

Challenge 7

ICT for Independent Living, Inclusion and Governance

**Infoday ICT Call 4
09.12.2008 Minsk**



European Commission
Information Society and Media

Challenge 7: ICT for Inclusion, Independent Living and Governance

Overcoming social and economic exclusion through new ICT innovation. Fostering ICT innovation for social inclusion, policy making, new emerging markets, and Europe-wide deployment



<http://ec.europa.eu/einclusion>

www.aal-europe.eu



http://ec.europa.eu/ict_psp



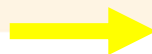
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Challenge 7: ICT for Independent Living, Inclusion and Governance

Objective

Integration & Empowerment of Individuals



Participation for All

Challenges

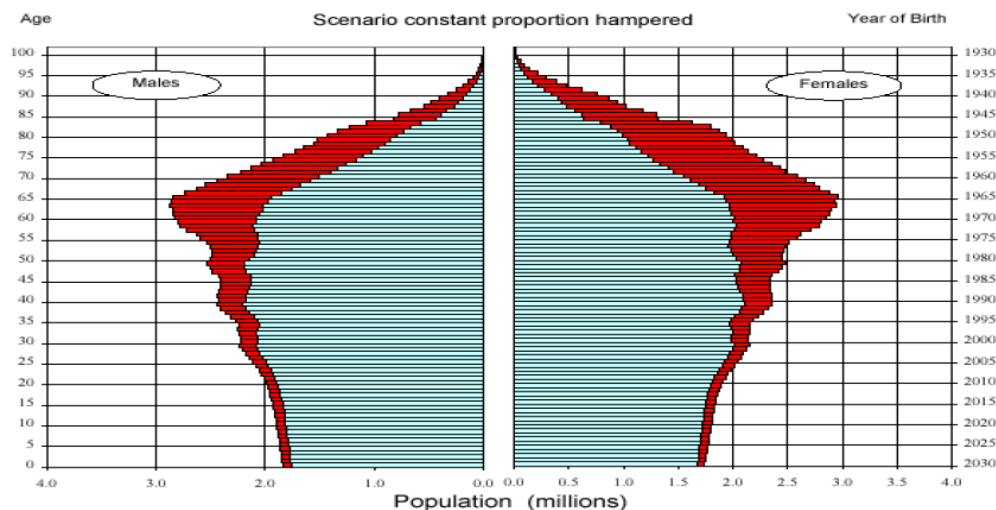
- 30% non-users
- Aging Population
- Inaccessible or expensive ICT



- Societal challenges for
 - Social care and health systems
 - Work and retirement
- New Markets
- Better Accessibility

Outcome Opportunities

European Union, 2030, Total and Hampered Population



Challenge 7: The policy context

Industrial Relevance

Industry

- ICT has major catalytic role on Inclusion and Participation
- Major global market opportunity 20B€+/year
- Accessibility attracts mainstream ICT



Policies

- Demographic Change
- i2010 flagship on ICT and Ageing
- Action plan Ageing Well
- Riga Ministerial Declaration, 2006
- eAccessibility Communication
- Campaign 'Be Part of It'

Policy Relevance

Key Areas

- ICT and Active Ageing
- Service Robotics for Ageing Well
- Embedding Accessibility of future ICT
- Augmenting human capabilities through brain neural interfaces



- Increased efficiency of Care services
- Increased active participation
- Emerging new markets
- Global Leadership in Ageing market

Impacts

Trends ICT for Inclusion

- Older people tend to live longer at home
 - Significant cost benefit
 - Increasing single households
 - Challenging task for care givers, relatives, social participation
- Emerging assistive user interfaces
 - New tools to incorporate accessibility design into mainstream ICT and non-ICT products
 - Natural brain-neuro-computer interaction towards new intuitive interaction with computers, home appliances, assistive technologies
- Service Robotics not yet mainstream,
 - Not yet mainstream, still significant research
 - Major area of research investment outside Europe
 - No economy of scale, fragmented markets (niches)
 - Not linked to care service provision
 - No integrated smart home concepts

Challenge 7: ICT for Independent Living, Inclusion and Governance

Three objectives :

- *ICT and Ageing (7.1)*
 - Complemented by Art. 169 initiative (AAL)
- *Accessible and Inclusive ICT (7.2)*
- *ICT for Governance and Policy Modelling (7.3)*

Links to other challenges:

- 1: Pervasive networks
- 2: Robotics
- 3: Networked Embedded Systems
- 5: Personal Health Systems

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Objective ICT-2009.7.1: ICT & Ageing

Target Outcomes

Expected Impacts

Key Area
**Service robotics
for ageing well**



Strengthened global position of European industry in Service robotics
More efficient care, prolonged independent living and better quality of life of elderly and carers.

Key Area
Open Systems Reference Architectures, Standards and ICT Platforms for Ageing Well



Global industrial and academic leadership in ICT and Ageing Well
Global interoperability standards established
Wide use of open ICT platforms and tools cross-cutting Ageing, Health and Energy services

Coordination Action
RTD roadmaps and Stakeholder coordination



Common strategic vision / RTD roadmap for ICT for ageing well in Europe and beyond.

Funding Schemes and Budgets

Target	Indicative Budget	Funding Scheme
<ul style="list-style-type: none">• Service Robotics for Ageing Well	} 23 M€	CP: STREP only
<ul style="list-style-type: none">• Open Systems, Ref. Architectures, Standards and Home Platforms		CP: IP only
<ul style="list-style-type: none">• Strategic visions, RTD roadmaps	1 M€	CSA: CA only

Key area: Service Robotics for Ageing Well

- Building on R&D advances in robotics research and system design (Challenge 2)
- Operational Verification of integrated and adaptable modular robotic solutions at home
 - Support for daily living and care activities
 - Demonstration in realistic environments
 - Usability, ethics for elderly a key
- Ensuring safe operation in a home environment
 - With people present (context detection)
 - May interfere / cooperate with other smart artefacts, intelligent home space.

Selected FP6/FP7 Ageing Projects

	Project	Topic
IP	PERSONA SOPRANO OASIS Companiable MON-AMI	Open Platforms and tools for Ageing applications/services; Advanced integrated care service platforms; Ontology based interoperability for ageing applications; Intelligent robotic companion for safety and social support; Ambient Intelligence for independent living;
STREP	HERMES VITAL MIND ELDER GAMES I2HOME EASY-LINE+ SMILING SHARE-IT CONFIDENCE MPOWER	Cognitive care and guidance for active ageing; Advanced interactive mental training for elderly people; Improving cognitive skills of elderly people through gaming; Innovative interaction with home appliances for all; Intelligent white goods for an ageing population; Support for mobility of an ageing population; Enhanced navigation with smart wheelchairs and walkers; Fall detection and protection for independent living; Service oriented architectures for independent living;
CSA- SA	AALIANCE CAPSIL SENIOR	European R&D coordination platform for Ageing Well; International R&D cooperation with US and Japan; Support Action on ICT and Ethics in Ageing domain

Key Area:

Open systems, Reference Architectures,
Standards and ICT Platforms for Ageing Well

Next generations of open platforms

- Building on advances in middleware, communications standards, service-oriented architectures
- Supporting cost-effective systems integration, personalisation, deployment and maintenance for end-to-end care support.

Emphasis put on

- Solutions across mobile and stationary environments
- Physical and semantic interoperability of sensors, devices, services and systems
- Concepts that integrate other home-based services, in particular services for personal health, energy efficiency management



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Objective ICT-2009.7.2: Accessible and Assistive ICT

Target Outcomes

Key Area
Embedded Accessibility of Future ICT.



Generalized accessibility support by ICT tools seamlessly integrated into future ICT and non-ICT product design
Global position of European industry in assistive technologies

Key Area
ICT restoring and augmenting human capabilities
-for people with reduced motor functions or disabilities
-Emphasis on brain/neuroanl computer interaction (**BNCI**)



Global position of European industry in assistive technologies
Seizing new market opportunities driven by novel technologies
Boosting European excellence in BNCI systems engineering

Support Measures
RTD research agendas, coordination of constituencies



Impact through aligned strategic research agendas visions of key stakeholders.

Expected Impacts



Embedded Accessibility in Future ICT

- **Target users:** ICT-based product/service developers
- **Objectives:** Developers' solutions (tools) for embedding generalised accessibility support (related to vision, hearing, speech, dexterity, mobility) within future mainstream ICT-based products and services
- **Key research issues:**
 - 'Virtual User' concept for Verification of accessibility features:
 - Realistic user modelling and interaction, virtual environments
 - Methods enabling self-adaptation of multi-modal interfaces
 - in real time to users' accessibility needs
 - User interfaces and content representation for people with special needs
 - Linking interaction paradigms like 3D or virtual reality to integrating accessibility services in physical environments
- **Essential Elements:**
 - Demonstration in industrial development context, integrated into quality control / content work flow with training material
 - To ensure accessibility support for ICT and also non-ICT products
 - IP: building on a generic framework //
 - STREPs: specific R&D on 'virtual user' modelling supporting applications in high-profile domains of user and industrial relevance.

ICT restoring and augmenting human capabilities

- **Target users:** User with special needs, i.e. reduced motor functions or disabilities
- **Objectives:** Radically new approaches, breakthroughs in HCs – augmenting personal capabilities
- **Key research issues:**
 - Building on progress on non-invasive sensors/actuator concepts for brain/neuronal-computer interaction (BCI) or other multi-sensor interfaces
 - Smart systems solutions incl. self-learning, advanced signal processing / control
- **Essential Elements:**
 - Advanced **BCI systems engineering:** HW/SW platforms, programming abstraction, tools to support modularity and flexible integration
 - Advanced sensing & control in real user environments (home, work)
 - Combining advances in micro-bio-nano technology, neuroscience and bio-psycho-sociology,
 - New business opportunities, possible spill-over into mainstream

Funding Schemes and Budgets

Target	Indicative Budget	Funding Scheme
<ul style="list-style-type: none">• Embedded Accessibility of Future ICT	} 33 M€	CP: IP, STREP
<ul style="list-style-type: none">• ICT restoring/augmenting human capabilities		CP: STREP only
<ul style="list-style-type: none">• Strategic visions, RTD roadmaps	1 M€	CSA: CA only

Further Information

- Web Resources
 - http://cordis.europa.eu/fp7/ict/programme/challenge7_en.html
 - <http://ec.europa.eu/einclusion>
- Information Days
 - **22th January 2009** - Budapest
- Key Contacts
 - ICT & Ageing
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Thank you for your attention!

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