Repositories and Preservation Proposal Cover Sheet

Cover Sheet for Proposals (All sections must be completed)		***JISC Capital Programme***
Name of Capital Programme: Repositories and Preservation Programme		
Bid for Call Area : (Please tick ONE BOX ONLY, as appropriate)		
Tools and Innovation (Strand B)		
☐	**Call Area I – Tools and Innovation Projects**	Please specify area of proposed project eg *'metadata generation and validation'*
Discovery to Delivery (Strand C)		
	Call Area II – Discovery to Delivery Projects	☐ **a)** Version identification framework ☐ **b)** Persistent identifier interoperability demonstrator ☐ **c)** Federated access management and repositories ☐ **d)** Semantic interoperability demonstrator
Repository Start-Up and Enhancement (Strand D)		
	Call Area III – Repository Start-Up and Enhancement Projects	☐ **a)** Repository start-up projects ☐ **b)** Repository enhancement projects
Digital Preservation and Records Management (Strand H)		
	Call Area IV – Digital Preservation and Records Management Projects	☐ **a)** Digital preservation across the lifecycle **X b)** Models and implementation of preservation services ☐ **c)** Preservation tools development
Shared Infrastructure Services (Strand I)		
	Call Area V – Shared Infrastructure Services Projects	☐ **a)** Pilot implementation of licence registry ☐ **b)** Pilot national name and factual authority service ☐ **c)** Scoping an architecture to support digital policy management ☐ **d)** Scoping a terminology registry
Name of Lead Institution:	University of Southampton	
Name of Proposed Project:	Preserv2 (PReservation Eprint SERVices): towards distributed preservation services for repositories	
Name(s) of Project Partner(s): **The British Library** **The National Archives** **Oxford University**		
Full Contact Details for Primary Contact: **Name: Steve Hitchcock** **Position: Project Manager**		

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Length of Project:	**18 months**		
Project Start Date:	April 2007	**Project End Date:**	September 2008

Total Funding Requested from JISC:	£199,958

Funding Broken Down over Financial Years (April – March):

Apr06 – Mar07	Apr07 – Mar08	Apr08 – Sep08
	£127587	£72344

Total Institutional Contributions:	£125,969	
Percentage Contributions over the Life of the Project:	**JISC** **61.4%**	**PARTNERS** **38.6%**

Outline Project Description

Together repositories and providers must shape preservation services at all cost levels ranging from all-encompassing 'black-box' preservation to pick-and-mix lightweight Web-based services that build on the common starting point, format identification. Building on the PRONOM-ROAR service developed in Preserv1 that identifies format profiles for 200+ repositories, Preserv2 will investigate the following structured process for active preservation aimed at repository content:

1. Characterisation: identification (as in PRONOM-ROAR), validation, and property extraction
2. Preservation planning: e.g. risk assessment (of generic risks associated with particular formats/representation networks), technology watch (monitoring technology change impacting on risk assessment), impact assessment (impact of risks on specific IR content), Preservation plan generation (to mitigate identified impacts, e.g. migration pathways)
3. Preservation action: e.g. migration (including validation of the results), will provide ongoing preservation intervention to ensure continued access or provide on-demand preservation action, performing migrations or supplying appropriate rendering tools at the point of user access.

Preserv2 will to go forward with the same partners as the original project – Southampton University, The National Archives, Oxford University and The British Library –with funding this time targetted at three partners, and the BL continuing as an unfunded advisory partner. Preserv2 is well positioned to investigate these new levels of preservation service provision because it brings service providers of national and international standing, who can offer this range of capabilities, together with ROAR, which enables the services to monitor and interact with a large number of repositories.

Preserv2: towards distributed preservation services for repositories

c. Introduction

c1 To make electronic documents human-readable the contents are marked up to describe how they should be displayed. Typically this encoding is performed by the application that was used to create the document. There are many computer applications, and because the encoding is often specific to the application it gives documents a distinctive signature that characterizes the application, known as the file format. If electronic documents stored in repositories are to be reproducible now and in the future, formal identification of file formats is a vital pre-requisite to the provision of preservation services.

c2 The Preserv project set out to investigate the use of The National Archives' (TNA) PRONOM-DROID service[1] (PRONOM is the online registry of technical information; DROID is the automatic file format identification tool) for file format identification on two pilot repositories using EPrints software, and instead produced format profiles (Preserv profiles[2]) of over 200 repositories presented via the Registry of Open Access Repositories (ROAR)[3]. Thus a primary element of preservation planning has been shown to be possible based on a standard Web interface (OAI) and no formal arrangement between repository and provider. The implications of this go beyond the numbers towards a reconceptualisation of service provider models. Repositories and providers can shape services at all cost levels that could range from all-encompassing 'black-box' preservation to pick-and-mix lightweight Web-based services that build on the common starting point, format identification.

c3 There is a need to investigate this range of services, rather than a single model, because the market for repository services is not well formed or structured. The number of repositories is growing internationally but these are at different stages of development in terms of content, institutional backing and funding and, therefore, in policy.

c4 Preservation is becoming more important for repositories as content grows and diversifies in terms of type and format. Preservation requirements for any given repository will ultimately be determined by policy. For example, a repository with an institutional requirement to manage its outputs and to present those to the world to enhance its prestige and impact is likely to have a strong need to preserve that content.

c5 Repository policies will cover preservation but also many other aspects of repository management, and are largely works-in-progress according to research by OpenDOAR. Despite this the Preserv project discovered that repositories are already making well-intentioned but possibly detrimental *ad hoc* policy decisions, in areas such as permitted formats, that have preservation consequences. Repository managers are looking for guidance from prospective trusted service providers, who will need to design services, and accept responsibilities, for a market that appears naïve and yet in some cases acts as though it is less naïve than it appears.

c6 To investigate, test and evaluate the practical applicability, feasibility and viability of these services for repository needs, Preserv2 proposes to go forward with the same partners as the original project, but with funding this time targetted at three partners rather than one, as before. That would mean more active roles for:

- TNA is ideally positioned to develop its work with PRONOM to provide preservation planning, including technology watch and risk assessment, for an extended range of distributed services, on the model of PRONOM-ROAR.

[1] The National Archives, The technical registry, PRONOM http://www.nationalarchives.gov.uk/pronom/

[2] Preserv Format Profiling: PRONOM-ROAR http://trac.eprints.org/projects/iar/wiki/Profile

[3] Registry of Open Access Repositories http://archives.eprints.org/

- Oxford University Library Services is in the process of migrating to a Fedora-based repository that itself has interesting preservation capabilities. The bigger point of interest here, however, is migration of objects and metadata between repositories - the basis of an outsourced preservation service model. Oxford will develop a generic harvester to gather objects and metadata through various interfaces and to perform the necessary metadata transformations between source and destination formats.
- Southampton University will again provide a service-oriented repository development platform based on EPrints, will develop ROAR and associated OAI services to support distributed services, and will act as project manager.
- Exemplar preservation action services (e.g. migration tools) that respond to the outcomes of preservation planning will be jointly developed by these three partners
- The British Library will advise on the broad project framework and implementation, and assist in evaluating the market potential.

c7 With more partners being funded there would be a need for independent assessment of project progress, and for this phase we would recruit an advisory group including members from leading preservation organizations with experience of preservation services.

c8 The project is planned to last 18 months, with a start date of April 2007, which would enable a prompt resumption following the completion of Preserv1 in January 2007.

d. Project Description

d1 Preserv1 (http://preserv.eprints.org/) identified a hierarchical series of models for preservation services[4], potentially decreasing in terms of cost from the hosted preservation service, to the institutional model (where an institution may have multiple repositories and wishes to handle preservation locally), and the repository model (where as much useful preservation support as possible is built into the repository software). The original intent was to investigate the hosted service model, which led to the PRONOM-ROAR service, and to identify ways to supplement EPrints software for preservation applications[5], producing the history module (providing an audit trail of changes to eprints) and support for complex objects, e.g. METS, in EPrints version 3.0 (beta released November 2006; full release January 2007).

d2 The follow-up project Preserv2 will investigate the hosted model further to determine the extent to which it can be broken into constituent services managed individually over the Web by trusted preservation service providers.

d3 It will also investigate the institutional model in more detail. The growing use of Fedora in institutions and its inherent preservation capabilities make this model a feasible proposition. Oxford University is migrating to a Fedora-based repository. This transition gives Preserv the opportunity of a testbed to explore this model as well as the more granular services elaborated in the next section.

Scenario: distributed preservation services from trusted providers

d4 In an effort to reengineer workflow in the creation, management and preservation of electronic records – demanded by the impact of increasing volume and the need to widen access (in this case not in response to open access but to meet FOI requirements) – The National Archives in 2004 initiated a programme called Seamless Flow[6]. One application of this approach was illustrated by Brown[7]. Applying this thinking in

[4] Hitchcock, S., et al., Digital Preservation Service Provider Models for Institutional Repositories: towards distributed services http://preserv.eprints.org/papers//models/models-paper.html
[5] Preservation Support in GNU EPrints 3 http://wiki.eprints.org/w/Preservation_Support

[6] The National Archives, Seamless Flow
http://www.nationalarchives.gov.uk/electronicrecords/seamless_flow/default.htm

Preserv led to the following structured process for active preservation aimed at repository content that enables the contributing service components to be identified:

1. Characterisation: identification (as in PRONOM-ROAR), validation, and property extraction
2. Preservation planning: e.g. risk assessment (of generic risks associated with particular formats/representation networks), technology watch (monitoring technology change impacting on risk assessment), impact assessment (impact of risks on specific IR content), Preservation plan generation (to mitigate identified impacts, e.g. migration pathways)
3. Preservation action: e.g. migration (including validation of the results) will provide ongoing preservation intervention to ensure continued access or provide on demand preservation action, performing migrations or supplying appropriate rendering tools at the point of user access.

d5 Within this structure there is a scope to create, test and evaluate a range of services, including at least one service from each of 1-3 above, aimed at serving the preservation requirements of digital and institutional repositories. Based on the PRONOM-ROAR approach, where ROAR offers the capability to interact with many repositories at a machine level, these services can be developed and tested on a wide scale. The reduction of the project length to 18 months will constrain how much can be done here, but the minimum target remains one service from each of 1-3 above.

d6 In addition to technical evaluation, this scenario also involves market evaluation of service providers because it envisages multiple, selectable services, potentially offered by multiple, cooperating service providers. For example:

d7 TNA will build on its file format expertise, embodied in PRONOM, to offer preservation planning (stage 2 above), including technology watch and risk assessment services. In principle preservation plan reports could be generated for all repositories with a Preserv profile, although it makes more sense as a demonstrator and for consequent preservation actions to work with cooperating repositories. Using ROAR to monitor the repository's changing content profile as the repository grows, it ought to be possible to automate and update the plan report. Since DROID is open source, this service could be offered by other providers that could deploy additional format knowledge. Registries of tools and migration paths are key enablers for plan generation and the various assessment activities.

d8 So far the scenario has identified possible risks; action may now be required (stage 3). Migration may be one option. Working with the cooperating repository a service provider will download the identified at-risk files and perform the agreed migration, returning the migrated versions to the repository along with an updated preservation metadata record. For example, this could be a within-repository (e.g. Southampton) format conversion tool working on instruction from an at-risk alerting service (TNA).

d9 This scenario raises further questions about the interaction of services providers and client repositories:

- What coordination is required between services?
- Which are the client-facing services and providers?
- What services can the market sustain?

d10 The characterisation stage (1) could be progressed further by seeking to integrate JHOVE into the validation process (migration paths could depend critically on file formats being correct), while property extraction might be informed by the findings of the JISC INSPECT project (About Investigating the Significant Properties of Electronic Content Over Time), in which TNA is also a partner.

d11 In addition, The National Archives will specify and evaluate a passive preservation package (aka bitstream preservation), including security and access control, integrity, storage management, backup and disaster recovery. Although it is possible, as with the active preservation elements, to envisage discrete

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[7] Brown, A., Automating Preservation: New Developments in the PRONOM Service, *RLG DigiNews*, Vol. 9, No. 2, April 15, 2005 http://www.rlg.org/en/page.php?Page_ID=20571#article1

passive preservation services, it is more likely that these would be packaged up as core functionality for any repository system. This package would aim to offer more resilient and comprehensive preservation storage than could be cost-effectively provided locally or alternatively a cheaper backup solution that simply provides an offsite alternative to that provided locally by an institution.

d12 The provision of such a package and its uptake raise further questions about the shape and combination of active preservation services offered. The scenario above describes on-site, i.e. within repository, preservation managed by a remote service provider. The passive preservation package points again towards the need for off-site services too.

d13 Preserv2 is well positioned to investigate these new levels of preservation service provision because it brings potential service providers, who can offer this range of capabilities, together with ROAR, which enables the services to monitor and interact with a large number of repositories.

Testbeds

d14 Planets[8], a large EU co-funded project in which TNA and the BL are participants, is specifying a testbed for experimentation by the digital preservation community. The Planets Testbed could be used in testing the tools that form part of the Preserv2 services. The technical infrastructure being developed - the Planets Interoperability Framework - is Web services-based, so will fit the Preserv model.

d15 Oxford University is developing a system for accessing external services on a per-object basis within Fedora - this can be used at ingest time (DROID, virus scanning) or on a scheduled basis (as a preservation activity, for example). This could also be used as a testbed for some of the more granular services under investigation.

d16 To assist migration between EPrints and Fedora Oxford has developed a harvester which can gather objects and metadata through various interfaces and perform the necessary metadata transformations between source and destination formats. This could be used to synchronise repositories during a transition. A more generic version of this would be useful for the outsourced preservation services model. In Preserv2 Oxford will develop fully abstracted versions of these packages (more IR software independent, more generic and better documented).

Preservation metadata

d17 Oxford will develop metadata standards for logging scripted activities – such as interaction with a preservation service provider – in a more structured manner than current standards allow, particularly when additional metadata is created. This would stand alone or could be integrated within PREMIS.

d18 Preserv1 used PREMIS to identify the origins and source of preservation metadata for the core preservation service model[9]. The work proposed here by Oxford would extend that analysis beyond the elements contained in PREMIS. While PREMIS is strong in many respects, the logging of technical metadata relating to preservation activities could be considered lacking in structure and detail, and this is the area that would be addressed.

Repositories: monitoring preservation policy and activity

d19 The market for preservation services among institutional repositories will be determined by repository policy. In Preserv1 a survey of repositories with a Preserv profile discovered that none had a formal

[8] Planets http://www.planets-project.eu

[9] Hitchcock, S., et al., Preservation Metadata for Institutional Repositories: applying PREMIS http://preserv.eprints.org/papers/presmeta/presmeta-paper.html

preservation policy[10]. This was neither surprising, nor necessarily a bad thing at this stage. Preservation policy should emerge naturally from general institutional and repository policy. Subsequently OpenDOAR discovered that only one-third of repositories have any kind of policy[11].

d20 This suggests that repositories may be waiting for clear guidance on preservation from trusted service providers, and this allows scope for the services that Preserv proposes to evaluate. It should not be assumed, however, that service providers have an entirely blank canvas to work with. The Preserv survey also revealed that, even without a policy, repositories are making decisions with preservation consequences, for example, restrictions on file formats that could be deposited. Service providers will need to be aware of the practicalities facing repositories, including prior decisions, in scoping services.

d21 Preserv2 will update the survey to help specify its target services, and will survey other stakeholders to anticipate potentially market-changing decisions. What is the role for 'big government' in funding repository preservation, for example? The UK government does so for formal publications, with legal deposit now extended to e-publications. How soon, as the open access mandates start to bite, will it be before repositories start to call for government, perhaps by proxy of the funders, to fund preservation of the content they demand is deposited?

Demonstrator

d22 Preserv2 will develop systems that aren't closely tied to repository code, using OAI-PMH for example and generating outputs in standard metadata formats. These can be integrated into repositories with minimal scripting effort or deployed as standalone services much in the same way DROID and ROAR work with PRONOM.

d23 Without specifying the demonstrator, which is dependent on the initial analysis and selection of services (among stages 2-3), it will have the following features:

1. An underlying service registry or registries
2. Service modules that extract an item or metadata from a repository using accepted standards (OAI, METS) and combine it with registry information and generates output in a standard format(s)
3. A scripting shell for implementation within a repository on a per-object basis as a part of inherent workflows
4. A standalone harvest/syndication system that processes an entire repository or other nominated content collection by repeated invocations of (2) - capable of consolidating output and report generation

d24 To scope and build a realistic demonstrator within the time available there is likely to be a trade-off between the number of services and the complexity of those services as reflected in the range of formats covered. It might be desirable to cover multimedia (video, image) and research data formats as well as conventional text-based formats, but this may have to be compromised if more services are to be developed.

d25 Target repositories would be those 200+ EPrints and DSpace repositories with a Preserv profile in ROAR. In addition the project would want to work with special-case repositories, such as Prospero (the JISC interim repository) which has distinctive preservation requirements due to its time-limited lifespan, and ecrystals, the eBank UK project repository that presents laboratory-based research data.

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[10] Hitchcock, S., et al., Survey of repository preservation policy and activity
http://preserv.eprints.org/papers/survey/survey-results.html

[11] Millington, P., Moving Forward with the *Open*DOAR Directory
http://opendoar.org/documents/BergenPresentation20060512Handouts.ppt

d26 As well as file format and repository registries, other registry services could include representation (environment) registries but also registries of migration pathways, preservation tools, etc. Direct involvement in the development of the latter registries is likely to be beyond the scope of this project, although we anticipate contributing to emerging services such as the DCC representation registry.

d27 Certification services that would provide standardized testing/evaluation of preservation action tools are another emerging area that may be beyond the scope of this project. However, there is likely to be a need for an independent organization to assess the services and the service providers, and the project would cooperate with any organizations capable of taking on this responsibility.

d28 More speculatively, a preservation "SWAT team" might be an attractive service that would perform an array of activities to get an institution up to speed with support for preservation or rescue digital materials considered beyond repair. This might have parallels with Cornell's File Format and Media Migration Pilot Service[12], and might emerge naturally from the survey of repository needs. It is likely to be reactive and relatively unstructured initially, however, and might be better offered directly by a service provider where the opportunity exists, rather than developed by the project. In any case, Cornell concluded: "We believe a superior alternative is to establish institutional repositories in which faculty are encouraged to deposit their work."

Enhanced project value through exploitation of complementary work

d29 The value returned from the investment in the Preserv2 Project will be multiplied by building on complementary project work which is ongoing at partner institutions.

d30 JISC 03/06 projects such as InSPECT (TNA, BL), LIFE2 (BL) and CAIRO (Oxford) will provide foundations in areas such as preservation metadata, planning, characterization and ingest.

d31 Planets[13] (TNA, BL) is investigating and developing preservation tools and services targeted at large-scale national libraries, archives and commercial organizations. Preserv2 will have access to the early results of this project, opening the possibility of adapting and targetting them at UK HE. Two particular opportunities exist:

- Planets is developing a Web services-based Interoperability Framework which could provide a foundation upon which new HE focused preservation services can be developed by Preserv2.
- Planets preservation planning and preservation action tools could be adapted by Preserv2 to meet the requirements of UK HE institutions.

d32 By leveraging available funding from other sources, Preserv2 will be able to deliver more comprehensive service demonstrators that will be of greater value to UK HE.

d33 Work packages and deliverables

- Survey and identify needs of exemplar repositories, and other stakeholders
- Specify and evaluate a core passive preservation package
- Scope, select and develop 3-4 active preservation services, e.g.
    - Prototype preservation plan generation service, including technology watch and risk assessment
    - Tool based migration service
- Build generic harvester to perform metadata transformations between source and destination formats for repositories and/or services
- Develop testbed for scripted services to act on objects in repositories

[12] Cornell Format & Media Migration Service http://www.library.cornell.edu/iris/migration/

[13] Planets http://www.planets-project.eu

- Extend Preserv-PREMIS to improve structure and detail for logging of technical metadata relating to preservation activities
- Test and evaluate with exemplar repositories
- Market testing and evaluation

Project management, promotion, advocacy and dissemination would be coordinated at Southampton University.

d34 Timetable

	Q1	Q2	Q3	Q4	Q5	Q6	Lead	Other
Project management							S	
Promotion, advocacy, dissemination							S	All
Survey needs of exemplar repositories, and stakeholders							S	
Design, build and test core passive preservation package							T	
Build generic harvester to perform metadata transformations							O	S
Scope, select active preservation services							S	All
Prototype preservation plan generation service, including technology watch, risk assessment							T	S
Develop testbed for scripted services to act on objects in repositories							O	All
Extend Preserv-PREMIS to improve structure and detail for logging of technical metadata							O	S
Tool based migration service							S	T
Test and evaluate active preservation with exemplar repositories							S	All
Market testing							All	

d35 Risks

1. A flaw in the proposal for Preserv1 was that the prospective service providers received no funding, so the project was limited in its ability to build a wide range of services. That problem is addressed in this new proposal with funding targetted at TNA and Oxford.
2. The market need for preservation services to support repositories could be altered by legislation. In the UK, legal deposit does not extend to institutional repositories, for example. The services to be tested in Preserv2 are predicated on institutions taking responsibility for the materials they allow, or require, to be deposited in their repositories. With greater imposition on repositories from research funder open access mandates there could be calls for support to maintain and preserve materials in repositories, which could reshape the market from institutional-facing services towards larger services centrally coordinated by funders or related agencies, or even by government. The two principal service providers in Preserv2 are national organizations in the UK and could scale up to respond to such changes.

d36 IPR and sustainability

The following software or services may have IPR implications:

- PRONOM-DROID: produced by TNA
- Oxford University harvester
- Migration service tools; rendering tools for use at the point of user access
- ROAR: is one of s suite of OAI services, also including Celestial (a harvesting service), produced and maintained by Tim Brody at Southampton University
- EPrints: repository software developed at Southampton University

Those that exist now are available as open source software (DROID, EPrints) or as open access (re-harvestable, in the case of ROAR), and therefore conform to JISC requirements. It is anticipated that services and software developed within the remit of Preserv2 will similarly conform.

d37 Dissemination

Given this is a continuation project building on established practical work we expect to be able to participate in workshops, seminars and international conferences, and to publish papers, at an earlier stage than in phase 1, giving the project a higher profile overall. With additional funded partners we expect to see greater participation in dissemination activities, and given the different backgrounds of partners this should help us to reach new audiences. We will look for opportunities for novel forms of dissemination, such as our video podcast from phase 1, to increase awareness of the project.

e. **Budget**

Omitted from this version.

f. **Key Personnel**

f1 Dr Leslie Carr, Southampton University, ECS, IAM Group, senior lecturer
Leslie is Principal Investigator for Preserv, also for the JISC IRS and R4L projects. He is technical director of EPrints software. Previously he led the IRRA project (2005-2006) and the Open Citation Project (JISC-NSF, 1999-2002), both of which have informed the development of Eprints. Leslie is a member of the OAI technical committee.

f2 Dr Steve Hitchcock, Southampton University, ECS, IAM Group, research fellow
Steve is joint project manager on the Preserv project, and is manager of the EPrints Community project. Previously he was project manager for the Open Citation Project (JISC-NSF, 1999-2002) and earlier worked on the Open Journal Project (JISC eLib 1995-1998). He is a member of the advisory group for the Repositories and Preservation programme.

f3 Dr Jessie Hey, **Southampton University**, ECS, IAM Group, research fellow
Jessie is currently joint project manager on the Preserv project, and works on Southampton's institutional repository (e-Prints.Soton). She previously worked on the JISC-funded ERCOMS and MALIBU electronic library projects.

f4 Adrian Brown, The National Archives, Head of Digital Preservation
Adrian is responsible for the long-term preservation of born-digital public records created by the UK government and courts, and for the delivery of a range of programmes to support this. These include the TNA Digital Archive, the TNA Web Archiving Programme, the Seamless Flow programme, and PRONOM, the TNA's technical registry and technology watch service. Among his other roles, he is a member of the management boards of the Digital Preservation Coalition and the UK Web Archiving Consortium, and sits on a number of international standards committees. Adrian is currently coordinating TNA's contribution to the Planets project.

f5 The National Archives will re-direct time from an existing staff member towards Preserv2 development from the start of the project.

f6 Dr Adam Farquhar, British Library, Head of eArchitecture
Adam co-founded the Library's Digital Preservation Team, is a lead architect on the Library's Digital Object Management (DOM) system, and coordinator for the EU-funded Planets digital preservation project. He is vice-chair of the ECMA TC45 Standards Committee that is specifying the Office OpenXML file format, serves on the Metadata Encoding and Transmission Standard (METS) Editorial Board, as well

as on advisory groups for the JISC Repositories Programme and the UK's Digital Preservation Coalition (DPC).

f7 Paul Wheatley, British Library, digital preservation specialist.
Paul played a leading role in various collaborative digital preservation developments at the University of Leeds where he worked on the seminal JISC-funded Cedars project and led the JISC funded Camileon project. Paul is currently the Digital Preservation Manager in the eIS Directorate of the British Library. He will be taking a leading role in the JISC 3/06 project Life2, and will be acting in an advisory capacity for the InSPECT project.

f8 Neil Jefferies, Oxford University Library Services (OULS), Acting Development Manager & Strategy Coordinator
Neil is responsible for the development and delivery of new services. Recent projects he has managed include the EPrints and Fedora Repositories (with corresponding involvement in the SHERPA and Preserv projects). Previously he worked in a broad range of computer-related fields from chip designs and parallel algorithm development for Nortel, through writing anti-virus software for Dr Solomon's and developing corporate systems for several major blue-chip companies.

f9 Sally Rumsey, OULS
Sally is the Project Manager leading the development and implementation of a sustainable repository for research output (initially ePrints and eTheses) of Oxford University. She previously worked at the London School of Economics where she was eServices Librarian. While there, she was the Manager of the LSE research repository (LSE Research Online), and led the team which implemented an electronic resource management system. She is a member of the JISC eBooks Working Group.

f10 Ben O'Steen, OULS
Ben is the Software Engineer implementing the design and delivery of a sustainable repository for research output (initially ePrints and eTheses) for Oxford University. He has over 10 years experience building bespoke business-critical systems and tools for corporate and private clients.

g. **Supporting Letter(s)** – *a copy of the letter(s) of support from a senior representative of the institution and any project partners. The supporting letter(s) will not count towards the page limit.*

g1 Letters of support from all partners seeking funding – Southampton University, Oxford University, The British Library and The National Archives – (were submitted with this proposal).