



REMOTE: Remote health and social care for independent living of isolated elderly with chronic conditions

Dr. Dimitrios Tzovaras

Center for Research and Technology Hellas
Informatics and Telematics Institute

Mr. Jesús Salazar

SIEMENS Healthcare sector Spain



Project data

Proposal call: AAL Joint Programme-Call 2008-1

Call topic: “ICT based solutions for Prevention and Management of Chronic Conditions of Elderly People














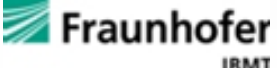

REMOTE is a 3-year project which started in June 2009

15 partners from 8 countries that include:

- **Sensor/Actuator developers**
- **Knowledge management engineers and ontology experts**
- **Web service providers, Software development experts and System integrators**
- **Healthcare professionals**
- **Human factors, Psychologists, and Sociologists**
- **Dissemination and Marketing experts**
- **User representatives**

Budget: 3,483,140 €

Funding: 2,334,691€

1		SIEMENS S.A. (Coordinator)
2		TSB Soluciones S.A.
3		Universidad Politecnica de Madrid
4		Fundación para la Investigación Médica Aplicada
5		Saliwell Ltd.
6		Centre for Research and Technology Hellas
7		Foundation for Research and Technology - Hellas
8		Netscouts gemeinnuetzige GmbH
9		Abama Technologies S.L.
10		University Hospital of North-Norway (UNN) - Norwegian Centre for Telemedicine
11		The European Older People's Platform
12		Bluepoint IT Solutions
13		Medea SRL
14		Fraunhofer-Institut für Biomedizinische Technik
15		Ortholine Ltd.



Objectives

- REMOTE aims at defining and establishing a multidisciplinary and integrated approach to R&D of ICT for addressing **real needs of elderly people** as well as **self care and self-management of chronic conditions**.
- REMOTE will advance the SoA in fields of **tele-healthcare and Aml** by enhancing the elderly's **home** with **audio-visual, sensor/motoric monitoring and automation abilities** to **trace vital signs, activity, behaviour and health condition**, and **detect risks and critical situations**, as well as provide, proactively and reactively, **effective and efficient support** at home
- REMOTE will prototype technology-based solutions well-adapted to the respective diagnosis, prevention and treatment opportunities **that can be pursued while allowing the elderly to stay “at home”** (detecting signs, symptoms, and risk factors; monitoring cure processes; etc.)
- A sound **User-Centered Design** approach is adopted from planning to execution of the project with repeated and essential involvement of users to ensure that all relevant facets of subjective quality are successfully delivered, ranging from **ethical aspects to accessibility, usability, safety, security, and “customer relationship”**



Progress beyond the state-of-the-art

Progress beyond the state-of-the-art in :

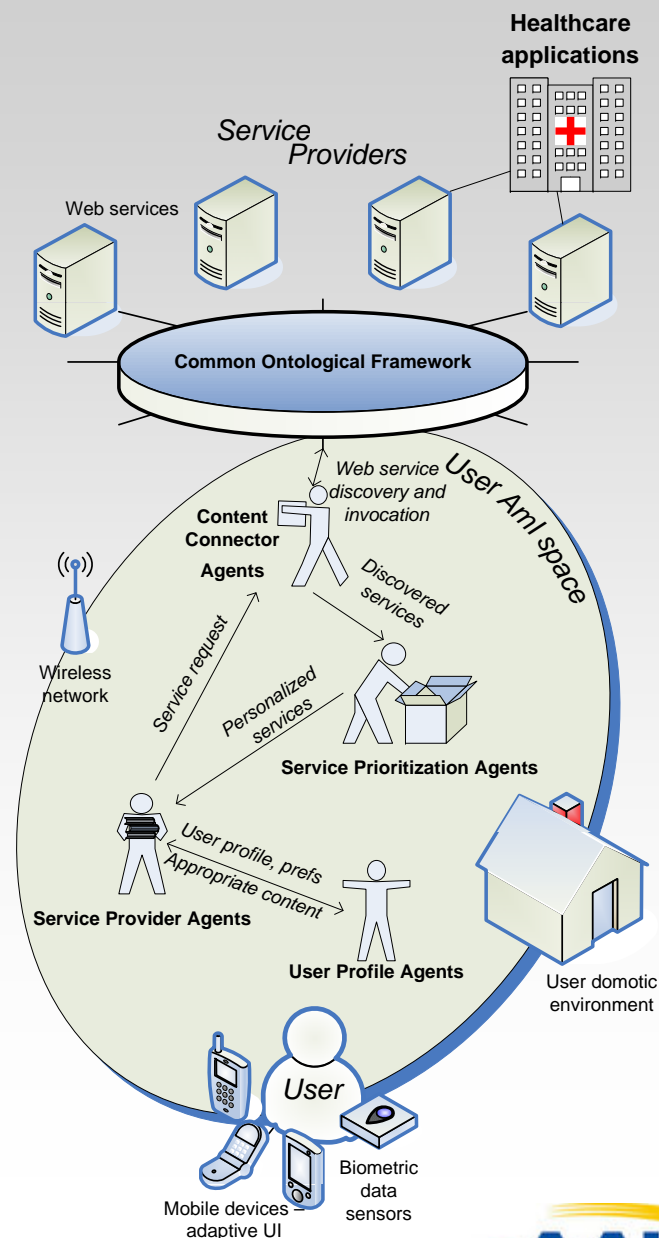
- **Open reference architectures and ontologies**
- **Intelligent agents and Aml framework**
- **Wearables, sensors and health/activity monitoring**
- **Independent living applications**
- **Social support applications**
- **In-home and domotic sensors and localization systems**
- **User interfaces and adaptive systems**
- **Tele-healthcare products and services**
- **Integration of technologies and products**



HOW

Main parts of the REMOTE architecture:

- **Monitoring and tracking infrastructure**
- **Aml framework managed by software agents**
 - *User Agents*
 - *Service Prioritisation Agents*
 - *Service Provider Agents*
 - *Content Connector Agents*
- **Common Ontological Framework**
- **Service-oriented content management architecture**
- **Adaptive user interfaces and mobile devices**
- **Healthcare applications**



Physiology monitoring sensors

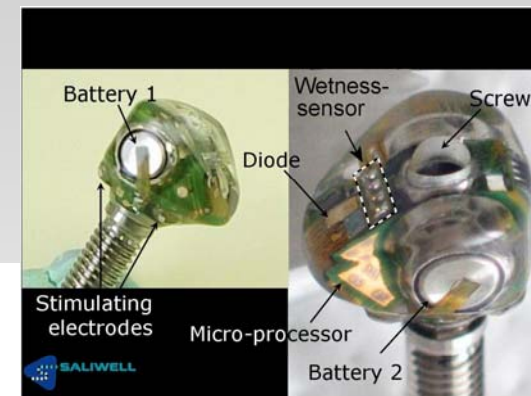
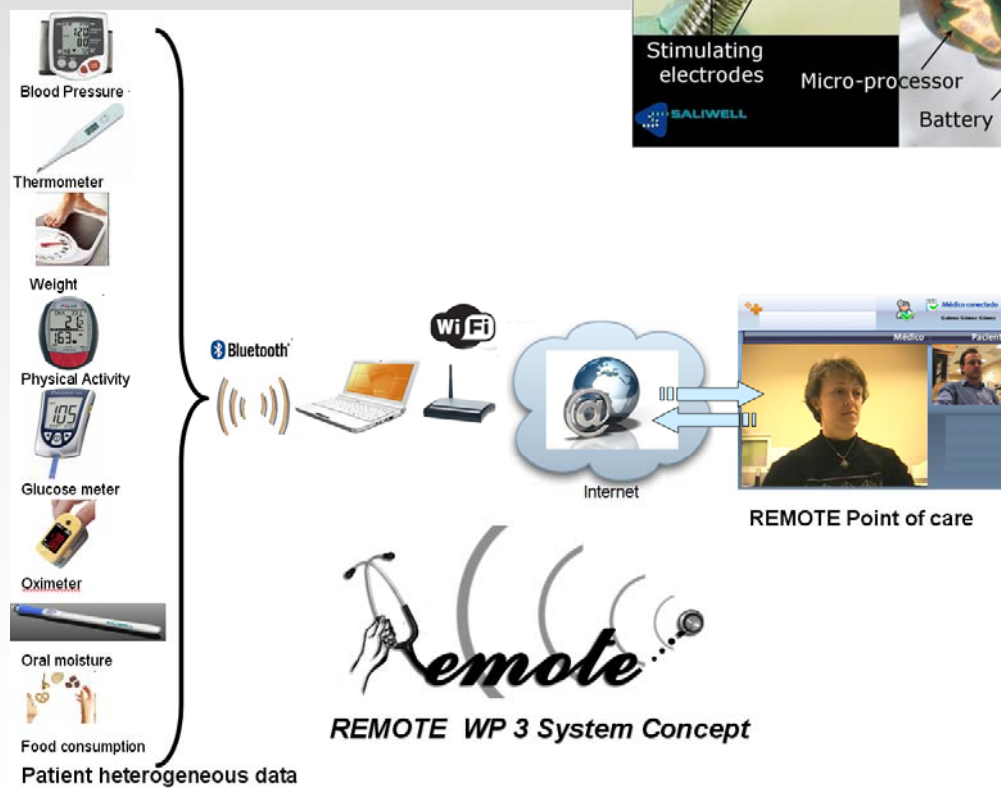
- Intra-oral wetness sensor
- Food consumption sensor
- Glucose meter
- Blood pressure meter
- Weight meter
- Oximeter
- Physical activity estimator
- ECG
- Heart rate meter

Processing and UI devices

- Cellphones
- Netbooks
- PDAs
- TVs

Communication via

- Bluetooth
- WiFi





- **Personal self-care services and applications:**

Develop a set of effective applications to foster the independent living of elderly, taking into account their needs emerging from physical isolation and specific chronic conditions:

- **Health, activity and nutrition advisor**
- **Social interaction platform** (chat, message board, voice-over-IP, video-streaming, etc.)
- **Personal Calendar**
- **Trip advisor**

- **Augmented home autonomy applications:**

To provide multi-user controlled environments for the elderly at home
Integrate all systems and applications within the home environment
using:

- **Actuators**
- **User interfaces for PC, iTV and small wall-mounted screens**



- **Mobile and portable toolkits**

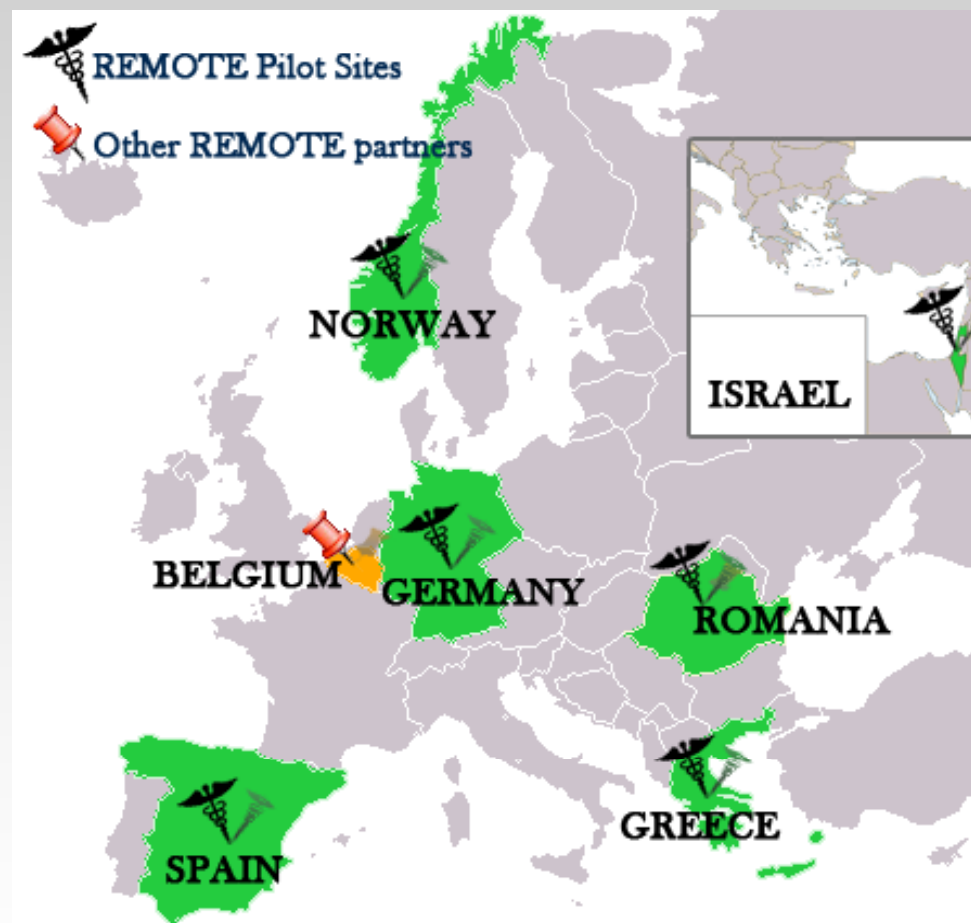
Systems and applications will be integrated to mobile and portable platforms:

- **Remote access to home automation and other REMOTE self-care services**
- **Virtual trip assistant**, which will **monitor the health conditions of the user on the move** and provide, when necessary, **alert messages and guidance** for preventing dangerous events (dehydration, high blood pressure, arrhythmia, etc.).



Testing

- REMOTE addresses all types of European **social, economic, legal and organisation related environments**, through its Pilots in 6 countries with relatively high percentages of population aged 65 years and over
- The evaluation has three phases:
 1. Individual sensor/systems tests and interface designs assessment (Month 18-24)
 2. Stand alone services and interactive interfaces assessment (Month 24-30)
 3. Final system trials (Month 31-33)





Dissemination and public awareness activities

Target Groups	Planned dissemination activities
INDUSTRY and ACADEMIA	Link to other European Projects
	Participation to specialized exhibitions
	Participation to Conferences
	Link with other R&D Centres and Scientific Organizations
	Participation to national and international conferences
	Articles, reports in scientific and technical journals
USER GROUPS & Associations	Workshops and User Panels; Publications on related senior net portals and magazines, mailings, etc.
GENERAL PUBLIC	REMOTE web site (Month 03)
	Project concept video (Month 12 and Month 33)
	Publication of articles in special interest magazines/newspapers
	Logo, Leaflets, Posters (Month 6 in English, Month 18 in all pilot sites languages)
Primary, secondary and tertiary Users	Demo events and focus groups at pilot sites



Contacts

Website: www.remote-project.eu

Administrative office

E-mail: hws_remote.es@siemens.com

Administrative office contact:

jesus.salazar.ext@siemens.com

Postal address:

María García Robledo / Jesús Salazar

Siemens S.A.

Healthcare Sector

C/Leonardo da Vinci, 15

Parque Empresarial La Carpetania

28906 Getafe (Madrid), España

