applications and technologies;

WP4 - Providing various until now independently operated end-to-end solutions with different specific user interfaces and linking these services to the easy-to-learn, unified human centric multimodal user interface. It will enable an end-user-driven validation of the results according to the home application scenario defined in WP1;

WP5 - Acquiring information about car-driver behaviour and also making available information coming from indoors.

In addition, the system will send all collected information to the home MIDAS system for processing and storage;

WP6 - Integrating and testing the results in reference to the identified scenarios and their interaction. Some of these integrated prototype solutions will serve as demonstrators to present the MIDAS project results to a wide European audience; and

WP7 - Responsible for underlining dissemination, project management and status monitoring. It carries out the administrative tasks to support the other more technically-oriented work packages.

MARKET AND TECHNOLOGY DRIVEN

As a consequence, the project is expected to combine both market- and a technological-driven approaches including:

- Use-case definition based on market needs;
- Legal, ethical and business evaluation
- Architecture design;
- Developments and integration;
- Integration of multimodality and innovation aspects into use-case definition; and
- Technology knowledge transfer.

The major expected results include a demonstrator and validation reports. The former will be used to test the system in home and car environments, with selected elderly people. The latter will show the results of the field trials.

Finally, the applicable results of the project regarding multimodal interface and service platform will be disseminated to relevant standardisation forums in the project domain area via the partners already involved in the standardisation work.



Elderly well-being

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- ITEA 2 – Information Technology for European Advancement – is Europe's premier co-operative R&D programme driving pre-competitive research on embedded and distributed software-intensive systems and services. As a EUREKA strategic Cluster, we support co-ordinated national funding submissions and provide the link between those who provide finance, technology and software engineering. Our aim is to mobilise a total of 20,000 person-years over the full eight-year period of our programme from 2006 to 2013.

- ITEA 2-labelled projects are industry-driven initiatives building vital middleware and preparing standards to lay the foundations for the next generation of products, systems, appliances and services. Our programme results in real product innovation that boosts European competitiveness in a wide range of industries. Specifically, we play a key role in crucial application domains where software dominates, such as aerospace, automotive, consumer electronics, healthcare/medical systems and telecommunications.

- ITEA 2 projects involve complementary R&D from at least two companies in two countries. We issue annual Calls for Projects, evaluate projects and help bring research partners together. Our projects are open to partners from large industrial companies and small and medium-sized enterprises (SMEs) as well as public research institutes and universities.



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