

# e-Infrastructure Use Cases and Service Usage Models (eIUS)

Michael A. Fraser

## 1 Welcome

A short video introduction to the eIUS Project is available.

## 2 Latest Project News

- 7 Aug 2009, **Experience reports, use cases, and videos now available.** The website now contains a table of outputs, including links to all the videos.
- 8 June 2009, **eIUS videos on youTube.** We have released two videos highlighting the use of e-infrastructure in archaeology and bioinformatics.
- 10 Nov 2008, **Progress Report** This document presents an overview of the progress made in the period April - September 2008 (as PDF document).
- June 2008, **eIUS outputs on Engage Portal.** In common with the other Community Engagement Projects we are making the eIUS project outputs available through the Engage Portal.
- 19 Dec 2007, **Scoping e-Infrastructure Usage: Interim Report** . The eIUS Project has published a scoping study which describes and evaluates a piloting of the project’s methodology for interviewing researchers and developing use cases. The study includes a series of annotated use cases. The Executive Summary is available together with the full report (as PDF document).

## 3 Project Outputs

Experience reports and use cases are currently available in PDF only. Videos are delivered via the Project’s channel on youTube.

Table 1: Use Cases and Experience Reports

<i>Mathematical and Physical Sciences</i>			
<b>Astronomy</b>	Experience Report	Use Case	Vid
<b>Crystallography</b>	Experience Report (1)&#xA0;	Use Case	
	Experience Report (2)		
<b>Earth Sciences</b>	Experience Report	Use Case	Vid
<b>Electronics and Electrical Engineering</b>	Experience Report	Use Case	Vid
<b>Engineering Science</b>	Experience Report	Use Case	
<b>Organic Chemistry</b>	Experience Report	Use Case&#xA0; (awaiting validation)	Vid (En Pro
<i>Social Sciences</i>			
<b>Applied Econometrics</b>	Experience Report	Use Case	
<b>Digital Geography</b>	Experience Report (1)&#xA0;	Use Case	
	Experience Report (2)		
<b>Human Geography</b>	Experience Report	Use Case&#xA0; (awaiting validation)	
<i>Medical and Life Sciences</i>			
<b>Bioinformatics</b>	Experience Report	Use Case	Vid
<b>Computational Biochemistry</b>	Experience Report	Use Case	

## 5 SUMMARY

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Use Cases and Experience Reports(cont.)

<b>Epidemiology</b>	Experience Report (1)&#xA0; Experience Report (2)	Use Case &#xA0; (awaiting validation)	
<b>Radiotherapy</b> <i>Arts and Humanities</i>	Experience Report	Use Case	
<b>Archaeology</b>	Experience Report	Use Case	Vid
<b>Corpus Linguistics</b>	Experience Report	Use Case	
<b>Dance Studies</b>	Experience Report (1)&#xA0; Experience Report (2)	Use Case&#xA0; (awaiting validation)	

### **Developing SUMs (work in progress documents)**

- Developing e-framework SUMs (PDF)
- Connecting use cases and SUMs (PDF)
- Developing SUMs from technical documentation (PDF)
- Identifying e-framework Service Genres (PDF)

### **Reports, Papers and Presentations**

- eIUS Final Report, July 2009 Report, PDF
- Progress Report, October 2008 Report (PDF)
- Presentation, Steering Group Meeting, October 2008 Slides (PPT)
- Scoping e-Infrastructure Usage: Interim Report, December 2007 Executive Summary and full report (PDF)
- Presentation, "e-Research Infrastructure Development and Community Engagement", UK e-Science All Hands Meeting, Nottingham, 13 September 2007 Slides (PPT)
- eIUS Project Plan, July 2007 Full Text (PDF)
- Presentation, National Grid Service 3rd User Forum and Training, Oxford e-Research Centre, 19 June 2007 Slides (PPT)
- Poster, Oxford e-Research Centre Launch, 15 June 2007 Poster (PDF)
- eIUS Proposal, November 2006 Full Text (PDF)

## **4 Contact**

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## **5 Summary**

Project Start: 1 April 2007  
Project End: 30 June 2009  
Project Partners: University of Oxford, NCeSS  
Project Pro-gramme: JISC e-Infrastructure Programme  
JISC Theme: e-Research

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## 6 Background/Context

The UK is entering a period in which online collaborative environments, distributed computing and data resources, advanced analytical tools, together with support and training, are becoming readily available for researchers in all disciplines. Within some subject areas, for example, high-energy physics and bioinformatics, e-infrastructure already underpins everyday work; whilst other subject areas are still investigating the applicability of existing resources for their research and making recommendations for future development. The deployment of e-infrastructure, whether within institutions, nationally or internationally, has the potential to increase the pace, impact, and efficiency of research both within and across disciplines.

If academic research in the UK is to build on the foundations laid by UK e-Science then it is essential first to understand the process by which different research communities can adopt e-infrastructure, and secondly to ensure that the required interfaces, support and training are put in place. The eIUS (pronounced 'ey-yus') project, led by Oxford University Computing Services in partnership with NCeSS and the Oxford e-Research Centre, is one of two complementary projects funded by JISC that aim to study current and planned usage of e-infrastructure, and also the perceived or actual barriers to uptake across research communities. Outcomes from the two projects will help identify and implement the appropriate interventions that will make e-Infrastructure available to a wider group of researchers.

## 7 Aims and Objectives

The eIUS project aims to gather and document concrete evidence of how e-infrastructure is, or is planned to be used as a facilitator of the research process across all major disciplines. This is not simply an information gathering project but rather is intended to broaden participation in the use and future development of e-infrastructure services. The project's overall objectives are to:

- develop a deep understanding of the e-Infrastructure services that are currently available in the UK, as well as how they are used by the research community in all major subject disciplines;
- establish a self-sustaining community process to contribute to this shared understanding during and beyond the lifetime of the project; and
- contribute to the International e-Framework Initiative whose primary aim is to facilitate technical interoperability within and across education and research through improved strategic planning and implementation processes.

## 8 Methodology

The project intends to accomplish its objectives through an iterative process of experience capture and analysis carried out in conjunction with the UK research community. This is being carried out through a combination of interviews, focus groups, and observational studies. Three different but related types of outputs will be produced:

- Experience Reports, capturing concrete examples of the use of existing e-Infrastructure by individuals or groups of researchers;
- Use Cases, derived and linked back to the Experience Reports, to provide non-technical idealised 'stories' of how users are currently interacting (or intend to interact) with e-Infrastructure to achieve specific research goals; and
- Domain Models and Service Usage Models (SUMs), describing patterns or combinations of e-Infrastructure services required to fulfill the specific Use Cases.

These outputs will be published early and often through a dedicated community engagement website, to allow for frequent review and validation by the research community and e-infrastructure service providers, as well as to enable researchers to submit new content. The project will pro-actively encourage this participation throughout its lifetime through the organisation of focus groups, workshops and other events designed specifically to engage the research community.

### 9 Implications/ Deliverables/ Stakeholders

The outputs of the project are expected to serve different but related stakeholder requirements:

- UK researchers seeking concrete examples of the use of e-Infrastructure to meet their specific needs;
- existing and future e-Infrastructure providers formulating their research and development strategies;
- JISC and other funding bodies developing strategic programmes and services; and
- institutions investigating and developing tailored virtual research environment frameworks.

### 10 Team

#### 10.1 Project Manager

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#### 10.2 Investigators

- Dr Michael A. Fraser, Principal Investigator, Oxford University Computing Services
- Professor Rob Procter, co-Investigator, National Centre for e-Social Science
- Professor Peter Halfpenny, co-Investigator, National Centre for e-Social Science
- Dr Alex Voss, co-Investigator, National Centre for e-Social Science
- Dr Marina Jirotko, co-Investigator, Oxford e-Research Centre, University of Oxford

#### 10.3 Research Staff

- Gabriel Hanganu, Senior Analyst, Oxford University Computing Services
- Meik Poschen, Research Associate, National Centre for e-Social Science
- (until March 2009) Dr Mercedes Arguello Casteleiro, Research Associate, National Centre for e-Social Science

### 11 e-Infrastructure Service Providers

The following list comprises a selection of e-infrastructure service providers, related initiatives and projects with whom we are consulting:

- Access Grid Support Centre
- Archaeology Data Service (ADS)
- Arts and Humanities e-Science Support Centre (AHeSSC)
- Digital Curation Centre (DCC)
- EDINA
- e-Framework for Education and Research
- Enabling Uptake of e-Infrastructure Services Project
- Engage Initiative
- Mimas

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- National Centre for Text Mining (NaCTeM)
  - National e-Science Centre
  - National Grid Service (NGS)
  - OMII-UK
  - UK Data Archive
  - UK e-science and e-research centres
  - Virtual Research Environments (VRE) Programme