

JISC

The JISC Capital Programme

Summary information for prospective project teams

April 2006 - March 2009

Version 2, September 2006



JISC's mission is to provide world-class leadership in the innovative use of ICT to support education and research.

JISC has been awarded additional funding of £81 million over the next three years, and is pleased to launch a range of new programmes to support the work of the higher education and research community:

- To enhance the network infrastructure (SuperJANET5)
- To digitise key resources for the academic community
- To support the development of e-learning
- To enhance e-research
- To support the user experience
- To develop digital repositories and mechanisms to support preservation

Broad outcomes across the range of programmes include:

- **Building capacity, knowledge and skills** and stimulating positive and informed change in the sector through piloting new technologies and approaches
- **Providing guidance** to the sector on best practice models for using technology at departmental, institutional, regional or national levels
- **Providing expert strategic leadership** to the sector and other bodies in specialist areas, and influencing national and international agendas
- **Gaining knowledge and experience** as a basis for future funding decisions for JISC and its sub-committees
- **Developing services, infrastructure or applications** that may be used at departmental, institutional, regional or national levels



Tangible outputs across the programmes will include:

- The SuperJANET5 network
- Digital repositories advice and services for institutions
- Tools to support collaborative research
- The development of high-quality digitised resources
- An improved infrastructure to enable the discovery of and access to resources
- An exploration of the use of e-learning to support lifelong learning
- Widened access to HE courses in FE colleges
- Enhanced security for the UK ICT infrastructure

Funding for SuperJANET5 has been provided by all JISC's funding partners. The remaining activities, however, have been funded by the Higher Education Funding Councils for England and Wales

e-Research: e-Infrastructure programme

Vision

To expand the uptake, sharing and effective use of distributed resources and services for research through enhancing and consolidating current technologies, and establishing sustainable communities of use.

The £10 million e-Infrastructure programme is primarily concerned with consolidating and building on work to establish an e-infrastructure undertaken with other partners during the initial five-year investment in the UK e-Science programme.

e-Infrastructure embraces networks, security, grids, data centres, specialist services and collaborative environments, and can include supporting operations centres, service registries, single sign-on, certificate authorities, training and community support services. The range of e-infrastructure developments is already maturing: grid computing is now typically used as a basis for the computation and data management required by collaborative research, and JISC investments such as in virtual research environments and Shibboleth are presently being adopted.

The programme comprises four thematic areas:

- **Community engagement and support:**
Focusing on community engagement and support in the broader take-up and more effective use of e-infrastructure
- **e-Infrastructure security:**
Creating solutions to issues of grid authentication, authorisation and security; establishing interoperability and consensus between access management regimes
- **Grid services and tools:**
Developing production tools and services to broaden the research community take-up of the computational and data grid resources within the National Grid Service
- **Knowledge organisation and semantic services:**
exploring, developing and applying semantic grid

technologies, semantics-aware services, protocols for the exchange of metadata, and the use of these to automate the creation of service workflows and virtual organisations.

Outcomes

- Broader and more effective use of the e-infrastructure
- Enhanced security for the UK infrastructure
- Increased capability, expertise and effective use of the National Grid Service, the UK's core production, computational and data grid
- Production level capabilities for the UK e-infrastructure
- New ways of retrieving and processing data, opening up new areas of research and expanding existing ones
- Integration with other key initiatives both within JISC and the wider research community

e-Research: Virtual Research Environments (VRE) Phase 2 programme

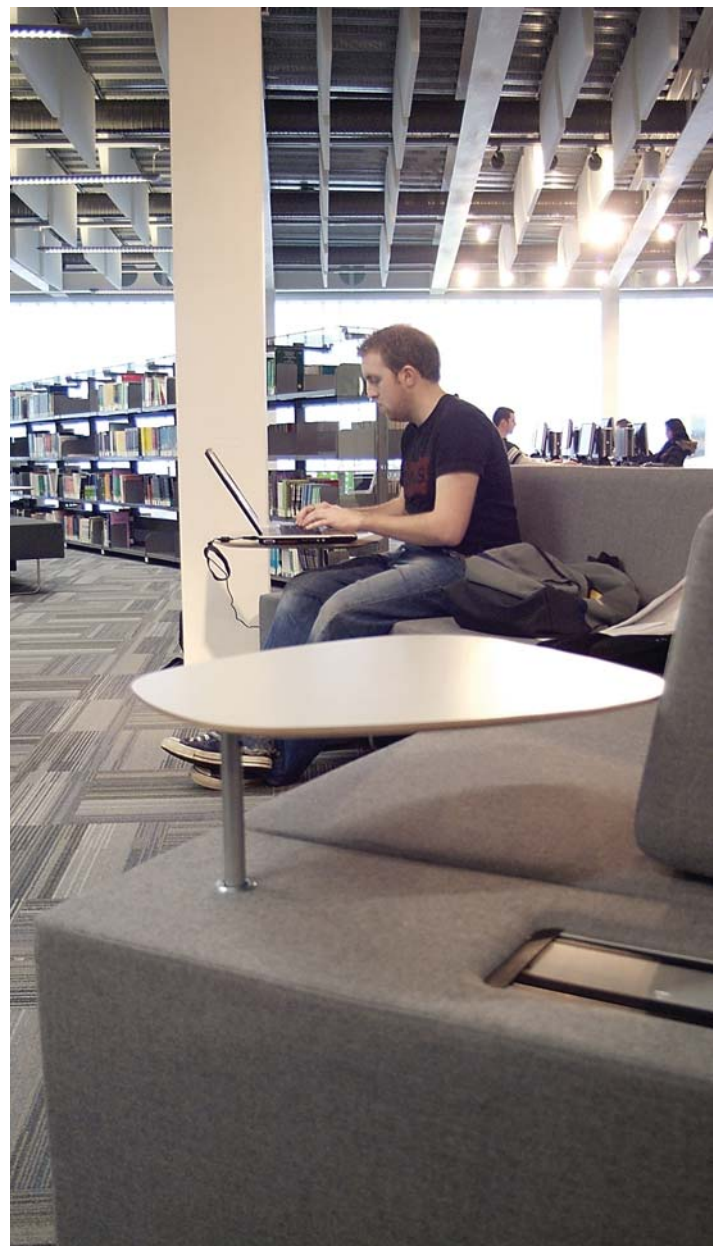
Vision

To provide an architecture of tools and resources to allow research communities to create multidisciplinary environments which enhance inter-disciplinary research, and to facilitate collaboration within and between institutions.

The £2 million VRE2 programme will further develop the activities of the existing VRE programme, bringing together tools and technologies into collaborative multi-disciplinary environments to assist both lone researchers and multiple research teams. Under Phase 2, technologies will be piloted across a broad spectrum in order to develop a common architecture which can be used as a basis for individually-tailored VREs populated with applications, services and resources appropriate to specific needs. The programme will involve researchers in development, as well as raising awareness, stimulating changes in practice and encouraging uptake amongst the community.

Outcomes

- Increased awareness of the impact of VREs among researchers, support staff and system administrators
- Continued involvement of the research community in building and deploying interoperable VRE solutions
- Enhanced understanding within JISC of user needs, both institutional and technical, for the deployment of VRE solutions within both discipline-specific and multi-disciplinary research settings, and improved levels of guidance on issues of adoption and embedding
- Practical extensions to the e-Framework for Education and Research
- Increased awareness among key stakeholders of the capabilities of VRE solutions and their potential impact on research practice
- Demonstrable use of VREs by communities



Users and Innovation: Personalising Technologies programme

Vision

To create opportunities to transform practice by developing technologies and processes that support the user experience in improved and innovative ways.

The Users and Innovation: Personalising Technologies programme is a £4.75 million investment in technology and practice, bringing together stakeholder experiences from across the education spectrum in order to identify common requirements and processes that promote a consistent approach towards next generation environments for education, research and administration. Practical institutional scenarios and models will be developed as part of the programme, from which real user demonstrations of technology in practice can be derived.

The two main strands of the programme are as follows:

Next Generation Technologies and Practices will adapt and adopt agile development approaches, seeking to make best use of those emergent technologies now becoming synonymous with Web 2.0 and social software, such as blogs, wikis, social bookmarking and personalised environments, in order to provide new opportunities to meet the increasingly diverse needs of institutions.

Personal e-Administration to Support Teachers and Researchers will explore the application of mature technologies and the implications of new and emerging ones in order to ease practitioners' administrative and management overheads within their wider institutional technologies and processes.

Outcomes

- The development and piloting of technologies and practices, based on user needs and experiences, within real institutional contexts
- A sustainable community of developers and practitioners which supports the development of technology and practice, using service-orientated approaches in a rapid and agile way and providing material that contributes to the ongoing development of the e-Framework for Education and Research
- Knowledge, synthesised from a range of programme activities, which can be disseminated to assist institutions in adopting next generation technologies and practices whilst maintaining local institutional control of certain key business areas.

e-Learning programme

Vision

To identify how e-learning can benefit learners, practitioners and educational institutions, and advise on its implementation, focusing on helping institutions to meet the diverse needs of learners throughout their lives.

The e-Learning programme is an £11.36 million investment to support the sector in harnessing the potential of e-learning to support lifelong learners. A particular area of investigation will be around providing a personalised learning experience, meeting the needs of individual learners in a range of settings through the use of technologies such as e-portfolios, e-assessment and online communities. The programme also includes work on how technology can facilitate the more sophisticated administration processes needed for this kind of flexible provision.

Outcomes

- Piloting new e-learning technologies to support lifelong learners, including support for HE courses in FE, widening participation, work-based learning, flexible delivery and personalised learning experiences
- Building capacity, knowledge and skills in the use of e-learning to support lifelong learning through institutional and collaborative cross sector projects; working with subject communities, and knowledge exchange activities
- Developing, piloting and implementing technical models that support the flexible, affordable and pedagogically diverse implementation of e-learning
- Providing guidance to practitioners, institutions and subject communities on the use of e-learning, in partnership with the Higher Education Academy
- Gaining knowledge to inform future JISC e-learning developments, through engagement with the ICT industry and through a collaborative e-learning research programme



Digitisation programme

Digitisation programme phase 2

Vision

To build sustainable and coherent e-resources that meet the needs of, and are of benefit to, learning, teaching and research in the UK.

The programme comprises £4.8m of investment in the digitisation of important scholarly resources, in collaboration with partners. It builds upon the Digitisation programme (phase 1) initiated in 2003 (www.jisc.ac.uk/digitisation_home.html), which resulted in the funding of six projects to create six million new digital surrogates for use within UK post-16 education and research.

The main strands of the programme are as follows:

Enabling access to and use of previously 'hidden' collections to the widest possible audience;

Facilitating innovative collaboration between the profit and not-for-profit organisations in the UK and abroad;

Enabling excellence in resource discovery, personalisation and contextualisation (for example, learning and research case studies and exemplars) of new e-resources;

Promoting the adoption of standards-compliant digitisation, metadata, interoperability and digital preservation.

Outcomes

- Online access for all users, regardless of location and time, to a range of authoritative digitised e-resources of broad disciplinary interest which form a coherent theme or themes from previously difficult or impossible to access material
- A small number of large-scale and sustainable collections and/or improved existing ones for the benefit of learning, teaching and research
- Learners, teachers and researchers enabled to use and re-use the e-resources within the Virtual Learning and

Research Environments (and where possible share through national repositories, such as JORUM)

- Enhanced resource discovery of new e-resources through the use of standards and the exposure of metadata to internet search engines
- The long-term sustainability and preservation of the new e-resources through innovative collaboration and cooperation between the profit and not-for-profit sectors in the UK and abroad
- Assistance in the preservation of rare or fragile collections by the provision of digital surrogate, which represent the originals as near as possible, where viable

The Strategic e-Content Alliance Vision

Working across the public sector to fully realise the potential of e-content through the greater integration of services and technologies and the removal of political and administrative barriers.

The Strategic e-Content Alliance (www.jisc.ac.uk/sea.html) is a three-year initiative between JISC and a range of key public sector agencies (in health, education, museums, archives, research and public libraries) who are engaged in delivering e-content services and digitising high quality resources for lifelong learning. Its mission is to develop a common framework of principles and good practices for e-content activities. This framework will enable key public sector organisations to collaborate and co-ordinate their e-content activities in both policy and operational contexts.

It will also reference the key barriers currently inhibiting closer co-ordination and develop an action plan to address these. This initiative builds directly on the work of the Common Information Environment group (www.commoninfo.org.uk/).

Further information:

www.jisc.ac.uk/programme_digitisation_capital

Repositories and Preservation programme

Vision

To establish a network of digital resources and services in order to significantly improve content use and curation.

The programme is a £13.8 million investment in higher education repository² and digital content infrastructure. It will fund initiatives to develop the Information Environment supporting digital repositories and preservation, including cross-searching facilities across repositories, and fund institutions to develop a critical mass of content, preservation solutions and advice for the development of repositories. The programme builds on the existing JISC programmes: in particular the Digital Repository programme and the Supporting Digital Preservation and Asset Management in Institutions programme.

The programme comprises the following areas:

- **Digital Repositories:** projects to further develop repositories for universities and colleges
- **Digital Preservation:** the programme will take forward the development of a distributed environment for digital preservation, in which services, roles and responsibilities are scoped and defined
- **Discovery to Delivery:** a service to provide searching across UK repositories and the agreement of standards for searching and semantic interoperability
- **Tools and Innovation:** the programme will develop and pilot innovative approaches to repository use and digital preservation through the development of new software and tools
- **Shared Infrastructure:** in support of both national and international developments, the programme will develop shared infrastructure services such as user profiling services, digital rights management, registries, identifier services, terminology and preservation services

Outcomes

- The further development and population of institutional and repository services
- A richer search infrastructure for UK digital repositories
- Further refinement of the application of standards and specifications for digital repositories and preservation
- New software and tools for both digital repository use and digital preservation
- Increased understanding of how repositories can be used and embedded to support education and research
- Pilot implementations and models for resource discovery and preservation shared infrastructure
- Clarification of roles and responsibilities across digital preservation services

It is anticipated that the programme will result in a range of benefits for universities and colleges, including better access to and management of their intellectual outputs, increased capability within the sector to manage these assets for education and research, and an infrastructure that will support the sector into the future.

² A digital repository is where digital content can be stored, searched and retrieved for later use. Content may include research outputs and journal articles, theses and teaching materials.

Further information:

www.jisc.ac.uk/programme_rep_pres

Network Infrastructure programme: SuperJANET5

Vision

To enable increased connectivity, as well as providing the infrastructure to support quality teaching and learning across all sectors of education and to enable the UK to stay at the forefront of global research and development.

SuperJANET5 is a £27.6 million state-of-the-art fibre optic network linking 19 regional networks across England, Northern Ireland, Scotland and Wales that will support a potential user base of up to 18 million users. Operated and developed by UKERNA this latest evolution of JANET is currently being rolled out with full implementation to be completed by the end of 2006.

This upgrade to the existing JANET backbone will ensure that the network can deliver the increasing demands of bandwidth-intensive leading-edge research, whilst maintaining the highest quality of service for all users.

Outcomes

The SuperJANET5 upgrade will deliver the five key requirements identified by the UK's research and education community:

- Scalability: initially a 10Gbit/s backbone, SuperJANET5 is upgradeable to 40Gbit/s and beyond. This will ensure that the network will meet education and research needs for the next 5-7 years
- Reliability: through the reduction of single points of failure
- Separability: purpose built parallel networks can be configured to serve multiple requirements
- Flexibility: through the ability to change the configuration of the network on demand
- Visibility: provide end-user access to monitoring and measurement information





The Joint Information Systems Committee (JISC) supports higher and further education by providing strategic guidance, advice and opportunities to use Information and Communications Technology (ICT) to support teaching, learning, research and administration.

JISC is funded by all the UK post-16 and higher education funding councils.

How you can get involved

Calls for project proposals will be released to the academic community in September 2006 and April 2007.

The latest road map showing when funding calls will be released can be found at:
www.jisc.ac.uk/capital_roadmap.html
Please check this site regularly for the latest information.

Where to find out more

Further information on the programme can be found at:
www.jisc.ac.uk/capital.html

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JISC is funded by:



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Further information about JISC:

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