

FP7 ICT Programme Challenge 5

Obj. 5.5 ***ICT for Smart and Personalised Inclusion***

***European Commission,
DG Information Society and Media
ICT for Inclusion Unit (H3)***



7th FP Call 7, Objective ICT-2011.5.5

ICT for Smart and Personalised Inclusion

Aims

- **E-inclusion aim:**

Improve the quality of life of people, including persons with disabilities and the elderly, supporting their full participation in society by means of ICT

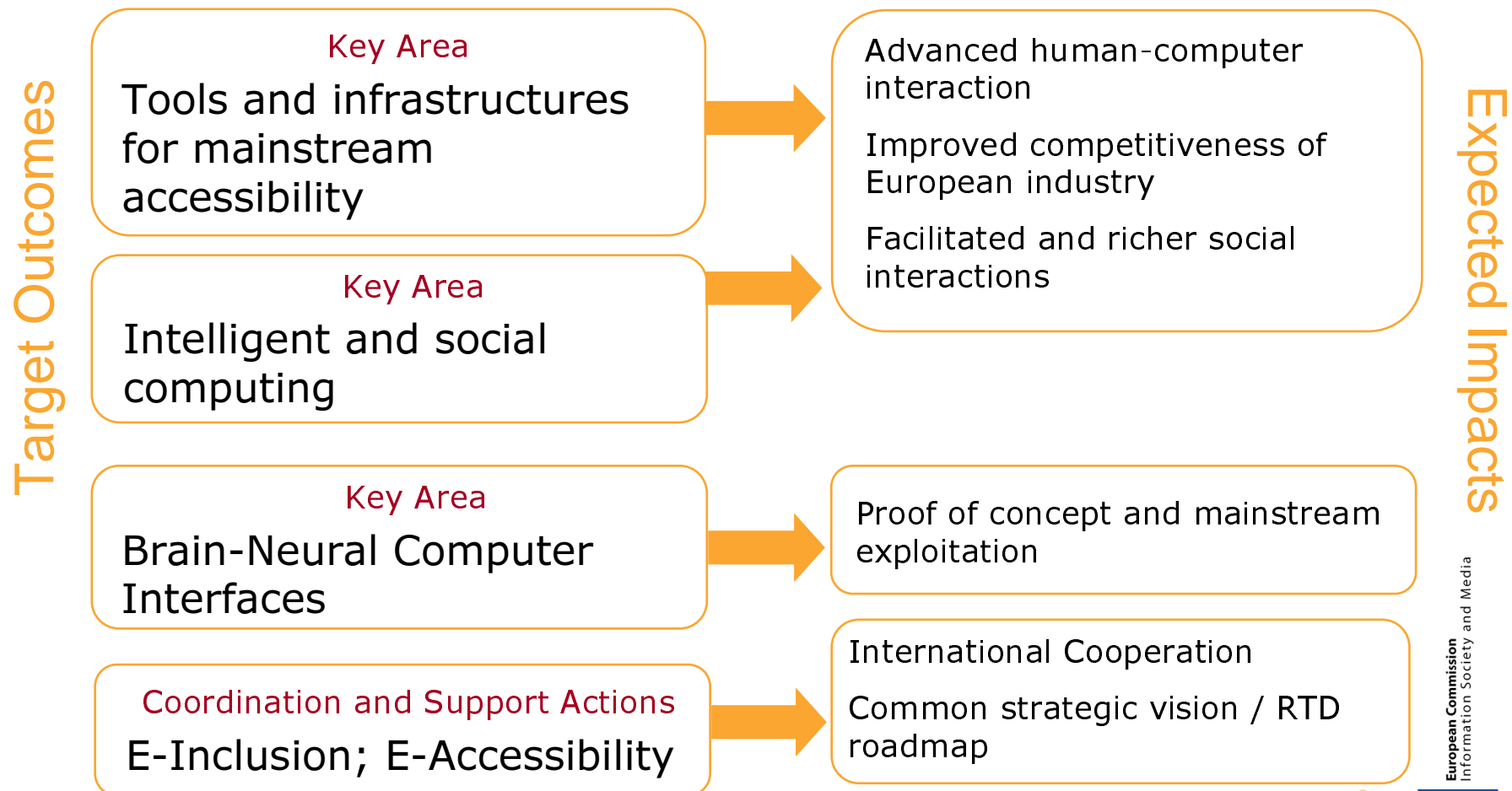
- **Aim of this call:**

"Research on ICT for smart and personalised inclusion addressing advanced solutions to improve social and economic inclusion by means of inclusive design, accessible, personalisable and human-ICT interfaces, social computing and advanced solutions for learning and skills acquisition as well as Brain-Neural Computer Interfaces (BNCI)."

7th FP Call 7, Objective ICT-2011.5.5

ICT for Smart and Personalised Inclusion

Call overview



7th FP Call 7, Objective ICT-2011.5.5

ICT for Smart and Personalised Inclusion

a) Tools and infrastructures for mainstream accessibility

TARGET OUTCOME (FP quote)

The objective is to support seamlessly accessible solutions and services for persons with disabilities, in various and changing settings (e.g. home, workplace, public transport, shops, education or medical centres, other public spaces, both indoors and outdoors). The research projects should focus on one or more of:

- 1) Virtual reality and simulation approaches for developers to design daily life environments and explore potential user interactions building on previous work on 'virtual user'; and prototypes for ambient intelligence multimedia infrastructure (supported by networked sensors, terminals, etc) interacting with users' interoperable and portable IT devices;*
- 2) personalisable software based assistive solutions supported through online/cloud-based platforms. This research should address generic and open solutions responsive to user physical, cognitive and mental capacities, preferences, and the ICT already available to the user.*

7th FP Call 7, Objective ICT-2011.5.5
ICT for Smart and Personalised Inclusion

a) Tools and infrastructures for mainstream accessibility

Research output:

- (ICT) accessible solutions for people with disabilities
 - For various settings (in-/out-door), e.g. home, work, transport; and seamless carried over
 - Aims: mobility, access, autonomy, participation

Research focus (1 and/or 2):

1) Simulation approaches + prototypes

- Virtual reality/ simulation approaches for (inclusive) design (/modelling) of daily environments and user interaction
- Prototypes for AI interacting with users' interoperable and portable IT devices

7th FP Call 7, Objective ICT-2011.5.5
ICT for Smart and Personalised Inclusion

a) Tools and infrastructures for mainstream accessibility

Research focus

2) 'Personalisable' software-based assistive technologies

- Software > online/cloud > generic/ open solutions
- Personalisable > responsive to user specificities (dynamically adaptable)
 - Personal: capacities, preferences
 - ICT: equipment, environment

7th FP Call 7, Objective ICT-2011.5.5

ICT for Smart and Personalised Inclusion

b) Intelligent and social computing for social interaction, user empowerment and learning or skills acquisition for people at risk of exclusion

TARGET OUTCOME (FP quote)

Advanced ICT-enabled solutions -including social, affective and persuasive computing, and possibly serious games - for the empowerment of people with disabilities or people at risk of social exclusion, including people with low literacy, cognitively or mentally challenged, or with anti-social behaviour, which may include young people.

This will aim at self-learning ICT solutions which take into consideration user profiling and feedback, in view to deliver personalised services and enhanced participation in work, education or training, social interaction, etc.

Special attention will be paid to information representation, information appropriation and learning by users, and social dynamics, considering also intermediaries supporting final users.

7th FP Call 7, Objective ICT-2011.5.5

ICT for Smart and Personalised Inclusion

b) Intelligent and social computing for social interaction, user empowerment and learning or skills acquisition for people at risk of exclusion

Research output:

- ICT-enabled solutions for empowering persons with disabilities OR at risk of social exclusion
 - IT: self-learning, responsive;
social, affective, persuasive computing (e.g. serious games)
 - Human scope: those with disability, at risks of exclusion, but also low literacy, anti-social, youth... > intellectual or social limitations
 - Empowerment aim: beyond accessibility > learning, skills, communicate (no medical approach)

7th FP Call 7, Objective ICT-2011.5.5

ICT for Smart and Personalised Inclusion

b) Intelligent and social computing for social interaction, user empowerment and learning or skills acquisition for people at risk of exclusion

Research focus: wide, interdisciplinary (technology + human & social research aspects; enhanced HCI interaction)

- User-centred (person in society)
 - Info representation & appropriation, learning processes, social dynamics
 - Role of intermediaries (second level users)
- ICT advanced and dynamic
 - User profiling (personalisation) and feedback (interaction)
 - Self-learning ICT-enabled solutions
- Impact-oriented:
 - Services for augmenting (social) participation, e.g. in work, education...

7th FP Call 7, Objective ICT-2011.5.5
ICT for Smart and Personalised Inclusion

c) Brain-Neuronal Computer Interfaces (BNCI) for assisting people with disabilities

TARGET OUTCOME (FP quote)

Building on previous research, the BNCI foci now are: adapting BNCI sensor technology for out-of-the-lab use, fusion of BNCI into multi-sensor and multi-modal interfaces solutions, and data/pattern analysis for interaction with ICT-enabled devices and applications.

Modularisation, interoperability, and smart processing of BNCI/sensor inputs for increased efficiency (e.g. through predictive approaches) are expected to be key aspects.

Work on interoperability of BNCI devices, in particular, should consider potential contribution to standardisation.

Research should also explore possible synergies with mainstream application domains, e.g. in gaming, virtual reality or alternative user-to-ICT input in complex multi-task settings.

7th FP Call 7, Objective ICT-2011.5.5
ICT for Smart and Personalised Inclusion

c) Brain-Neuronal Computer Interfaces (BNCI) for assisting people with disabilities

Research output:

- BNCI for assisting people with disabilities
 - Building on previous research
 - Contribution to standards, notably on interoperability of BNCI devices

Research focus:

- Smart processing of BNCI/sensor inputs
- Fusion of BNCI with multi-sensor and multi-modal interfaces
 - Modularisation, interoperability
- Data/ pattern analysis of interaction with ICT devices and apps
- Adapting BNCI technology for out-of-the-lab use
- Possible synergies with mainstream application domains

7th FP Call 7, Objective ICT-2011.5.5
ICT for Smart and Personalised Inclusion

d) Coordination and support actions

TARGET OUTCOME (FP quote)

- i) a cooperation framework with Latin America on ICT for skills and empowerment of disadvantaged social groups and local communities, and on ICT for improving personal autonomy of people at risk of exclusion.*
- ii) a cooperation framework at European or international level for promoting the development of accessibility guidance for advanced technologies, services and contents (including evaluation methodologies), with special focus on the internet, and for setting research agendas on e-accessibility.*

7th FP Call 7, Objective ICT-2011.5.5
ICT for Smart and Personalised Inclusion

d) Coordination and support actions

Output: Cooperation frameworks

Focus:

1) Cooperation with Latin America on ICT for

- 1.1) Skills & empowerment of disadvantaged social groups & local communities (collective focus) +
- 1.2) Personal autonomy of people at risk of exclusion, through enhanced e-accessibility, access to info & services (individual focus)

2) European or international cooperation on

- 2.1) Guidance for advanced accessibility
 - Including evaluation methodologies
 - Especially regarding the internet > web accessibility +
- 2.2) Research agendas on accessibility

7th FP Call 7, Objective ICT-2011.5.5
ICT for Smart and Personalised Inclusion

Aspects to consider

Essential aspects for areas 'a', 'b', and 'c': users

- Address user requirements, e.g. safety, trust & security, ID management, privacy & ethics other (b new area, ethics delicate)
- Involve target end-users at all stages of the research work - from design to validation
- Intermediary users and actors (e.g. accessibility designers & service providers) & further final users (carers, relatives)

7th FP Call 7, Objective ICT-2011.5.5
ICT for Smart and Personalised Inclusion

Aspects to consider

Cont:

- Providers and sustainability
 - Viable business models
 - Strong involvement of providers commercial or public, policy makers
- Standards
 - Consider existing ones & new contributions
- Impact
 - Applications with measurable impact on people quality of life and society
- Effectiveness and efficiency
 - Broad expertise instead of excessive number of partners

7th FP Call 7, Objective ICT-2011.5.5
ICT for Smart and Personalised Inclusion

Expected impact

For areas 'a' and 'b':

- Significant progress on accessibility of ICT, advanced HCI and intelligent computing, strong involvement of final & intermediary users
- Increased user ability, notably of persons with disabilities, to carry out daily life activities and to interact with ICT
- Improved competitiveness of Europe mainstream ICT industry, including through appropriate pre-standardisation.
- Higher levels of user empowerment and richer social interactions through personalised web-based assistive and social computing solutions.

7th FP Call 7, Objective ICT-2011.5.5
ICT for Smart and Personalised Inclusion

Expected impact

For 'c':

- Advanced proof of concept on BNCI technologies and reinforced perspectives for mainstream exploitation.
- Augmented human capabilities through wider use of BNCI.

For area 'd':

- Reinforced international cooperation on ICT to support social inclusion and development.
- Common strategic visions and RTD roadmaps between relevant key stakeholders in ICT accessibility.

Funding Schemes and Budgets

| Target | Indicative Budget | Funding Scheme |
|---|-------------------|----------------------|
| a) Tools and infrastructures for mainstream accessibility | 15 M€ | up to 3 IPs |
| b) Intelligent and social computing | 9 M€ | up to 1 IPs + STREPS |
| c) Brain-Neural Computer Interfaces | 9 M€ | up to 1 IPs + STREPS |
| d) E-Inclusion; E-Accessibility | 2 M€ | 2 CSA |

European Commission
Information Society and Media

Further Information

Web Resources

- CORDIS (7thFP, ICT) http://cordis.europa.eu/fp7/ict/home_en.html
[Find a project] & [Find project partners]
- e-Inclusion activity <http://ec.europa.eu/einclusion>
- Practice, practitioners, events, etc <http://www.epractice.eu/>

Contacts

- European Commission, e-Inclusion Unit [einclusion \(at\) ec.europa.eu](mailto:einclusion(at)ec.europa.eu)
- Responsible for the objective: [Luiz.Santos \(at\) ec.europa.eu](mailto:Luiz.Santos(at)ec.europa.eu)