

Overview of running EU-funded projects in the area of Assistive Technologies and Ambient Assisted Living

back up

help



You will find below an overview of running projects in the area of **Assistive Technologies, Ambient Assisted Living and Independent Living, Brain-Computer Interface and Human-Computer Interface, e-accessibility, design for all and web accessibility** that are funded by the ICT Policy Support Programme under the Competitiveness and Innovation framework Programme (CIP)¹, the Sixth (FP6 – 2003-2006) and the Seventh (FP7 - 2007-2013) Framework Programmes for Research and Technological Development².

In addition to those programs, the Ambient Assisted Living Joint Programme started operations in 2008 and a first batch of 53 projects has been launched³.

ASSISTIVE TECHNOLOGIES

April 2011 – March 2014

APISIS4all

Accessible Personalised Services In PDTs for all

<http://www.apsis4all.eu/>

up to 3.41 M€ EC funding (Deployment CIP)

The objective of APISIS4all is to overcome the existing accessibility barriers faced by disabled people, older people and people who are not familiar with ICT when interacting with Public Digital Terminals (PDTs), such as Automated Teller Machines and Ticket Vending Machines.

APISIS4all will increase user satisfaction, regardless of disability, age or digital literacy, by providing **new, customised interaction modes, including adaptive interfaces and interaction through the user's mobile**, thus offering users a truly personalised service adapted to their needs and preferences.

March 2010 - February 2013

Cardiac

Coordination Action in R&D in Accessible ICT

<http://www.cardiac-eu.org>

up to 0,500 M€ EC funding (FP7)

The major aim of the Coordination Action would be to improve the overall success of Challenge 7 ICT 2009 7.2 'Accessible and Assistive ICT'. **It would assist those involved in the research aspects of Challenge 7 by identifying the research and development that is needed in this field, both immediately and in the near future, by raising the level of knowledge and understanding of Accessible and Assistive ICT and by stimulating companies, research institutions and individual experts to become involved in this important area.**

¹ http://ec.europa.eu/ict_psp

² <http://cordis.europa.eu/fp7/ict>

³ <http://www.aal-europe.eu/projects/aal-brochure-2010>

July 2008 – December 2011

DTV4ALL

Digital Television for All

<http://www.psp-dtv4all.org>

up to 1.462 M€ EC funding
(Deployment CIP)

This industry-driven pilot encompasses: mature access services (subtitling, signing and audio description); identification, analysis, tests, and recommendations for emerging services, devices and platforms for widespread and sustainable second-generation digital television; user requirements elicitation and testing; standardisation and dissemination. In addition to implementing the mature services for the large-scale pilot sites, “proof of concept” activities will be carried out around emerging services, which are not yet available “off-the-shelf” but will approach maturity on platforms by 2010.

January 2011 – December 2013

ATIS4all

Assistive Technologies and Inclusive Solutions for All

ETNA

European Thematic Network on Assistive Information and Communication Technologies

<http://www.atis4all.eu/>

up to 0.59 + 0.69 M€ EC funding
(Deployment CIP)

The main objective of the ETNATIS cluster is to facilitate everyone's access to the most suitable assistive technology (AT) or accessibility device and service according to their needs, preferences and contextual characteristics (e.g. ICT solution, environment constraints, user device, language, etc.). For this purpose, the cluster will start and maintain **an open, collaborative portal offering reliable information on AT and inclusive products and services, and cutting-edge technological trends.** ATIS4all will contain Web 2.0 participation tools in order to encourage online discussion, exchange of knowledge and expertise, and sharing of information between key actors and end users.

January 2008 - December 2010

Hermes

Cognitive Care and Guidance for Active Ageing

<http://www.fp7-hermes.eu>

up to 2.820 M€ EC funding (FP7)

Age-related decline of cognitive capabilities can be compensated by using other functional cognitive skills and training these, thereby reducing the need for active care and support and increasing the ability to cope with everyday life and live independently. **This research project provides an integrated approach to cognitive care through an assistive technology combined with the functional skills of an older person.** Based on intelligent audio and visual processing and reasoning, the project will result in the combination of a home-based and mobile device to support the user's cognitive state and prevent cognitive decline.

March 2010 - February 2013

MUNDUS

MULTimodal Neuroprosthesis for Daily Upper limb Support

<http://www.mundus-project.eu>

up to 3.350 M€ EC funding (FP7)

MUNDUS is an assistive framework for recovering direct interaction capability of severely motor impaired people based on arm reaching and hand function. Sensors, actuators and control solutions will adapt to the level of severity or progression of the disease allowing the disabled person to interact voluntarily with naturality and at maximum information rate. MUNDUS targets are the neurodegenerative and genetic neuromuscular diseases and high level Spinal Cord Injury. MUNDUS will be an adaptable and modular facilitator, which will follow its user along the progression of the disease, sparing training time and allowing fast adjustment to new situations. MUNDUS will use any residual control of the end-user, thus being suitable for long term utilization in daily activities.

July 2009 – June 2012

REACH112

REsponding to All Citizens needing Help

<http://www.reach112.eu>

*up to 4.400 M€ EC funding
(Deployment CIP)*

REACH112 will implement an accessible alternative to traditional voice telephony that will be suitable for all. **While people with disabilities find it hard to communicate with the existing solutions, REACH112 will provide modes of communication so that they will find a way to communicate in each situation, may it be with a live real-time text conversation, with sign language, with lip reading, with voice or with any simultaneous combination of these modes described by the concept of Total Conversation.** Meanwhile, there is an urgent need to improve access to emergency services for people with disabilities in the EU. REACH112 will implement a 12-month pilot in Sweden, UK, The Netherlands, France and Spain allowing disabled users to communicate at a distance with each other and directly with the emergency services. IP devices will be provided in the homes, workplaces and on the move, connecting the users simultaneously in video, voice and text. The service will be integrated with existing telecommunication platforms and emergency service frameworks.

January 2008 - June 2010

Smiling

Self Mobility Improvement in the eLderly by counteracting falls

<http://www.smilingproject.eu>

up 2.250 M€ EC funding (FP7)

Ageing is characterized by functional changes in the sensory, neurological and musculoskeletal systems, affecting motor tasks including gait and postural balance: the main risk factors for falling. **This research project aims at improving gait and postural balance thanks to a wearable non-invasive system that will generate small height and slope perturbations during active walking.**

AMBIENT ASSISTED LIVING / INDEPENDENT LIVING

October 2008 – October 2011

CommonWell

Common Platform Services for Ageing Well in Europe

<http://www.commonwell.eu/>

up to 2.680 M€ EC funding
(Deployment CIP)

The project aims to support independent living and improve the quality of life for older people and those with long-term conditions. 12 partners are cooperating in the project to deliver ICT-enabled health and social care services in four Member States. The integrated services are to support the effective management of chronic disease, and to address issues which affect independence, such as reduced agility, vision or hearing, in order to significantly improve the quality of life for older people and their families. A total of 400 users across four locations in Europe will receive the newly integrated services for at least twelve months. The results of evaluating the pilot operation will be used to extend service provision and promote the wider uptake of this model of care across Europe.

February 2008 – January 2011

Confidence

Ubiquitous Care System to Support Independent Living

<http://www.confidence-eu.org>

up to 3.500 M€ EC funding (FP7)

In order to detect an unusual event (such as a fall) or any unexpected behaviour that could indicate health problems with elderly people, this research project will develop and integrate existing innovative technologies in a new care system. This will work both outdoors and indoors and the user can control it and customise its alarm protocol. Such a cost effective, non-intrusive and reliable system would support the independence and confidence of elderly people and diminish the need of their institutionalisation. This multidisciplinary research with end-users involved at various stages will result in a working prototype.

May 2008 – April 2012

Dreaming

ElDeRly-friEndly Alarm handling and MonitorING

<http://www.dreaming-project.org>

up to 2.770 M€ EC funding
(Deployment CIP)

This industry-driven pilot intends to validate new, economically sustainable home assistance and e-Inclusion services able to extend the independent living of elderly citizens in their homes and break their loneliness. The system includes health and safety monitoring and assistance at home, through privacy respecting and user-friendly technology (sensors, TV based videoconferencing). Alarm and alerts are handled through a Decision Support System, which selects the most suitable action and possibly dispatch the appropriate resources (fire brigade, ambulance, GP on duty, nurse, social worker, etc.). Validation covers the impact on the quality of life of elders, their formal and informal caregivers and their relatives, on economic and clinical indicators, on financial sustainability. This will help refining the business case in view of large-scale deployment.

February 2010 – January 2013

Florence

Multi Purpose Mobile Robot for Ambient Assisted Living

<http://www.florence-project.eu>

up to 3.550 M€ EC funding (FP7)

Due to increasing mobility and the ageing society the demand for care will increase significantly, leading to high costs and unrealistic manpower demands. Florence will alleviate this by keeping **elderly independent much longer by providing care and coaching services, supported by robots.** This will greatly improve the efficiency in care and reduce costs. The second problem addressed by Florence is the **acceptance of robots by elderly.** For this purpose, the project adopts a user-centric approach, by starting with focus-group sessions. The Florence consortium contains partners from the complete value chain: robot vendors, care providers, and consumer electronics vendors. The consortium positions the service robot as a consumer device, supporting various lifestyle services.

March 2010 – February 2013

HOME SWEET HOME

Health monitoring and sOcial integration environMEnt for Supporting WidE ExTension of independent life at HOME

<http://www.homesweethome-project.eu>

*up to 2.44 M€ EC funding
(Deployment CIP)*

The project will trial a new, **economically sustainable home assistance service which extends elders independent living**. It intends to achieve this by providing a comprehensive set of services which support elders in their daily activities and allows carers to remotely assess their ability to stay independent. It comprises the following services: Monitoring and Alarm Handling, eInclusion, Domotic, Daily Scheduler, Navigation and Mental Faculty Maintaining. The Monitoring and Alarm Handling is based on a DSS which analysis in real time data collected from medical and environmental sensors, fall detectors and geopositioning systems. Standard behavioural patterns are established for individuals and sudden, major changes trigger alarms. eInclusion is achieved through intuitive videoconferencing based on the familiar TV paradigm and adapted to use by people unfamiliar with IT technology. Domotics and Daily Scheduler help elders to organise their daily activities and to manage the house in spite of growing physical and mental impairments. The navigation system takes people who got lost to the closest safe place. Cognitive training is implemented through interactive games based on cognitive adaptive technology.

April 2010 – September 2012

inCASA

Integrated Network for Completely Assisted Senior Citizen's Autonomy

<http://www.incasa-project.eu>

*up to 2.140 M€ EC funding
(Deployment CIP)*

The project deals with citizen centric technologies and public/private services network, to help and protect independent elderly people, prolonging the time they can live well in their own home by increasing their autonomy and self-confidence. The improvement of quality of life and social care for the ageing population will be provided by the assessment of the typical habit profile of the monitored person, starting from the basic assumption that the elderly people are habitual people. Unusual behaviours will be the basis of an eInclusion strategy, provided by external actors, whose level of support depends from the degree of relationship with the assisted people and the rules and the actors depending from the organization of the national healthcare and social system. For this reason inCASA will reuse pre-existing solutions/services for human/environment monitoring, integrated in order to collect and analyze data to profile user habits and implement customized intelligent multilevel alerts/communication services.

January 2010 – December 2012

INDEPENDENT

ICT Enabled Service Integration for Independent Living

<http://www.independent-project.eu>

*up 2.625 M€ EC funding
(Deployment CIP)*

The project will define, deliver and pilot a digital infrastructure supporting integrated delivery of health and social care to older people, in order to support them in **safe independent living and to improve efficiency of care**. The infrastructure enables support services to overcome limitations of sectoral telehealth and telecare and empowers informal carers and the voluntary / third sector to participate in delivery of support, thus radically improving efficiency. ICT use is extended from the high needs end to a stage where not care but preventative support is needed. "People" services for Daily Living and Activation (DALs) and Continued Wellness (CWS) break open current 'silos' in service delivery to cross-sectoral cooperation and participation of family and voluntary staff. The architecture recognises that integration of consumer and other widely available devices must be achieved and open interface standards adopted.

March 200 -August 2011

ISISEMD

Intelligent System for independent living and self-care of seniors with cognitive problems or mild dementia

<http://www.isisemd.eu>

up to 2.260 M€ EC funding (Deployment CIP)

The aim of project is to provide a pilot of innovative intelligent set of scalable services that will support the independent living of elderly people in general and in particular the group of elderly with cognitive problems or mild dementia and at the same time to support the formal and informal caregivers in their daily interaction with the elderly. The services will improve the elderly ability for self-care by support for their basic daily activities in way that prevents health risks in their homes. The services will also strengthen the daily interaction with their social sphere - partners and relatives, friends and care-givers, giving them the feeling of safety and preventing their social isolation. Last but not least, their cognitive training and activation will be strengthened.

February 2010-January 2013

KSERA

Knowledgeable Service Robots for Aging

<http://www.ksera-project.eu/>

up to 2.900 M€ EC funding (FP7)

The project will research and develop a **Knowledgeable Service Robot for Aging (KSERA)** that will serve several related purposes for elderly persons in general and those with pulmonary disease in particular. Specifically KSERA will provide (1) a mobile assistant to follow and monitor the health and behavior of a senior, (2) useful communication (video, internet) services including needed alerts to caregivers and emergency personnel, and (3) a robot integrated with smart household technology to monitor the environment and advise the senior or caregivers of anomalous or dangerous situations. KSERA aims at an adaptive technical aid that will provide needed and useful services in a pleasant, easy-to-use format via a robot that also acts as a companion and assistant.

December 2009-November 2012

MOBISERV

An Integrated Intelligent Home Environment For The Provision Of Health, Nutrition And Mobility Services To The Elderly

<http://www.mobiserv.eu/>

up to 2.750 M€ EC funding (FP7)

The objective of the project is to develop a **proactive personal service robotics for supporting independent living.** The project will develop a personalized system, orchestrating vital signs recording and analysis, warnings, and alerts to health and emergency assistance networks. It will deliver a robotic prototype of an open standard-based personal platform capable of sensing the user's personal environment and adapting to the user's patterns of behaviour. By early detection of threatening environmental and/or emerging medical conditions, harmful consequences will be mitigated by issuing warnings and providing guidance; in case adverse events cannot be evaded, alarms will be issued. The platform will integrate innovative components delivered by the project and existing standards-compliant technologies. Innovative wireless (bio-) sensor-actuators, localisation and communication technologies, smart textiles and clothing and a wearable solution hosting monitoring equipment will be integrated into an existing robotic platform capable of self-learning and able to support elderly in indoor contexts. Tele-alarm applications will be developed to enhance health and integrated care services.

September 2006 - August 2010

MonAmi
Mainstreaming Ambient Intelligence

<http://www.monami.info>

up to 8.700 M€ EC funding (FP6)

This integrated project will demonstrate that accessible, useful services for elderly and disabled persons living at home can be delivered in mainstream systems and platforms. Bouquets of services and applications will be selected and developed, with a Design for All approach together with potential users, in the areas of comfort applications, health, safety and security as well as communication and information. The technology platforms will be derived from standard technology mainly built upon the TFIHI approach and will include reliable self-organizing networks, wearable devices, monitoring and service infrastructures ensuring the quality of service, reliability and privacy. Feasibility and usability testing and validation will be carried out in six countries.

February 2007 – January 2011

Netcarity
A Networked multi-sensor system for elderly people: health Care, safety and security in home environment

<http://www.netcarity.org>

up to 8.250 M€ EC funding (FP7)

The project proposes a new integrated paradigm for supporting independence and engagement in elderly people living alone at their own home place. It fosters the development of a 'light' technological infrastructure to be integrated in homes of old people at reduced costs, that both allows the assurance of basic support of everyday activities and health critical situations detection, as well as the social and psychological engagement required to maintain in the elder the emotional well-being enhancing dignity and quality of life. The project will seek to advance ambient intelligence technologies in the integration of micro and nano systems in a networked wireless/wired multi-sensing environment with plug and play capabilities and intelligent decision making for an effective detection of critical situations and support of task completion. Efforts will be concentrated in developing low-cost solutions and could rapidly reach the market and facilitate easy adaptation in a wide number of existing homes.

May 2008 – May 2011

NEXES
Supporting Healthier and Independent Living for Chronic Patients and Elderly

<http://nexeshealth.eu>

up to 2.380 M€ EC funding
(Deployment CIP)

The project aim is to ensure immediate successful deployment of ICT-enabled integrated care programs supporting healthier and independent living. It is widely accepted the importance of introducing substantial changes in the delivery of care and social support services for chronic patients, including changes in lifestyle, empowerment of patients and relatives and better collaboration among different levels of care. Obstacles lie in the current fragmentation of health providers and community services together with the challenge of managing co-morbidity. Nexes aims at the extensive deployment and sustainability of validated integrated care services, by:

- Deploying four integrated care programs for chronic patients based on structured interventions addressing prevention, healthcare and social support.
- Innovating in services that: a) adopt an integrated approach that includes profound organizational changes, b) face the co-morbidity challenge, and, c) use of ICT as modular and scalable tools supporting interoperability among actors.
- Validating the deployed programmes in large scale RCT studies.

January 2007 - June 2010

Persona

Perceptive Spaces Promoting Independent Ageing

<http://www.aal-persona.org>

up to 6.750 M€ EC funding (FP6)

There is a need to harmonise Ambient Assisted Living (AAL) technologies and the development of sustainable and affordable solutions for social inclusion and independent living of elderly people. This integrated project aims to integrate these approaches into a common semantic framework, advancing the concept of Ambient Intelligence. It will develop a technological platform based on scalability and openness providing a broad range of AAL services. Psychologically pleasant and easy-to-use integrated solutions will demonstrate affordability and sustainability of the approach for all the actors and stakeholders involved. Social impact will be assessed and a business strategy for future deployment of the proposed technologies and services will be initiated.

January 2007 - June 2009

SensAction-AAL

SENSing and ACTION to support mobility in Ambient Assisted Living

<http://www.sensaction-aal.eu>

up to 2.000 M€ EC funding (FP6)

With recent technological advances, **it is now possible to use body-fixed sensors in combination with advanced ICT solutions to effectively monitor older people in their home environment and to introduce interventions that are tailored to their individual needs. This new approach allows the establishment of tele-rehabilitation, tele-medicine and tele-care scenarios where, from a distance, medical professionals monitor older people in their home environment and assist with tailored interventions, and prevention or rehabilitation programs.** The partners of this research project are designing and testing in the field an innovative wireless on-body system which enables: (1) physical activity monitoring in daily living conditions, and (2) real-time, active control of physical performance using principles such as sensory augmentation and biofeedback. The SENSATION-AAL architecture introduces original solutions that will ultimately make the proposed system: 1) easy-to-wear and easy-to-use; 2) active anywhere, anytime; 3) cost effective.

January 2007 - April 2010

Soprano

Service Oriented Programmable Smart Environments for Older Europeans

<http://www.soprano-ip.org>

up to 7.000 M€ EC funding (FP6)

This integrated project aims to integrate older people with functional impairments into social life and increase their independence, by designing and developing innovative, context-aware, affordable, smart services with comfortable interfaces. Three strands of research and development are to be integrated. The stand-alone assistive technology provides products designed to compensate for motor, sensory and cognitive difficulties frequently experienced by older adults. The smart home technology enables the integration of advanced ICT in the home environment. Specific appliances and devices are integrated in the home environment to provide tele-care services and more overall control of the living space to support both professional and informal carers in their work.

February 2010 – January 2013

SRS

Multi-Role Shadow Robotic System for Independent Living

<http://www.srs-project.eu>

up to 3.300 M€ EC funding (FP7)

The project will demonstrate an innovative, practical and efficient system called **“shadow robot” for personalised home care.** SRS solutions are designed to enable a robot to act as a shadow of its controller. For example, elderly parents can have a robot as a shadow of their children or carers. In this case, adult children or carers can help them remotely and physically with tasks such as getting up or going to bed, doing the laundry and setting up ICT equipment etc. as if the children or carers were resident in the house.

February 2010-January 2014

Universaal

UNIVERSal open platform and reference Specification for Ambient Assisted Living

<http://www.universaal.org/>

up to 10.500 M€ EC funding (FP7)

There is a huge market potential for AAL solutions, but adoption is limited because they require significant resources for implementation. To address this, the project will produce an open platform that provides a standardised 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-the-art results from existing initiatives**. Work on establishing and running a sustainable community will achieve attention, with promotion of existing results gradually evolving into promotion of the universAAL platform, as it develops into one consolidated, validated and standardised European open AAL platform. The platform will provide runtime support for the execution of AAL applications in accordance with a reference architecture, development support through core AAL services and an online developer depot of various development resources. universAAL results will be standardised in European (CEN) and international (OMG, Continua) standardisation bodies.

May 2008 - October 2010

VAALID

Accessibility and Usability Validation Framework for AAL Interaction Design Process

<http://www.vaalid-project.org>

up to 2.737 M€ EC funding (FP6)

This research project aims at facilitating and streamlining the process of creation, design, construction and deployment of technological solutions in the context of AAL. A 3D-Immersive Simulation Platform for computer aided design and validation of User-Interaction subsystems will support the design of the Human Interaction aspects in all the stages of user centred design, putting in practice the guidelines for verification and validation of the accessibility and usability facets. Virtual Reality and Augmented Reality scenarios will be used to verify interaction designs and validate the accessibility of the AAL products. This will help European industry, ICT companies specialized in Human Factors and User Interaction design, Research and Academia in streamlining their respective business for the Independent Living and Inclusion.

January 2010 – December 2012

AsTeRICS

Assistive Technology Rapid Integration & Construction Set

<http://www.asterics.eu>

up to 2.650 M€ EC funding (FP7)

AsTeRICS will provide a flexible and affordable construction set for realising user driven AT by combining emerging sensor techniques like Brain-Computer Interfaces and computer vision with basic actuators. People with reduced motor capabilities will get a flexible and adaptable technology at hand which enables them to access the Human-Machine-Interfaces (HMI) at the standard desktop but in particular also of embedded systems like mobile phones or smart home devices. AsTeRICS will implement a set of building blocks for the realisation of AT:

- Sensors which allow the individual to exploit any controllable body or mind activity for interacting with HMI
- Actuators for interfacing to standard IT, to embedded systems and to interact with the environment
- An Embedded Computing Platform that can be configured to combine sensors and actuators to tailored AT-solutions which support the full potential of an individual user.

February 2010-January 2013

BETTER

BNCI-driven Robotic Physical Therapies in Stroke Rehabilitation of Gait Disorders

<http://www.iai.csic.es/better/>

up to 2.950 M€ EC funding (FP7)

The main objective of the project is to improve physical rehabilitation therapies of gait disorders in stroke patients based on BNCI assistive technologies, improving systems, providing guidelines for further improvements, and developing benchmarking tools. The project will validate, technically, functionally and clinically, the concept of improving stroke rehabilitation with robotic gait exoskeletons based on a TOP-DOWN approach: motor patterns of the limbs are represented in the cortex, transmitted to the limbs and fed back to the cortex. BETTER proposes a multimodal BNCI which main goal is to explore the representations in the cortex, characterize the user involvement and modify the intervention at the periphery with ambulatory and nonambulatory robotic gait trainers.

September 2008 – December 2011

BRAIN

BCI's with Rapid Automated Interfaces for Nonexperts

<http://www.brain-project.org>

up to 2.700 M€ EC funding (FP6)

This research project will push Brain Computer Interfaces (BCI) into practical assistive and ICT tools to enhance inclusion for a range of different disabled users, by allowing them to interact with loved ones, carers, home appliances and assistive devices, or personal computer and internet technologies. Improvement of reliability, flexibility, usability, and accessibility will entail upgrades to all four components of a BCI system - signal acquisition, operating protocol, signal translation, and application. Lightweight, inexpensive, non-invasive / easy to use sensors will be developed. Software will identify the best parameters for each user and provide training. Automated signal processing will improve signal translation. An intuitive universal interface will enable control of existing applications, including home assistive technologies.

January 2010 – December 2012

BrainAble

Autonomy and social inclusion through mixed reality Brain-Computer Interfaces

<http://www.BrainAble.org>

up to 2.300 M€ EC funding (FP7)

The project will conceive, research, design, implement and validate an ICT-based human computer interface (HCI) composed of BNCI sensors combined with affective computing and virtual environments. This combination will dramatically improve the quality of life of people with disabilities by overcoming the two main shortcomings they suffer - exclusion from home and social activities - by providing inner functional independence for daily life activities and autonomy (HCI connected to accessible and interoperable home and urban automation) and outer social inclusion (HCI connected to advanced and adapted social networks services).

February 2010 - January 2013

DECODER

Deployment of Brain-Computer Interfaces for the Detection of Consciousness in Non-Responsive Patients

www.decoderproject.eu

up to 2.800 M€ EC funding (FP7)

The project will develop a Brain-Computer Interface (BCI) into single-switch based systems to practically enhance inclusion of patients who are otherwise only little or not at all able to interact with their environment and share ICT. This achievement will move on from the improvement of three components of state-of-the-art BCIs, i.e. signal acquisition (input), signal classification and signal translation (output) and adapt them to the specificities of non-responsive patients such as low arousal, short attention span, and altered electrical activity of the brain. A forth component is the application; existing assistive technology will be adapted to a single-switch control. Besides classic EEG paradigms near-infrared spectroscopy will be used for signal acquisition due to its higher spatial resolution. Potential and automated software will identify the best signal for each user and will optimize signal translation.

January 2010 – December 2011

Future BNCI

Future Directions in Brain/Neuronal Computer Interaction (BNCI) Research

<http://www.future-bnci.org>

up to 0.500 M€ EC funding (FP7)

Rapid progress in Brain/Neuronal Computer Interaction (BNCI) research is creating a number of new opportunities across a much wider range of potential users than previously recognized. Unfortunately, the many new developments and new research groups lead to two problems. First, key terms and definitions are confusing, outdated, nonexistent, and/or only sporadically accepted by people and groups from different backgrounds. Second, there are widely differing views on how to capitalize on recent progress and which avenues for future development merit the most attention. Future directions in BNCI systems (Future BNCI) will identify which opportunities are (and are not) promising across all four components of a BCI system: sensors and signals; signal processing; applications and devices; and interfaces and operating environments.

January 2010 - December 2012

Mindwalker

Mind Controlled Orthosis And Virtual Reality Training Environment For Walk Empowering

<http://mindwalker-project.eu/>

up to 2.750 M€ EC funding (FP7)

The project will conceive a system empowering lower limbs disabled people with walking abilities that let them perform their usual daily activities in the most autonomous and natural manner. New smart dry EEG (electroencephalogram) bio-sensors will be applied to enable lightweight wearable EEG caps for everyday use. Novel approaches to non-invasive BCI (brain-computer interaction) will be experimented in order to control a purpose-designed lower limbs orthosis enabling different types of gaits. Complementary research on EMG processing will strengthen the approach. A Virtual Reality (VR) training environment will assist the patients in generating the correct brain control signals and in properly using the orthosis.

November 2008 – October 2012

TOBI

Tools for Brain-Computer Interaction

<http://www.tobi-project.org>

up to 9.050 M€ EC funding (FP7)

This integrating project will develop practical technology for non-invasive brain-computer interaction (BCI) prototypes combined with other assistive technologies (AT), to augment their adaptive capabilities, in order to improve the quality of life of people with motor disabilities. In such a hybrid approach users can fuse brain interaction and muscle-based interaction or can switch between different channels naturally (based on monitoring of physiological parameters or mental states). Four application areas could be really impacted, in terms of pre-clinical validation: Communication and Control, Motor Substitution, Entertainment, and Motor Recovery.

September 2008 – August 2011

TREMOR

An Ambulatory BCI-driven tremor suppression system based on functional electrical stimulation

<http://www.iai.csic.es/tremor>

up to 2.140 M€ EC funding (FP7)

Tremor movement disorder is strongly increasing in incidence and prevalence with ageing. It is responsible for social inconvenience and functional disability, in particular for daily living. Treatments are not always effective. **This research project will validate, technically, functionally and clinically, the concept of mechanically reducing the tremor through selective Functional Electrical Stimulation of muscles.** The Brain Computer Interaction (BCI) detection of involuntary motor activity will combine CNS (Electroencephalography) and PNS (Electromyography) data with biomechanical data (Inertial Measurement Units, IMUs). The system will model and track tremor and voluntary motion.

September 2008 – August 2011

Accessible

Accessibility Assessment Simulation Environment for New Applications Design and Development

<http://www.accessible-project.eu>

up to 2.600 M€ EC funding (FP7)

Introducing a harmonised accessibility methodology into the software design and development processes used by large organisations, SMEs or individuals (developers, designers, etc.), with significantly better measurement strategies and methodologies would help improving the accessibility of future ICT applications and systems for all user groups. **This research project will develop a process for collating different methodological tools, checking the coherence with the W3C/WAI ARIA and other standards in order to produce an Open Source Assessment Simulation Environment (including accessibility-analysing and developer-aid tools) to assess efficiently the accessibility and viability of software applications.** This will be demonstrated for: Mobile applications (including JavaFX Scripts), Web applications, Web services (mainly for info-mobility services), and description languages (e.g. UML, SDL, etc.).

September 2008 – February 2012

AEGIS

Open Accessibility Everywhere: Groundwork, Infrastructure, Standards

<http://www.aegis-project.eu>

up to 8.220 M€ EC funding (FP7)

Third generation access techniques should provide a more exploitable and deeply embeddable approach to accessibility in mainstream ICT. This integrating project develops and explores this approach with an Open Accessibility Framework addressing the design, development and deployment of accessible mainstream ICT. Providing embedded and built-in solutions, as well as toolkits for developers, for “engraving” accessibility in existing and emerging mass-market products, will make accessibility open, plug & play, personalised & configurable, realistic & applicable. The project identifies user needs and interaction models for several user groups, (end users with visual, hearing, motion, speech and cognitive impairments as well as application developers) and develops support for desktop applications, rich web applications and embedded generalized accessibility in user interfaces and applications running into standard as well as rich features cell phones and PDAs. This will be tested with hundreds of end users, developers and experts.

September 2006 – August 2009

Diadem

Delivering Inclusive Access for Disabled or Elderly Members of the community

<http://www.project-diadem.eu>

up to 1.950 M€ EC funding (FP6)

In order to support users who suffer from a reduction in their cognitive skills to remain active and independent in the society both at work and at home, this research project aims at providing an adaptable web browser interface. The system, located in the user's PC, will ensure that as many services on the Internet as possible are accessible and it will also monitor that the user's privacy and security are not challenged. A plug-in to a web browser monitors the ability of the user to interact, while dynamic personalisation of the interface optimises the assistance to a specific user. The service provider needs only to use standard web services and to provide some fixed meta-level data about the dialogue structure. The technology will also be extended into the work place.

September 2010 - August 2013

eACCESS+
the eAccessibility Network

<http://www.eaccessplus.eu/>

*up to 0.74 M€ EC funding
(Deployment CIP)*

eAccess+ will create a platform for collecting and providing guidance on how to use in practice the body of knowledge on eAccessibility. eAccess+ is a best-practice network too that will facilitate co-operation between the community of practitioners (found in research institutions and consultancies) and all the other stakeholders (policy makers, administrators in the public sector, technical staff in the private sector...). The purpose is to accelerate the take-up of e-accessibility specifications and technical solutions, and to contribute to a common approach at European level. The network will support the development of common guidelines and standards, and, where needed, will provide rationale for harmonised political and legal measures. Its main focus is web accessibility but it will address also digital TV and self-service terminals.

February 2010 - January 2013

GUIDE
**Gentle User Interfaces for
Disabled and Elderly Citizens**

<http://www.guide-project.eu>

up to 3.400 M€ EC funding (FP7)

The project will develop a toolbox of adaptive, multi-modal user interfaces (UIs) that target the accessibility requirements of elderly users in their home environment, making use of TV set-top boxes as processing and connectivity platform beside the common PC platform. With its software, hardware and documented knowledge, this toolbox will put developers of ICT applications in the position to easier implement truly accessible applications using the most recent user interface technologies with reduced development effort. For this purpose, the toolbox will provide the technology of advanced multi-modal UI components as well as the adaptation mechanisms necessary UI components interoperable with legacy and novel applications, including the capability to self-adapt to user needs.

January 2008 – December 2011

Oasis
**Open Architecture for Accessible
Services Integration and
Standardisation**

<http://server-5.iti.gr/joomla/>

up to 8.520 M€ EC funding (FP7)

The aim of this integrating project is to develop the interoperability, quality, breadth and usability of services of all daily activities for the elderly. In order to enable and facilitate interoperability, seamless connectivity and the sharing of content between such services and related ontologies, the project will develop an open reference architecture and system. The applications developed include a nutritional advisor, an activity coach, a brain and skills trainer, social communities' platform, health monitoring as well as environmental control. Applications are all integrated as a unified, dynamic service batch, managed by a Service Centre and it supports all types of mobile devices and all types of environments for the elderly and beyond.

April 2007 - September 2010

WAI-Age
**Web Accessibility Initiative:
Ageing Education and
Harmonisation**

<http://www.w3.org/WAI/WAI-AGE>

up to 0.900 M€ EC funding (FP6)

Activities under the W3C Web Accessibility Initiative (WAI) topic "Ageing Education and Harmonisation" aim at a better understanding of the needs of the ageing community in the context of existing Web accessibility guidelines. More direct contribution from the ageing community into W3C/WAI work will help revising and complementing educational materials to better reflect their needs and to pursue the standards' coordination to promote adoption and implementation of a common set of guidelines. This support action contributes to these efforts and also to the associated dissemination.

September 2011-August 2014

WAI-Act

Web Accessibility Initiative (WAI) - Cooperation Framework for Guidance on Advanced Technologies, Evaluation Methodologies, and Research Agenda Setting to Support eAccessibility

www.w3.org/WAI/ACT/

up to 1 M€ EC funding (FP6)

Regarding web accessibility there is a need for expanded European and international cooperation on the development of solutions for people with disabilities; for consensus-based, authoritative technical guidance to accelerate implementation of advanced technologies; for internationally harmonised evaluation methodologies; and for supporting coordination of research agenda on eAccessibility. WAI-ACT will address these challenges through development of a **framework for open, expanded cooperation among European and international stakeholders, technical guidance on advanced web technologies; an evaluation methodology for web accessibility; and a research agenda for eAccessibility**. Technical guidance will include a repository of information on accessibility support in web technologies, application notes on authoring accessible web page components, and code samples for web applications. WAI-ACT will result in: expanded cooperation on the development of accessibility solutions; authoritative accessibility guidance on advanced web technologies; harmonised methodologies for evaluating accessibility of websites; common visions for a coordinated eAccessibility research agenda. WAI-ACT will be lead and will build upon the strengths of the existing World Wide Web Consortium (W3C) Web Accessibility Initiative (WAI) cooperation mechanisms to facilitate strategic European and international participation throughout the project. **WAI-ACT will also seek active exchange with relevant networks in Europe such as eAccess+, and with standardisation activities such as EC Mandate M/376.**

DESIGN FOR ALL

February 2010-July 2012

MyUI

Mainstreaming Accessibility through Synergistic User Modelling and Adaptability

<http://www.myui.eu>

up to 2.400 M€ EC funding (FP6)

The project will foster the mainstreaming of accessible and highly individualized ICT products – a major issue for e-Inclusion. The project addresses important barriers which include developers' lack of awareness and expertise, time and cost requirements of incorporating accessibility and missing validated approaches and infrastructures. The project's approach goes beyond the notion of Universal Design by addressing specific user needs through adaptive personalized interfaces. An ontology-based context management infrastructure will collect user and context information in real-time during use. Sharing the collected information across several personal applications will increase efficiency and validity. The user interface will self-adapt to the evolving individual user model, in order to fit the user's special needs and preferences.

January 2010-December 2013

Veritas

Virtual and Augmented Environments and Realistic User Interactions To achieve Embedded Accessibility DesignS

<http://veritas-project.eu/>

up to 8 M€ EC funding (FP7)

The project aims to develop, validate and assess an open framework for built-in accessibility support at all stages of ICT and non-ICT product development, including specification, design, development and testing. The goal is to introduce simulation-based and VR testing at all stages of product design and development into the automotive, smart living spaces, workplace, infotainment and personal healthcare applications areas. The goal is to ensure that future products and services are being systematically designed for all people including those with disabilities and functional limitations.

January 2010-June 2012

VICON

Virtual User Concept for Supporting Inclusive Design of Consumer Products and User Interfaces

<http://www.vicon-project.eu>

up 2.400 M€ EC funding (FP7)

Persons with age-related (mild to moderate) impairments (age-related hearing loss, macular degeneration, etc) can only fully benefit from consumer products, when user interfaces (UIs) incorporate accessible multimodal interaction capabilities providing good usability, and thus possess some certain degree of context sensitivity. Due to the complexities of singular and multiple age-related impairments, it is unrealistic for a mainstream manufacturer to have a detailed understanding of these and design appropriately. Inclusivity at this level can therefore only come from support from a third party solution to form first party knowledge. **The approach pursued is to accompany the entire design process of UIs of consumer products, including concept, solution alternatives, product and (particularly) UI specification, virtual testing and feedback from UI prototypes through the development of an advanced Virtual User Model in an environment that supports the specification, building, and evaluation of user interfaces – both hardware and software – for controlling and interacting with consumer products.**

Updated June 2011

Title of the publication

back up

help



European Commission
Information Society and Media

For further information:

ICT for Inclusion
Tel: +32 (0)2 29 90245
Directorate General for Information Society and Media
European Commission, BU31 01/66
B-1049 Brussels Belgium
einclusion@ec.europa.eu
<http://ec.europa.eu/einclusion>



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