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INFORMATION AND COMMUNICATION TECHNOLOGIES

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Accessibility Assessment Simulation Environment for New
Applications Design and Development
(ACCESSIBLE, Grant Agreement No. 224145)



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Executive Summary

This document, issued at early project stage (month 3), aims at giving a brief overview on the ACCESSIBLE Project “Accessibility Assessment Simulation Environment for New Applications Design and Development” - Grant Agreement n. 224145. The Project Presentation, being set out in this Deliverable, has been structured according to EC Guidelines

The reader will be provided of relevant information regarding the project objectives, expected results, vision and approaches. In particular it will be underlined how the project activities will bring the consortium to reach the main project objectives. This presentation as well as the short project description (Appendix 2) will be used as initial dissemination material, until new publications that will reflect project developments will be developed during the project.

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List of abbreviations and acronyms

(in alphabetic order)

Abbreviation	Explanation
CDC	Connected Device Configuration
CLDC	Connected Limited Device Configuration
EARL	Evaluation And Report Language
ERT	Evaluation and Report Tools
IDE	Integrated Development Environment
ICT	Information and Communication Technologies
MSC	Message Sequence Chart
SME	Small and Medium Enterprise
SDL	Specification and Description Language
UI	User Interface
URL	Uniform Resource Locator
UML	Unified Modelling Language
WG	Working Group

1 Introduction

Accessibility is an urgent issue nowadays. Authorities and experts are putting a lot of effort on pushing forward accessibility of software applications but, despite this fact, ICT applications and systems are not fully accessible yet. The triggering idea behind ACCESSIBLE is to contribute to 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 large organisations, SMEs or individuals (developers, designers, etc.) to produce software products of superior accessibility and quality, accompanied by appropriate measures and proposals for best practices. The proposed system will be demonstrated in four pilots for the assessment of: a) Mobile applications b) Web applications, c) Web services (mainly focusing on infomobility services), and d) description languages (e.g. UML, SDL, etc.).



2 Consortium

The ACCESSIBLE Consortium has been carefully crafted to bring together individuals and organisations with the experience and skills necessary to achieve the project objectives. ACCESSIBLE participants collectively constitute a consortium of high scientific and technical quality.

The Consortium consists of 11 participants from European Countries, with high competence related to the ACCESSIBLE objectives, in scientific, technological and application areas. The reason for such an extended partnership is the effort to create a synergy between complementary expertise on ACCESSIBLE-related activities and to exploit a pan-European approach in order to realise the project challenge.

There is an excellent complementarity between the participants, each providing a unique set of experiences and knowledge - either as enlarged European research institutes working in different countries and environments or as technology providers in the specific area of competence. The broad range of partners' backgrounds will ensure the suitability of the result for subsequent adaptation and distribution internationally. Thus, the project encompasses all key actors in a well-balanced combination, which avoids duplication of expertises, thereby keeping the budget modest and the work team focused. Apart from the big commercial partners SUN and ALDAG, the research entities (CERTH, FORTH-ICS, USTUTT, FFCUL) and the established NGO (MCA) involved, the project is also supported by four innovative SMEs in the field of software development (SOFTECO, NETSCOUTS), telecommunication solutions (SOLINET) and managing ethic laws and gender issues (CS).

The ACCESSIBLE Consortium members appear in the following table. The Project Coordinator contact details are listed in Appendix 1 of this document.

THE ACCESSIBLE CONSORTIUM	
 <small>INFORMATICS & TELEMATICS INSTITUTE</small>	<p>CERTH/ITI Centre for Research and Technology Hellas Informatics and Telematics Institute-Greece</p>
	<p>CERTH/HIT Centre for Research and Technology Hellas Hellenic Institute of Transport- Greece</p>

THE ACCESSIBLE CONSORTIUM



FORTH- ICS
Foundation for Research and Technology Hellas,
Institute of Computer Science – Greece



SUN
Sun Microsystems Czech sro – Czech Republic



USTUTT
University of Stuttgart, Institute for Human Factors and
Technology Management – Germany



ALDAG
ALCATEL-LUCENT DEUTSCHLAND AG - Germany



FFCUL
Fundação da Faculdade de Ciências da Universidade de
Lisboa - Portugal



SOFTECO
Softeco Sismat SpA - Italy

THE ACCESSIBLE CONSORTIUM	
	NETSCOUTS Netscouts gGmbH - Germany
	MCA Marie Curie Association - Bulgaria
	CS CONCEPT SWISS - Switzerland
	SOLINET SOLINET GmbH - Germany

Table I: ACCESSIBLE Consortium members.

3 Project data

The following table summarises the project data:

Contract Number	224145
Project acronym	ACCESSIBLE
Project Name	Accessibility Assessment Simulation Environment for New Applications Design and Development
Programme	Accessible and Inclusive ICT (objective ICT-2007.7.2)
Date of start	01 st September 2008
Duration	36 months
Total Cost	3.788.998,12 €
EC Contribution	2.600.000,00 €
Project Web Site	http://www.accessible-project.eu & www.accessible-eu.org

Table II: Summary of project data.

4 Project objectives

Web Accessibility has been described, very concisely, as “online access ramps” or “ramps to the Internet” indicating that it refers to people with disabilities’ access to knowledge services using Information and Communication Technologies (ICTs). Hence, Accessibility is a concept for embracing the rights and possibilities for better integrating people with disabilities into the Knowledge Based Economy and Society.

Designing for people with disabilities is becoming an important topic today. This idea is strongly supported by the fact that an increasing number of countries are legislating towards promoting and enforcing the rights of people with disabilities. Consequently, accessibility is one more aspect that has to be taken into account in the development of software applications, especially in user interfaces.

The development of accessible software requires specialized knowledge and significant effort from developers. With the additional encumbrance of taking into account different kinds of accessibility requirements, guidelines and best practices, and different implementation technologies (which by themselves might pose severe problems of delivering accessible applications), developers are faced with a daunting task. Therefore, the highly specialised skills required for developing accessible software sets aside most developers. To mitigate these challenges, developers can be guided during the development process in the creation of accessible ICT. To do this, 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 the needs of people with disabilities and the access technologies they use. The ACCESSIBLE project will try to implement specific methodologies and tools for ensuring accessibility for designers and software developers.

One of the many challenges of ACCESSIBLE is the integration of combinations of many possible disabilities, rather than on an individual basis. 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 as with ageing, everyone is likely to acquire multiple disabilities, and although each one might be relatively minor, their combined effects are certainly major

ACCESSIBLE’s objectives can be summarized as follows:

- To research and develop an Assessment Simulation module by collating and merging different methodologies and tools, in order to fully support and incorporate accessibility approaches for the design and development of accessible new applications. This assessment module will support the overall analysis and verification accessibility procedure of Web applications and services, mobile applications as well as standard description languages. It will be integrated with appropriate open source tools that will be modified and further developed within the project.
- To research and develop for the first time reliable and harmonised methodological approaches and tools for large-scale assessment accessibility of applications and services. A Harmonised Accessibility Methodological framework (HAM) will be implemented which can be incorporated to a multilayer ontological framework. Thus, ACCESSIBLE will introduce for the first time a complete ontological framework (extending the ASK-IT project ontological framework) for assessing new multi-domain applications in terms

of accessibility. Each ontology will define taxonomies to characterise disabilities and other relevant characteristics of end user groups, and correlate them with devices specifications (features and limitations), and application semantics. Also a set of rules will be developed, built upon the ontology vocabularies, in order to describe the different accessibility checks of different application domains. Based on this methodology, ACCESSIBLE will provide designers/developers/testers with appropriate knowledge resource and guidelines to drive design for people with disabilities and to develop accessible software applications.

- To implement a developer/designer-aid module in order to involve appropriate accessibility standards and methodologies within the overall lifecycle of software development processes. This module, which can support users to facilitate the design and development of accessible software applications, will be based on modification and integration of Sun's relevant architectures and technologies such as the NetBeans IDE. The developed module will support developers in the creation of accessible applications for the web and mobile devices in addition to desktop applications. We will also focus on ensuring that developers with disabilities are able to use this tool to develop accessible applications.
- To present the accessibility evaluation results through the implementation of an EARL-based reporting module in order to export results in a form helpful to potential receivers of test results, including designers, developers and business stakeholders. The Evaluation and Reporting Language (EARL), which as been proposed by W3C evaluation and Repair Tools Working Group (ERT WG), is a language to express test results such as bug reports and conformance claims. EARL enables any person, entity, or organization to state test results for anything tested against any set of criteria.
- To construct prototype tests and full demonstrations, in order to evaluate the proposed system by using specific pilot applications which are the following:
 - a) Accessibility assessment of Web applications and services,
 - b) Accessibility assessment of mobile applications
 - c) Accessibility assessment of infomobility services and
 - d) Accessibility assessment of standard description languages (e.g UML, SDL, etc.).
- To go through a relevant Quality Assurance Process, in order to turn the proposed Accessibility methodology (if it is possible) into a real accessibility framework that could be enforced through national or international laws. ACCESSIBLE simulation assessment environment maybe could be one of the evaluation mechanisms to be used for selecting from various proposals in public procurements.

5 Technical Approach

5.1 Architecture and Modules

5.1.1 Overall Architecture and Modules

The overall system architecture of ACCESSIBLE consists of five major modules, shown in the following Figure 1:

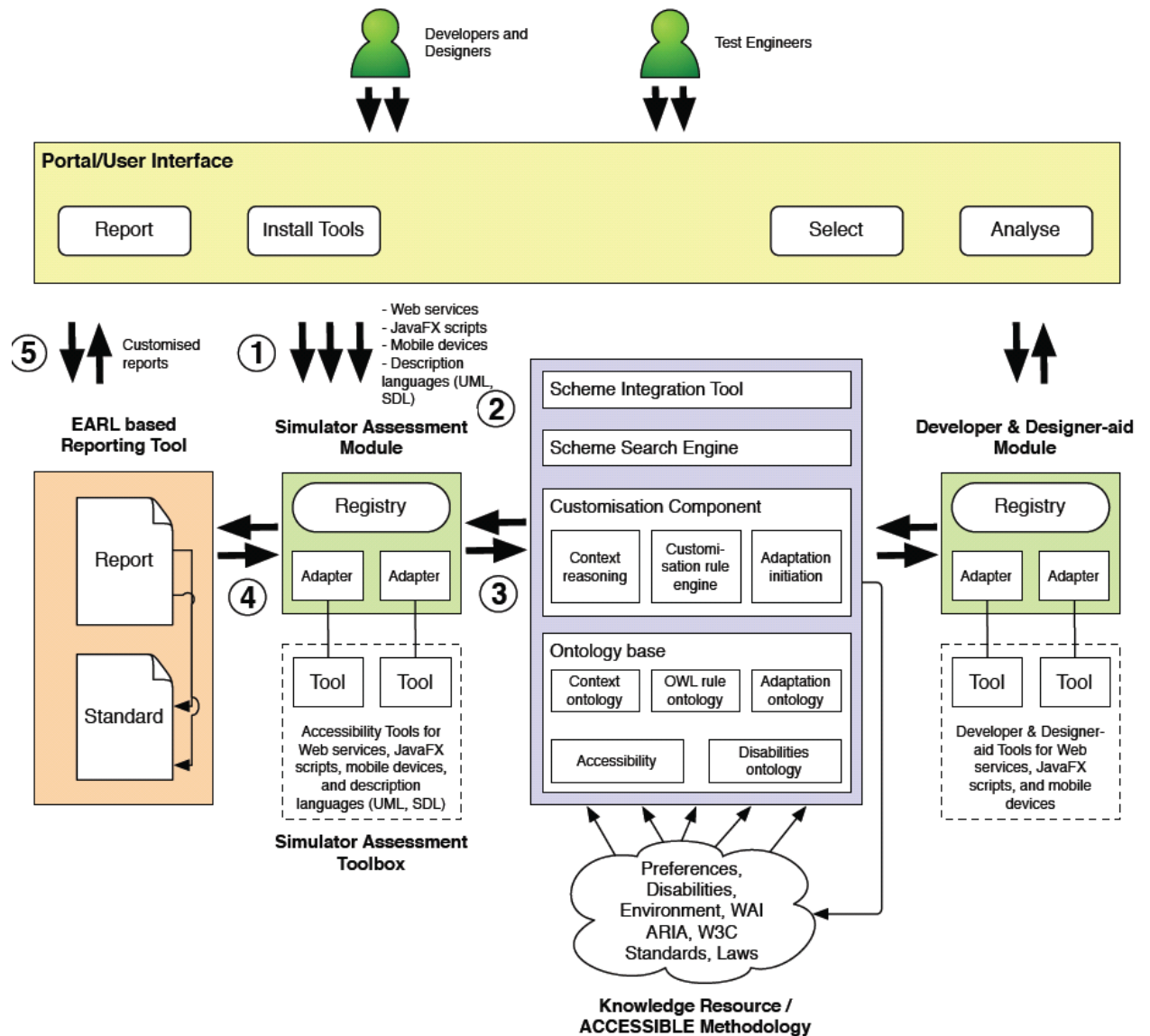


Figure 1: The ACCESSIBLE architecture

- The **user-centred presentation portal** dedicated to specific skilled users (developers, programmers, testers) that enable them both to design and develop accessible software applications and also to evaluate the accessibility of their software applications in order to get accessibility-status reports through a variety of tools and innovative technologies. Regarding the potential structure and functionality of the Portal, different UI presentations according to specific user groups will be supported, enabling a personalised experience

in relation to specific tasks. More specifically, each different user group, according to the requirements stemming by its role in the development process, will have access to different facilities and methods, and furthermore the ability to manage and alter these dynamically populated collections. Typical facilities offered include the personalisation of the user work space, project-based presentation of accessibility evaluation sessions, repositories of methods and tools according to their popularity or personal preference, unified project workspace for testing and reporting, etc. Also, relevant users of the system can have the possibility of selecting the more appropriate accessibility method or tool they prefer based on their exact requirements and preferences. The portal interacts with all the main components of the ACCESSIBLE system such as the assessment simulation module, the multilayer ontology, the designer aid module and the EARL based tool. The design of the user-centred presentation portal will be carried out using the user centred design approach, which is an iterative process whose goal is the development of usable systems, through the involvement of end users in the design process. Regarding the technology that will be used for the development of the portal, a software library will be used which supports the development of Web Interfaces capable of adaptation to diverse user skills and preferences (based on profiles that gather user and context specific parameters). In the context of ACCESSIBLE, this library will be used as a generic UI development framework to increase the usability and therefore maximize the efficiency of the system for each specific target user group (designers, developers, test and evaluation experts, etc). Finally, for the architecture of the portal an advanced configuration, called three- or multi-tier architecture, will be used aiming at separating the application from logic and data. The proposed architecture introduces several advantages such as scalability, reliability and security. Furthermore this complete distinction of the application tiers from the data tiers enables the integration of various services for unifying the ACCESSIBLE user interface with the Simulator Assessment Module, Developer and Design-aid Module and the EARL based Reporting Tool.

- **The Assessment Simulation module** will support the overall analysis and verification in terms of accessibility for Web applications, Web services mobile applications and description languages (UML, SDL, etc.). The module, which takes input from the user-centred presentation portal, will be composed from the following accessibility assessment tools that will be developed within the ACCESSIBLE project in order to support the accessibility assessment process:
 - A *Web applications assessment tool*, in order to support the accessibility assessment of Web applications. The available Structure Evaluation Tool (provided by NETSCOUTS) is expected to be updated and integrated to this module. The Structure Evaluation Tool is a software tool for the analysis and validation of the structure of websites and applications, in terms of accessibility and quality. In addition SET can check failure detection capabilities, based on coloured highlighting (such as sequence of headlines, missing attributes in titles or graphics, control of table layouts, language break, etc.).

- A *web services assessment tool*, based on the open source web-based service alignment tool (provided by CERTH/ITI from ASK-IT integrated project) in order to support the assessment in terms of accessibility for web services. The purpose of this service alignment tool was to enable Web Service providers to integrate their services with the ASK-IT system. It allows software developers to align the functionality of their products, following its conceptual definition, with the aid of ontologies.
- A *mobile applications assessment module* in order to test accessibility of Java enabled mobile and desktop applications.
- A *description languages assessment tool*, in order to support the accessibility assessment of standard description language models (e.g. UML, SDL, MSC, etc). Concerning description languages the tool will offer the possibility to check the compliance of the designs with accessibility guidelines as described in the ACCESSIBLE harmonised methodology. This module will be based on the available SAFIRE Professional tool. SAFIRE Professional is a fully integrated development & run-time environment optimized for the implementation, validation & observation of telecoms systems developed and marketed by SOLINET.

- The **open source developer & designer's aid module** which can support users to facilitate the design and development of accessible software applications. This will be centred on the ACCESSIBLE harmonized methodology and ontological framework, thus ensuring accessibility quality. Target users (developers, designers, etc.) will be supported with specific tool (s) that afford designing and implementing accessible software applications. These tool (s) will be based on already existing open-source software architectures and technologies from SUN, such as the NetBeans IDE, JAAPI, etc. The following sub-modules and tools will be reviewed in order to select the most appropriate of them for the development of the module:
 - NetBeans IDE for development of Java applications

- The **multilayer ontological framework (ACCESSIBLE knowledge resource)** will incorporate the ACCESSIBLE harmonized methodology that will be provided during the project. The framework aims to formalize conceptual information about:
 - The *characteristics* of users with disabilities, assisted devices, applications, and other aspects that should be taken into account when describing an audience with disabilities and developing tailored Web sites
 - accessibility *standards* and associated checkpoints and guidelines
 - Semantic *verification rules* to help describing requirements and constraints of users, and associating them to accessibility checkpointsIn order to cope with these goals, the framework must comply with the following requirements:
 - To be as *formal* as possible, thus providing all the necessary definitions in a concise, unambiguous, and unified form

- Provide information that can be *easily processed* by software applications and integrated into accessibility assessment processes
 - *Easily implemented* by software developers and other users involved in the software development process
- The **EARL-based reporting tool** in order to export accessibility evaluation results in a form helpful to potential receivers of test results, include designers, developers and business stakeholders. The Evaluation and Reporting Language (EARL), which has been proposed by W3C evaluation and Repair Tools Working Group (ERT WG), is a language to express test results such as bug reports and conformance claims. EARL enables any person, entity, or organization to state test results for any thing tested against any set of criteria. The needs of audience are likely to be somewhat different. For example a developer is primarily interested in a page-by-page enumeration of errors and recommendations, whereas a manager is more concerned with compliance issues and strategic recommendations. The following four core classes from EARL will be incorporated within ACCESSIBLE reporting tool:
- Assertor: Context information about the test and contains information such as who (person) or what (tool) carried out the test, when the test was carried out, or information about the platform and configuration in which the test was executed.
 - Subject: The subject which is being evaluated and could be a piece of software code, a document, or an object.
 - Testcase: The test criteria against which a subject is being evaluated could be any (referenceable) specification, guidelines, a single test from a test suite, or some other test case.
 - Result: The outcomes of a test conducted on a subject can contain information about the success or failure of the test, a confidence indicator for the obtained results, the reason for failing, or other attributes.

5.2 Pilot Applications

The ACCESSIBLE prototype and implemented modules will be evaluated in a series of pilots that will be designed and realized during the running period of the project. 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 the following pilots:

- Web applications assessment
- Mobile applications assessment
- Web services assessment
- Description languages (e.g. UML, SDL) assessment pilot

The goal of the pilot applications is to demonstrate the use of the ACCESSIBLE system for enhancing the accessibility of Web services (e.g. infomobility services), web applications and mobile applications and to meet accessibility standards suitable to support full access to services by people with disabilities. At least one application

per the aforementioned domains will be tested within the ACCESSIBLE simulation environment.

Indicatively and according to our current plans some of the following applications will be taken into consideration within the project:

- Web based ecommerce application for goods (NETSCOUTS)
- Web based ecommerce application for office supplies (NETSCOUTS)
- info mobility and ASK-IT compliant web services (SOFTECO & CERTH)
- Potentially use of AEGIS FP7 project developed sample applications (SUN)
- Next-generation telecommunications services (SOLINET).

5.2.1 Scenarios in ACCESSIBLE

Indicatively and according to our current plans some of the following scenarios will be taken into consideration within the project:

Web applications

Olga, 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 accessibility issues. Through the ACCESSIBLE portal, she selects the appropriate assessment tool (Web Applications Assessment Tool). Through the definition of which target user categories are being tested, the expert feeds a specification of the Web application (e.g., a URL, a set of URLs to be tested) to be evaluated by ACCESSIBLE verification rules as described in the ACCESSIBLE 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.

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, and begins the analysis of each application form. The ACCESSIBLE system and associated accessibility harmonized 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. Also the integration and usage of NetBeans Mobility Pack within the ACCESSIBLE platform can support users for modelling and running their implemented applications in simulated mobile devices. This will further help the developer to understand how to make their applications accessible.

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 ACCESSIBLE alignment tool can be used in order to align accessibility terms into Web services.

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 SDL (or 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.

6 Expected impact

ACCESSIBLE will empower research community on effective usage of accessibility standards and technologies helping to create and improve software products accessibility. This consideration will unquestionably improve quality, accessibility and usability of software applications. The ACCESSIBLE system will support the software development of future applications that will be more accessible and designed for all. This project will help to overcome the fragmented approaches that are currently taking place in accessibility issues. By empowering software developers, and organisations with accessibility assessment systems and ubiquitous and personalised design and developer's aid tools, the competitiveness of Europe's software, services will be increased in this emerging market.

The expected main technological impact results in the ACCESSIBLE project are organised around the following main directions:

Personalisation: ACCESSIBLE will tailor access to accessibility harmonized methodologies and information for users or groups of software developers based on appropriate accessible criteria, methodologies, accessibility assessment and authoring tools, while assuring a basic level of easy and effective access to digital accessible resources.

Aggregation: ACCESSIBLE will allow for combining and/or integrating various accessibility information or technologies from different source bodies by allowing the developers and designers to access them efficiently, and provide them with support for the design and development of accessible applications and services.

Collaboration: ACCESSIBLE will facilitate the community of concurring developers to share experience, and accessible the software development process giving emphasis on insights, innovation, and quality. Thus, it will act as real driver of developing accessible applications and testing the accessibility of services, applications and models in order to shift from code-centric to model-centric software development.

Presentation: adaptive and user-centred user interface environment, well-conceived designer aid and assessment simulation applications; by reducing technology complexity and facilitate use of harmonized accessible methodologies.

The benefits that appropriate organizations (Service providers, SMEs,) will derive from ACCESSIBLE project by incorporating accessibility technologies (tools, standards, methodologies), can be summarised as:

- *Social:* all organisations have corporate social responsibilities; supporting the requirements of disabled customers and staff is one of the key responsibilities. This is implemented through systems being inclusive.
- *Financial:* increased revenue will emerge from a broader client base, not just people with disabilities but also ethically driven consumers and the mildly challenged. Reduced cost will emerge from increased productivity of staff, both disabled and able. Finally, cost of sales will be reduced by automated accessible customer support.
- *Legal:* there is a legal requirement to avoid discrimination against the disabled by developing accessible systems. Such discrimination may be identified as the lack of provision of appropriate ICT solutions.

In fact, ACCESSIBLE based on inclusive ICT leads to a number of significant benefits that have a direct commercial impact, significantly prolonging independent living, and increasing active participation in the economy and the society.

In particular, ACCESSIBLE will:

- Provide companies and SMEs, which develop mobile and/or desktop applications, with appropriate supporting tools for the overall accessibility assessment procedure.
- Expand potential market share
- Improve the accessibility and usability of future ICT products and services
- Facilitate the accessibility case by giving several opportunities to enterprises, companies and strengthening the accessibility and usability procedures of the software development processes

European Added Value

ACCESSIBLE is also related to the eEurope 2010 strategy. This project will help to overcome the fragmented approaches that are currently taking place in accessibility issues. Overall, ACCESSIBLE will benefit the EC information society in terms of economics and improved services reaching its customers, users, suppliers and citizens, in general improving European software developers/designers and products' competitiveness. The vision behind ACCESSIBLE is to develop applications and services based on Information Communication Technologies (ICT) that will allow people with disabilities to live more independently.

ACCESSIBLE will establish a mean of bridging the gap between people with disabilities and people without disabilities. Consequently, ACCESSIBLE will give more opportunities for greater synergy and link with the information society. It means that accessibility is a concern for everyone, not only for a minority with special needs. With an increasingly diverse and ageing society, the objective should –and will– increasingly be to promote accessibility for all.

References

1. Annex I-“Description of Work”, ACCESSIBLE project, CN. 224145, Seven Framework Programme, Accessible and Inclusive ICT (objective ICT-2007.7.2)

Appendix 1: Coordinator and Technical Manager Contact Details

Coordinator contact details

Name	Dr. Dimitrios Tzovaras
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Technical Manager contact details

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Appendix 2: Short Project description

I PROJECT INFORMATION

Project acronym: ACCESSIBLE

Project name: Accessibility Assessment Simulation Environment for New Applications Design and Development

Contract number: 224145

Priority component: Accessible and Inclusive ICT (objective ICT-2007.7.2)

Project Logo:



Project Web Site: <http://www.accessible-project.eu>

List of participants:

No.	Participant Organisation Name	Participant Short Name	Country
1 (Coordinator)	Centre for Research and Technology Hellas / Informatics and Telematics Institute and Hellenic Institute of Transport	CERTH	Greece
2	Foundation for Research and Technology Hellas, Institute of Computer Science	FORTH- ICS	Greece
3	Sun Microsystems	SUN	Czech Republic
4	University of Stuttgart, Institute for Human Factors and Technology Management	USTUTT	Germany
5	Alcatel Lucent Deutschland AG	ALDAG	Germany
6	Fundação da Faculdade de Ciências da Universidade de Lisboa	FFCUL	Portugal
7	Softeco Sismat SpA	SOFTECO	Italy
8	Netscouts gGmbH	NETSCOUTS	Germany
9	Marie Curie Association	MCA	Bulgaria
10	Concept Swiss	CS	Switzerland
11	Solinet GmbH	SOLINET	Germany

Total project cost: 3.788.998,12 €

Commission project funding: 2.600.000,00 €

II. PROJECT MAIN GOALS

ACCESSIBLE is an EU FP7 project spanning over 36 months, start date 1st September 2008, with the aim of improving the accessibility of software development products, by introducing an harmonised accessibility methodology into accessible software development processes, using significantly better measurement strategies, methodologies, etc. The envisaged improvement will enable large organisations, SMEs or individuals (developers, designers, etc.) to produce software products of superior accessibility and usability, accompanied with appropriate measures, technologies and tools that improve their overall quality. The objectives set forth by the ACCESSIBLE project are:

- To 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.
- To provide developers and designers a framework for gaining insight into the accessible software development process – the right disability and accessibility information, standard, tool or methodology. Developers will have a user-centred interface to get access to the different piece of methodological approaches they need.
- To provide a “harmonised methodology” between different standard developing organisations, end user groups, expert groups, decision makers and policy makers.

III. KEY ISSUES

The ACCESSIBLE project will provide groundwork for the design and development of more accessible ICT systems. Typically, accessibility evaluation is considered late in the development process and is often conducted by outside experts, after the application is delivered and content is produced. This leads to issues being reported to developers late in the project, at a time when changes are more costly and time consuming. In order to make accessibility development efforts more efficient, the ACCESSIBLE project can support the integration and assessment of accessibility into all stages of an application development process, with as much automation as possible. Thus, ACCESSIBLE project focuses on the developer phase of the project and helps developers, with little or no accessibility knowledge, helping ensure that applications and services are fully accessible to persons with disabilities. Moreover, as ACCESSIBLE targets not just traditional software environments (i.e., Desktop computers), it will provide methodologies and tools that help leverage accessibility of web services and description languages as well.

IV. TECHNICAL APPROACH

The ACCESSIBLE project integrates both new ICT driven concepts and user with disabilities oriented approaches, with methodologies and tools regarding accessibility. Within this context, and by using lessons learned from relevant research, standards and tools, the ACCESSIBLE project aims to develop a new scalable, interoperable and integrated assessment simulation system as an accessible-driven solution with a user-centred approach.

By promoting accessibility and usability, the ACCESSIBLE project will

- Research and develop an Assessment Simulation module by collating and merging different methodological tools, checking the coherence with the W3C and other standardisation works in order to fully support and incorporate accessibility approaches for the design and development of accessible new applications.
- Research and develop for the first time reliable and harmonised methodological approaches and tools for large-scale assessment accessibility of applications and services. A Harmonised Accessibility Methodological framework (HAM) will be implemented which can be incorporated to a multilayer ontology based knowledge resource. Thus, ACCESSIBLE will introduce for the first time a complete ontological framework (extending the ASK-IT ontological framework) for assessing new multi-domain applications in terms of accessibility
- Implement a developer/designer-aid framework in order to involve appropriate accessibility standards and methodologies within software development processes.
- Present the accessibility evaluation results through the implementation of an EARL based reporting module in order to export results in a form helpful to potential receivers of test results, including designers, developers and business stakeholders.

V. EXPECTED ACHIEVEMENT / IMPACT

ACCESSIBLE will empower research community on effective usage of accessibility standards and technologies helping to create and improve software products accessibility. This consideration will unquestionably add to quality, accessibility and usability of software applications. The ACCESSIBLE working environment system will support the software development of future applications that will be more accessible and designed for all. This project will enormously contribute to enhance accessibility in software development process and thus stimulate the ICT and digital content markets in Europe. By empowering software developers, and organisations with accessibility assessment systems and ubiquitous and personalised design and developer's aid tools, the competitiveness of Europe's software services will be increased in this emerging market.

VI. COORDINATOR CONTACT DETAILS

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