ITEA 2

INFORMATION TECHNOLOGY FOR EUROPEAN ADVANCEMENT

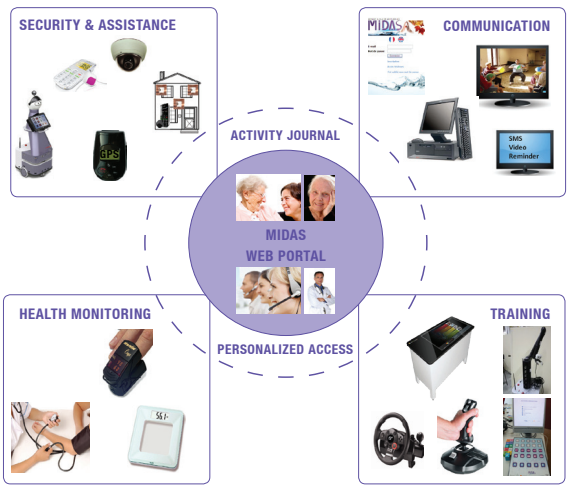
Project Results

Multimodal interfaces and platform

Providing user-centred home support for the disabled and an ageing population

Caring for the elderly and disabled is a major socio-economic challenge. The ITEA 2 MIDAS project has developed an intelligent remote interactive service platform with customised support to enable the elderly and disabled to continue living in their homes. Friendly adaptive interfaces help overcome the natural scepticism and uneasiness of the elderly with respect to technology. While the technical solutions are now available, suitable business models and political commitment are still required for wide-scale use.

Up to 25% of the EU population will be more than 60-years old in the next ten years, yet there is a lack of infrastructure, care workers and a continuous presence available to support an aging population in their homes – and the situation is already placing financial strain on national budgets. By enabling people to stay in their homes longer, it is estimated that it would be possible to put off the need for retirement homes placement and hospital care by 2 years.



MIDAS application domains

INTEGRATED SOLUTION

MIDAS focused on integrated and scalable systems offering the elderly and the disabled the services and comfort they need in their own environment. User-oriented interactive systems exploit new communications technologies and intelligent connecting systems. Key objectives included:

- Global prevention and stimulation for less isolation;
- Better quality of home care;
- Efficient medical aid; and
- Non-intrusive surveillance.

GLOBAL-SCALE SYSTEM

The project developed a fully integrated global-scale service platform. This involved social networking, communications and assisted living with all tools accessible through a web portal. Amalgamated views can be tailored to the people concerned – medical professionals, call centres, carers and family members.

Development of such an integrated platform enables collection of information from all types of different devices in the home. For example, partners worked on ambient communication such as Internet TV communications with messaging over the domestic TV – allowing the elderly who are often in front of their sets to be contacted by video SMS and provide an acknowledgement. Other partners worked on a social network web application centred on a user profile, making possible contact in geographic proximity for local associations, family and friends.

A range of other applications were developed, including:

- Medical training for prevention involving a touch table enabling users to fill their own pill boxes. A cognitive evaluation, facial expression recognition tools and a drive simulator able to support people in their daily life. All of them run in a step-by-step process with remote help if necessary;

MIDAS
(ITEA 2 - 07008)

Partners

CEA LIST
Centre National de la Recherche Scientifique LIFL
CITIC
CreativIT
Energy Sistem Soyntec
Ficotriad
France Télécom Orange Labs
Fundacion Tecnalia Research & Innovation
Geomobile
Information & Image Management Systems
INTUILAB
KaTron
Korea Information Technology Valley
LI2G-CHU Grenoble University Clinic of Geriatric Medicine
Morgan'Conseil
ROBOSOFT
Siel Bleu
Telefónica I+D
Thales Alenia Space

Countries involved

France
Republic of Korea
Spain
Turkey

Project start

October 2008

Project end

October 2011

Contact

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- Robotic support for the disabled involving image-recognition processes to help training with robots, particularly for paraplegics;
- Video coaching for wellbeing with a visual display of exercises to keep people in good health at home when not mobile and so unable to get to a gym;
- Security/assistance support using robots combined with geo-location, video portals, multimedia boxes for security and activity monitoring; and
- Health monitoring – making it possible to control vital signs or carry out chronic disease management remotely.

EXISTING AND NEW TECHNOLOGY

MIDAS used existing technologies and specially developed applications.

Presentation of a video SMS on a home TV is a real improvement on most current telecommunications operator applications. However the new application needs to be deployed on real networks as it requires additional operational intelligence in the network.

The project also developed friendly, adaptive interfaces designed to overcome natural scepticism and unease with technology. These interfaces are integrated in an overall ambient-assisted-living system which gathers input from the multimodal interfaces themselves and from devices around the end-user, making intelligent decisions and providing a feedback to the user.

ONE-STOP SHOP

The result is a one-stop shop for personalised access to interactive home support for the disabled and an aging population. While the project has been an undoubted technical success, exploitation of the solutions now requires development of suitable business models. The potential market is huge but very fragmented with no clear big solution. Commitment is necessary for future funding and those requiring these services will need to understand the costs.

Major project outcomes

DISSEMINATION

- 26 publications
- 33 participations in international and national conferences
- The MIDAS Final Event in the Orange Labs premises
- A book chapter
- 3 categories of demonstrators

EXPLOITATION

- Prototype of an integrated web platform
- 4 service solutions in the communication area
- 12 service solutions in the prevention and security area
- Improved protocols for Users Testing by health professionals representatives
- 11 investigated scenarios at home or on the go
- A software license agreement of PiRiA software (Program for Indexing and Recall Images by Affinity). A research and development agreement is ongoing between the Xedix company and CEA.

STANDARDISATION

- 6 standards implemented: CMS, Knowledge representation, DPWS, Continua Health Alliance, Digital Video and Teleassistance alert protocol.

PATENTS

- Four patents applications filed

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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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