

## Making use of the UK's advanced computing services for research - an overview

*Enabling, facilitating and delivering quality training in  
the UK and Internationally*

*Author/Presenter* : David Fergusson

## National eScience Centre

- Open meeting place for researchers using computing
- Examples and projects to help show what can be done
- Bringing users, developers and service providers together
- Helping represent the UK internationally
- Training & outreach

# What is JISC?

The mission of the Joint Information Systems Committee (JISC) is to provide world-class leadership in the innovative use of ICT to support education and research. JISC funds a national services portfolio (e.g. JANET) and a range of programmes (e.g. Use of Technology to Support Admissions to HE) and projects (e.g. Google Generation project).

# What are distributed services

Not end to end solutions but sets of resources that can be combined to make solutions.

Individual bricks to build up.

What is the glue?

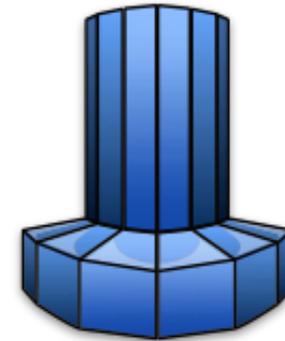
Application to application communication.

- . Web services and intermediate data formats
- . Not always there yet

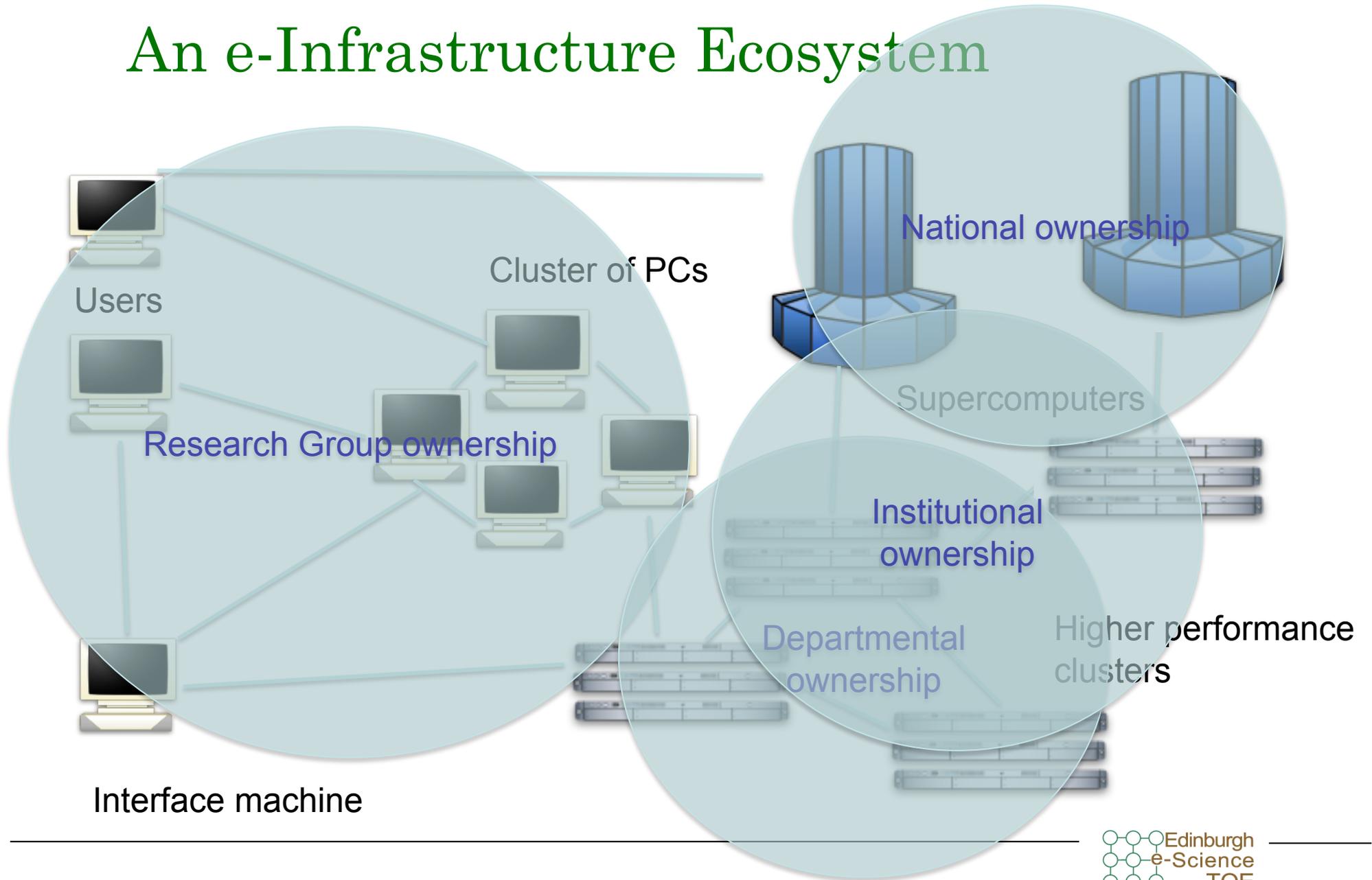
# An e-Infrastructure Ecosystem

## - types of computing

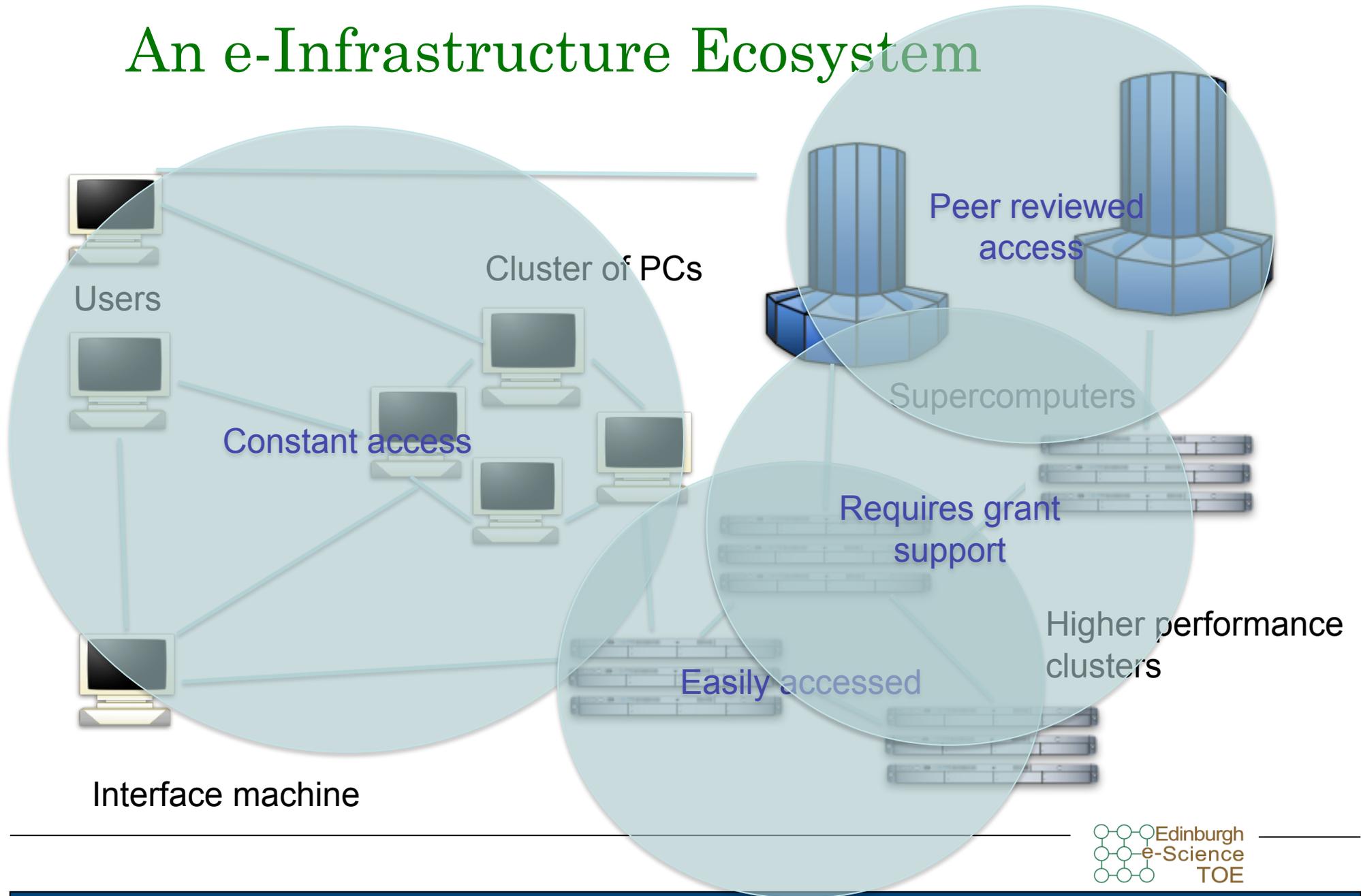
- Providing broad access to a range of services
- High Performance Computing
  - Large computationally intense simulations
  - Requires cutting edge super computing
- High Throughput Computing
  - Very large numbers of small jobs
  - Can use large numbers of consumer computers



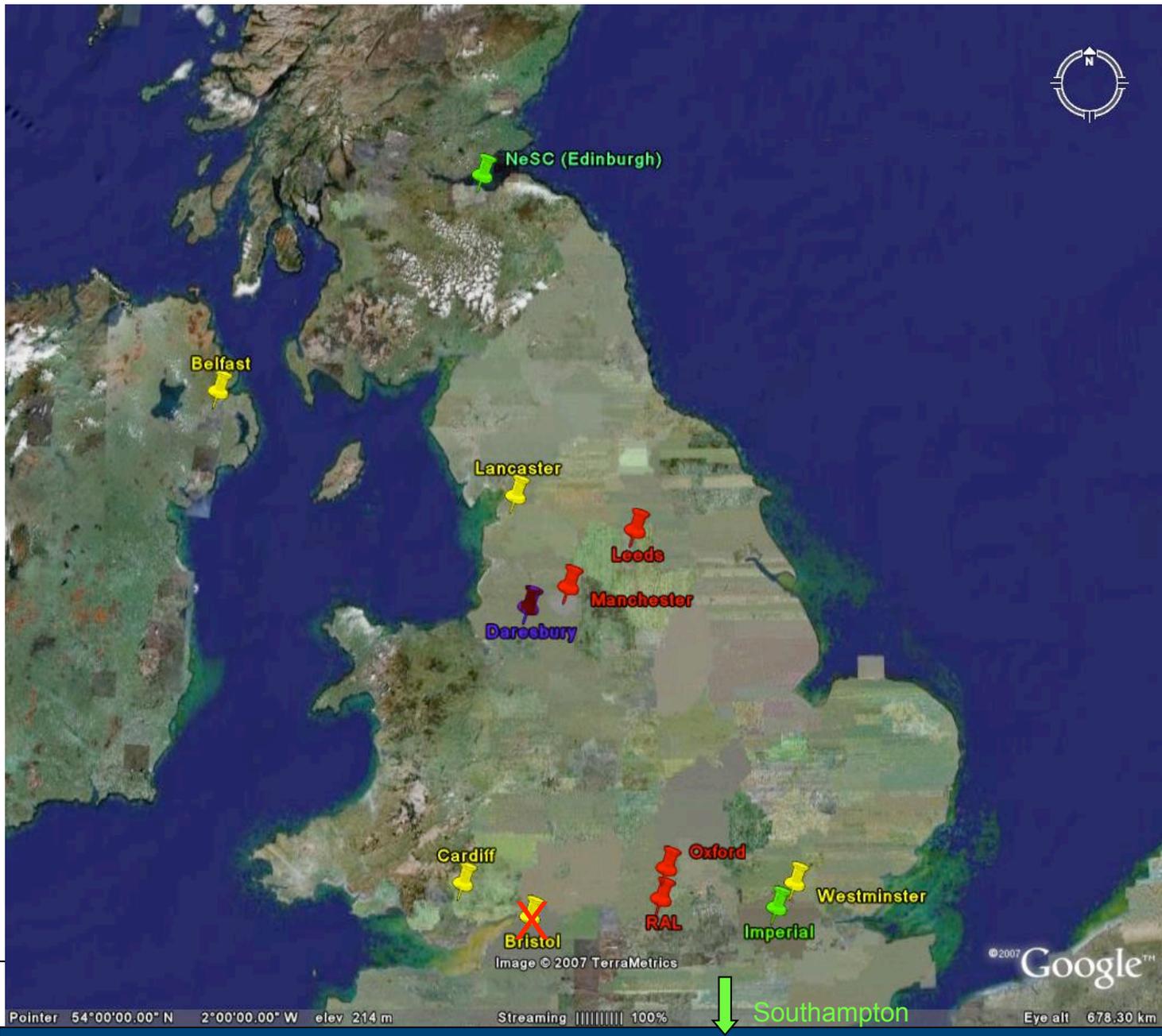
# An e-Infrastructure Ecosystem



# An e-Infrastructure Ecosystem



# NGS & Partners



# An e-Infrastructure Ecosystem - other resources

## ● Computation

## ● Data

- International data sets
- National data sets
- Local data sets

## ● Services

- Applications
- Combining services
- others

# Edina

- <http://edina.ac.uk/>
- [Collections Description](#) Digimap is a collection of EDINA services that deliver maps and map data of Great Britain to UK tertiary education. Data is available either to download to use with appropriate application software such as GIS or CAD, or as maps generated by Digimap online.
- [There are a number of collections available, each requiring a separate institutional subscription. Once subscribed, access is free at the point of use. Some collections also require individual registration.](#)
- [Digimap - Ordnance Survey® Collection](#)**Historic**
- [Digimap - historic maps from Landmark](#)**Geology**
- [Digimap - geological maps and data from the British Geological Survey](#)**Marine**
- [Digimap - hydrographic maps and data from SeaZone](#)
- [Uses of Digimap](#)
- [Example Applications](#)
- [Detailed Case Studies](#)

# Digimap applications

- **Agriculture**
- Development impact on agricultural land around the urban fringe
- Quarries on farms
- **Archaeology**
- Clava Excavation project
- Field school training excavation exercise
- **Architecture**
- Newcastle Quayside design
- **Astronomy and Astrophysics**
- Locating interference sources (transmitters) and assessing topography for suitable telescope situation
- **Biological Anthropology**
- Demography
- **Cellular Science**
- Clinical medicine
- **Celtic studies**
- Place names in the Highlands and Islands
- **Civil Engineering**
- Policy sensitive traffic signal control
- Traffic management studies
- **Civil and Environmental Engineering**
- Hydrological model of River Almond catchment
- **Computer Science**
- 3D visualisation of landscapes
- Aberdeen beach hazards
- **Continuing Education**
- Location modelling of Bronze Age settlements and burials
- **Ecology and Resource Management**
- Manganese mobilisation from upland catchment
- **Economic and Social History**
- Evaluation for teaching
- **Economics**
- Externality fields produced by Tottenham Hotspur football club
- Regional analysis of demographic and economic issues
- **Electrical Engineering**
- Access to water for testing data signals
- Externalities of wind energy
- **Electronics and Electrical Engineering**
- Position location using mobile radio and GPS
- **Engineering**
- Wind damage to buildings in the UK
- **Geography**
- 18th century Bedfordshire
- Car distribution
- Deglaciation of Eastern Scotland
- Environmental change in west Reading area
- Phosphorous modelling in the River Kennet
- Sustainable tourism and waste management
- Terrain modelling for air flow/large bird interaction
- **Geology**
- Shoreline management in Lincolnshire
- **History**
- Historic Towns Atlas
- History of Merton College, Oxford and its estates
- **Land Economy**
- Site development appraisal
- **Library**
- Identifying EU Structural and Regional Fund Boundaries
- **Management**
- Housing projects
- **Marine Sciences and Coastal Management**
- Trace gas photo production in estuaries
- **Mathematical Sciences**
- Modelling rainfall with respect to topographical variables
- **Medical Sociology**
- Area health project
- **Physiological Sciences**
- Evaluation for Epidemiology
- **Planning**
- Brownfield sites
- **Statistics**
- Population decline in townships in the Ross of Mull
- **Teaching and Learning Service**
- Development of information and computer technology resources for learning
- **Town and Country Planning**
- Wylam planning development
- **Zoology**
- Distribution of watervoles
- Seal behaviour

# Video and Audio

- **Film and Sound Online** Film & Sound Online is a JISC-funded set of collections of film, video and sound material. Several hundred hours of high-quality material are available for download, either in full or as segments, and can be used freely in learning, teaching and research.
- **Preview Sample Film clips**  
Use the sample clips to see what a typical film is like, and to test the download speed of the computer you're using.
- **Sample Film/Video Description**  
A typical description of a downloadable film from Film & Sound Online.
- **Collections**  
Descriptions of and list of film titles for all the collections.
- **About MAAS**  
The original agency responsible for digitising the content of Film & Sound Online.

# Collections

- Film & Sound Online Collections
- **Amber Films**
- Documentaries and feature films from a remarkable film-making collective established in the north-east of England in 1968. Of interest to students, teachers and researchers in the fields of media studies and of UK political and social history in the late 20th and early 21st centuries.
- **Anglia Television Library**
- **Two** series: "Who Were the British?" (1965) and "The Lost Centuries" (1968): The first covers the history and impact of the Romans in Britain. The second covers the Post-Roman rise of Christianity and the later influence of the Islamic Empires through to the Renaissance.
- **Biochemical Society**
- **A substantial** selection of films from the Biochemical Society Archive, charting the development of biochemistry in the later 20th century through the experiences of some of the subject's most celebrated practitioners.
- **Culverhouse Classical Music**
- **Over 50 hours** of copyright-free classical music and associated scores, covering much of the core repertoire plus rarer pieces from the 17th to the 20th centuries. Adaptation and manipulation permitted.
- **Digital Himalaya**
- **One of the** finest ethnographic film collections documenting Himalayan cultures, also including footage from other parts of the world. A selection of about 50 hours.
- **Educational and Television Films Ltd, the ETV Collection**
- **100 hours of films** from the political Left from around the world, including the USSR, China, Eastern Europe, Chile and Cuba.
- **Films of Scotland**
- **Documentary films** on all aspects of Scotland. A selection of 50 hours.
- **Healthcare Productions**
- **Material in the field** of health education for students, nurses, medical practitioners, and the public. A selection of 25 hours.
- **Imperial War Museum**
- **A substantial selection** of films from one of the most important moving image resources for the study of the major conflicts in which Britain was involved in the 20th Century. A selection of 50 hours.
- **IWF Knowledge and Media GmbH**
- **A wide selection of material** from one of the leading science film institutes in the world, based in Germany. A series of highlight extracts from the collection's complete films is available, each one complete in itself and showing a single process or phenomenon, together with a growing list of complete films from the collection.
- **Logic Lane**

# More collections

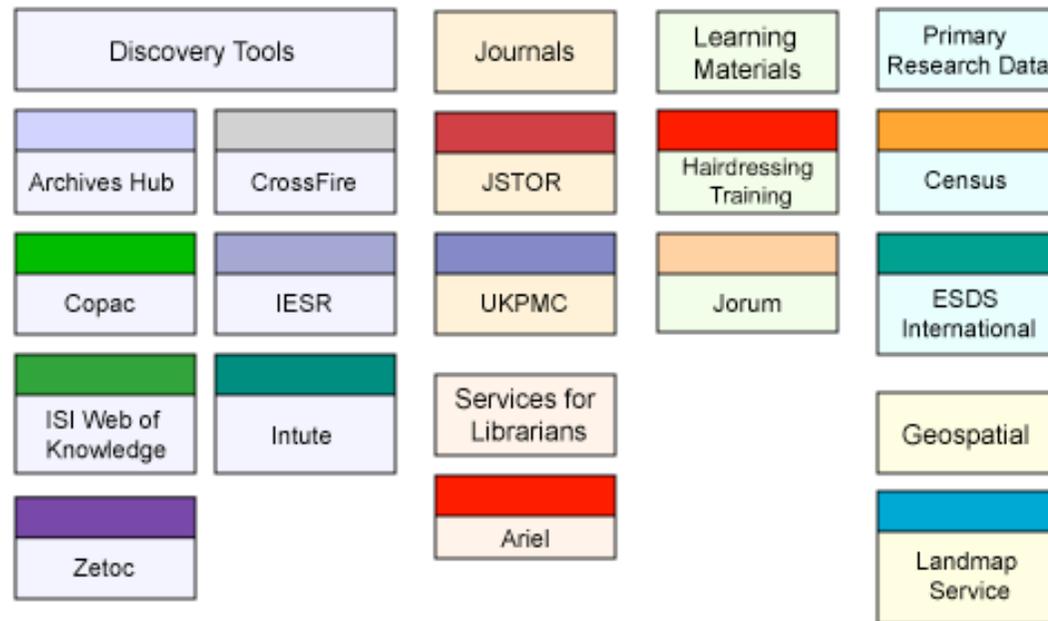
- A series of films **tracing the** development of philosophy at Oxford University from the 1930s to the early 1970s, featuring eminent figures such as Sir Alfred Ayer, Bernard Williams, Iris Murdoch and Sir Isaiah Berlin. A collection of 6 titles amounting to just under six hours.
- Performance Shakespeare
- A **collection of 11 productions and** documentaries from Channel 4 Learning that will complement, inform and support the study of English literature, media, theatre, the performing arts and creative industries.
- Royal Mail Film Classics
- One of the **finest British collections** of documentary, public information, animation and industrial film, covering subjects ranging across transport and communications in Britain and abroad, the Home Front during the Second World War, British industries from fishing to mining, the nation's health - and developments in the Post Office service itself. A selection of 16 hours.
- St George's Hospital Medical School **Collection**
- **These films reflect the production and** teaching needs of one of the leading medical schools in the UK. A selection of nine hours.
- Sheffield University Learning Media Unit **Collection**
- **Medicine, statistics, law, chemistry, archaeology,** and the performing arts. A selection of 47 hours.
- The Trials of Alger Hiss (1980)
- An account **of the espionage and perjury case** that resulted in the conviction and imprisonment of Alger Hiss. A single film

# MIMAS

- <http://www.mimas.ac.uk/>
- What is Mimas?
- Mimas is a JISC and ESRC-supported national data centre providing the UK Higher Education, Further Education and research community with access to key data and information resources to support teaching, learning and research across a wide range of disciplines.
- Users from authorised institutions can [access Mimas services free of charge\\*](#).
- [This website is a gateway to all Mimas services and projects.](#)

# MIMAS services

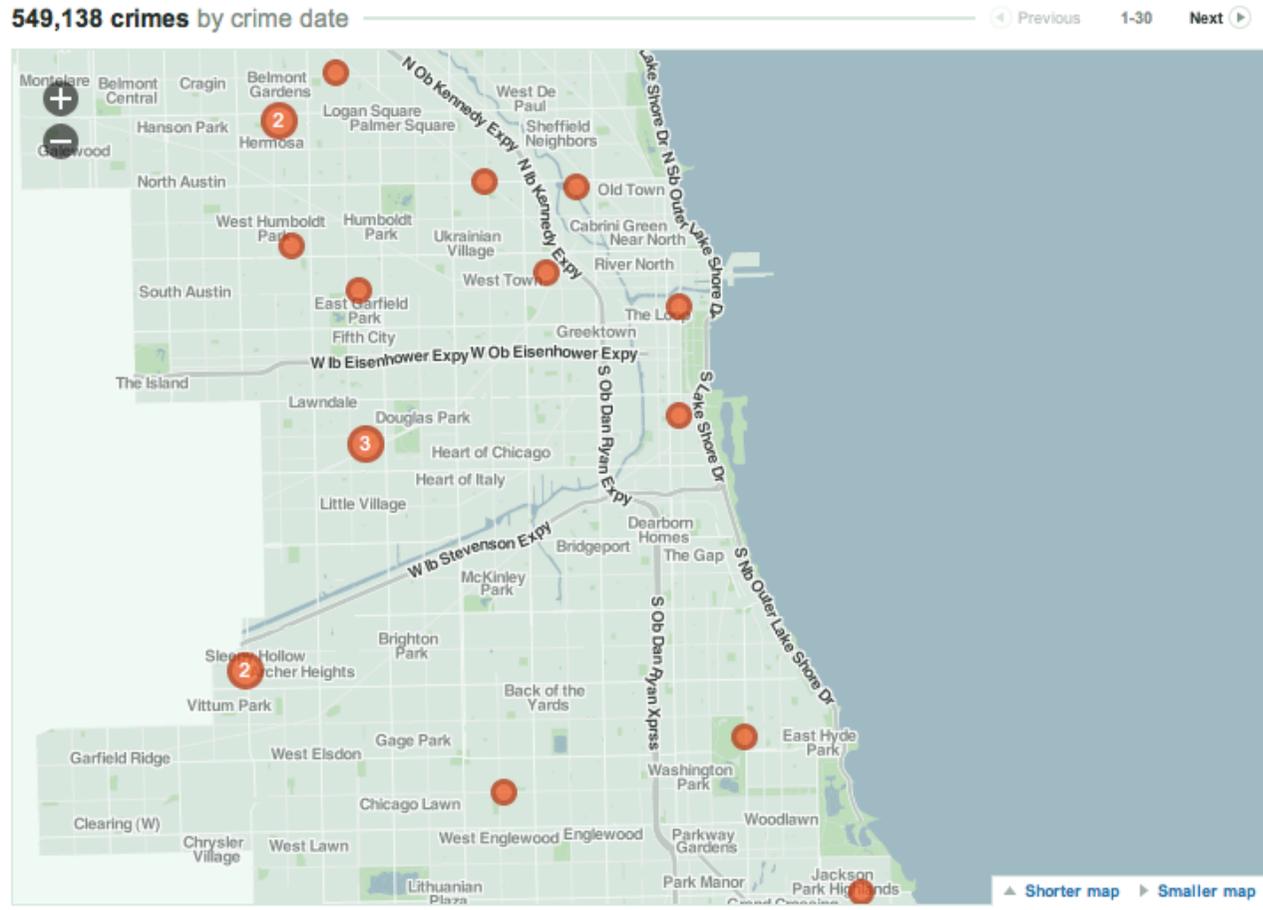
## Mimas Services Overview



## Aggregating services

- Collecting and plugging together information or computation from many sources
- Creating more than a simple combination
- It's not the technology it's what you do with it that counts!

# Crimes in the Chicago area



**Vandalism: Criminal damage to property**

Place: School, private building. Reported at 9:30 a.m. on September 8, 2008.

1700 block W. Berteau Ave

**Other offense: Violating order of protection**

Place: Residence. Reported at 7:40 a.m. on September 8, 2008.

9200 block S. Wabash Ave



# MyExperiment

<http://www.myexperiment.org/>



myExperiment makes it really easy to **find, use and share scientific workflows** and other files, and to build **communities**.

All ▼

**Use myExperiment to...**

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- [Find Files](#)
- [Share Your Workflows and Files](#)
- [Create and Find Packs of Items](#)
- [Create and Join Groups](#)
- [Find People and Make Friends](#)
- [Send Messages](#)
- [Get Feedback](#)
- [Tag and Rate things](#)
- [Write Reviews and Comments](#)
- [Build your Profile and Reputation](#)

**Explore**

**Find Workflows**

**Register**

**or Login:**

Username or Email:

Password:

Remember me:

---

Or use OpenID:

(eg: name.myopenid.com)

**Login**

[Forgot Password?](#)

[About myExperiment](#)

[Join the Mailing List](#)

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[For Developers](#)

[The myGrid Project](#)

[Taverna Workflow Workbench](#)

[The BioCatalogue Project](#)

[myExperiment Publications](#)

# Workflow sharing

Home Users Groups Workflows Files Packs NEW

All ▼ Search

Home » Workflows BOOKMARK

Logged in successfully ✕

Upload New Workflow  View All Workflows

Top 50 tags for Workflows [See All Tags]

AIDA | alignment | **benchmarks** | BioAID | bioassist\_nl | bioinformatics | biomoby | biorange\_nl | BLAST | cdk-taverna | d-grid | dbfetch | demo | design pattern | disease | e-science | ebi | **example** | genotype | gwes | gworkflowd | kegg | **localworker** | microarray | multiple sequence alignment | **mygrid** | pathway | pathway-driven | pathways | pdb | phenotype | **protein** | protein annotation | pubmed | semantic\_web | sequence | sequence alignment | sequence similarity search | shim | social sciences | **taverna** | test | text mining | text\_mining | text\_mining\_network | trident | tutorial | uniprot | VL-e | workflow pattern

Latest Last Updated Most Viewed Most Downloaded Most Favourited

Taverna 1

Original Uploader

Glatard

### feat FSL group analysis (v1)

Created: 28/01/09 @ 17:25:34 | Last updated: 28/01/09 @ 17:36:08

Credits: Glatard

License: Creative Commons Attribution-Share Alike 3.0 License

This workflow is to be run on results obtained from this one (couldn't manage to find a clean solution for merging those two in Scuff). Processor "feat\_group": 1. builds the experiment input (design) file from template and input parameters 2. calls feat FSL Processor "roi" reads activation maps produced by feat\_group, extract a region of interest and compute the mean, stdev, max and min activation within it. Here is a sample input in VBrowsers's XML dialect. Below is...

Rating: 0.0 / 5 (0 ratings) | Versions: 1 | Reviews: 0 | Comments: 0 | Citations: 0

Viewed internally: 13 times | Downloaded internally: 0 times

This Workflow has no tags!

View

Download (v1)

Taverna 1

Original Uploader

Glatard

### FSL feat individual analysis (v1)

Created: 28/01/09 @ 16:50:31 | Last updated: 28/01/09 @ 17:24:16

Credits: Glatard

License: Creative Commons Attribution-Share Alike 3.0 License

This workflow implements feat FSL individual analyses as performed in the experiment detailed in (Soleman et al, "Large scale fMRI parameter study on a production grid", MICCAI-G'08). An example of inputs (in VBrowsers XML dialect) can be found here. In this document, files are represented by their LFNs in vlemed's LFC. Processor "feat": 1. generates the experiment input (design) file from the parameters 2. calls feat FSL. Processor "convertString" tweaks the...

Rating: 0.0 / 5 (0 ratings) | Versions: 1 | Reviews: 0 | Comments: 0 | Citations: 0

View

Download (v1)

**New/Upload**

Workflow ▼

Dfmac

- My Profile [edit]
- My Messages (5)
- My Memberships
- My History
- My News

**5 new messages**

- Judyredfearn is now
- Stuartdunn is now
- Gergely Sipos is now
- Carole Goble is now
- Alex Voss is now

**My Stuff**

5 Friends | 3 Groups | 1

**Friends**

- Alex Voss
- Carole Goble
- Gergely Sipos
- Judyredfearn
- Stuartdunn

**Groups**

**My Favourites**

0 favourites

**My Tags**

2 tags

roadshow | jisc

**Popular Tags**

25 tags

[All Tags]

# Workflow example

**Version 1 (of 1)**

Version created on: 20/01/09 @ 02:22:32 by: Francois Belleau | Revision comments ⌵

Last edited on: 20/01/09 @ 03:41:26 by: Francois Belleau

**Title:** Author's collaborators according to pubmed

**Type:** Taverna 2 beta

**Preview**

(Click on the image to get the full size)

The diagram illustrates a Taverna 2 workflow. It starts with a 'Workflow Inputs' box containing an 'Author' node. This node feeds into a 'name' node with sub-nodes for 'text\_search\_in\_pubmed\_sparql\_endpoint' and 'html'. The 'html' node connects to a 'Nested\_workflow' node (with 'uris' sub-nodes) and a 'pubmed' node (with 'value' sub-nodes). Both 'Nested\_workflow' and 'pubmed' feed into a 'Filter\_List\_of\_Strings\_by\_regex' node, which has 'stringlist' and 'regex' sub-nodes. The output of this filter is a 'filteredlist' node. This node feeds into a 'uri' node (with 'sponge\_uris' and 'html' sub-nodes), which then feeds into a 'Get\_Web\_Page\_from\_URL' node (with 'name' and 'contents' sub-nodes). The 'Author' node also feeds directly into this 'Get\_Web\_Page\_from\_URL' node. Finally, the 'Get\_Web\_Page\_from\_URL' node feeds into a 'Workflow Outputs' box containing five output nodes labeled 'out1' through 'out5'.

**Taverna 2 beta workflow**

**Original Uploader**



**Francois Belleau**

**License**

All versions of this Workflow are licensed under the **Creative Commons Attribution-Share Alike 3.0 License**.

**Credits (1)**  
(People/Groups)

 Francois Belleau

**Attributions (0)**  
(Workflows/Files)

None

**Tags (4)**

Original Uploader tags

bio2rdf | pubmed | sparql | **text\_mining**

Add Tags ⌵

**Shared with Groups (0)**

None

**Featured In Packs (0)**

None

**Ratings (0)**

Hover and click to rate



# Roadshow entry – file sharing

[Manage File Entry](#) [Delete File Entry](#)

**File Entry: JISC eRoadshow at Kings, London**  
Created at: 14/01/09 @ 10:23:32 Last updated: 14/01/09 @ 10:24:06  
[License](#) | [Credits \(1\)](#) | [Attributions \(0\)](#) | [Tags \(2\)](#) | [Featured in Packs \(0\)](#) | [Ratings \(0\)](#) | [Attributed By \(0\)](#) | [Favourited By \(0\)](#) | [Sharing](#) | [Comments \(0\)](#)

**Title: JISC eRoadshow at Kings, London**  
**File name:** kingsroadshow-v1-04-AB.pdf  
**File type:** application/pdf

**Description**  
JISC eRoadshow at Kings, London

**Download**  
[Download File](#)

**Uploader**  
  
Dfmac

**License**  
All versions of this File are licensed under the **Creative Commons Attribution-Share Alike 3.0 License**.

**Credits (1)**  
(People/Groups)  
Dfmac (you)

**Attributions (0)**  
(Workflows/Files)  
None [edit]

**Tags (2)**  
 Uploader tags  
eroadshow | jisc [edit]

**Shared with Groups (1)**  
eJISC eRoadshow group

**Featured In Packs (0)**  
None

File

  
Dfmac

- [My Profile](#) [edit]
- [My Messages \(5\)](#)
- [My Memberships](#)
- [My History](#)
- [My News](#)

**5 new messages**

- [Judyredfearn is now...](#)
- [Stuartdunn is now y...](#)
- [Gergely Sipos is no...](#)
- [Carole Goble is now...](#)
- [Alex Voss is now yo...](#)

**My Stuff**  
5 Friends | 3 Groups | 1 Files

**Friends**

- [Alex Voss](#)
- [Carole Goble](#)
- [Gergely Sipos](#)
- [Judyredfearn](#)
- [Stuartdunn](#)

**Groups**

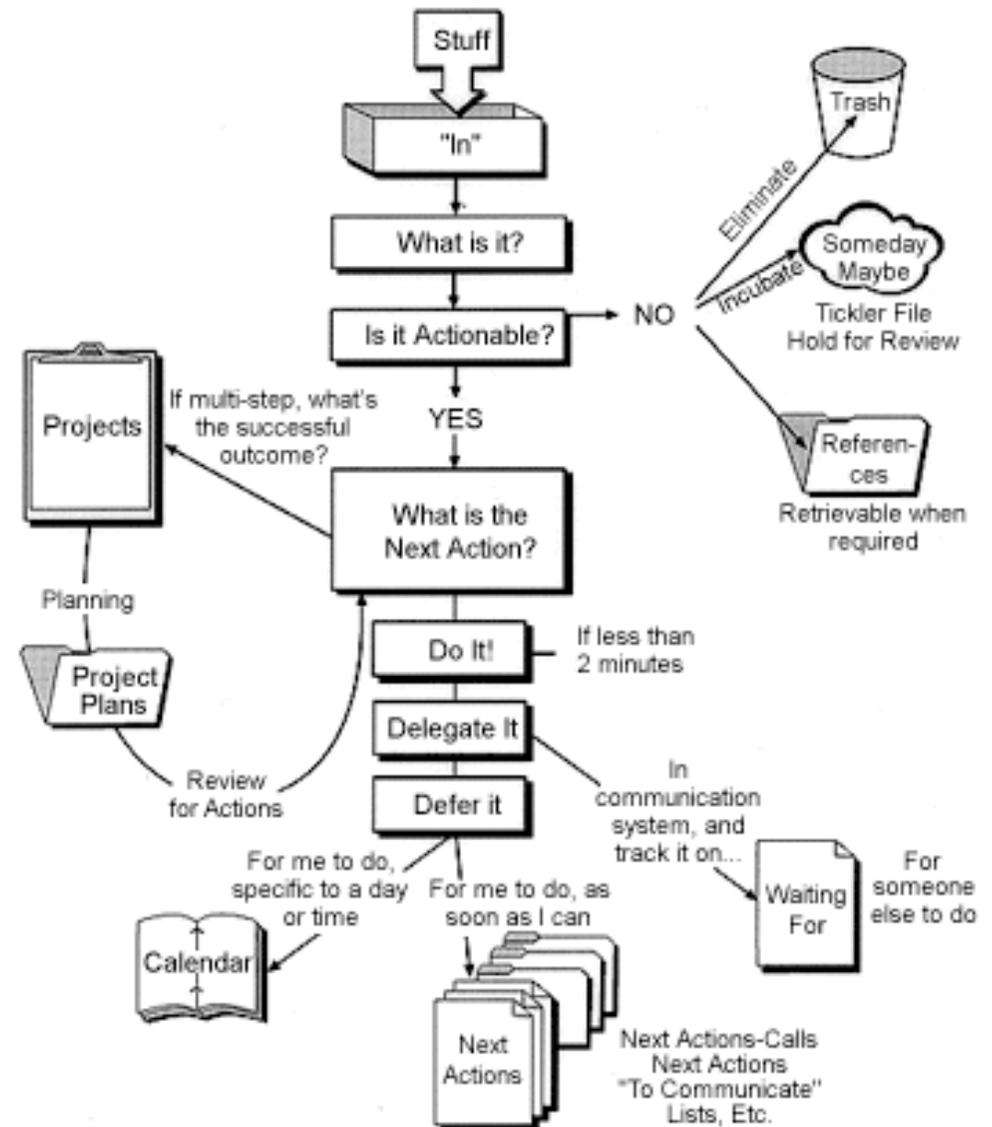
**My Favourites**  
0 favourites

**My Tags**  
2 tags  
eroadshow | jisc

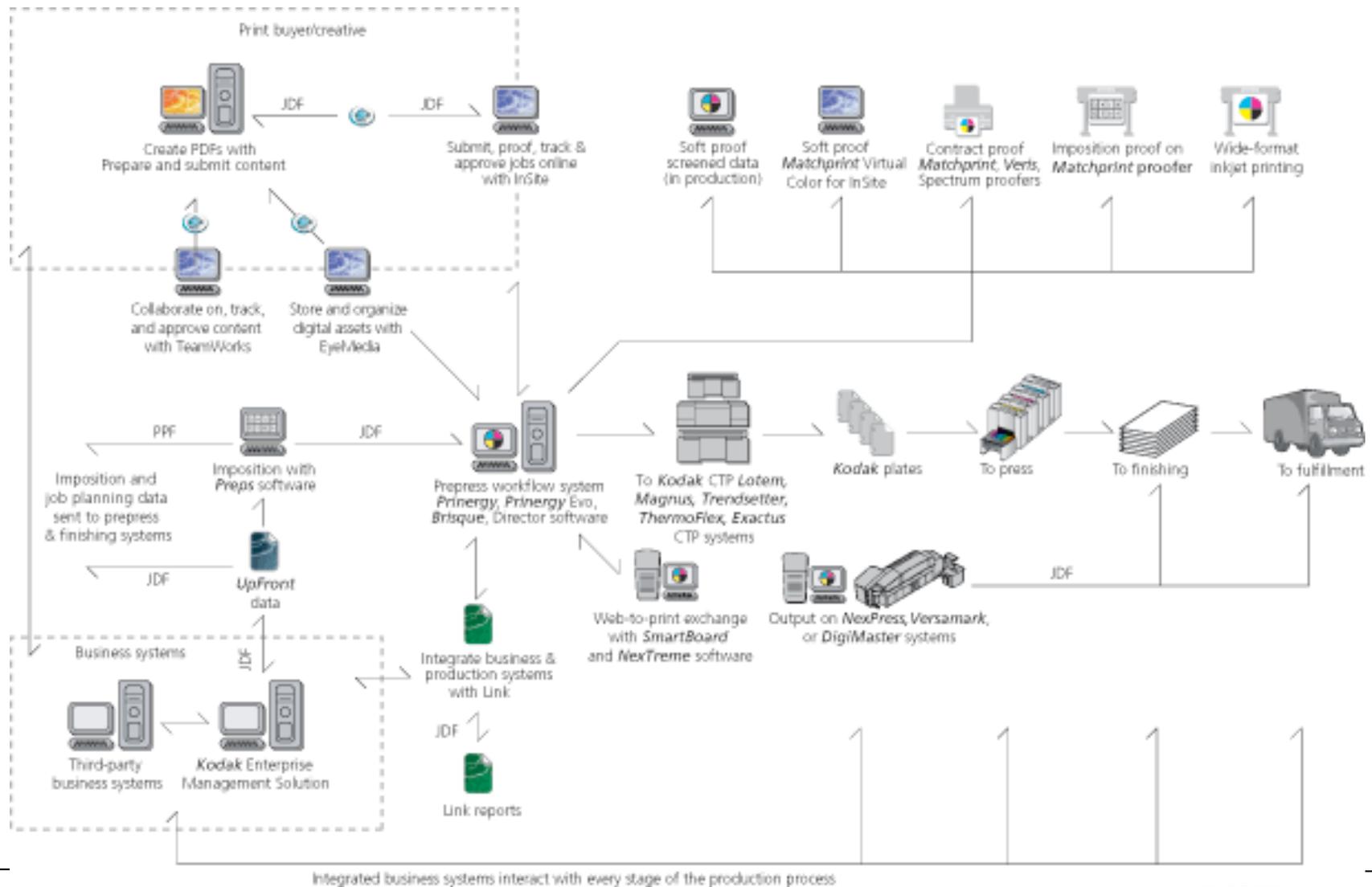
# Workflows

- The steps required to do a task
- Understanding how we do our jobs
- Decomposing tasks

# Example workflow



# Photography workflow



# Metadata is the thing



## JISC services

JISC funds a range of content, resource discovery, advisory and support services to address the needs of all users in further and higher education, and research councils. Some of these services are included in this catalogue.

For more information about all JISC Services visit:  
**[www.jisc.ac.uk](http://www.jisc.ac.uk)**

# JISC Services

Academy JISC Academic Integrity Service

[www.heacademy.ac.uk/ourwork/learning/academic\\_integrity](http://www.heacademy.ac.uk/ourwork/learning/academic_integrity)

Archives Hub

[www.archiveshub.ac.uk/](http://www.archiveshub.ac.uk/)

British Universities Film and Video Council (BUFVC)

[www.bufvc.ac.uk](http://www.bufvc.ac.uk)

Census Dissemination Unit

<http://census.ac.uk/edu>

JISC CETIS (JISC Centre for Educational Technology Interoperability Standards)

[www.cetis.ac.uk](http://www.cetis.ac.uk)

Copac

<http://copac.ac.uk>

Digital Curation Centre (DCC)

[www.dcc.ac.uk](http://www.dcc.ac.uk)

Economic and Social Data Service (ESDS)

[www.esds.ac.uk](http://www.esds.ac.uk)

EDINA

<http://edina.ac.uk>

Information Environment Service Registry

[www.iesr.ac.uk](http://www.iesr.ac.uk)

JISC infoNet

[www.jiscinfonet.ac.uk](http://www.jiscinfonet.ac.uk)

JISC Internet Plagiarism Advisory Service

[www.jiscpas.ac.uk](http://www.jiscpas.ac.uk)

Intute

[www.intute.ac.uk](http://www.intute.ac.uk)

JANET

[www.ja.net](http://www.ja.net)

JISC Legal

[www.jisclegal.ac.uk](http://www.jisclegal.ac.uk)

JISC Monitoring Unit

[www.mu.jisc.ac.uk](http://www.mu.jisc.ac.uk)

JISC RSCs (Regional Support Centres)

[www.jisc.ac.uk/whatwedo/services/as\\_rsc/rsc\\_home](http://www.jisc.ac.uk/whatwedo/services/as_rsc/rsc_home)

Mimas

[www.mimas.ac.uk](http://www.mimas.ac.uk)

National Academic Mailing List service (JISCMail)

Netskills

OSS Watch

Procureweb

SUNCAT

TASI (Technical Advisory Service for Images)

JISC TechDis

Techwatch

Text Mining Centre

UK Access Management Federation for Education and  
Research

UKBORDERS

UK Data Archive

UKOLN

Zetoc

[www.jiscmail.ac.uk](http://www.jiscmail.ac.uk)

[www.netskills.ac.uk](http://www.netskills.ac.uk)

[www.oss-watch.ac.uk](http://www.oss-watch.ac.uk)

[www.procureweb.ac.uk](http://www.procureweb.ac.uk)

[www.suncat.ac.uk](http://www.suncat.ac.uk)

[www.tasi.ac.uk](http://www.tasi.ac.uk)

[www.techdis.ac.uk](http://www.techdis.ac.uk)

[www.jisc.ac.uk/whatwedo/services/  
services\\_techwatch/techwatch](http://www.jisc.ac.uk/whatwedo/services/services_techwatch/techwatch)

[www.nactem.ac.uk](http://www.nactem.ac.uk)

[www.ukfederation.org.uk](http://www.ukfederation.org.uk)

[www.edina.ac.uk/ukborders](http://www.edina.ac.uk/ukborders)

[www.data-archive.ac.uk](http://www.data-archive.ac.uk)

[www.ukoln.ac.uk](http://www.ukoln.ac.uk)

<http://zetoc.mimas.ac.uk>

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# JISC Information Environment Service Registry (IESR)

- <http://www.omii.ac.uk/repository/project.jhtml?pid=178>
- <http://iesr.ac.uk/>
- is a machine readable registry of electronic resources;
- contains information about these electronic resources, and details of how to access them;
- aims to make it easier for other applications to discover and use materials which will help their users' learning, teaching and research.

## UK Data Archive

- UK Data Archive  
The UK Data Archive (UKDA) is a national resource centre that acquires, disseminates, preserves and promotes the largest collection of digital data in the social sciences and humanities in the United Kingdom.
- <http://www.data-archive.ac.uk/>

# JISC Virtual Research Environments

VRE definition A VRE helps researchers in all disciplines manage the increasingly complex range of tasks involved in carrying out.

A VRE will provide a framework of resources to support the underlying processes of research on both small and large scales, particularly for those disciplines which are not well catered for by the current infrastructure.

<http://www.jisc.ac.uk/whatwedo/programmes/vre2.aspx>

VREs add value to the research process across all disciplines by complementing and inter-working with existing resources and by being flexible and adaptable to changing requirements.

The approach being taken is based on an architecture which is extensible and supports, but does not restrict, the resources needed by individual research teams.

The concept of a VRE is evolving, and the intention of this programme is not to produce a complete VRE, but rather to define and help to develop the common framework and its associated standards and to encourage others to work within this framework to develop and populate VREs with applications, services and resources appropriate to their needs.

# VERA

Virtual Research Environment for Archaeology

<http://vera.rdg.ac.uk/index.php>

