



ACCESSIBLE Project Newsletter n°1

SEVENTH FRAMEWORK PROGRAMME

PRIORITY FP7-ICT-2007-2
Accessible and Inclusive ICT



Introducing ACCESSIBLE

We welcome you to the first issue of the Accessible Newsletter. A new issue will be published every 6 months for the next 3 years with the aim to inform you about the progress and the achievements produced, as well as the related and interesting activities undertaken during the course of the project.

The ACCESSIBLE project stands for “Accessibility Assessment Simulation Environment for New Applications Design and Development”, targeting the challenges of FP7-ICT-2007-2 in the creation of accessible and inclusive ICT (Information and Communication Technologies) solutions.

Each issue will be available both in PDF and accessible HTML format via the project’s Website, **www.accessible-eu.org** or **www.accessible-project.eu**

Full Project Name

*Accessibility Assessment
Simulation Environment for
New Applications Design
and Development*

Grant Agreement

224145 (ACCESSIBLE)

Upcoming Events

**ACCESSIBLE @
HCI International 2009**

*19-24 July, San Diego
California, USA*

ACCESSIBLE Outline

Accessibility is a paramount issue nowadays. Authorities and experts are putting a lot of effort in pushing forward accessibility of software applications. However, despite this, ICT applications are in most cases not fully accessible yet. The triggering idea behind ACCESSIBLE is to contribute for better accessibility for all citizens, to increase the use of standards, and to develop an assessment simulation environment (including a suite of accessibility analysing tools, as well as developer-aid tools) to assess efficiently, easily and rapidly the accessibility and viability of software applications for all user groups.

ACCESSIBLE will exploit the technologies behind the recent expansion of accessibility tools and standardisation methodologies, in order to provide an integrated simulation assessment environment for supporting the production of accessible software applications mobile or not.

This will enable organisations and individuals (e.g. developers, designers, etc.) to produce software products of superior accessibility and quality, accompanied with appropriate measures and proposals for best practice. The proposed system will be demonstrated in the four pilots of ACCESSIBLE for the assessment of mobile applications, Web applications, Web services (mainly focusing on info-mobility services), and description languages (e.g. UML, SDL, etc.).

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

Demanding for Accessibility Awareness in Software Development

It is important to realise that people with disabilities are not just a tiny minority of the population of the European Union. The lowest estimate, based on the extremes of currently defined disability categories, puts their total number at around **40 Million persons** (nearly 11% of the population of the EU). However, other estimates that take into account people with cognitive difficulties, and those people in the so-called hinterland between fully able bodied and the classically termed disabled should considerably raise those numbers.

Designing for the disabled is becoming an increasingly important topic for a variety of reasons, especially due to the recent legislation in many countries, promoting the rights of people with disabilities. Unfortunately, most ICT applications are not fully accessible today for several reasons:

- ✂ ICT has developed over the latest years, and the importance of accessibility has only begun to be appreciated in recent years. Any solution that is older than 2-3 years is unlikely to be fully accessible. **Making an existing system accessible is often very difficult and expensive**, in much the same way as making an existing building wheelchair-friendly can be very difficult and not aesthetic.
- ✂ Many developers and, more surprisingly, designers, are **unaware of the importance or need for accessibility**. Consequently, new development is being done in blissful ignorance, as they do not have the necessary knowledge or skills.



- ✂ Also, the implemented standards and best practice around accessibility are somewhat confusing and incomplete. This often leads to **different interpretations from designers and developers**, resulting in discrepancies between software products and services.
- ✂ Some market stake-holders believe that creating accessible solutions will have **prohibited costs** and, at the same time, make them boring and less attractive to the majority of users.

- ✂ Commissioners of new developments do not know how to **specify accessibility requirements** or how to test compliance.

- ✂ Existing development tools and packaged solutions (e.g., IDEs) give little out-of-the-box assistance in most cases or, at worst, make it **impossible to develop accessible solutions**.

As mentioned above, designing for people with disabilities is becoming an increasingly important topic for a variety of reasons, but especially due to recent legislation in many

countries that aims at promoting and enforcing the rights of people with disabilities.

There has been the development of the **universal design, design for all**, and **universal usability** philosophies. Many developers worry that they will be expected to produce a system that will be usable by every user, regardless of capability, and that they might have to seriously compromise their overall design to achieve this aim. With the increasing ability to personalise interfaces to meet

the requirements of different users, this is not necessary.

There are guidelines to help developers create applications that are accessible and usable by people with disabilities. These range from very general guidelines to the very specific guidelines for Web user agents (e.g., Web browser), authoring tools, and content developers. However, it is not clear whether

providing guidelines is an effective method for ensuring usable designs, since these might be differently interpreted by developers and designers.

Developers need to have a conceptual framework in which to situate disabled-related guidelines, which they often do not have due to lack of experience with people with disabilities and their technologies.

Vision and Scope of ACCESSIBLE

The scope of ACCESSIBLE includes a definition of new methodologies, with prototypes implementing them, in the field of enhanced software development accessibility for mobile and desktop applications or services. These prototypes will be evaluated in real user trials that will be set up and managed by international partners participating in ACCESSIBLE.

Currently, there are a large number of accessibility assessment tools, as well as EU and national standards for accessibility that support activities such as analysing accessibility of Websites and desktop applications.

Furthermore, there are many designer-aid tools that provide developers and designers with the appropriate environment for the design and the effective implementation of accessible software applications.

Unfortunately, these facilities are not sufficient and do not encompass a harmonised methodology to support integrated assessment accessibility solutions for Web services and applications, mobile applications, and desktop applications.

ACCESSIBLE Scientific and Technological Objectives

The main objective of ACCESSIBLE is to gain fundamental understanding of the software design processes and accessible software development, including human and socio cognitive aspects, in a manner to improve their accessibility and quality by developing and exploiting the *science of complexity*.



Conceptual view of ACCESSIBLE knowledge resource link

The ACCESSIBLE project will research and develop methodologies and tools for product and services accessibility assessment.

This project will go beyond state of the art and will provide developers and designers with the ACCESSIBLE assessment & simulation system. The challenge is to find how can technology be best used to increase accessibility quality of software applications.

One big challenge lays in the combination of multiple disabilities. How do we design for a person with both a hearing and sight loss, or a blind person with only one hand? This is particularly important because with ageing, everyone is likely to acquire multiple disabilities. Although each one might be relatively minor, their combination is certainly major.

Objectives

- ✂ The development of an **Assessment Simulation Module** for supporting the assessment of Web applications, web services, and mobile applications.
- ✂ A **Harmonised Accessibility Methodological** framework for accessible software design and development, between different standard developing organisations, end users, expert groups, decision makers and policy makers.
- ✂ The research and development of a developer and designer-aid framework with **multilayer ontologies** and report tools.



Sub-goals

- ✂ To **raise the awareness of software developers** to accessibility problems in their products and services.
- ✂ **Tracing** the development of the accessibility in software applications.
- ✂ **Better understand** why different software products are accessible or not.

Target User Groups

Due to the user centred nature of ACCESSIBLE, there is the need for a direct contact with users in the project development. These activities include user-testing, evaluation of user needs, etc.

This interaction with users takes place throughout the project duration. There are four main target groups:



- ✂ **Software developers** and designers that will use ACCESSIBLE in order to support them for the development and testing of accessible software applications.

- ✂ **Groups and public bodies** involved in policy making and providing basis for policy making.
- ✂ **Service providers** who will be able to provide their services to a wider audience.
- ✂ **End users** who benefit from the enhanced accessibility.



We should emphasise on the relevance of the first group, as it includes the people who are involved in the actual software design and development, and whose skills and awareness is needed if software accessibility is to be improved.

Scenarios in ACCESSIBLE

Web applications

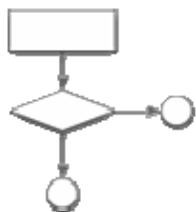
A quality assurance expert has the responsibility of verifying whether a Web application is accessible to a set of accessibility-dependent users, in order to raise awareness of acces-

sibility issues. Through the ACCESSIBLE portal, the expert selects the Web Applications Assessment Tool. Through the definition of what target user categories are being tested, the expert feeds a specification of the Web application (e.g., a URL) to be evaluated

by ACCESSIBLE verification rules as described in the harmonised methodology. The outcome of this process is a report with success/failure accessibility checkpoint states, with helpful clues on how to solve the failure points for accessibility-dependent users.

Web Services

A developer is defining a new Web service by specifying its WSDL interface. Knowing that several of the data fields will be presented in user interfaces and directly interacted/manipulated by end users, it is critical to understand if the service supports accessibility by certain user groups. The developer starts this verification process by selecting the Web Services Assessment Tool available in the ACCESSIBLE portal. This tool parses



the service's WSDL file, and evaluates the parameters that are exchanged through the specific web service in terms of accessibility support (e.g., whether the provision of

images and captions has been planned in order to support access to the blind and the visually impaired. For each problem detected in this process, the developer is given a set of recommendations on how to improve the service's WSDL, in order to be used without accessibility problems. The outcome of this process is a report with success/failure accessibility checkpoint states, with helpful clues on how to solve the failure points for accessibility-dependent users.

Description languages

While developing a new set of services for next generation telecommunications networks and service platforms, accessibility issues must be taken care right from the beginning. Service designers specify these services using high-level description languages, such as UML.

The ACCESSIBLE portal is used to select the Description Language Assessment Tool. This tool verifies the behaviour and telecommunications protocol interfaces (SIP-based) specified in SDL models and allows the early identification of service features and aspects that need to be consolidated or added. Such service features will include the selection of adequate voice and video encoding schemes, correct routing of location-sensitive calls, correct session initiation, handling, and termination in accordance with the user accessibility



profile, etc. The outcome of accessibility checking will be an appropriate EARL-based report, which will describe the applications' accessibility status.

Examples of telecommunications services that may benefit from this approach can include real-time multimedia telecommunications services, special (multi-session handling services, presence-related services that comply with user accessibility profiles, emergency calls that need to be automatically and correctly routed to specific destinations (e.g. healthcare centres) depending on the user location, etc.

Mobile applications

A set of mobile applications developed in NetBeans IDE features are given to a Quality Assurance expert, in order to provide feedback about accessibility issues. The expert selected SUN's relevant accessibility tools inside the NetBeans IDE (through the ACCESSIBLE portal), and begins the analysis of each mobile application. The ACCESSIBLE system and associated accessibility harmonised methodology verify the accessibility aspects of these applications, according to different user and device characteristics. The critical points of the applications are found and reported for software improvement tasks. This will help developers understanding how to make their applications accessible.

ACCESSIBLE Breakdown

User needs, benchmarking, accessibility and simulation requirements

- ✂ Analyse and evaluate state-of-the-art methodologies and technologies in order to identify missing components in accessibility tools and standards.
- ✂ Identify and analyse common work practices and patterns regarding accessibility on both mobile and desktop applications.
- ✂ Extract market characteristics and determine the current market trends and the present relevant systems applied to accessibility standards.
- ✂ Specify the accessibility and simulation requirements with respect to the present situation.
- ✂ Define detailed use cases and application scenarios in order to demonstrate the potential of ACCESSIBLE.

Design Infrastructure and ACCESSIBLE Harmonised Methodology

- ✂ Implement a harmonised accessibility methodology approach applied to software development and design of accessible new applications and services.
- ✂ Define universal objective accessibility assessment metrics.
- ✂ Design and deliver the ACCESSIBLE Assessment Environment Architecture.

Services and Content Knowledge Infrastructure

- ✂ Propose a set of common knowledge resource of ontologies in order to support accessibility assessment procedures.
- ✂ Define ontological taxonomies in order to characterise disabilities and other relevant characteristics of user groups, devices specifications (features and limitations), and user interface semantics.

- ✂ Define specific rule language. Each rule should express a validation property that should be verified on user interfaces. This task should be performed at runtime with a rule inference engine. The ASK-IT ontology (www.ask-it.org) will serve as a basis for the development of this infrastructure.
- ✂ Implement a graphical modelling feature that represents visually each defined rule (in consonance with the rule's language instancing).

ACCESSIBLE Core Development

- ✂ Develop the appropriate tools and modules for the ACCESSIBLE system
- ✂ Integrate all the ACCESSIBLE components into a functional environment and assign them into the ACCESSIBLE Knowledge Resource in order to be able to provide all required applications and services including: development of User Interface Portal and User Assistant Agent, development of Assessment Simulation Module, development of open source developer and designer aid Module, development of an EARL based reporting Tool, and integration of the ACCESSIBLE Modules and Tools.

Pilot applications

The ACCESSIBLE prototype and implemented modules will be evaluated in a series of pilots that will be designed and realised within the running period of the project. It is expected that these pilots will evaluate the accessibility of the prototype.

The pilots will be planned in such way as to cover the most important aspects of ACCESSIBLE and will exhibit its modularity and adaptation in multi-purpose scenarios. Specifically, the ACCESSIBLE system will be evaluated in four pilots, corresponding to the scenarios presented earlier.

The goal of the pilot applications is to demonstrate the use of the ACCESSIBLE system for enhancing the accessibility of Web services (e.g. info mobility services), web applications

and mobile applications, and to meet usability and accessibility standards suitable to support full access to services by people with disabilities.

ACCESSIBLE Events

ACCESSIBLE KICK OFF Meeting

On September 4-5, 2008 the FP7 project ACCESSIBLE held its official kick-off meeting in Prague which has been organised by Sun Microsystems. The kick-off meeting was well attended, with representatives from all ACCESSIBLE beneficiaries. As an interdisciplinary project, ACCESSIBLE brings together experts in many different fields as well as end users with disabilities. This first meeting was important in giving the partners a chance to present their research aims, offering comments and insights on the work of others.

ACCESSIBLE WP2 Meeting

On December 03, 2008, a WP2 meeting was held in Stuttgart, Germany within the premises of the University of Stuttgart beneficiary with participants from CERTH, SUN, NETSCOUTS, MCA, CS and USTUTT beneficiaries. This meeting was therefore essential for establishing dialogue and cross-fertilisation between the diverse areas of research and work within the WP2 "User needs, benchmarking, accessibility and simulation requirements" of the ACCESSIBLE project.

ACCESSIBLE 2nd Plenary Meeting

On 15-16 January, 2009 the FP7 project ACCESSIBLE held its 2nd official plenary meeting in Genoa, Italy, organised by SOFTECO. As the second official project meeting, the discussion included both the technical aspects, such as the administrative and financial side, as well as the more substantive issue of the research to be undertaken. This research encompasses theoretical as well as more technical aspects, dealing with: the accessibility assessment of ICT applications and the current challenges with European accessibility standards and practices. Finally, this meeting forged an important link with Prof. Julio Abascal from the Laboratory of Human-Computer Interaction for Special Needs, University of the Basque Country (Dept. of Computer Architecture & Technology) who joined the meeting upon CERTH/ITI's invitation. Prof. Abascal has been invited as an external accessibility expert (his laboratory is the oldest accessibility laboratory in Spain) in order to receive important feedback from an accessibility expert point of view for the ACCESSIBLE research and technological implementations as well as to explore further collaboration between ACCESSIBLE project and his research team.

ÆGIS pan-European User Forum and Workshop



Several of the ACCESSIBLE partners also participate in ÆGIS (Open Accessibility Everywhere: Groundwork, Infrastructure, Accessibility Everywhere: Groundwork, Infrastructure, Standards - <http://www.aegis-project.eu>) project, supported with the financial contribution of the European Commission. The first ÆGIS pan-European User Forum and Workshop are being organized on the 4th and 5th June 2009 respectively at Research In Motion UK Ltd, Slough, Berkshire, United Kingdom. During

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

the User Forum, thought-provoking discussions between the end-users with disabilities and software developers will take place, thus enabling the developers to better understand user needs when developing accessible desktop, mobile and internet applications. The workshop will present the preliminary findings of the project related to its Use Cases and preliminary user requirements, thus stimulating discussions on these issues between both end-users and application developers. Key stakeholders from relevant areas are expected to participate (such as end users' representatives and organisations, EC representatives, technologies developers, etc.). This workshop is an excellent chance to meet experts from relevant fields in the accessibility and open source fields.

Registering is available via http://www.aegis-project.eu/user_forum.html.

ACCESSIBLE at HCI International 2009

ACCESSIBLE consortium partners will be presenting papers at the HCI International 2009 conference in San Diego, USA. This takes place on 19-24 July 2009.

More information is available at www.hcii2009.org, while the next ACCESSIBLE newsletter will look closer at the workshop itself.

Consortium List

No	Participant Name	Acronym	Country	Type
1	Centre for Research and Technology Hellas / Informatics and Telematics Institute and Hellenic Institute of Transport	CERTH	Greece	Research Institute
2	Foundation for Research and Technology Hellas, Institute of Computer Science	FORTH- ICS	Greece	Research Institute
3	Sun Microsystems	SUN	Czech Republic	Industry
4	University of Stuttgart, Institute for Human Factors and Technology Management	USTUTT	Germany	University
5	ALCATEL-Lucent Deutschland AG	ALDAG	Germany	Industry
6	Fundação da Faculdade de Ciências da Universidade de Lisboa	FFCUL	Portugal	University
7	Softeco Sismat	SOFTECO	Italy	SME
8	Netscouts gGmbH	NET-SCOUTS	Germany	SME
9	Marie Curie Association	MCA	Bulgaria	NPO
10	CONCEPT SWISS	CS	Switzerland	SME
11	SOLINET GmbH	SOLINET	Germany	SME

Coordinator

CERTH/ITI

Contact Person

Dr. Dimitrios Tzovaras

Dimitrios.Tzovaras@iti.gr

Technical Manager

CERTH/HIT

Contact Person

Dr. Evangelos Bekiaris

abek@certh.gr

Dissemination Leader

MCA

Contact Person

Mr. Karel Van Isacker

projects@marie-curie-bg.org

Project details

Project Reference	224145
Contract Type	STREP
Start Date	2008-09-01
Duration	36 months
Project Status	Execution
Project Cost	€3.79 million
Project Funding	€2.6 million

Join us!

If you would like to join us and receive our news, invitations to our workshops, information on the progress of the project, or just want to contact us, please fill in the contact form below and send it to projects@marie-curie-bg.org (ACCESSIBLE communication partner **Marie Curie Association**) or by fax at + 359 32 628890.

Title (please select one):	<input type="checkbox"/> Mr. <input type="checkbox"/> Ms. <input type="checkbox"/> Mrs. <input type="checkbox"/> Dr.
First name*:	
Surname*:	
Email*:	
Your Function or Expertise*:	
Organisation Name:	
Address/postal code:	
Country:	
Tel. no. (+Int. Code):	
Fax no. (+Int. Code):	
Web Address:	http://
How did you get in touch with this project?	
My remark/request is:	
Are you a person with special needs?	<input type="checkbox"/> Yes <input type="checkbox"/> No

If yes, please specify:	<input type="checkbox"/> Blind/partially sighted <input type="checkbox"/> Deaf or other hearing impairment <input type="checkbox"/> Unable to walk, e.g., wheelchair user <input type="checkbox"/> Difficulty in walking and bending limbs <input type="checkbox"/> Cognitive impairments or other learning difficulty <input type="checkbox"/> Illiterate <input type="checkbox"/> Other: _____
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* *Obligatory*

I would like to subscribe to the ACCESSIBLE mailing list and receive further news and updates on the progress of the ACCESSIBLE project as well as invitations to your workshops. I understand that I will have no obligations whatsoever, and any possible participation to the project's activities will be strictly voluntary. I can also withdraw my participation at any time with a simple e-mail to projects@marie-curie-bg.org.