



THE EUROPEAN
AMBIENT ASSISTED LIVING
INNOVATION ALLIANCE

newsletter

The AALIANCE newsletter gives information on the activities of the EU-funded Coordination Action AALIANCE.

Further up-to-date information is available on www.aaliance.eu

Roadmapping in Ambient Assisted Living

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It is generally acknowledged nowadays that demographic development and the ageing of the European population will lead to:

- a growing number of older people who live by themselves and who are in need of care, especially intensive care
- to an ageing workforce in general and
- to more financially stable and wealthier senior citizens who are ready to enjoy their retirement and spend their money on products that secure and enhance not only their wealth, safety and security but also their entertainment and communications needs.

Recent European population projections for 2008-2060 published by the European Office for Statistics underlined these demographic

developments. From 2015 onwards, deaths are projected to outnumber births in the 27 countries of the EU. Almost three times as many people will be aged 80 or more in 2060.¹ These social trends will bring dramatic challenges for healthcare and care systems, state pensions schemes and employers. At the same time they will offer innovation and business opportunities for technology providers in the field of innovative ICT-enabled assisted living or "ambient assisted living" (AAL). AAL helps older individuals to improve their quality of life, to lead healthier lives and to live longer, so extending their active and creative participation in the community.

A Vision of Ambient Assisted Living

Currently there are a vast number of European and national research activities in the field of AAL. These activities involve a range of technological areas and approaches to innovative technology. What is lacking, however, is a common vision of AAL that provides a definitive view of the necessary steps and projects which are currently being developed to advance Ambient Assisted Living. It is one of the tasks of the FP coordination action AALIANCE to develop such a roadmap and to provide strategic guidance for short-, mid- and long-term R&D approaches in the context of AAL.

Initially, we have to distinguish AAL from more traditional forms of ICT-enabled assistive technologies. We need to emphasize the important role that ambient intelligence plays in AAL technologies.

These technologies have to be:

- Embedded - non-invasive or invisible devices, distributed throughout the environment or directly integrated into appliances or furniture
- Personalized - tailored to users' needs
- Adaptive - responsive to the user's and their environment, and
- Anticipatory - anticipating users' desires as far as possible without conscious mediation

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¹<http://europa.eu/rapid/pressReleasesAction.do?reference=STAT/8/119&format=HTML&aged=0&language=EN&guiLanguage=en>



Ambient intelligence refers to electronic environments that are sensitive and responsive to the presence of people: Ambient intelligence = Ubiquitous computing + Intelligent social user interface. Ambient assisted living is the use of ambient intelligence in the social

domains of ageing at home, ageing in society and ageing at work.² However, if we take the aspect of ambient intelligence seriously in AAL, we have to be aware that in reality a person using AAL passes through many different physical spaces (rooms, home, car, working

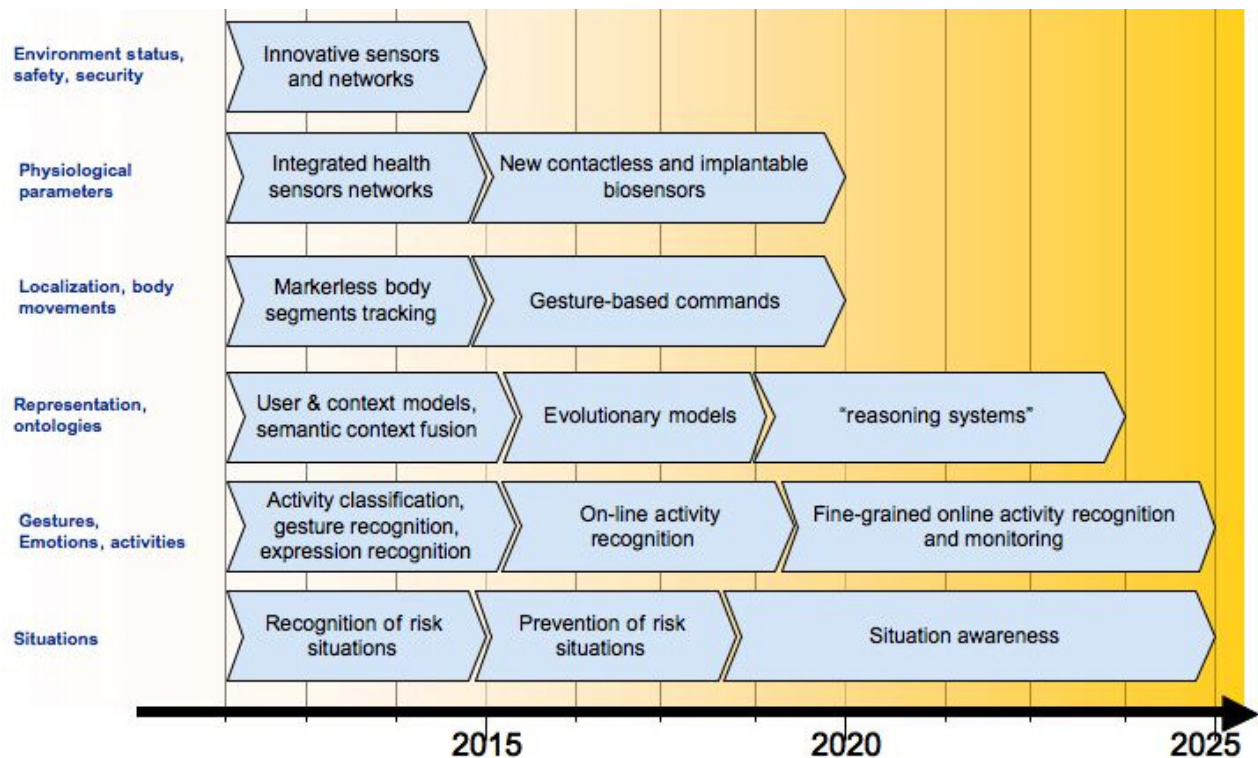
location, shop, outdoors) and virtual spaces (e-shopping, gaming, chatting, searching or planning activity) throughout the day, depending on the current activity or focus. The distinction between different domains can therefore be only a logical, not a practical, one.

Key enabling functions in AAL

- Sensing: anything and anywhere: within the body or on the body, within an appliance or on an appliance, or in the environment (home, outdoors, vehicles, public spaces, etc.).
- Reasoning: collecting, processing and analysing data, transforming into knowledge within different and often cross-connected spaces (body, home, vehicle, public spaces).
- Acting: automatic control through actuators, feedback (e.g. information, advice, guidance) - local or remote (e.g. call centre), instantaneous (e.g. in the case of alarms) or delayed (e.g. in the case of trend information and lifestyle recommendations) to relevant participants using personalized multi-modal interfaces, possibly across multiple spaces.
- Communicating: sensors and actuators are connected to one or more reasoning systems that in turn might be connected - including dynamically, e.g. a person moving from home to vehicle to a public space -- to other reasoning systems, possibly with their own sensors and actuators.
- Interacting: intelligent interaction with systems and services is an important aspect of applications and will have specific requirements to deal with the abilities of users.



Sensing & Reasoning



Example: Roadmap for sensing and reasoning technologies

²Following the terminology used in the European action plan for "Aging well in the Information Society".

System integration

In AAL, the different functions provided by a wide-ranging set of disciplines (e.g. advanced human/machine interfaces, sensors, microelectronics, software, web and network technologies, energy generation or harvesting and control technologies, new materials and robotics) have to be integrated into a system that offers applications and services in a user-centred way. While ICT-enabled products in the field of walking aids or telemonitoring could be developed following already existing technological paths in the field of gerontechnology,

more ambitious AAL solutions raise specific challenges regarding system integration and design hierarchy. In AAL, system integration not only depends on technical and functional integration factors, but also has to take into account user needs and user knowledge. This could lead to a situation that the systems design cannot be fully defined as long as the applications have not been defined on a basic level by the users themselves. Such thinking emphasizes the importance of user involvement and user perspective

in AAL-related research and innovation activities that have already been tackled by a number of R & D projects. On the other hand, a common AAL platform is needed as the basis for third-party service development and provision and to stimulate the development of products at an early stage and the establishment of value chains that put into effect the business opportunities within AAL. •

News from the AALIANCE's Partners: First Validation Phase for CSTB's Gerhome Project

Facing an ageing population and the shortage of places in institutions for the elderly, the French scientific and technical centre for buildings (CSTB) has been working on the design of smart buildings for the security and well-being of the elderly at home.

Built on CSTB premises in the scientific park of Sophia-Antipolis in 2005, the GERHOME (GERontology at HOME) laboratory is a standard one-room apartment, furnished and equipped with instruments to evaluate solutions intended to ease the day-to-day living of the elderly at home. Unobtrusive sensors embedded in the building collect events linked to the use of electric equipment (such as TV and white goods), sanitary appliances (such as basins and showers), windows, doors, cupboard doors and drawers, bed and seats, etc. In addition, correlations between video-sensor analysis and building-sensor events give a greater reliability for detection of activities of the residents. Such monitoring allows the residents to learn daily activities for themselves, with the possibility of focusing on unusual forms of behaviour or warning signs, which could potentially launch alerts.

In March 2008, lab trials were performed on 15 healthy elderly volunteers, selected thanks to the contribution of the CODERPA, a French national elderly representative association. Based on a clinical protocol elaborated by the geriatric unit at Nice University Hospital, each volunteer had to undergo a brief medical check-up at the hospital, then spend four hours in the GERHOME lab performing a scenario that asked for simple daily activities to be undertaken: preparing and eating a meal, watching TV, cleaning, and resting.

The main aim of this first experimental phase was to validate the system ability to capture precisely every significant activity during the scenario. Registered data also enabled progress towards the elaboration of a repository of different forms of behaviour: analysis of difficulties encountered by the volunteers, the length of time it took to complete various tasks and an understanding of seniors' life habits. At the same time, a survey on acceptance and perception of the solution has also been carried out in collaboration with sociologists.

CSTB

le futur en construction

CSTB is an associated partner
in AALIANCE.

The dissemination of detailed results of this first experimental phase is planned for autumn 2008 at a specific event dedicated to the project. At the beginning of 2009, the GERHOME system will be deployed in five homes and three rooms in a nursing home in the surrounding mountainous Alpes-Maritimes region. Acting as a building standardization and assessment organization at a European level, CSTB is investigating through the GERHOME project how a certification process could apply to AAL products and services. In fact, certification tags would guarantee the quality, reliability and efficiency of buildings designed and adapted to final end-users. www.CSTB.fr



Elderly volunteers involved in the experimentation and GERHOME project team in front of the GERHOME Lab, June 27, 2008.

Join us at the ICT 2008 Conference in Lyon.

**Invitation to the AALIANCE ICT 2008 Networking Session
„Ambient Assisted Living:
New Challenges for Researchers, Innovators and Policy-Makers“**

Date: Thursday, 27 November 2008, 9.00h - 10.30h



Global demographic trends are leading to a rapid aging of our societies, with a sharp increase in the elderly and the very elderly. Evidence suggests that ICT in combination with new services can contribute positively to this scenario: Ambient Assisted Living (AAL) solutions can extend the time elderly people can live in a decent way in their preferred environment and increase their autonomy, self-confidence and mobility and increase the efficiency and productivity of used resources in the ageing societies. At the same time AAL provides new challenges and opportunities for researchers, companies and policy makers alike. AALIANCE - the European Ambient Assisted Living Innovation Alliance - invites all stakeholder to this networking session to share and discuss their views on the upcoming AAL sector in Europe.

More information:

<http://www.aaliance.eu/public/news/join-us-in-the-aaliance-networking-session-at-the-ict-2008-conference>

Events

19 Nov – 21 Nov 2008

European Conference on Ambient Intelligence (Aml 08) – Nuremberg (Germany)

<http://www.ami-08.org/index.html>

25 Nov – 27 Nov 2008

ICT 2008 - Lyon (France)

Europe's biggest research event for information and communication technologies

http://ec.europa.eu/information_society/events/ict/2008/index_en.htm

30 Nov – 2 Dec 2008

European Ministerial e-Inclusion Conference – Vienna (Austria)

http://ec.europa.eu/information_society/events/e-inclusion/2008/index_en.htm

27 Jan – 28 Jan 2009

2nd German AAL Congress – Berlin (Germany)

<http://www.aal-kongress.de/>

Imprint

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