Planetarium

A SUCCESSFUL SECOND YEAR – REVIEW TEAM IMPRESSED

Dr. Adam Farquhar, Planets Project Coordinator

Each year, the European Commission invites a panel of independent experts to review the project, evaluate its progress, and make suggestions for improvements. The project's second annual review was undertaken in July 2008. During the intensive two day review, members of the project team were able to demonstrate a variety of software components that are involved in the Planets solution. They showed well-polished user-oriented applications, administrative and back-end capabilities, and key preservation components. They were also able to show how research ideas from the first year have been implemented in software tools, and how independent tools from last year have been integrated into a single solution. The project found the review process very constructive. Not only does the project receive advice from a talented and experienced panel, but it encourages us to bring together the strands of the project at a single place and time.

The following is a quote from the review report:

"Overall, the Review Panel remains impressed with the deliverables of the PLANETS project through this second review period including the clear commitment of the partners. The nature and extent of the project overall is articulated to a very high standard and the quality and clarity of the deliverables continues to be of a very high standard. The panel is impressed with the progression in both depth and breadth of the overall programme from last year, especially with regard to the number and quality of the demonstrations, and the uniqueness of the research output from the XC*L activity is seen by the panel as a central plank of the PLANETS outcomes for validation/quality assurance".

The central recommendation from the review panel is for the project to invest more heavily in work to sustain results after the project itself reaches an end in May 2010. This aligns very well with the interests of the project partners – some of whom look forward to providing digital preservation tools and services based around Planets technology, and others, such as the British Library, who look forward to using the technology as a key component of its overall solution.

The annual review also provides an opportunity to reflect on the progress that the project has made and consider future priorities. It continues to be a great pleasure for me to work with such an exceptional team of people across Europe. We've seen rapid progress in maturing our ideas over the first two years of the project. In the coming year, we will evaluate them in case studies and pilots at several of the partner institutions. This will give us much deeper understanding of how the technology will work within the context of institutions that have a mission to preserve digital content. I look forward to sharing what we learn through that experience, and to sharing the software tools and preservation services actively with the preservation community.

> "Planets will provide the technology component of our digital preservation solution"
>
> **Richard Boulderstone, Director, The British Library**

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PLATO – A NOT SO PHILOSOPHICAL APPROACH TO PRESERVATION PLANNING

Mark Guttenbrunner – *Vienna University of Technology*

The preservation planning tool Plato implements the PLANETS Preservation Planning approach. This provides a solid way of making informed and accountable decisions on the selection of a solution to implement in order to optimally preserve digital objects for a given purpose.

The tool is integrated into the PLANETS Interoperability Framework based on open J2EE and web technologies. This environment provides a loose coupling of services and registries for preservation action and characterization through flexible discovery and invocation.

Plato follows the Planets preservation planning methodology, guiding you through the four steps shown in Figure 1:

- define your context and requirements;
- select potential actions and evaluate them on sample content;
- analyse outcomes and;
- define a preservation plan based on this empirical evidence.

Figure 1: Preservation Planning Workflow

In the Define Requirements phase, Plato allows you to enter information such as the name of the planner, applicable policies, the designated community or relevant organisational procedures and workflows before uploading sample records. Identification of the sample records format is done automatically through the integration of the identification service DROID.

Plato then allows you to define your requirements. It has been developed paying close attention to the web user interface in order to assist in determining these requirements and offers a fully flexible way to enable the specification of a wide range of measurement scales. As the definition of requirements in a tree structure is often done in a workshop setting, Plato also supports tree import from mind-mapping software.

In the second phase, Evaluate Alternatives, you first are able to define the alternatives which you want to examine. Plato assists you by allowing you to select applicable action services such as emulation tools or migration services provided by service registries like CRiB. Next you have to decide which of the selected alternatives you want to include in the planning process.

After describing the experiment settings and the environment, the experiments are run. This can be done automatically through Plato if you did select services from service registries. The resulting files can be downloaded and the results of the experiments entered in Plato.

The third phase of the preservation planning, Analyse Results, assists you in taking an accountable decision for an alternative. First you have to decide how well the measured values meet your requirements by assigning a numeric value between 0 and 5. 0 is used for if a result is unacceptable and the alternative has to be eliminated if the requirement is not met. By weighting the nodes of the requirements tree you can then decide which requirements you consider to be of more or less importance.
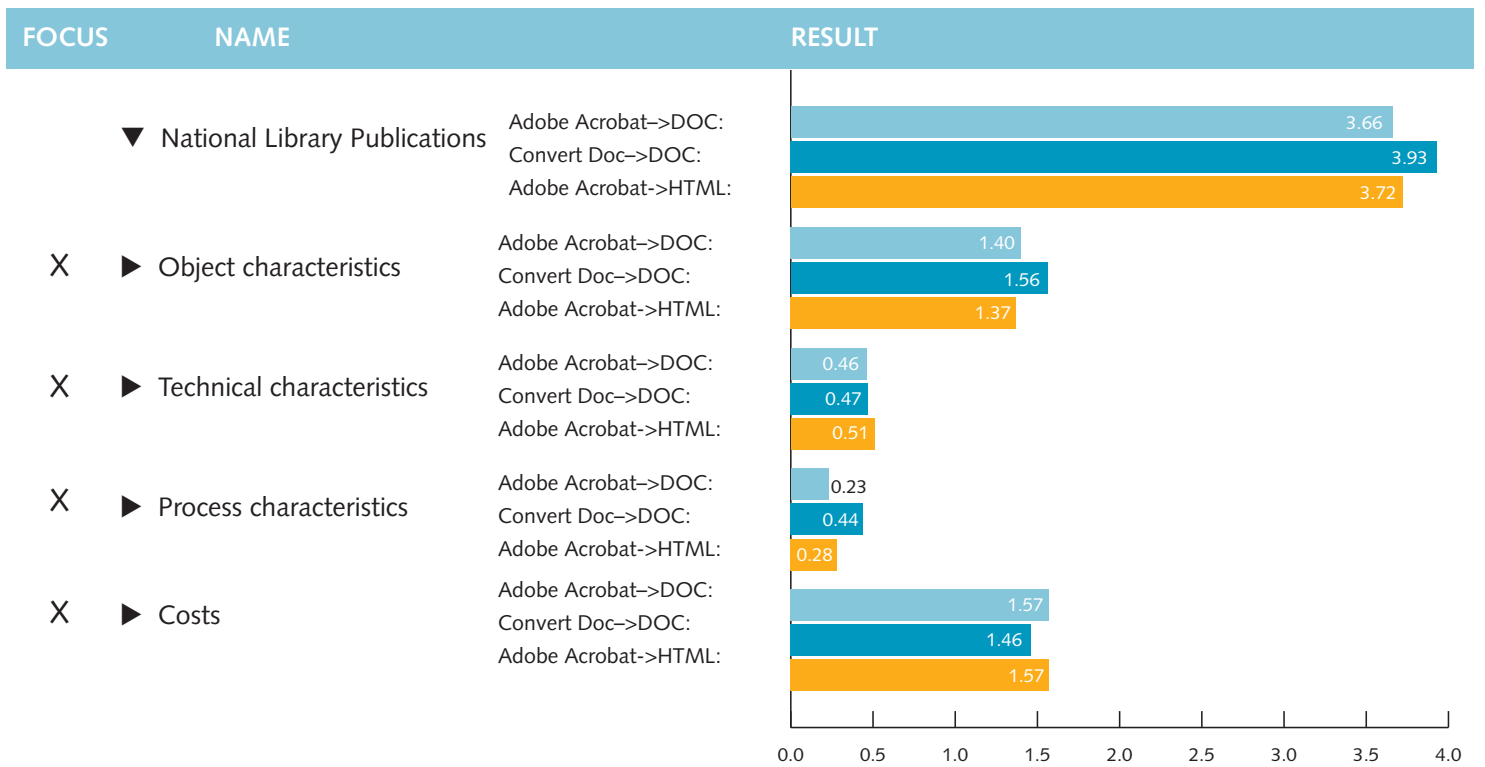
An accumulated figure for each alternative is then calculated by Plato, and the alternatives are ranked. In addition, a flexible visualization as shown in Figure 2 allows you to graphically analyze the specific strengths and weaknesses of each potential preservation action. Finally, all the data you fed into and calculated with Plato is shown in a detailed summary to enable you to make a final decision on the optimal alternative.

With all these steps and features, Plato already considerably improves the repeatability, documentation and automation of preservation planning. The applicability and usefulness of the tool has been validated in a series of workshops and case studies which involved a wide range of institutions.

When the next release of Plato goes online in November 2008, an extension of the current workflow by a 4th phase (Build Preservation Plan) will be introduced. Users will then be able to create a preservation plan by entering information about the execution of preservation actions and who will be responsible for those actions.

If this article got you interested in Plato, you can find detailed information about how to get an account on the Plato web-site: **http://www.ifs.tuwien.ac.at/dp/plato/**.

More information about Plato, including a copy of the draft User Manual and a Powerpoint-based walkthrough of the tool can be found at **http://www.ifs.tuwien.ac.at/dp/plato/**

FOCUS	NAME	RESULT		
	▼ National Library Publications	Adobe Acrobat–>DOC:	3.66	
		Convert Doc–>DOC:	3.93	
		Adobe Acrobat->HTML:	3.72	
X	▶ Object characteristics	Adobe Acrobat–>DOC:	1.40	
		Convert Doc–>DOC:	1.56	
		Adobe Acrobat->HTML:	1.37	
X	▶ Technical characteristics	Adobe Acrobat–>DOC:	0.46	
		Convert Doc–>DOC:	0.47	
		Adobe Acrobat->HTML:	0.51	
X	▶ Process characteristics	Adobe Acrobat–>DOC:	0.23	
		Convert Doc–>DOC:	0.44	
		Adobe Acrobat->HTML:	0.28	
X	▶ Costs	Adobe Acrobat–>DOC:	1.57	
		Convert Doc–>DOC:	1.46	
		Adobe Acrobat->HTML:	1.57	

(scale: 0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0)

PLANETS TEAM NEWS

We have been informed of a number of arrivals and departures within the Planets Team:

WELCOME TO:

Clive Billenness
Planets Programme Manager,
British Library
Clive has been seconded to the Programme for the remainder of the Project from the Library's Corporate Programme Office, where he has been working as a Project Management Consultant.

CONGRATULATIONS TO

Dirk von Suchodoletz at the University of Freiburg on the award of his PhD. Dirk's thesis was on the Planets-related topic of: *"Functional long-term preservation of digital objects – requirements for the successful application of emulation strategy"*

If you have any news about Planets team members that you would like to share with colleagues, please let us know

FAREWELL AND CONGRATULATIONS TO

Seamus Ross
Many congratulations to Seamus, who has been appointed Dean of the Faculty of Information Studies at the University of Toronto, and will be leaving HATII at the end of the year.

Seamus said about his new post:
"The University of Toronto and its Faculty of Information Studies have been at the forefront of information science research and teaching for nearly 80 years. I look forward to pressing the cause forward – conducting innovative research and teaching with world-class academics, staff and students and working with them to exploit wonderful new opportunities presented by the rapidly changing information landscape"

Helen Hockx-Yu
Helen has now moved within the British Library to become the Programme Manager for their Web Archiving Programme, of which she says "I have not done anything more challenging than this so far, but that's what makes it so interesting."

ORGANISATIONAL PRESERVATION GOALS MUST GUIDE DIGITAL PRESERVATION ACTIVITIES

Angela Dappert - The British Library

The following article is drawn from Planets External Report PP2-D2. The data model that is referenced below is also described in a paper presented to the iPres08 Conference on Digital Preservation.

The full paper can be downloaded at: **www.bl.uk/ipres2008**

Digital preservation activities can only succeed if they consider the wider strategy, policy, goals, and constraints of the institution that undertakes them. Furthermore, because organizations differ in many ways, a one-size-fits-all approach cannot be appropriate

For digital preservation solutions to succeed, it is essential to go beyond the technical properties of the digital objects to be preserved, and to understand the cultural and institutional framework in which data, documents and records are preserved.

Fortunately, organizations involved in digital preservation have created documents describing their policies, strategies, workflows, plans, and goals to provide guidance. They also have skilled staff who are aware of sometimes unwritten considerations.

Staff at the British Library, the National Archives of the Netherlands, the Austrian National Library, and the National Library of the Netherlands have analyzed preservation guiding documents and interviewed staff from libraries, archives and data centres that are actively engaged in digital preservation.

From this work, we have created a conceptual model for expressing the core concepts and requirements that appear in preservation guiding documents. It defines a specific vocabulary that institutions can reuse for expressing their own policies and strategies.

In addition to providing a conceptual framework, the model and vocabulary support automated preservation planning tools through an XML representation.

To perform our analysis, we used a combination of top-down and bottom-up methods. We examined the scientific literature to create a top-down model from first principles. To complement this, we analyzed actual preservation guiding documents for their content. We also interviewed decision makers to determine factors that influence their preservation choices.

The resulting conceptual model presents a very simple and elegant representation of the preservation planning domain. It views preservation planning as a process that identifies and mitigates risks to current and future access to digital objects.

It accommodates a full range of preservation planning processes such as monitoring, characterization, comparison of characteristics, and evaluation of candidate preservation actions. It allows processes to be associated with a full range of entities from institutions, and collections, down to byte-streams.

The vocabulary of the model can be shared and exchanged by software applications. It offers a convenient starting point for creating individualized models for an institution; this holds true even if the institution does not require a machine-interpretable specification.

Key findings from the analysis of preservation guiding documents are:

- Data carrier storage media refresh has become an urgent priority as institutions discover failures at rates well above earlier predictions.
- There is a lack of consensus on the use of digital preservation terms, the variety of preservation planning goals, and uncertainty as to how digital preservation should be implemented in practice.
- Preservation policy documents set a general framework for digital preservation, but do not provide specific practical guidance.
- Some existing preservation policies may not accurately reflect the institution's actual preservation goals
- Some institutions mandate a specific "technical preservation strategy," such as migration, regardless of and sometimes in conflict with lower level technical requirements. This demonstrates the need to include institutional and data object considerations in the conceptual model.
- Non-technical aspects, such as the regulatory framework, need to be more detailed than they currently are to support automated preservation planning tools.
- Most current preservation polices specify preventive actions during ingest, including format normalization, format validation, error correction, as well as standards for both file formats and metadata.
- Most institutions currently hold fairly homogeneous digital collections that they characterize by data carrier types or file format. This simplifies the choice of tools that they use.

Writing on his blog site after this paper was presented at iPres, Chris Rusbridge, Director of the UK Digital Curation Centre described it as

"…fascinating PLANETS work on relating preservation policy both to institutional goals and to a detailed model of the preservation approach, and particularly its risks. It is refreshing to see the emphasis on risks at this meeting: risks, rather than absolutes, imply choices on courses of action dependent on the probability and impact of the danger, and on the resources available"

IDENTIFYING PRESERVATION NEEDS AND WAYS TO MEET THEM

Digital Preservation Planning: Principles, Examples and the Future with Planets Workshop

How to identify the needs of organisations and their users to access digital information, and ways to meet those needs, was the theme of a workshop delivered jointly by Planets and the Digital Preservation Coalition at The British Library's Conference Centre on 29 July 2008.

Forty-three digital information managers, archivists, librarians, researchers and IT developers attended the workshop, entitled "Digital Preservation Planning: Principles, Examples and the Future with Planets."

This one-day interactive event introduced DPC members, and members of other organisations with a digital preservation remit, to Planets technology and to the work of organisations with established digital collections and preservation measures.

Frances Boyle, Executive Director, DPC, and Conference Chair said that planning to preserve digital content must be based on organisational needs and an integral component in business strategy.

Andreas Rauber, Vienna University of Technology presented the Planets suite of tools and services which are being designed to meet the requirements of 16 European institutions.

Matthew Woollard, UK Data Archive and Natalie Walters, Wellcome Trust described practical measures being taken in their organisations.

Christoph Becker, Vienna University of Technology, set out requirements and stakeholders' needs that should be considered during the planning process and introduced the Planets planning tool, Plato.

> "This is the first event I have been to where I have felt confident that active preservation will be a practical reality. The other thing I find heartening is that a number of very technologically accomplished people have begun to talk about things that mean something to me. I have been to events where there has been no discussion and archivists have been afraid to ask a question. That's not happened here."
> **Malcolm Todd, Digital Records Specialist,**
> Houses of Parliament

After exercises with Plato (The Planets Preservation Planning Tool), Manfred Thaller, University of Cologne, introduced file formats and why it is necessary to understand them.

Matthew Barr, Humanities Advanced Information and Technology Institute, presented the Planets testbed and its role in identifying and justifying preservation actions.

Kevin Schürer, UK Data Archive, led a facilitated discussion based on a questionnaire issued to delegates prior to the event. (See summary of responses below).

Feedback indicated the event was well-received, with 90% of delegates rating the event as Good or Better at meeting expectations.

Twenty institutions responded to a questionnaire issued in advance of the workshop to ascertain the status of preservation activity in the organisations represented. (Published with permission)

- Respondents said the biggest barriers to preservation are: (i) lack of expertise (ii) funding and (iii) buy-in at senior level.
- Ten respondent's organisations had a digital preservation strategy in place. Five of those who did not said they intended to develop one within 18 months.
- Thirteen respondents' organisations worked with other institutions such as DPC, Planets, The British Library, The National Archives and JISC.
- Fourteen respondents said preservation of digital content had already become a critical issue.
- A wide range of file formats was identified as in need of immediate attention. These included: government research, historical archives, digital masters, content on floppy discs, e-theses and engineering drawings.

- Respondents said that (i) raising awareness among senior management (ii) skills training and (iii) access to independent advice were the most important initiatives needed at national level.
- Twelve organisations said they would pay for third-party digital preservation services and eight advice and consultancy.
- Nine would consider using a commercial service provider, if they could be satisfied about transparency, cost, access to data, certification and sustainability.
- Material is most frequently stored using corporate storage, a digital repository; commercial system or dedicated server.
- The majority of respondents' organisations take charge of preservation of digital collections in-house. All had back-up arrangements.

RECENT PUBLICATIONS

Design of concrete Archive based on Universal Identification and a Logical Object Model inspired by the Planets project

Eld Zierau and Anders Johansen

In: Proceedings of the European Conference on Digital Libraries (ECDL'08). Aarhus, Denmark, September 14–19, 2008

www.ecdl2008.org

Distributed Preservation Services: Integrating Planning and Actions

Christoph Becker, Miguel Ferreira, Michael Kraxner, Andreas Rauber, Ana Alice Baptista, and José Carlos Ramalho

In: Proceedings of the European Conference on Digital Libraries (ECDL'08). Aarhus, Denmark, September 14–119, 2008

www.ecdl2008.org

Emulation: From Digital Artefact to Remotely Rendered Environments

Dirk von Suchodoletz, and Jeffrey van der Hoeven

In: Proceedings of the Fifth International Conference on Preservation of Digital Objects (iPRES 2008). London, UK, September 29–130, 2008

www.bl.uk/ipres2008

Evaluating Strategies for the Preservation of Console Video Games

Mark Guttenbrunner, Christoph Becker, Andreas Rauber, and Carmen Kehrberg

In: Proceedings of the fifth international conference on Preservation of Digital Objects (iPRES 2008). London, UK, September 29–30, 2008

Gebruik bestandsformaten voor de opslag voor lange termijn onderzocht

Sara van Bussel and Frank Houtman

In: InformatieProfessional, 07/08/2008

www.informatieprofessional.nl/home/index.php

The KB e-Depot in development: Integrating research results in the library organisation

Hilde van Wijngaarden, Frank Houtman, and Marcel Ras

In: Proceedings of theFifth International Conference on Preservation of Digital Objects (iPRES 2008). London, UK, September 29–30, 2008

www.bl.uk/ipres2008

Modeling Organizational Preservation Goals to Guide Digital Preservation

Angela Dappert and Adam Farquhar

In: Proceedings of the Fifth International Conference on Preservation of Digital Objects (iPRES 2008). London, UK, September 29–30, 2008

www.bl.uk/ipres2008

Personal & SOHO Archiving

Stephan Strodl, Florian Motlik, Kevin Stadler, and Andreas Rauber.

In: Proceedings of the Joint Conference on Digital Libraries (JCDL 2008) Pittsburgh, Pennsylvania, USA, June 16–20, 2008

http://www.jcdl2008.org/

The Planets Approach to migration tools

Eld Zierau and Caroline van Wijk

Presented at IS&T Archiving 2008

www.imaging.org/conferences/archiving2008/

The Planets project: developing a practical infrastructure for digital preservation

Jean-Marc Comment and Hans Hofman

Paper presented at XVIth International Congress on Archives (ICA'08),

www.kualalumpur2008.ica.org

The Planets Testbed: Science for Digital Preservation

Brian Aitken, Petra Helwig, Andrew Jackson, Andrew Lindley, Eleonora Nicchiarelli, and Seamus Ross

Article on Testbed in The Code4Lib Journal online journal http://journal.code4lib.org/

http://journal.code4lib.org/articles/83

The Planets Testbed: Science for Digital Preservation

Brian Aitken, Petra Helwig, Andrew Jackson, Andrew Lindley, Eleonora Nicchiarelli, and Seamus Ross

Article on Testbed in The Code4Lib Journal online journal

http://journal.code4lib.org/articles/83

Plato: A Preservation Planning Tool

Hannes Kulovits, Christoph Becker, Michael Kraxner, Florian Motlik, Kevin Stadler, and Andreas Rauber

In: Proceedings of the ACM/IEEE Joint Conference on Digital Libraries (JCDL'08). Pittsburgh, Pennsylvania, June 16–20, 2008.

Plato: A Preservation Planning Tool Integrating Preservation Action Services

Hannes Kulovits, Christoph Becker, Michael Kraxner, Florian Motlik, Kevin Stadler, and Andreas Rauber

In: Proceedings of the European Conference on Research and Advanced Technology for Digital Libraries 2008 (ECDL'08). Aarhus, Denmark, September 14–19, 2008

Plato: A service-oriented decision support system for preservation planning

Christoph Becker, Hannes Kulovits, Andreas Rauber and Hans Hofman

In: Proceedings of the ACM/IEEE Joint Conference on Digital Libraries (JCDL'08) Pittsburgh, Pennsylvania , June 16–20, 2008

Using METS, PREMIS and MODS for Archiving eJournals

Angela Dappert, Markus Enders

In: D-Lib Magazine September/October 2008

http://www.dlib.org/dlib/september08/dappert/09dappert.html

PLANETS AT EVENTS

Members of the Planets project have attended major international conferences and workshops to raise awareness about Planets across the digital preservation community. Planets was seen and heard at the following events between May and September 2008:

Joint Conference on Digital Libraries (JCDL), 16–20 June 2008, Pittsburgh, Pennsylvania
Attended this year by over 300 hundred delegates, JCDL is the major international forum focused on digital libraries and associated technical, practical, and social issues

**JISC Digital Curation and Preservation Projects Forum
30 June 2008, Birkbeck College, London**
A one-day workshop bringing together and identifying the practical deployment of tools and resources that are in development or have been produced by digital preservation projects

**16th International Congress on Archives, ICA Congress
21–27 July 2008, Kuala Lumpur**
The annual conference of the International Council of archives, which has 1,500 members in 190 countries worldwide.

Digital Preservation Planning: Principles, Examples and the Future with Planets, 29 July 2008, British Library Conference Centre, St Pancras, London
One-day workshop to introduce participants to Planets and the work of organisations with well-established digital preservation practices.

**Archiving Databases with SIARD
9–10 September 2008, Swiss Federal Archives (SFA), Berne**
Two-day workshop providing an introduction to long-term preservation of databases using SIARD (System Independent Archiving of Relational Databases).

ECDL 2008, European Conference on Research and Advanced Technology for Digital Libraries, 14–19 September, 2008 Aarhus, Denmark
The major European conference on digital libraries and associated technical, practical and social issues bringing together researchers, developers, content providers and users.

**iPRES 2008, The Fifth Conference on Preservation of Digital Objects
29–30 September, British Library Conference Centre, St Pancras, London**
The fifth in a series of international conferences introducing the latest developments in thinking, policy, research, technology and practice in the digital preservation field.

ABOUT PLANETARIUM

Planetarium is the new name for the Planets newsletter, which is published four times each year throughout the life of the Planets Project.

Each issue details recent project activities, describes practical tools and services developed by the project, provides news highlights about the project and the Planets team and gives details of recent publications about Planets topics and past and future events at which Planets is/was represented.

If you have suggestions for articles in future issues, please let us know.

Sign up to receive future copies of Planets newsletters via the RSS feed at **www.planets-project.eu**

For more information on the project, please contact **info@planets-project.eu**

FORTHCOMING EVENTS

Planets Project team members will be involved with the following forthcoming events:

**WePreserve Training Week
13–17 October, Prague**
An intensive training programme introducing students to the OAIS framework; preservation planning, characterisation; metadata; testbed technologies and European initiatives in digital preservation.

**The Third WePreserve Annual Conference
29–30 October 2008, Nice**
Two-day conference that introduces delegates to the latest developments with the DPE, CASPAR and Planets programmes.

BACKGROUND TO THE PLANETS PROJECT PROJECT IST-033789

Planets is a four-year, €15 million, project co-funded by the European Commission under Framework Programme 6.

Co-ordinated by the British Library, Planets brings together the expertise of 16 European National Libraries and Archives, leading research institutions, and technology companies to address the challenge of preserving access to digital, scientific and cultural knowledge.

The project's goal is to provide long-term access to digital scientific and cultural assets. Planets will deliver practical tools and services to automate the preservation process making it simpler, faster and cheaper.

Planets technology is being designed to meet the needs of different types and sizes of organisations with a focus on national libraries and archives.

A shared platform, vocabulary and computer languages to describe objects and the preservation process will bind together actors in the digital preservation and curation communities: researchers, institutions, their digital archives and third-party tool and service providers.

Plug-in capability will allow third-party tools and services to be easily incorporated and updated

Security and ability to audit the preservation process are core components.

Planets is one of three projects funded under EC Framework Programme 6. It works with Digital Preservation Europe (DPE) and Cultural, Artistic and Scientific Knowledge for Preservation, Access and Retrieval (CASPAR).

Planets Partners are:

- The British Library
- The National Library of the Netherlands
- Austrian National Library
- The Royal Library of Denmark
- State and University Library, Denmark
- The National Archives of the Netherlands
- The National Archives of England, Wales and the United Kingdom
- Swiss Federal Archives
- University of Cologne
- University of Freiburg
- HATII at the University of Glasgow
- Vienna University of Technology
- Austrian Research Centers GmbH
- IBM Netherlands
- Microsoft Research Limited
- Tessella Support Services Plc

THE PLANETS COMPONENTS
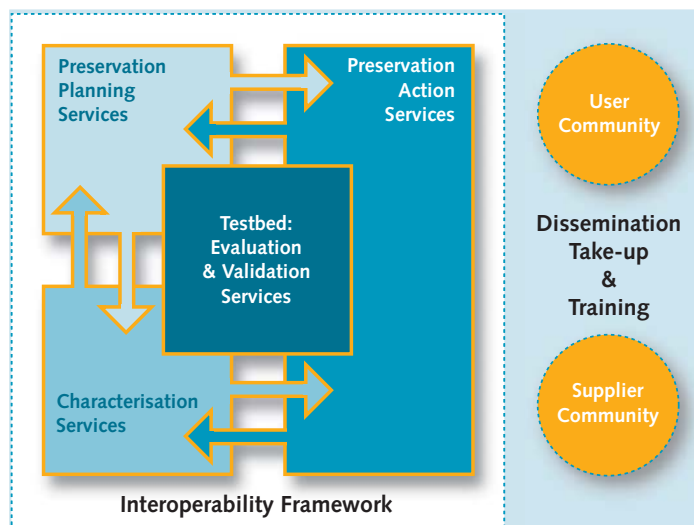
Planets will provide a comprehensive set of network-accessible, scaleable, sustainable tools to assist curators of digital material at each stage of the digital preservation process. It begins with the preparation of a risk-based, prioritised preservation plan, through the identification of the materials to be preserved to the selection of tools to undertake the conversion of the data into a format better suited to long-term preservation, through the non-destructive testing of and then the full-scale execution of those tools to the verification of the format of the output.

The Planets partners are also working with institutions engaged in digital preservation as well as with organisations who supply and maintain their digital content systems.

Planets also organises seminars and training events for members of the digital preservation community, publishes newsletters and articles and provides speakers for conferences. For more information, visit **www.planets-project.eu** or e-mail **info@planets-project.eu**