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Ambient Assisted Living:
an overview of the EU projects

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Introduction

The number of people in need of care increases constantly because of the increasing average age & quantity of people with physical limitations, especially in Europe. Also, there is manpower shortage in the care sector, which is more & more in financial straits. This is the reason why very many seniors will depend on their close relatives for the care needs.

The prime aim of technology should be to improve the quality of life and is particularly pertinent in the case of the disabled and elderly, whose physical and sensory disabilities can be partially compensated for with technological products. Modern society should therefore use its resources to promote the social integration of disabled people by enabling them to be autonomous and by helping them to gain access to education and working environments.

Modern technology is continuously enhancing our standard of life. This has been made possible particularly by research in such areas as "Intelligent Building", telematics, computer-vision, robotics, artificial intelligence, etc. where increasingly powerful yet less and less expensive computation systems are attempting to simulate what were previously considered as being exclusively human roles - learning, reasoning and communication.

For several decades in Europe-27, the number of elderly is growing continuously. In the last two decades, the population has grown by 0.3% while the population of elderly grew by 3.7%[1]. The median age increased from 35.3 to 40.9 years from 1990 to 2010. It is estimated that 2020la population over 65 years will be more than 25% of the whole European population. In the near future the population will fall while the proportion of older people will increase and it is expected that the relationship between the people who work with the rest of the population will increase from the current 2 to 1 reaching 4 to 1. Baseline projections of old age dependency ratios in EU Member States (65+ over people aged 20-64 years) says that the percentage will overcame 50% in 2035. This is the main effect of population ageing and the retirement of the "baby boomer"[2] generation.

These considerations suggest to focus research efforts for supporting the elderly allowing conditions suitable to people no longer active. With new technologies will be possible to increase the autonomy of the elderly so that they can live longer in their preferred environment without decreasing safety and care they need. These possibilities offered by technology will create conditions more pleasant for the elderly and may also be a cost savings.

The European Commission has funded many research projects finalizes to use innovative technologies, new philosophies and new rules in order to assist elderly people to live independently in their home environment as long as possible. Many programs with these goals have been organized like the old "Tide program" of nineties (Technology initiative for disabled and elderly people) of European Commission, Directorate-General for Communications Networks, Content and Technology arriving to current AAL (Ambient Assisted living) focused in creating tools and conditions to prologue autonomy of elderly and people with special needs.

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[1] Source "AMBIENT ASSISTED LIVING JOINT PROGRAMME - ICT for ageing well (http://www.aal-europe.eu/about/demographic-change/)

[2] Person who was born between 1946 and 1964. This definition is applied to people born in north America, but can be used also for people born in this period of the whole word.

IV

Abstract

This report summarise the effort done for prolonging autonomy of elderly and disabled people and in particular creating tools and conditions to prologue autonomy of elderly and people with special needs. Mainly has been considered the AAL JP Program and the related projects. An effort has been made to classify projects basing on objectives and technology used. At the end there is a more detailed description of several selected project like UniversAAL project (aimed to spread results of research in this field), Independent living project, Soprano project (Service-oriented Programmable Smart Environments for Older Europeans), Oasis project (Open architecture for Accessible Services Integration and Standardization), Hera project (Home sERvices for specialised elderly Assisted living), etc.

1. AAL is not a technology but a philosophy

1.1 AAL, "Assistive technologies" and "Independent living"

Ambient Assisted Living (AAL) aims to extend the time people can live independently in their home environment by increasing their autonomy and self-confidence, the discharge of monotonously everyday activities, to monitor and care for the elderly or ill person, to enhance the security and to save resources.

AAL is not a technology but a philosophy. Typically, several technologies will be needed to develop AAL solutions.

Ambient Assisted Living (AAL) is a European Initiative that was born in order to address the needs of the ageing population, to reduce innovation barriers of forthcoming promising markets and also to lower future social security costs. This initiative is planned to be implemented during the 7th EU Framework Programme.

Assistive technologies are those products and services that enable persons (regardless of age) to perform a function that due to some disability would otherwise be difficult to perform. While some disabilities are associated with aging, aging itself is not a disability and even if some limitations exist many elderly people do not perceive themselves as being disabled. Even if assistive technologies sometimes are considered a part of AAL technologies, healthcare technologies are not AAL technologies but are closely related to them because aging population is the most concerned with healthcare.

The concept of **Independent Living** (IL) challenges the preconceived medial models of disability and old age, by emphasizing self-determination and equal opportunities and the removal of societal barriers to participation. IL emphasizes active social participation and the organization of societal supports within a radical agenda.

1.2 The aims of the research on the Ambient Assisted Living for disabled and elderly people

The research in this area has demonstrated the usefulness and showed that a large number of users can enjoy the solutions that have been developed by various projects and those promoted and financed by the European Commission (AAL program) as well as those who have done more modestly from industry associations who have not always benefited from external funding.

2. Synoptic of classification of selected EU AAL projects (Ambient Assisted Living Joint Programme - ICT for ageing well)

In the following table are reported selected AAL projects grouped by argument for an immediate overview of topics considered in this program.

Topic	*Projects*	*Countries*
Specific diseases	A2E2, AMICA, BEDMOND, UNDERSTAID	Finland, The Netherlands, Norway, Sweden, Germany, Greece, Austria, Spain, Italy, Portugal, Denmark, Spain, Poland
Social network & socialize	AGNES, ALADDIN, YOUDO, TOPIC, ALICE, SOCIALIZE	Sweden, Italy, Germany, Greece, Austria, Spain, UK, Switzerland, France, The Netherlands
Special user interface	CAPMOUSE, MEDIATE, GETVIVID, EDLAH, DALIA, 3rD-LIFE, 2PCS	Norway, Sweden, Belgium, Switzerland, France, Denmark, France, Romania, England, Austria, Netherlands, Luxembourg, Spain, Slovenja, Poland, Switzerland, Italy, Germany
Safety & security	Care@Home, AIB	Netherlands, Romania, UK, Luxembourg, Finland, Sweden, Spain
Home automation	NITICS, HELICOPTER, ELF@HOME, ALIAS	Switzerland, Poland, Romania, Slovenia, France, Italy, Sweden, Denmark, The Netherlands, Spain, Germany, Austria
Other	VICTORYAHOME, SALIG++	The Netherlands, Norway, Portugal, Sweden

Table 1 Projects and topics

Technology	*Projects*	*Countries*
Software and network	AGNES, ALADDIN, BEDMOND, Care@Home, YOUDO, UNDERSTAID, TOPIC, SALIG++, 3rD-LIFE, 2PCS, ALICE, SOCIALIZE	Sweden, Italy, Germany, Greece, Austria, Spain, UK, Portugal, Netherlands, Romania, Luxembourg, Switzerland, Denmark, Poland, France, Slovenja
Sensors and actuators	A2E2, AMICA, HELICOPTER	Finland, The Netherlands, Norway, Sweden, Germany, Greece, Austria, Spain, Italy, Romania, Denmark
Human machine interface	GETVIVID, DALIA	Switzerland, France Denmark Romania, Netherlands, Belgium, Austria, luxembourg

New materials		
Embedded systems	MEDIATE, EDLAH	Luxembourg, Switzerland, France, Denmark, Romania, England, Belgium, Austria,
Several technologies involved in smart homes	CAPMOUSE	Norway, Sweden, Belgium
Other ambient intelligence technologies	VICTORYAHOME, NITICS, ALIAS, AIB	The Netherlands, Norway, Portugal, Sweden, Switzerland, Poland, Romania, Slovenia, France, Germany, Austria, Finland, Spain

Table 2: projects and technology

3. Brief description of selected AAL projects

Are reported here some selected project of AAL program. Only few data are reported in order to allow a quick comparison and selection for any different interest. Source of data are http://www.aal-europe.eu/projects/*name of the project*/.

Call 1

4. **A2E2**
   a. **Countries**: Finland, The Netherlands, Norway
   b. **Topic**: Specific diseases: of diabetes type II and cardio-vascular diseases
   c. **Technology:** sensors, A2E2 server and software system
   d. **Brief description**: Tool prompting and guiding through life style changes that are essential for the prevention and management of diabetes type II and cardio-vascular diseases in the elderly individual

5. **AGNES**
   a. **Countries**: Sweden, Italy, Germany, Greece, Austria, Spain
   b. **Topic**: Social network; socialization
   c. **Technology:** USB-Cam, network
   d. **Brief description**: The combination and integration of home-based ICT and social networks, connecting the elderly person living at home with their families, friends and carers, on various levels.

6. **ALADDIN**
   a. **Countries**: Greece, Germany, Italy, UK, Spain
   b. **Topic**: Specific diseases: dementia; Social network
   c. **Technology:** Network
   d. **Brief description**: self-management tools for an improved and sustained quality of self-management of dementia improving quality of life related to home-based treated patients suffering from dementia as well as their care-givers

7. **AMICA**
   a. **Countries**: Sweden, Germany, Greece, Austria, Spain, Italy
   b. **Topic**: Specific diseases: COPD
   c. **Technology:** sensors and actuators
   d. **Brief description**: The Autonomy Motivation & Individual Self-Management for chronic obstructive pulmonary disease (COPD) patients (AMICA) is aimed at the disease management and medical care of chronic obstructive pulmonary disease COPD patients. Its main goal is to provide medical management and medical care to

patients suffering from COPD.

8. **BEDMOND**
    a. **Countries**: Spain, Austria, Portugal
    b. **Topic**: Software and network
    c. **Brief description**: An ICT-based system for the early detection of Alzheimer's disease (AD) and other neurodegenerative diseases on the basis of data assessment with health professional criteria.

9. **CAPMOUSE**
    a. **Countries**: Norway, Sweden, Belgium
    b. **Topic**: Special user interface for computer
    c. **Technology:** home automation
    d. **Brief description**: The project delivers a proof of concept on how a head mounted capacitive sensor controlled by the tongue can be used as an input for a human machine interface.

10. **Care@Home**
    a. **Countries**:
    b. **Topic**: Safety & security
    c. **Technology:** Software and network
    d. **Brief description**: Care@Home involve continuous, automatic and remote monitoring (e.g. by mobile phone/wireless / fixed sensors) of real time emergencies and lifestyle changes over time in order to manage the risks associated with independent living.
    e. http://www.aal-europe.eu/projects/bank-4-elder/

11. **CCE**
    a. **Countries**:
    b. **Topic**: Special interface
    c. **Technology:** sensors and actuators
    d. **Brief description**: The CCE dementia solutions comprises of connectivity between the different physical components, sensors, medication dispenser, server, Net TV, etc.
    e. http://www.aal-europe.eu/projects/cce/

Call 2

28. **3rD-LIFE 28**
    a. **Countries**: Spain, Slovenja, Poland, Austria
    b. **Topic**: Special user interface
    c. **Technology:** Software and network
    d. **Brief description**: 3rD-LIFE aims to improve the quality of life of ageing people providing them with a virtual tool for interacting with other users and other functionalities which will be achieved through the development of a tool consisting in a 3D virtual environment especially adapted to be used by ageing people. With only a computer and an internet connection, they will be able to, from their own homes and through their own voices, communicate with other users, make audio and video calls to real world terminals and have a more joyful and active live thanks to the applications that will be implemented,
    e. http://www.aal-europe.eu/projects/3rd-life/#sthash.vXGpP0zU.dpuf

29. **ALIAS 29**
    a. **Countries**: Germany, France, Austria
    b. **Topic**: Home automation

c. **Technology:** Other ambient intelligence technologies
d. **Brief description**: One focus of the project lies on questions of social acceptance of robot systems in general and in specific within the named user groups.
    i. The consortium aims at integrating a commercial pilot that includes all state-of-the-art communication media.
    ii. On top of the integration of existing solutions, three novelties will be introduced:
    iii. a novel cognitive user interface concept is introduced to ensure a good usability;
    iv. a proactive behaviour of the robot platform will ensure that the user stays in contact with his surroundings and gets mentally stimulated;
    v. the third unique selling point is a Brain-Computer-Interface (BCI) that will be included in order to train and preserve the mental functions of the use
e. -http://www.aal-europe.eu/projects/alias/#sthash.guhK8yZS.dpuf

Call 3 60

61. 2PCS 61
a. **Countries**: Switzerland, Italy, Austria, Netherlands, Germany
b. **Topic**: Special user interface
c. **Technology:** Software and network
d. **Brief description**: The 2PCS solution is based on a unique combination of innovative software features and a mixture of state of the art technologies aligned to a life-phase oriented business process logic. The goal is to develop an attractive, intelligent, demand oriented and age-independent personal protection and caring system (2PCS device and infrastructure) without stigmatisation, restriction of freedom and permanent monitoring. The aim of the project is to improve the mobility, the information accessibility and the subjective as well as objective safety of elderly people
e. http://www.aal-europe.eu/projects/2pcs/#sthash.pGT2vwR9.dpuf

62. AALUIS 62
a. **Countries**: Austria, Netherlands, Germany
b. **Topic**: Special user interface
c. **Technology:** Human machine interface
d. **Brief description**: The user interface (UI) is an important feature of interaction between the human and the machine (services). Thus the main focus of the project lies on the development of innovative UIs and a layer for the easy and standardized integration of new and existing UIs. The aim is to build these interfaces and the connection layer on open and already existing middleware platforms. The aim of AALuis is to facilitate the connection of different services to different types of user interfaces and thus to enable future users of AAL systems to use more services interacting in their preferred way.
e. http://www.aal-europe.eu/projects/tao/#sthash.CtDVn0P7.dpuf

79. SOCIALIZE 79
a. **Countries**: Italy, Germany, Spain, Switzerland
b. **Topic**: Social network & socialize
c. **Technology:** Software and network
d. **Brief description**: The SOCIALIZE project will develop a hardware/software platform able to put in close contact the elder users with the community where they live, promote elderly social interaction and proactive involvement in the democratic development of their own community through the use of new technology implemented in the elderly day by day contest. SOCIALIZE technology will be

accessible by different channel and in different geographical locations. Furthermore the SOCIALIZE mobile user interface will offer to the users to benefit of a subset of system functions through mobile devise.

 e. http://www.aal-europe.eu/projects/socialize/#sthash.KDJmqnne.dpuf.

Call 4 83

84. AIB 84
 a. **Countries**: Finland, Sweden, Spain
 b. **Topic**: Safety & security
 c. **Technology:** Other ambient intelligence technologies
 d. **Brief description**: The aim of Ageing in Balance (AiB) project is to develop a new solution for preventing the falls of the older adults, by taking into account wide range of different factors. In AiB, an innovative model of risks of falls will be developed. The model will include all possible risk factors as described by the various studies and assessments from all aspects (mental, physical and environmental: intrinsic and extrinsic). Several assessment scales combined with data from environmental sensors and other technology (e.g. cognitive games) will be employed to give a clear picture of the fall risk.
 e. http://www.aal-europe.eu/projects/aib/#sthash.P778KrJA.dpuf

85. ALICE 85
 a. **Countries**: Spain, Austria, The Netherlands
 b. **Topic**: Social network & socialize
 c. **Technology:** Software and network
 d. **Brief description**: ALICE will research, develop and integrate a set of ICT based services into the existing TV set, allowing elderly people to enjoy experiences of communication and social interaction based on ICT. By doing this, ALICE will lead the way for elderly people to remotely share moments of enjoyment, laughter and fun as if they were face-to-face with their loved ones.
 e. http://www.aal-europe.eu/projects/alice/#sthash.9Bc11tC6.dpuf

Call 5

114. DALIA
 a. **Countries**: Netherlands, Belgium, Austria, Switzerland, luxembourg,
 b. **Topic**: Special user interface
 c. **Technology:** Embedded systems, Sensors and actuators
 d. **Brief description**: The DALIA Personal Virtual Assistant will be created mainly for smart phones and Smart-TVs based on Android, chosen due to its wide deployment and open platform. For proper usage, the end-users need a suitable smart phone; for usage at home a Wi-Fi connection is sufficient, whereas for outside usage a data flat rate contract is recommended. The smartphone integrated sensors will be used for the measurement of health parameters. DALIA (Assistant for Daily Life Activities at Home) will provide an integrated home system that supports older adults as primary end-users, offers support to their informal carers as secondary end-users, and can be extended to interface with services of formal care and medical services.
 e. http://www.aal-europe.eu/projects/dalia/#sthash.SMpx3ykx.dpuf

115. EDLAH
 a. **Countries**: England, Belgium, Austria, Switzerland
 b. **Topic**: Special user interface
 c. **Technology:** Embedded systems
 d. **Brief description**: The EDLAH international research project consist of creating a

service system for the elderly to stay autonomous as long as possible. The project is build for a tablet and offers four different services, Health and nutrition, Social network, Medicine, Object location

116. **ELF@HOME**
   a. **Countries**: Spain, Sweden, Germany
   b. **Topic**: Home automation
   c. **Technology:** Sensors and actuators, Software and network
   d. **Brief description**: The proposed service will automatically generate a personalized fitness program based on the health status and the continuous monitoring of activity level of the user. This continuous monitoring will be accomplished by the development of a new wearable activity sensor specially designed for elderly needs. The health status monitoring will be done using biomedical sensors. A TV interface and a computer vision system will be used during fitness sessions to analyse fitness exercises execution. All these components will be connected to a service platform implementing the intelligence needed.
   e. http://www.aal-europe.eu/projects/wetakecare/#sthash.xm5kA5Ni.dpuf

117. **GETVIVID**
   a. **Countries**: Switzerland, France Denmark Romania
   b. **Topic**: Special user interface
   c. **Technology:** Human machine interface
   d. **Brief description**: GeTVivid aims at supporting older adults with mild impairments to manage their daily activities in their home and aims at improving the quality of life, autonomy and participation in social life. Our overall goal is to design for "natural" and easy-to-learn interactions that will lower cognitive demands and allow older persons to keep regular contact with people. Therefore, a platform connecting TV devices will be developed based on the HbbTV standard and complemented with a mobile second screen. Through push and pull customized information and services can be provided to the older adults.
   e. http://www.aal-europe.eu/projects/getvivid/#sthash.KjmBDVoQ.dpuf

118. **HELICOPTER**
   a. **Countries**: Italy, Romania, Sweden, Denmark, The Netherlands
   b. **Topic**: Home automation
   c. **Technology:** Sensors and actuators
   d. **Brief description**: HELICOPTER aims at inferring end-users' healthiness in an unobtrusive and simple way, through monitoring of daily life behaviours and will support end-user and their caregivers with feedback, advice, and motivation. The system will gather data coming from a heterogeneous set of (mostly off-the-shelf) devices, including medical, environmental and wearable sensors, to provide a qualitative and quantitative assessment of the activities carried out.
   e. http://www.aal-europe.eu/projects/helicopter/#sthash.b5oF4tjL.dpuf

119. **MEDIATE**
   a. **Countries:** Luxembourg, Switzerland, France, Denmark, Romania
   b. **Topic**: Special user interface
   c. **Technology:** Embedded systems
   d. **Brief description**: MEDiATE is independent of any specific technology and is based on web services, focusing on interoperability, ie. ensuring compatibility with existing systems. Once developed, the solution will be tested through confrontation with technologies such as VisAge or Remad for user interaction via touchscreens, tablets, or connected TVs. The MEDiATE project includes the development of an economic model based on usage-based pricing, algorithms supporting the information system, the challenges of training and employment, and other more general objectives such as

ensuring optimal integration of informal partners in the ecosystem of care and facilitating the emergence of new services from the informal network complementary to existing ones.

120. NITICS
   a. **Countries**: Switzerland, Poland, Romania, Slovenia, France,
   b. **Topic**: Home automation
   c. **Technology:** Several technologies involved in snart homes
   d. **Brief description**: The NITICS project will build a flexible platform that will rely on a set of basic and task oriented services: localization of personal objects (keys, glasses, mobile); localization and movement pattern analysis of elderly and disabled people inside their homes – which, integrated with body sensors and environmental captors will support end-users as well as caregivers, family members, and others involved in assisting the person; a multimedia bi-directional platform (TV/PC/Smartphone) to ease, stimulate and support daily activities; augmented-reality system to assist users in finding the objects.
   e. http://www.aal-europe.eu/projects/nitics/#sthash.GZav4pux.dpuf

121. RELAXEDCARE
   a. **Countries**: Austria, Switzerland, Slovenia, Spain
   b. **Topic**: Social network & socialize
   c. **Technology:** Software and network
   d. **Brief description**: RelaxedCare: follows the user-inspired innovation process in combination with ISO 9241 and basis its technological developments on existing AAL middleware platforms that will be adopted and extended. A focus is put on the mathematical models and algorithms for the multi-level behaviour pattern recognition approach including a social activity layer and the development of pervasive user interfaces that are nicely designed and fun to use. To create a working system, reliability and acceptance are crucial. Therefore two end user organisations as well as experienced designers and usability experts will include informal caregivers and assisted persons throughout the project in the development process. –
   e. http://www.aal-europe.eu/projects/relaxedcare/#sthash.gmEjMZy0.dpuf

122. SALIG++
   a. **Countries**:
   b. **Topic**: Social network & socialize
   c. **Technology:** Software and network
   d. **Brief description**: Almende has joined a new European research project in the Ambient Assisted Living programme. SALIG++ (Smart Assisted Living involving Informal careGivers) will develop a minimally intrusive system that monitors elderly people in their homes, and allows them to stay in contact with their friends, family and caregivers. This way, elderly people will be able to live independently in their own homes for a longer time. SALIG++ uses technology such as smart TVs, smartwatches, 3D cameras and embedded sensors to automatically recognise Activities of Daily Life (cooking, sleeping, social interaction) and to signal worrisome events (such as a fall)
   e. http://www.almende.com/news1/-/asset_publisher/Lgc1/content/id/224865

123. TOPIC
   a. **Countries**: Austria, Germany, France
   b. **Topic**: Social network & socialize
   c. **Technology:** Software and network
   d. **Brief description**: In TOPIC, we aim at providing a solution by diminishing family carers' burden, by then decreasing all the related problems, and offer them a better quality of life and independence. It will then reduce all the related costs of these

"hidden patients". The solution we offer to develop, the CarePortfolio, will provide multimodal social support to informal carers by means of a set of accessible online services, which would be available at all times via a portal, available on the Internet, via tablets, smart phones, and/or iTV.

e. http://www.aal-europe.eu/projects/topic/#sthash.J0AjTUFH.dpuf

124.   UNDERSTAID
a. **Countries**: Denmark, Spain, Poland
b. **Topic**: Specific diseases (dementia)
c. **Technology:** Software and network
d. **Brief description**: The understAID project focuses on easing the lives of informal caregivers and directly addressing their currently unmet needs for accessible educational support. The solution will be based on new user-centered, personalized and context-based e-learning models that will provide customized and relevant guidance on how to deal with dementia and their inflicted relatives
e. http://www.aal-europe.eu/projects/understaid/#sthash.7DcY5YVn.dpuf

125.   VICTORYAHOME
a. **Countries**: The Netherlands,Norway,Portugal,Sweden
b. **Topic**: Safety & security
c. **Technology:** Other ambient intelligence technologies
d. **Brief description**: Living the way you want to. Active and healthy ageing together with the people we love. Isn't it what we all wish for ourselves and our beloved ones? VictoryaHome is a project that aims to help and enable people to live their lives the way they want, and to help people care for each other
e. http://www.aal-europe.eu/projects/victoryahome/#sthash.qb4QAuKh.dpuf

126.   YOUDO
a. **Countries**: Switzerland, Austria, Germany
b. **Topic**: Social network & socialize
c. **Technology: Social network**
d. **Brief description**: The innovation of our idea consists of gathering all the needed content for the top 6 care topics distributed to the informal carer on their personal trusted device (TV-set or computer) – depending on their age & preferences. In a 2nd step we have to research in which way the content could be transformed, so that the end user really understands it. With the TV technology we use it is possible to set up own IP-TV-channels & feed them with own content.
e. http://www.aal-europe.eu/projects/youdo/#sthash.qkvtCzUS.dpuf

4. Analysis of some relevant projects in the field of AAL

4.1 UniversAAL project

UniversAAL aims to produce an open platform that provides a standardized approach making it technically feasible and economically viable to develop AAL solutions. The platform will be produced by a mixture of new development and consolidation of state-of-art results from existing initiatives.

UniversAAL will establish a store providing plug-and-play AAL applications and services that support multiple execution platforms and can be deployed to various devices and users. Finally the allocation of local human resources is also supported in the store.

The project Work on establishing and running a sustainable community will receive attention right from the start, with promotion of existing results gradually evolving into promotion of the universAAL platform, as it develops into one consolidated, validated and standardized European open AAL platform.

Free Keywords:	Consolidated European AAL platform, runtime support, AAL services, development tools, community building and standarization
Funded under:	7th FWP (Seventh Framework Programme) FP7-ICT-2009-4 - Objective 7.1b
Area:	ICT-2009.7.1:ICT & Ageing
Technology:	Standardized technology used in other AAL projects
Contract type:	Large-scale integrating project (IP)
Coordinator:	STIFELSEN SINTEF
Starting date:	1st February 2010
Duration:	48 months
Total Budget:	13.980.164 €
Funding:	10.500.000 €

4.2 Soprano *(Service-oriented Programmable Smart Environments for Older Europeans)*

SOPRANO is an Integrated Project in the European Commission's 6th Framework Programme (IST Priority 6th Call on Ambient Assisted Living - AAL). The SOPRANO project aims to develop affordable, smart ICT-based assisted living services with interfaces which are easy to use for older people and familiar in their home environment. The societal trends that SOPRANO is responding to are:

♦ the increase in the proportion of older citizens in the population due to demographic change the scale and type of needs of older citizens which society must plan to meet, the rejection of current ICT-based services by many older citizens, and the steady deterioration of non-ICT-based service provision in the Information Society;

♦ the poverty of offer of ICT-based services usable by older citizens;

♦ the difficulty of designing ICT-based services to be usable by older citizens.

SOPRANO is developing supportive environments for older people based on the concept of "ambient assisted living", using information and communication technologies (ICT5) to enable older people to live independently in their own homes. SOPRANO will not only address the "problems" of old age (e.g., falls, health problems), but will focus on positively enhancing the quality of life of older people. Focus groups and interviews with older people

and care providers identified a number of potential opportunities for the development of SOPRANO. Social isolation has profound negative outcomes such as loneliness, depression, boredom, social exclusion and disruption of patterns of daily living.

SOPRANO project foreseens an "avatar" (an interactive computer-generated assistant; pictured here) on a TV screen that will be able to interact with the person in their home using natural language, for example, providing prompts for what exercises to carry out and reminding people to leave their house in a safe and secure manner when they go out (e.g., locking doors, shutting windows).

Social isolation may be alleviated through the more extensive use of videotelephony to link older people who live alone with their family and friends. Many of the features of SOPRANO will be useful for people with mild dementia: particularly those that help and support people to carry out everyday tasks of living. However, extensive research and development is required to ensure that the interaction media (interfaces, avatars, etc.) are appropriate for a diverse range of potential users, such as people with dementia, or those with sensory impairments.

Available at: http:/!www.soprano-ip.org/echome.asp?lang=1

4.3 Oasis *(Open architecture for Accessible Services Integration and Standardization)*

OASIS Is an Integrated Project with the scope to revolutionise the interoperability, quality, breadth and usability of services for all daily activities of older people. More specifically, OASIS targets to utilise ICT and other key technologies in order to provide holistic services to older people to support their physical and psychological independence, stimulate their social or psychological engagement and foster their emotional well being. In doing so, OASIS thus addresses key areas of their activities encompassing: independent living and socialising, autonomous mobility, and flexible work-ability. OASIS is the acronym of a Large Scale Integrated Project co-financed by the European Commission (7th Framework Programme, ICT and Ageing - Grant Agreement No: 215754). The full project name is: Open architecture for Accessible Services Integration and Standardization. It started on January 1, 2008 and has a length of four years. The OASIS Consortium is composed of 33 Partners from 11 countries. Large Industries, SMEs, Universities, Research Centers, Non-Profit Organizations, Public Organizations and Healthcare Centers are all represented.

4.4 Hera *(Home sERvices for specialised elderly Assisted living)*

The HERA project aims to provide a platform with cost-effective specialised assisted living services for the elderly people suffering from mild Alzheimer with identified risk factors, which will significantly improve the quality of their home life, extend its duration and at the same time reinforce social networking. The HERA platform will provide three main categories of services:

♦ Cognitive and physical reinforcement services: These services will be a supplement of non-drug therapeutical interventions provided to the patient by specialised Alzheimer care center.

♦ Patient specific home care services: This service category will include social reinforcement services, reality orientation support services and services capable to monitor several Alzheimer related risk factors.

♦ General home care services for elderly: This service category will include medication reminder services, information services as well as alarm services in cases of abnormal health conditions.

Available at: http://www.aal-hera.eu

4.5 HOMEdotOLD *(HOME services aDvancing the sOcial inTeractiOn of eLDerly people)*

The HOMEdotOLD project aims to provide a TV-based platform with cost-effective services that will be delivered in a highly personalised and intuitive way and will advance the social interaction of elderly people, aiming at improving the quality and joy of their home life, bridging distances and reinforcing social voluntariness and activation. thus preventing isolation and loneliness. The project main objectives are:

♦ to provide the appropriate platform based on INHOME and Net TV technologies for supporting the services described above advancing the social interaction of the elderly people;

♦ to provide services allowing the elderly to stay socially active including the "social working" and the "personalised news headlines" services;

♦ to provide services for bridging distances and supporting elderly people's existing roles, including the "videoconference", the "remote dining", the "photos, videos, experience sharing" and the "intelligent calendar" services;

♦ to install the HOMEdotOLD pre-product prototype and perform trials at pilot sites by involving real elderly users;

♦ to evaluate and demonstrate the commercial feasibility and the business potential of the HOMEdotOLD services by preparing a realistic business and exploitation plan.

4.6 I2HOME *(Intuitive interaction for everyone with home appliances based on industry standards)*

(http://www.i2home.org)

I2HOME will address the problem of living an independent life and realizing full potential with an approach based on existing and evolving industry standards. They will focus on the use of home appliances by persons with cognitive disabilities and older persons. At the same time the project will take care that the developed and standardized access strategies will be applicable to domains beyond the home.

In I2HOME, participants will build upon a new series of industry standards (ANSL'INCITS 389ff) for interfacing networked appliances by means of a Universal Remote Console (URC). They will use architecture with a Universal Control Hub (UCH) as core component that communicates to networked (off-the-shelf) home appliances and consumer electronics devices through industry

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