

1st National Workshop on Ambient Assisted Living (AAL)

Preparation of an article 169 initiative
in the field of

'Small and smart technologies for ambient assisted living'
to be implemented within FP7

SSA project, funded under IST Call 2

Duration: 1.9.04 – 31.8.06

<http://www.vdivde-it.de/aal>

Dr. Hans-Joachim Muhr, TEMAS AG

1. Aim of the workshop and introduction of the Specific Support Action ‚Ambient Assisted Living‘
2. Introduction of the 4 parallel workshop sessions:
 - Health (Dr. Georges Kotrotsios, CSEM)
 - Safety, security and peace of mind (Dr. Thomas Schumann, Adhoco AG)
 - Independence (Virginie Carniel, Emitall SA)
 - Mobility (Prof. Gerhard Tröster, ETHZ)
3. Example of a pilot project in the field of AAL: a new adaptive home automation and reporting system (Dr. Thomas Schumann, Adhoco AG)
4. Execution of the parallel workshop sessions

Aim of the AAL workshop



- Identification of challenges and elaboration of possible solutions concerning:
 - needs of the ageing population
 - application fields to meet the needs
 - technologies and services to realize the application fieldsin order to identify chances for the development of new markets and to receive valuable contributions from a Swiss national perspective for the European AAL169 programme.



4 parallel workshop sessions comprising the discussion of four basic requirements of elderly people from various perspectives:

**1 Health, 2 Safety, security and peace of mind,
3 Independence, 4 Mobility**

AAL – aims and context



The concept of „Ambient Assisted Living“ (AAL):

- Ambient Assisted Living aims at extending the time people can live in a decent and self-determined way in their **home environment supported by the use of ICT products and the provision of remote services including care services**, thus providing
 - Increasing their autonomy and self-confidence
 - Assisting them in carrying out their daily activities
 - Getting access to social, medical and emergency systems
 - Monitoring and taking care of their well being
 - Enhancing their security, safety and privacy

The context of AAL:

- AAL169: A new European technology funding programme "bridging" technology programmes and markets. Planned duration from 2007 – 2013 within FP 7

Features of Article 169

Objectives

- Enabling of the Community to participate in research programmes undertaken jointly by several European States, including participation in the structures created for the execution of national programmes

Characteristics

- Article 169 integrates national programmes, the European States submit the proposal
- Article 169 is adopted by a co-decision process between the European Parliament and the Council

Players involved

- Political players from the European States are the policy makers and the operational players are the programmes managers of national programmes

The current AAL consortium

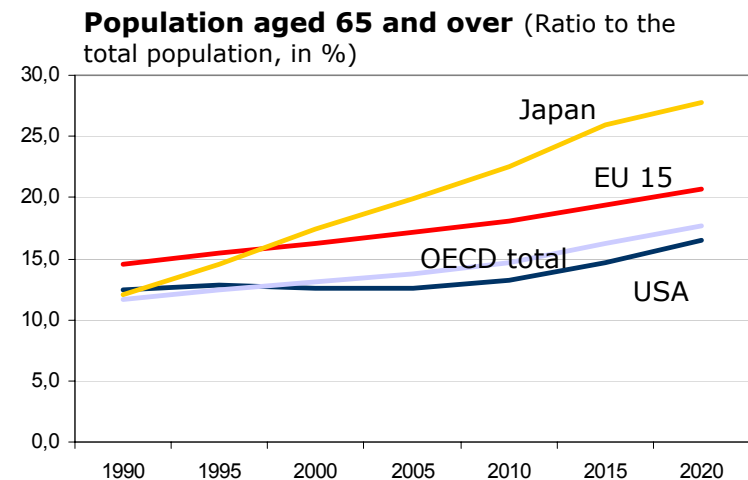


Vienna University of Technology/Fortec	Austria
Federal Ministry of Transport, Innovation and Technology	Austria
Interuniversitaire Micro-Elektronica Centrum vzw	Belgium
Tekes – National Technology Agency	Finland
Ministry of Economy, Finance and Industry	France
VDI/VDE Innovation und Technik GmbH	Germany
Federal Ministry for Education and Research	Germany
National Office for Research and Technology	Hungary
Ministero dell'Istruzione, dell'Università e della Ricerca	Italy
Progetto Finalizzato Materiali Speciali per Technologie Avanzate II	Italy
Commission for Technology and Innovation (TEMAS)	Switzerland

AAL background



- Demographic change and ageing of population in industrial countries
- Because of increasing life expectancy and low birth rates
- Far-reaching implications and consequences for all facets of human life and society:
 - *Economy*
(economic growth, investment and consumption, pensions and financing of welfare systems)
 - *Social structure*
(as it affects health and health care, family and living arrangements, housing and migration,...).



Source: OECD Factbook 2005

New solutions for the demands of elderly people required

AAL - a transnational challenge



European level

- Demographic change as **common problem and challenge** for Europe
- Resources and competencies are **distributed all over Europe**
- **Synergies** through combination of resources and competencies because of a) different competencies and b) the lack of „critical mass“ in the single states
- **World-wide** dynamics and competition; activities in US, Asia

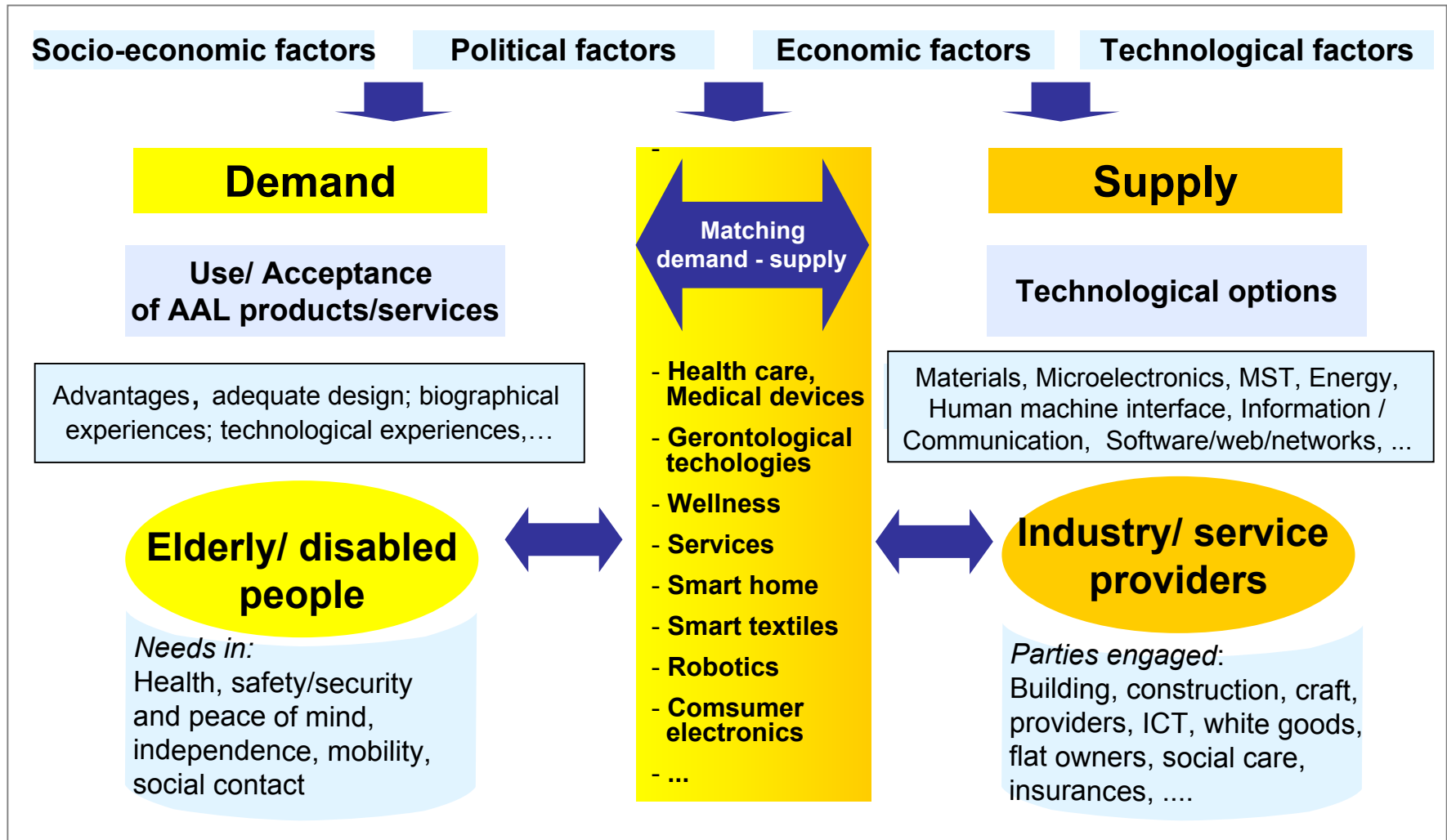
AAL - a transnational challenge



National level

- **Specific AAL-problems** and challenges on the national level (e.g. differences on demographic trends, society structure, culture, organisation of care)
- Specific socio-economic or **institutional framework conditions** (public acceptance, structure of social security systems,...)
- **Market** penetration on very different level, different national market mechanisms. There are different criteria of acceptance, depending on the national socio-cultural/economic context.
- **Subsidiarity**: higher efficiency of national solution (compared to central European approach)
- **Legal reasons**: national level is competent/responsible for specific aspects (e. g. social care, national social security systems)

AAL innovation model



Specific issues on the demand side



- Acceptance depends on the **obvious advantage and practical use** - “gadgets” are less accepted and bought
- New products should **consider “old” habits** of the users and should have an **adequate design (for all)**, thus providing a **simple and intuitive handling**
- **Multi-functionality** of physical and electronic user interfaces
- **Reliable and authentic confirmation** of remote handling activities
- **Protection** against unauthorized intrusion and use of data
- The systems should **stay user-determined**
- Fast and secure **error diagnosis and error removal**
- Simple, cheap **possibility of expansion and integration** of new devices according to user requirements and financial conditions
- **Acceptable price** in relation to the often not easy calculable benefit, especially for comfort-functions (e. g. classical remote control)
- The new living environment should **not generate new risks**

Specific issues on the technology and supply side



- Often **various technological options** exist to offer the required functionalities
- All technological fields/options that help to solve AAL-challenges are relevant for AAL - selection according to user and market requirements
- For AAL **application oriented** problems are most interesting; **basic research is only in special cases needed**
- Important are **interdisciplinary co-operations** and system integration
- Advantages of available devices are to be used in an **integrative manner for cost-effectiveness and interoperability**
- There is a strong need for **localisation and adaptation** of AAL solutions to be compatible with **varying social preferences and regulatory aspects**
- Despite the possibility of integration, solutions have to work without the network **on their own** (e. g. in case of power blackout)

Market figures for AAL applications



- **Preventive health care:**

- The European Telecardiology Market will grow from 50 Mio € in 2005 up to **400 Mio € in 2011** [Frost&Sullivan 2004]
- Mobile health care will lead to a **reduction of annual treatment cost of about 30%** [McKinsey 2004]

- **Smart home or smart features in the home:**

- The global market for intelligent home automation systems will grow from 172.9 Mio \$ in 2002 up to **399 Mio \$ in 2009** [Frost&Sullivan 2004]

- **Smart textiles:**

- In EU-15 there are 177.000 SMEs with mostly less than 20 employees, which produce **4% of the annual industrial EU-GPD**
- The textile industry in EU-25 achieved with 2.6 Mio employees a **turnover of 215 Billion \$**, is world-wide leading in export of textiles and third in export of clothing

Opportunities and challenges



- **Individual:** AAL meets individual needs of elderly and handicapped people, better individual living
- **Economy:** higher effectiveness of limited resources, reduction of costs in the health services, chances/strengthening position for European industry in promising/existing markets
- **Society:** Better overall living standards and quality of life for elderly people, stabilisation of social and health care systems, relief for younger generation



- Autonomy, individuality, security of privacy, entrance for all
- Market is still in an early phase
- Heterogeneous set of industrial branches and services
- AAL-products not yet in the focus of industrial R&D and marketing
- Information lack about the user needs/demands
- Usable business models
- European industries so far have not yet exploited the market potential
- International standards

RTD projects within AAL 169 calls



- **Targeted calls** for RTD projects
- Participation of partners from **at least 3 countries**
- Project content shall focus on **short time to market** (2-3 years period)
- Composition of project consortium shall facilitate the **deployment of results**
- Special focus shall be put on **user requirements** and on the **various players involved** (consumers, care-service providers, health insurance, ...)
- Involvement of **sociologist, specialists in user-centered design and specialists in disciplines related to ageing** is recommended

1. Aim of the workshop and introduction of the Specific Support Action ‚Ambient Assisted Living‘
2. Introduction of the 4 parallel workshop sessions:
 - Health (Dr. Georges Kotrotsios, CSEM)
 - Safety, security and peace of mind (Dr. Thomas Schumann, Adhoco AG)
 - Independence (Virginie Carniel, Emitall SA)
 - Mobility (Prof. Gerhard Tröster, ETHZ)
3. Example of a pilot project in the field of AAL: a new adaptive home automation and reporting system (Dr. Thomas Schumann, Adhoco AG)
4. Execution of the parallel workshop sessions

Central theme:

By shifting the balance of health care toward individuals in their own environment (their home, their workplace, or wherever they are), overall health costs can be decreased through emphasizing prevention and better managing minor chronic problems to slow down their progress into major ones.

Discussion topics:

- Wellness (monitoring of Activities of Daily Living (ADL), ...)
- Fitness (offers for health preservation, ...)
- (Tele) Health care (constant monitoring of health condition, ...)
- Assistance for care givers (technology as supporting measure, ...)

Workshop ,Safety`



Central theme:

Availability of help when required in the home environment by protecting privacy, individualism and autonomy.

Discussion topics:

- Safe home (video observation, fall detecting sensors, ...)
- Secure home (gas detecting sensors, device faults, ...)
- Immediate and context-sensitive availability of help (in-house monitoring, personal emergency call, connection to social and medical services, ...)
- Context-sensitive adaptation of home infrastructure (light sources, ...)

Workshop 'Independence'



Central theme:

Chance of living at home without depending on other people to carry out common daily activities and to enhance the quality of life by avoiding isolation.

Discussion topics:

- Facilitation of ADL (autonomous households, communication systems to external service providers, ...)
- Improvement of quality of life and comfort (communication systems to relatives and friends, services for physical and cognitive training, ...)
- Barrier-free home environment (flexible adaptation of home infrastructure, ...)

Workshop ,Mobility`



Central theme:

Removing barriers: freedom of moving, getting things, train the body and support the mobility of the mind

Discussion topics:

- Physical assistance without devices (rehabilitation, smart actuators, adaptable furniture, ...)
- Physical assistance with devices (light weight wheel chairs, Movingbot, ...)
- Mental assistance (soft- or hardware for mental training, ...)

Workshop Key Questions



1. What are in your view the key technological and sociological challenges to be addressed in future RTD for AAL, if the specific user need is considered?
2. What are in your view the key RTD issues to be addressed? (short – medium – longer term)
3. What do you see as major barriers to economical exploitation and impact for future AAL products and services in Switzerland/Europe?
4. How do you see the role of public policies and services for the further evolution of AAL?
5. How should Switzerland proceed in the fields of AAL?

Agenda



1. Aim of the workshop and introduction of the Specific Support Action ‚Ambient Assisted Living‘
2. Introduction of the 4 parallel workshop sessions:
 - Health (Dr. Georges Kotrotsios, CSEM)
 - Safety, security and peace of mind (Dr. Thomas Schumann, Adhoco AG)
 - Independence (Virginie Carniel, Emitall SA)
 - Mobility (Prof. Gerhard Tröster, ETHZ)
3. Example of a pilot project in the field of AAL: a new adaptive home automation and reporting system (Dr. Thomas Schumann, Adhoco AG)
4. Execution of the parallel workshop sessions

Agenda



1. Aim of the workshop and introduction of the Specific Support Action ‚Ambient Assisted Living‘
2. Introduction of the 4 parallel workshop sessions:
 - Health (Dr. Georges Kotrotsios, CSEM)
 - Safety, security and peace of mind (Dr. Thomas Schumann, Adhoco AG)
 - Independence (Virginie Carniel, Emitall SA)
 - Mobility (Prof. Gerhard Tröster, ETHZ)
3. Example of a pilot project in the field of AAL: a new adaptive home automation and reporting system (Dr. Thomas Schumann, Adhoco AG)
4. Execution of the parallel workshop sessions