Open Source Assistive Technology Software

Using the Open Source development model to innovate and improve software for people with disabilities.

A presentation to the British Computer Society Open Source Specialist Group.

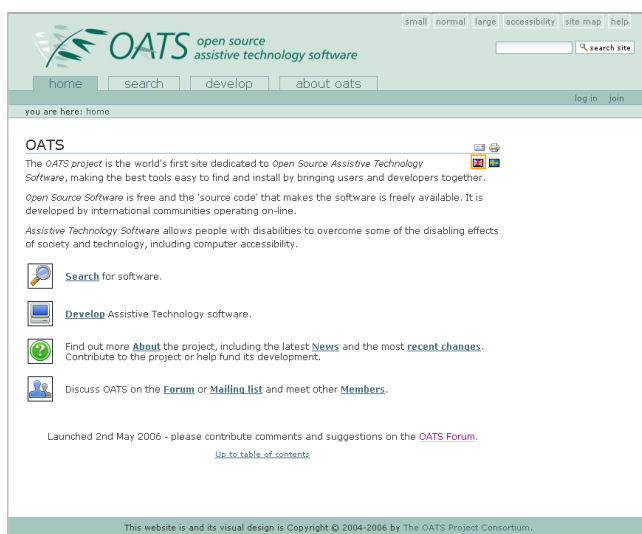Simon Judge MENG MIET   8th August 2006

Abstract

This presentation will present the OATS project - the world's first site dedicated to *Open Source Assistive Technology Software.* OATS – Open Source Assistive Technology Software – is a pilot project to promote the availability and development of freely available software for users of Assistive Technology (AT).

Assistive Technology enables people with disabilities to overcome barriers – for example how can you efficiently access a computer if you cannot use a mouse or keyboard? Assisitve Technology is an increasingly important field, given, for example, the ageing of the population. There is also a massive cross over between Assistive Technology human-computer interaction, usability, accessibility and simply good design. There will always be a need for customised and/or specialist software for the population for whom existing software is not appropriate and catering for these needs has the potential to improve design and usability for the mainstream population.

Software (combined with increasingly powerful and mobile computing) offers a very effective means of meeting a wide range of Assistive Technology needs and these will be outlined and examples given and demonstrated (including existing open source Assistive Technology software).

Open Source software is now a well-established development model, however it has not been fully utilised within the Assistive Technology world. The project participants believe that Open Source is, naturally, an excellent development model for Assistive Technology – since it encourages standardisation, innovation and brings users and developers closer together.

The project has developed a website, www.oatsoft.org, to host a **repository** of freely available AT software and a **forge** to promote the development of new software. Fundamental to the project is the concept of a **'community'** bringing together users of assistive technology and software developers. In designing the website particular attention has been given to the needs and abilities of these two groups of users. *Accessibility* and *usability* have been uppermost considerations.

The website is based on PLONE – the open source content management system - this was chosen because of the good inherent accessibility features, the software development tools already available and the active PLONE community. Software development tools, accessible through the forge, include 'bug tracking', code versioning and extensive documentation capabilities. The site will be demonstrated and the issues surrounding it's implementation discussed.

Although undoubtedly capable of further development, the OATS website is fully functional and has attracted considerable interest from both users of assistive technology and software developers. This project was a pilot project and the proposed route to move beyond this successful pilot will be presented and the opinions and feedback of the audience sought on this.

Summary Biography: Simon Judge

Simon works as a Clinical Scientist at Access to Communication and Technology (ACT), Birmingham. ACT[1] is a specialist NHS service providing Electronic Assistive Technology (EAT) to people with communication problems and/or physical difficulties that might be helped by technology. As part of his day-to-day job Simon meets and works with a large number of people of all ages with often profound disabilities. Providing Assistive Technology equipment to these clients allows a unique insight into the extremes of accessibility and usability.

Working within the Assistive Technology field since 1999 Simon previously worked for a not-for-profit organisation (MERU[2]) where he jointly set up and ran a service providing custom made EAT controls to children with disabilities.

Simon has an MEng in Electronic and Electrical Engineering from Imperial College, London. He has a particular interest in Human Computer Interaction with relation to the use of 'restricted' interfaces and also the potential impact of Open Source Software on the Assistive Technology market.

The use of the Open Source software development model for Assistive Technology has been a passionate belief since entering the field. The OATS[3] project is the culmination of many years of developing and evolving work in encouraging FLOSS within the field. It was inspired by interaction with some brilliant software engineers and Assistive Technology professionals and seeded from a meeting with Richard Stilgoe, founder of the Orpheus Centre[4].

Further information can be found at www.sjinterface.co.uk .

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[1] www.wmrc.nhs.uk/act - please note this is being redevloped and will be relaunched soon.
[2] www.meru.org.uk
[3] www.oatsoft.org
[4] www.**orpheus**.org.uk/

Project Partner Organisations and Participants:

Andrew Lysley, Jason Walsh, Stephen Druce

The ACE Centre Advisory Trust is an independent charity that provides a focus for the use of technology with the communication and educational needs of young people with physical and communication difficulties. Based in Oxford, the ACE Centre offers a wide variety of services including in-depth individual assessments, information, R&D, and specialist training for parents and professionals.

Simon Judge

Access to Communication and Technology, ACT is an NHS service providing Electronic Assistive Technology (EAT) throughout the West Midlands region. The mission statement of ACT is: "To empower, using techniques and technologies which optimise potential for communication and control"

Andy Judson

The School of Computing at the University of Dundee has a long history of developing cutting edge research in assistive and healthcare technologies; we also have established research groups exploring computational systems and interactive systems design. The assistive and healthcare technologies group is developing a range of computer systems for patients, professionals, older people and people with specific needs.

Eive Landin

The Swedish Institute for Special Needs Education is the national authority that coordinates government support in respect of special needs education for children, young people and adults with disabilities.

Mats Lundalv

DART (at Sahlgrenska University Hospital, Göteborg) is the regional centre of western Sweden for AAC (Augmentative and Alternative Communication) and computer access for children, young people and adults with disabilities. The trans-disciplinary DART team works with assessment, education and the development of both low and high tech aids to provide strategies and techniques to create individual and well-balanced communication and access solutions.

Steve Lee

Software developer in education, Open Source and Assistive Technology . Technical consultant and author. Web Services Director for http://schoolforge.org.uk.