SHERPA-DP: Distributed Repositories/Distributed Preservation

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Topics

- Sherpa
- Background and Overview of Sherpa DP
- OAIS (very briefly)
- Disaggregated (distributed) Preservation Service
- Workflow

Sherpa

- 2002-05 JISC project under the Focus on Access to Institutional Resources (FAIR) programme, which aimed to:
  - establish OAIS compliant institutional open access e-print repositories in 20 partner institutions
  - investigate key issues in creating, populating and maintaining e-print collections
  - work to achieve technical, metadata and collection management standards for the effective dissemination of the content
  - investigate digital preservation of e-prints using the Open Archival Information System (OAIS) Reference Model

Sherpa DP Project

- **acronym: S**ecuring a **H**ybrid **E**nvironment for **R**esearch **P**reservation and **A**ccess: **D**igital **P**reservation
- **project partners**: AHDS at King's College London (Lead), Nottingham, Glasgow, Edinburgh, White Rose Consortium, London Leap Consortium
- **duration**: 2 years, March 2005 – February 2007
- **funding**: JISC and CURL
- **JISC programme**: Supporting Digital Preservation and Asset Management in Institutions (4/04)

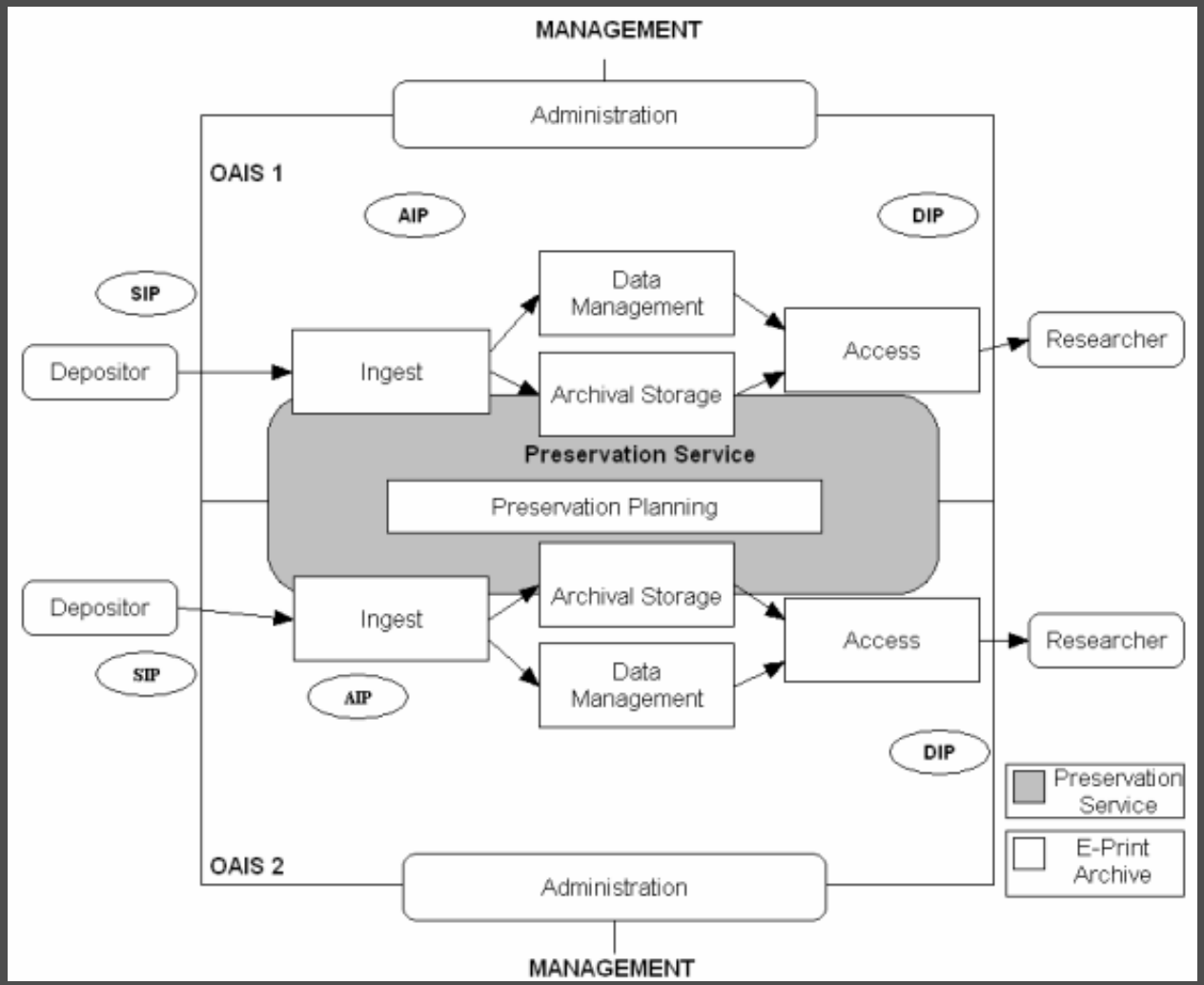
Sherpa DP Aims

- develop prototype preservation environment for the Sherpa DP partners based on the OAIS reference model, including shared protocols and software tools
- establish a comprehensive workflow and set of procedures to suit the needs of institutional repositories and the preservation service
- provide guidance on the ingest process in order to encourage the deposit of file formats that will minimise long-term operational costs and maximise preservation potential
- develop an exemplar for an outsourced preservation service
- create a digital repositories handbook that will set out best practice standards and processes for resource creation and ingest, preservation planning and management, and provision of access for the holdings of institutional e-print repositories in the UK

Sherpa DP Methodology

- map the six entities of an OAIS-compliant repository (ingest, archival storage, administration, data management, preservation planning and access) onto an existing structure
- model the implementation of a disaggregated preservation service within the OAIS framework
- identify rights and responsibilities, services and actions, and apportion these between the IR and preservation repository service
- develop tools and processes to implement the preservation services and actions

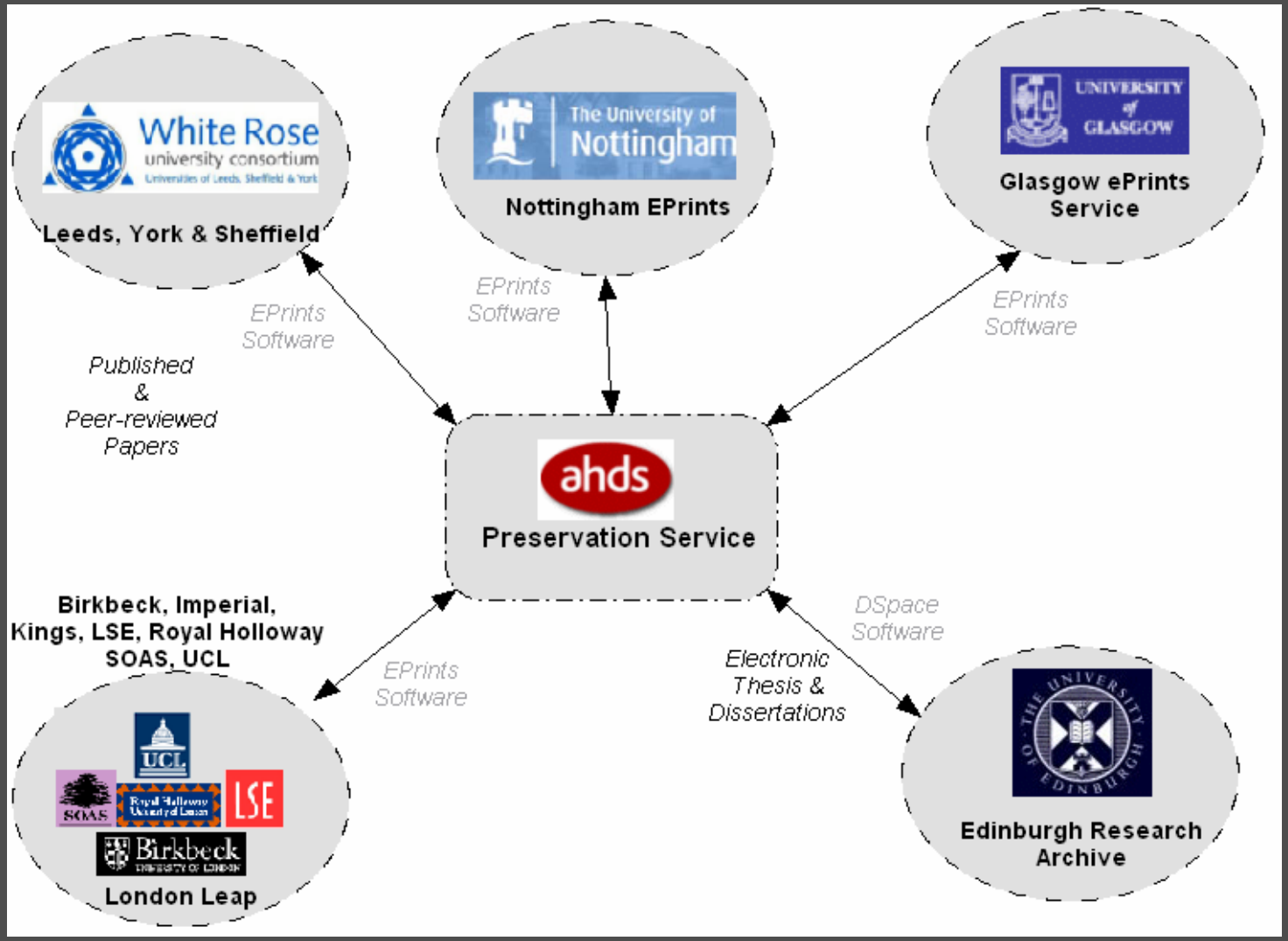
OAIS Functional Model as applied by Sherpa DP



Why disaggregate preservation functions?

- institutional repositories lack the time to implement preservation
- scarcity of staff with necessary preservation skills and expertise
- seeking to remove duplication of services
- potential cost savings in terms of staff time and equipment
- preservation is not inherent in most repository software
- DSpace and EPrints software primarily about submission, basic storage and access

Repository Landscape



Quantities

Archive	Total number of e-prints in archive	Average file size	Approximate Size of archive	Estimated growth around next 5 years
Nottingham EPrints + Etheses + Modern Languages Publication Archive	-	500 KB	746 MB	10,000 records (5 GB)
London LEAP Birkbeck University	129 (full text archive)	300 KB	-	Expected to grow to 5000 items per year for London LEAP
London LEAP King's College	41 (full text archive)	,,	-	8 GB total for London LEAP
London LEAP LSE	142 (full text archive)	,,	370MB total size	-
London LEAP SOAS	25 (full text archive)	,,	-	-
London LEAP Royal Halloway	67 (full text archive)	,,	-	-
London LEAP UCL	860 (510 full text+ bibliography records) 1265 Total records	,,	-	-
White Rose Consortium	614	500 KB	300MB	File size is expected to grow to 1.5 MB
Glasgow EPrints	366 full text (1712 total records)	300 KB	110MB	5000 full text records and large collection of bibliographic records
Jelit Glasgow EPrints	20	-	10 MB	50 MB
Erpanet Glasgow Eprints	46	-	30MB	-
Edinburgh Research Archive	600 (only full text)	2 MB	3.5 GB	Around 5000 full texts. Expected size: 10 GB
Total Size (estimated) on the preservation server			5-6 GB	Around 25 GB

Establishing responsibility

- Who is responsible for creating the AIP?
  - preservation service, institutional repository, or both?
- What type of metadata is created & needed?
  - descriptive, technical, structural & administrative metadata
- How will AIP be used?
  - identification of at-risk formats, migration
- When will the AIP be created?
  - on ingest, schedule, or when the resource is at-risk

Establishing responsibility: Institutional Repository

- implement appropriate repository software *(all use Eprints except Glasgow which uses DSpace; AHDS uses Fedora)*
- develop selection, retention and ingest polices
- develop a rights framework
- specify a minimum metadata set, and provide details to the Preservation Service
- quality control for descriptive metadata
- support mechanisms for metadata harvest
- support for extension schemes to enable preservation.
- creation of technical metadata (possibly)
- alerting mechanisms for updated/additional content?

Establishing responsibility: Preservation Service (AHDS)

Storage:

- provide a permanent storage facility and disaster recovery capabilities
- manage storage hierarchy

Preservation Planning:

- Evaluate contents of archive and undertake risk assessment
- develop recommendations for preservation standards and policies
- life cycle management. Monitor changes in technology environment, users' service requests, and knowledge base

Preservation Action:

- develop and implement migration plans
- create and manage multiple copies of objects, including off-site storage
- record appropriate information on any changes to the objects

Data transfer (IR ←→ AHDS)

- investigate methods to identify new submissions or new content in IR.
- implement transfer mechanisms between institutional repositories and preservation service (DSpace and Eprint APIs, storage layers and module add-on capabilities)
- examine the capabilities of OAI-PMH for complex object formats

Sustainable preservation actions

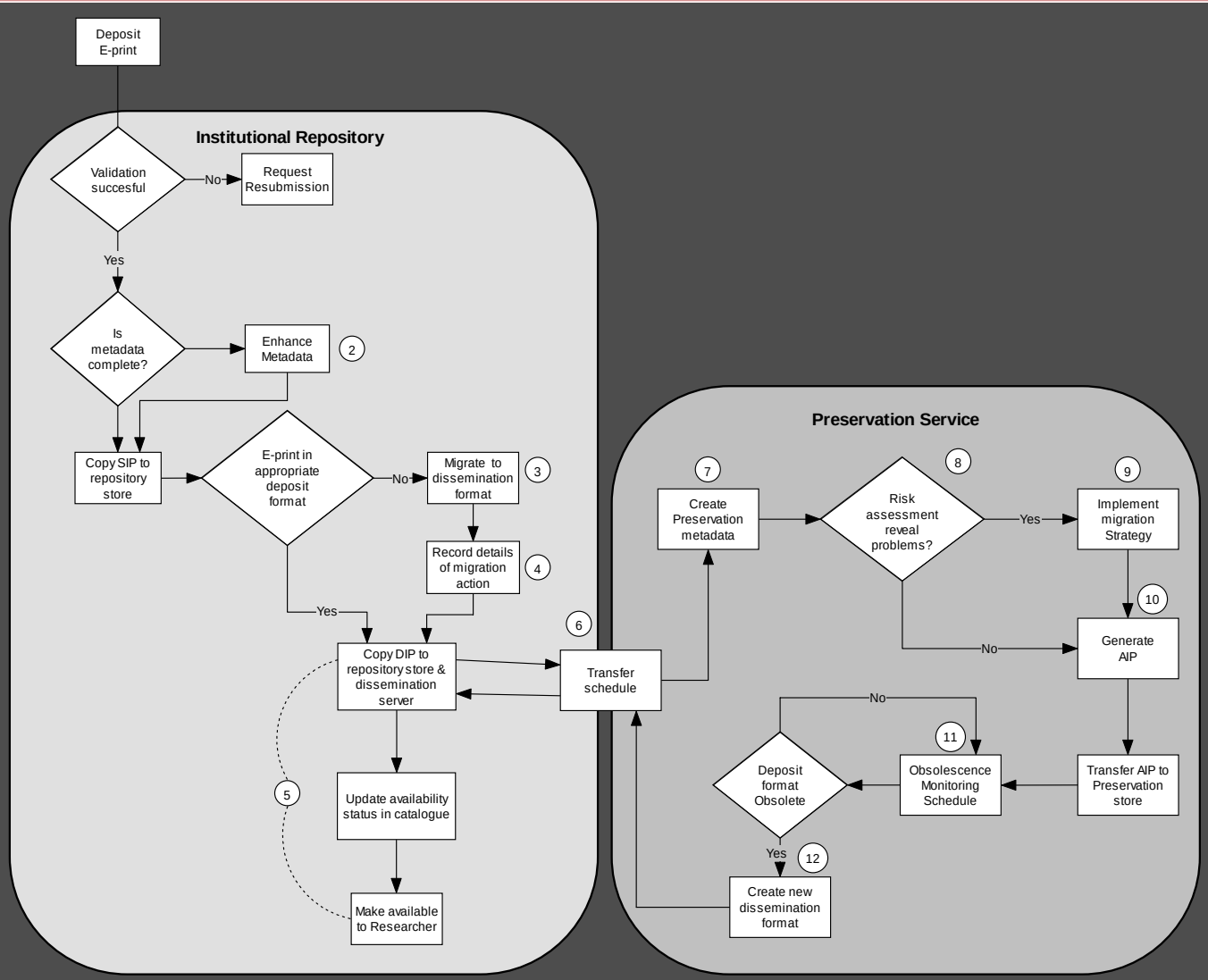
Create new, or refine existing, automated tools to perform:

- file format migration
- metadata extraction
- obsolescence checking and migration services
- identification and tracking of versions
- synchronisation of versions across repositories
- integrity checking and reporting

Components of technical solution

- metadata addition to EPrints software
- plug-ins for DSpace and EPrints
- java scripts to manage retrieval of metadata and data from IRs
- use of METS for storing metadata
- Fedora to be implemented in preservation repository
- customise existing web interface for Fedora

Simplified workflow (preliminary)



Further Information

URL:

http://www.ahds.ac.uk/about/projects/

http://www.sherpadp.org.uk

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