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ÆGIS

Open Accessibility Everywhere:
Groundwork, Infrastructure, Standards

European Commission
Information Society and Media

ÆGIS will develop an Open Accessibility Framework (OAF) consisting of open source accessible interfaces and accessibility toolkits for developers, alongside accessible applications and open source assistive technologies for users. ÆGIS will produce this framework through user research and prototype development with current and next generation ICT. This should deeply embed accessibility into future ICT for the open desktop, rich Internet applications, and mobile devices. ÆGIS results will be referred to standards organisations where appropriate, and made available under open source licenses to the greatest extent possible.

AT A GLANCE

Project:
ÆGIS - FP7-224348
Open **A**ccessibility **E**verywhere: **G**roundwork, **I**nfrastructure, **S**tandards

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The Consortium consists of 20 complementary partners from 10 countries: Center for Research & Technology Hellas (CERTH), Sun Microsystems (SUN), Fundación Vodafone España (FVE), The Chancellor, Master and Scholars of the University of Cambridge (UCAM), AOL LLC (AOL), Katholieke Universiteit Leuven (K.U.Leuven), Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V. (FhG/IAO), Royal National Institute of Blind People (RNIB), ACE Centre Advisory Trust (ACE), SingularLogic S.A. (SILO), Czech Technical University (CVUT), European Platform for Rehabilitation (EPR), Universidad Politécnica de Madrid / Life Supporting Technologies (UPM-LST), ONCE Foundation (FONCE), Blue Point IT Solutions S.r.l. (BluePoint), CONNCEPT SWISS (CS), VASTRA GOTALANDS LANS LANDSTING (SU-DART), Femtioprocent Data AB (FPD), Adaptive Technology Resource Centre, University of Toronto (ATRC), Research In Motion Limited (RIM)

Duration:
01 September 2008 – 29 February 2012, 42 Months

Total Budget:
€ 12.600.861

EC Requested Funding:
€8.220.000

Programme:
7th Framework-Programme

Project overview

The ÆGIS project seeks to determine whether 3rd generation access techniques will provide a more accessible, more exploitable and deeply embeddable approach in mainstream ICT. This includes desktop machines, rich Internet and mobile applications. This approach will be developed and explored within the Open Accessibility Framework (OAF) through which aspects of the design, development and deployment of accessible mainstream ICT are addressed. The OAF provides built-in accessibility solutions, as well as toolkits for developers, for "engraving" accessibility into existing and emerging mass-market ICT-based products. This makes accessibility open, plug & play, personalised & configurable, realistic & applicable in various contexts. ÆGIS is placing users and their needs at the centre of all ICT developments. Based on a holistic user centred design (UCD) approach, ÆGIS will identify user needs and interaction models for several user groups includingusers with visual, hearing, motion, speech and cognitive impairments, as well as application developers, and will

develop open source-based generalised accessibility support for mainstream ICT devices/applications:

- the open desktop,
- rich Internet applications, and
- Java-based applications for mobile devices

All developments will be iteratively tested with end users, developers and experts in three phases and 4 Pilot sites Europe wide (in Belgium, Spain, Sweden and the UK).

Project objectives

The main objectives of the ÆGIS Project can be classified in research/scientific, technological, social and economical domains. They are listed below per area.

Research / Scientific objectives

- To model the wants and needs of people with disabilities, e user interaction elements in using rich applications of mainstream ICT .To structure a holistic UCD methodology which follows across the project phases. To demonstrate and prove that use of 3rd generation open desktop access techniques resulting in equal or better end-user access experiences as compared to the existing, 2nd generation proprietary approaches.
- To bring 3rd generation access to rich Internet applications & mobile accessibility, Developing innovative approaches to building generalised accessibility support, using free & open source accessibility frameworks and infrastructure.

Technological objectives

- To build a set of developer's tools and user interface component sets that improve the speed, accuracy, ease, and reduce expense of creating 3rd generation accessible applications – for the desktop, for rich Internet applications, and for mobile platforms.
- To develop new approaches and algorithms for eye-tracking, using standard web-cams to enable highly affordable access to the open desktop & mobile devices for people with severe physical impairments.
- To explore real-time-text methodologies for the open desktop and for communication between the desktop and mobile devices.
- To explore and develop language ontology based, concept coded, symbol support in standard office software.
- To develop window management, symbol and magnification techniques on the open desktop for visual & cognitive disabilities; including assistance in locating applications, locating key portions of application content, dynamic reading assistance through text-to-speech, etc.
- To develop methodologies and techniques for connecting 3rd generation API-based accessibility information exposure from visually designed, free-form "Web 2.0" user interfaces.
- To develop an accessibility testing framework for inclusion into a large, distributed, open source projects for rapid detection of accessibility problems introduced by new code and preventing accessibility regressions.

Social objectives

- To empower people with disabilities, the elderly and any other group of users being disadvantaged today when using Internet services, desktop PC or mobile devices, so that they benefit fully from, mainstream ICT, at negligible extra cost or effort.
- To bring built-in and totally support multilingualism to mainstream ICT applications, in order to boost equality in service provision and opportunities throughout Europe.
- To enable people with severe cognitive impairments to express themselves in written form using commercial off-the-shelf office productivity tools.

Economical objectives

- To reduce the cost of developing accessible cross-platform ICT solutions for all users, using the new ÆGIS open source modules, frameworks and developer tools.
- To reduce decisively (to the level of even eliminating) the cost of assistive technologies for individual users with disabilities in getting full access to desktop, mobile and Internet applications, through the provision of open source frameworks and assistive technologies.

- To decisively reduce (to the level of even eliminating) the cost of creating accessible documents – including those in DAISY, Braille, and Large Print formats.
- To create new business opportunities for small and medium enterprises by providing high quality and low cost, all-inclusive applications.

Main activities

ÆGIS is composed of 5 "sub-projects" (SP1 through SP5):

SP1: User Centred Design, Integration and Pilot Applications

This SP defines the User Centred Design and Use Cases to be followed throughout the project. This SP also develops the ÆGIS open accessibility framework and architecture. This Open Accessibility Framework is a comprehensive, holistic approach to programmatic support for assistive technologies. Finally, this SP will organise the local testing and evaluation through pilots in 4 countries.

SP2: Open Accessible Desktop

SP2 will complete the 3rd generation approach already underway in open desktop development. It will demonstrate/prove that the 3rd gen. can meet & exceed the access offered using the 2nd gen./reverse-engineered way of the proprietary platforms. It also tackles affordability issues in accessible document creation, eye-gaze techniques, and maintains accessibility quality in long-running distributed development.

SP3: Web Applications Accessibility

SP3 brings the 3rd gen. approach to Rich Internet Applications ("Web 2.0"), defining user interface component sets, creating developer tools, and building user agent/browser support for API-based accessibility. It will prove this approach through a set of real-life sample applications built with AEGIS components and developer's tools.

SP4: Mobile Applications and Consumer Devices Accessibility

SP4 mirrors the research work of SP3, but as applied to Java-based mobile devices. In addition, it includes research into and building the underlying accessibility frameworks and APIs, as well as prototype assistive technologies, for mobile devices.

SP5: Horizontal Activities

SP5 is responsible for the project management, the training of the consortium members and pilot end-users. It will also manage the project's dissemination activities. This SP will address the exploitation, business scenarios and cost-effectiveness activities. It willexplore standardisation and policy issues, identifying all existing and emerging standards and policies/trends related to ÆGIS, informing the ÆGIS development work. It will also define strategies, channels and plans for the dynamic introduction of the ÆGIS results and key applications, especially its numerous open source ones, into standardisation actions and incentives. Finally, this SP will take care of any ethical and gender issues that might arise within the project.

Pilot sites and demonstrators

4 distinct pilots are planned in Belgium, Spain, Sweden, and the UK. Each pilot will undertake evaluation in 3 phases (trials and mock-ups, early prototypes, and final prototypes). The pilots aim to involve vision, mobility, cognitive, hearing and speech impaired people, as well as experts in the field, tutors and other facilitators and developers.

All feedback received from each of the 3 evaluation phases will be fed back into the development process that will take place in the project period following the each evaluation phase.

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