JISC DEVELOPMENT PROGRAMMES

Project Document Cover Sheet

Proposal for no cost follow-up (from Sept 2006)

Project

Project Acronym	ESP-GRID	**Project ID**	
Project Title	Evaluation of Shibboleth and PKI for Grids		
Start Date	1 July 2004	**End Date**	31 March 2006 (original)
Lead Institution	Oxford University		
Project Director	Professor Paul Jeffreys / Mr Matthew Dovey		
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Partner Institutions	None		
Project Web URL	http://wiki.oucs.ox.ac.uk/esp-grid/		
Programme Name (and number)	Core Middleware: Technology Development		
Programme Manager	Nicole Harris		

Document

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Reporting Period	March 2006-		
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Proposal for (no cost) extension

Proposed title: Barriers to Initial Involvement for Novice Grid Users

Introduction

As a logical follow-on from the recent ESP-GRID project, this work will also form part of the eHorizons research (see http://www.e- horizons.ox.ac.uk/) into the future benefits of e-Science technologies. We propose a study involving the interviewing of scientific and humanities researchers who are potential, incipient and established grid users. Firstly, by observation, we wish to establish whether any existing or future (yet to be developed) grid resource or service would benefit them in their research; this may be to enable their current style of working to be easier or quicker, or it may be to enable greater collaboration or inderdisciplinary working.

For those users who are either currently working with grids or who agree that future use of the grid may be beneficial, we would like to explore further to examine the following hypotheses:

1. If a grid interface or the working environment is (apparently) too difficult to use, it will not be adopted by many of the appropriate users.

2a. Most scientists and humanities researchers will be Service End Users (as defined in Norman, 2006).

2b. Currently grids are serving Power Users (as defined in Norman, 2006) and do not yet benefit non-computer-technical researchers.[1]

Hypothesis one has been found to be difficult to investigate within the existing literature, as studies have focussed on the loss of productivity resulting from the imposition of difficult to use software.[2] There seems to be little work undertaken on the consequences of poor usability where a researcher's free choice allows him/her to choose not to employ the new software or 'system' and either use an alternative or indeed not to pursue that kind of work at all. It will be beneficial to establish the principle that - at least in the academic environment - despite the great potential benefits, users may not adopt the newer, more powerful methods if their initial experience is that "it is too difficult".

Hypotheses 2a and 2b cited above are directed at examining the types of future users. If such a principle can be shown to be true then the knowledge that the majority of future users will be Service End Users should aid the thinking for the design of access management systems for the future.

Communities of users

We intend to interview users from as broad a range of disciplines as possible. As a starting point we will attempt to look at the requirements work (and follow ups) for researchers engaged in the Integrative Biology (IB, see http://www.integrativebiology.ac.uk/) and the Building a Virtual Research Environment for the Humanities (BVREH, see http://bvreh.humanities.ox.ac.uk/) projects, both of which are led by researchers based in Oxford. We may approach users for follow-up sessions of our own and hope to contact potential future users through recommendations of their colleagues. Another useful approach will be to carry out short focus group sessions on the back of subject or collaborative workshops that have already been scheduled. We also hope to observe geneticists and/or biomedical researchers engaged in working with the Biomedical Research Informatics Delivered by Grid Enabled Services (BRIDGES, see http://www.brc.dcs.gla.ac.uk/projects/bridges/) portal for the first time. (The access mechanism - using Shibboleth - to the BRIDGES portal was developed as part of the ESP-GRID project). Of particular interest is the reaction of users when something appears to fail: what is their reaction? How do they attempt to continue?

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[1] Norman (2006) Types of grid users and the Customer-Service Provider relationship: a future picture of grid use, paper accepted for the UK e-Science All Hands Meeting, September 2006. User categories proposed were "Service End User (Data), Service End User (eXecutables), Power User Agnostic of grid node used, Power User requiring Specific grid node, Power User Developing a Service".

[2] For example, see Dutton, W.H. (1999), Society on the Line, Oxford University Press, Oxford, UK)

Summary of aims

Aim one

To test the hypothesis that *If a grid interface or the working environment is (apparently) too difficult to use, it will not be adopted by many of the appropriate users*.

Aim two

To test the hypothesis that *Most scientists and humanities researchers will be Service End Users* and to test the related hypothesis (2b) that *Currently grids are serving Power Users and do not yet benefit non-computer-technical researchers*.

Key personnel

The interviewing and analysis work will be carried out by Mustafizur Rahman and Alun Edwards. Marina Jirotka will advise on methodologies and at the analysis stages. Mark Norman will provide advisory input throughout.

Mustafizur Rahman

Mustie is Programme Manager of the ICT/Begbroke Directorate and a Principal Researcher at the Centre for Requirements and Foundations at the University of Oxford. His specialisms are in practice-driven requirements for industrial applications, requirements engineering in e-Science, e-Social Science and distributed computing environments and Mustie has looked into intellectual property and legal issues in e-Health. Previous projects include: IMaGE (Copyright Ownership of Medical Data in Collaborative Computing Environments); CyberSEM (remote scanning electron microscopy); eDiaMoND (Digital Mammography National Database Project).

Alun Edwards

Alun is the manager of Intute: Arts and Humanities (http://www.intute.ac.uk/ formerly the Humbul Humanities Hub) at the University of Oxford and principal evaluator with the ESP-GRID project. Previously, Alun has worked on evaluation of the Digital Certificate Operation in a Complex Environment (DCOCE, see http://www.dcoce.ox.ac.uk/) project. Alun's expertise lies within requirements gathering and analysis.

Marina Jirotka

Dr Marina Jirotka is University Lecturer in Requirements Engineering at OUCL, Director of the Centre for Requirements and Foundations (http://www.softeng.ox.ac.uk/crf/), Fellow of St Cross, Research Associate at the Oxford Internet Institute (see http://www.oii.ox.ac.uk/), and (from October 2006) a James Martin Fellow. She developed the Requirements Engineering module that forms part of the MSc in Software Engineering and the MSc in Computer Science. Marina's specialisms are in practice-driven requirements; Computer-Supported Collaborative Work; e-Science and e-Social Science.

She is currently Principal Investigator on the ESRC Project 'Copyright ownership of medical data in collaborative computing environments' (RES-341-25-0033); Principal Investigator on the EPSRC proposal 'Embedding e-Science Applications: Designing and Managing for Usability' (EP/D049733); and principal investigator on ESRC 'Oxford e-Social Science (OeSS) Project: Ethical, Legal and institutional Dynamics of Grid Enabled e-Sciences' (RES-149-25-1022). She is also requirements advisor on the Integrative Biology Virtual Research Environment and BVREH. She is a member of the UK e-Science Usability Task Force and has held various workshops at NeSC in the area of Usability and e-Science, most recently in Usability and Security in e-Science applications. She has published numerous refereed papers in international journals, conferences and books in the fields of computer-supported collaborative working, e-Science and e-Health, requirements engineering and workplace studies.

Mark Norman

Mark is a project manager within Oxford University Computing Services and has managed several JISC projects in the areas of identity management in the information environment and e-Science domains. Recent and current projects include: DCOCE; ESP-GRID; ShibGrid.

Projected costs

Item	Dates	Cost
Staffing		
Mustafizur Rahman, Principal Researcher	0.25 FTE Sept, Dec 06	
	0.5 FTE Oct, Nov 06, Jan 07	8,194
Alun Edwards, Project Officer	0.6 FTE Oct-Nov 06	4,500
Mark Norman, Project Manager	0.2 FTE Dec 06 - Jan 07	1,644
Non staff		
Travel and Subsistence	(All Hands Meeting t&s, travel to Glasgow users Usability conference, other meetings etc.)	2,060
Conferences	(All Hands, Usability)	309
Other	(Printing of questionnaires etc. Incentives/prizes for participants)	618
	Total (Not FEC)	£17,325
	ESP-GRID (projected) underspend	£19, 071
	Projected balance	£1,746

Work packages

Task / work package	Leader	September	October	November	December	January
Detailed scheduling and planning	MR	██				
Contact users and line-up interviews	MR	██				
Analysis of IB usability feedback	MR	██	██			
Analysis of BVREH usability feedback	MR, AE		██			
Interviewing of selected IB users	MR, AE		██			
Interviewing of selected BVREH users	MR, AE		██	██		
'Lab' usability tests of BRIDGES	MR, AE			██	██	
Analysis of usability tests[3]	MR, AE			██	██	
Report writing	MR, MN				██	██
Final report	MR, MN					██

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[3] Including reaction to failure

Planned outputs

We plan to write a report on this project and would like to present it at a JISC and/or e-Science event. We would also like the main findings of the report to appear in a peer-reviewed journal.