

iPRES 2014

MELBOURNE | 6-10 OCTOBER



Proceedings of the
11th International Conference
on Digital Preservation

Proceedings of the 11th International Conference on Digital Preservation

© iPres 2014 conference proceedings are made available under a Creative Commons license. With the exception of any logos, emblems, trademarks or other nominated third-party images/text, this work is available for re-use under a Creative Commons Attribution 3.0 unported license. Authorship of this work must be attributed.

ISBN 978-0-642-27881-4

Layout and compilation: Anna Metcalfe, State Library of Victoria

State Library of Victoria
328 Swanston Street
Melbourne, Victoria 3000
slv.vic.gov.au

Presented by



Sponsored by



iPRES 2014
MELBOURNE | 6-10 OCTOBER

**Proceedings of the
11th International Conference
on Digital Preservation**

Edited by Serena Coates, Ross King, Steve Knight,
Christopher (Cal) Lee, Peter McKinney, Erin O'Meara,
and David Pearson

Conference Committee

Co-Convenors

Sue Roberts State Library of Victoria, Australia
Anne-Marie Schwirtlich National Library of Australia, Australia

General Chairs

Liz Jesty State Library of Victoria, Australia
David Pearson National Library of Australia, Australia

Programme Chairs

Steve Knight National Library of New Zealand, New Zealand
Christopher (Cal) Lee University of North Carolina at Chapel Hill, United States

Workshop/Panels/Tutorials Chairs

Peter McKinney National Library of New Zealand, New Zealand
Erin O'Meara Gates Archive, United States

Poster Chairs

Serena Coates State Library of Queensland, Australia
Ross King Austrian Institute of Technology, Austria

Local Organising Committee

Emma Bloom State Library of Victoria, Australia
Annette Brown State Library of Victoria, Australia
Phillip Clifford State Library of Victoria, Australia
Justine Heazlewood Public Records Office of Victoria, Australia
Liz Jesty State Library of Victoria, Australia
Teula Morgan Swinburne University, Australia
David Pearson National Library of Australia, Australia
Sue Roberts State Library of Victoria, Australia
Gail Schmidt State Library of Victoria, Australia
Sarah Slade State Library of Victoria, Australia
Janice Van de Velde State Library of Victoria, Australia
Nerida Webster State Library of Victoria, Australia

Programme Committee

Stephen Abrams	California Digital Library, United States
Reinhard Altenhöner	German National Library, Germany
David Anderson	University of Portsmouth, United Kingdom
José Borbinha	Lisbon Technical University, Portugal
Raju Buddharaju	National Library Board Singapore, Singapore
Thu-Mai Christian	University of North Carolina, United States
Euan Cochrane	Yale University, United States
Angela Dappert	DPC, United Kingdom
Kevin DeVorse	National Archives and Records Administration, United States
Wendy Duff	University of Toronto, Canada
Kresimir Duratec	TU Wien, Austria
Michael Factor	IBM Haifa, Israel
Ed Fay	LSE, United Kingdom
Andrea Goethals	Harvard University, United States
Neil Grindley	JISC, United Kingdom
Mariella Guercio	University of Roma Sapienza, Italy
Ross Harvey	RMIT, Australia
Andrew Jackson	British Library, United Kingdom
Leslie Johnston	Library of Congress, United States
Michelle Lindlar	German National Library of Science and Technology, Germany
Hansueli Locher	National Library of Switzerland, Switzerland
Jens Ludwig Göttingen	State and University Library, Germany
Nancy McGovern	MIT, United States
Don Mennerich	New York Public Library, United States
Courtney Mumma	Artefactual Systems, Canada
Heike Neuroth	Göttingen State and University Library, Germany
Tomasz Parkola	Poznan Supercomputing and Networking Center, Poland
Natalie Pang	Nanyang Technological University, Singapore
Andreas Rauber	Vienna University of Technology, Austria
Thomas Risse	L3S, Germany
Seamus Ross	University of Toronto, Canada
Sven Schlarb	ONB, Austria
Daisy Selematsela	National Research Foundation, South Africa
Robert Sharpe	Tessella, United Kingdom
Barbara Sierman	National Library of the Netherlands, Netherlands
Shigeo Sugimoto	University of Tsukuba, Japan
Kara Van Malssen	AV Preserve, United States
Lucia Maria Velloso de Oliveira	Fundacao Casa de Rui Barbosa, Brazil
Paul Wheatley	Paul Wheatley Consulting Ltd, United Kingdom
Andrew Wilson	Queensland State Archives, Australia
Qu Yunpeng	National Library of China, China
Zhixiong Zhang	National Science Library, China
Eld Zierau	Royal Library of Denmark, Denmark

PREFACE

Co-convenors Anne-Marie Schwirtlich (Director-General of the National Library of Australia) and Sue Roberts (CEO and State Librarian of Victoria) were delighted to be able to welcome 200 delegates (115 from Australia and 85 from 17 other countries) to Melbourne for the 11th International Conference on Digital Preservation (iPres), held from 6–10 October 2014.

The conference was structured around a programme of workshops on the Monday and Tuesday, papers, posters and panels during the core conference on Wednesday and Thursday, a plenary panel and closing remarks on Friday morning, and finished up with more workshops on Friday afternoon.

We received 92 total submissions and accepted 69 (22 full papers, 15 short papers and 13 posters, 5 demos, 6 workshops, 5 tutorials and 3 panels). The acceptance rate for research paper submissions was 51% (18 out of 35).

Keynotes

Dr Shaun Hendy (Professor of Physics and Director of Te Pūnaha Matatini – the Centre for Complex Systems and Networks – at the University of Auckland) presented on the connections between ‘Preservation, Innovation and Collaboration’. He reinforced the notion that ‘we must collaborate to innovate’ as digital preservation becomes increasingly important as governments and businesses increasingly move to adopt more data-driven decision-making and policy. Policy evaluation may take decades, so policy makers and researchers need rich digital records of decision-making processes and outputs to inform policy evaluation in multiple sectors including research, education and innovation.

Dr Ross Wilkinson (Executive Director of the Australian National Data Service) opened Tuesday’s session with a presentation on ‘The value of digital preservation: Exploring the benefits of preserved data to researchers, institutions and nations’. He discussed the different perspectives of researchers, research institutions, and the public at large on the value of data. He noted that there is a variety of interests that need to be taken into account when considering the preservation of data including the researchers who create data, the government and taxpayers who frequently fund research as well as research and collecting institutions that are often responsible for the long-term safekeeping of research outputs.

Dr Herbert Van de Sompel (Leader of the Prototyping Team at the Research Library of the Los Alamos National Laboratory) in his presentation, ‘When I say NOW, it’s already over’, noted that the pace and extent of web-based communication is ‘astounding’ and brings with it a focus on an eternal Now and a risk of neglecting the Past. He then explored some of the challenges of providing appropriate access to remnants of the ephemeral web information environment of the Now at some point in the Future with a particular emphasis on the complexity of assuring the temporal coherence of embedded web resources such as images and style sheets.

The programme

The conference this year was structured around two key strands – research and innovative practice. The purpose of this distinction was to promote both academic/research work and work that is clearly rooted in the actual experience of institutions undertaking digital preservation (while acknowledging that some work encapsulates both of these strands).

We had an excellent array of papers and posters with the award for Best Paper (sponsored by Ex Libris) going to Miksa, Vieira, Barateiro, and Rauber for their paper ‘VPlan – Ontology for collection of process version data’. The judges noted that ‘this paper introduces the VPlan ontology for managing significant characteristics of preserved processes and workflows that can be used for the automated verification of future redeployments of those workflows. By facilitating confidence in the independent replicability of scholarly claims based on computational analyses, VPlan helps to ensure the trustworthiness and creditability of scholarly advancement’.

Honourable mentions also went to Gattuso and McKinney, 'Converting WordStar to HTML4' and Graf, Gordea, and Ryan, 'A model for format endangerment analysis using fuzzy logic'.

The award for Best Poster (sponsored by CAARA – the Council of Australasian Archives and Records Authorities) went to Bähr, Rechert, Liebetaut and Lindlar for their poster on 'Functional Access to Electronic Media Collections using Emulation-as-a-Service'.

Papers covered a wide array of preservation topics including migration and emulation, file format management, registries and linked data, funding models, education and training, personal archiving and software-based art, web archiving, metadata and persistent identifiers.

A new addition to this year's conference was the Digital Preservation Systems Showcase in which a set of vendors presented their systems' implementation of a pre-defined set of functions, thereby providing a unique opportunity to view digital preservation systems in an 'apples to apples' comparison. The systems presented in the showcase were DuraCloud, Archivemata, RODA from KEEP Solutions, Preservica and Rosetta.

The showcase divided digital preservation functionality into four large categories:

- **How do we get content in** – which included ingest flows/methods, preconditioning/pre-ingest preparation, format identification, metadata extraction, fixity checking/assignment and virus checking.
- **How do we manage and preserve the content** – which included intellectual management, risk analysis, preservation planning, preservation execution, repository management (queries, monitoring, analysis, updates) and exception handling.
- **How can the content be accessed from the system** – which included derivative generation (static, on-the-fly, options of types), access rights, complex materials, handing over to other access methods and export of data.
- **Other considerations** – which included flexibility/interoperability of the system, exit strategy, Archival Information Package creation, relationships to PREMIS and other metadata schemas, data models, provenance, testing and storage.

Acknowledgments

This year's conference was generously supported by sponsors Preservica, Ex Libris, EMC, City of Melbourne, Microsoft, and the Council of Australasian Archives and Records Authorities.

The conference banquet (sponsored by Preservica) was held in the lovely Queen's Hall at the State Library of Victoria and provided an excellent opportunity for all the delegates to mingle, network, share information and generally enjoy the opportunity to talk to colleagues from near and afar.

The Organising Committee was very pleased with the success of the conference, and wishes to acknowledge the contribution of the many members of the Programme Committee who helped ensure the high quality of the papers, posters and ancillary events attached to iPres this year. The Programme Co-chairs would also like to acknowledge the efforts of the local organisers in ensuring the smooth running of the conference and the warm welcome extended to delegates which helped create a collegial atmosphere throughout the event.

Finally, we would like to acknowledge the volunteers from the Royal Melbourne Institute of Technology (RMIT), Charles Sturt University and the National Library of Australia who undertook so much of the behind-the-scenes work that made iPres 2014 so successful. We now pass the baton on to the University of North Carolina at Chapel Hill who will be hosting iPres in 2015. We look forward to seeing you all there.

Steve Knight and Christopher (Cal) Lee
Programme Chairs, iPres 2014

Monday 6 October 2014

Workshops

8.30AM-5PM	REGISTRATION			
9AM-1PM		Defining a Roadmap for Economically Efficient Digital Curation – A 4C Project Workshop Neil Grindley, Katarina Haage, Paul Stokes	Born Digital Appraisal, Ingest, and Processing Jessica Moran (Chair), Leigh Rosin, Douglas Elford, Emma Jolley, Somaya Langley, Donald Mennerich, Ben Fino-Radin, Christopher A. Lee, Erin O'Meara	PREMIS Implementation Fair Workshop Peter McKinney, Eld Zierau, Rebecca Guenther
1-2PM	LUNCH VENUE: QUEEN'S HALL			
2-5PM		ICA-AtoM, Archivematica and Digital Preservation Lise Summers, Meg Travers	Preserving Data to Preserving Research: Curation of Process and Context Angela Dappert, Rudolf Mayer, Stefan Pröll, Andreas Rauber, Raul Palma, Kevin Page, Daniel Garijo	Memento. Uniform and Robust Access to Resource Versions Herbert Van de Sompel

Tuesday 7 October 2014

Workshops

8.30AM-5PM

REGISTRATION

9AM-1PM

Digital Preservation Systems Showcase

Modelling file formats and technical environments using the NSLA Digital Preservation Technical Registry (DPTR)

Jan Hutar,
Ross Spencer,
Libor Coufal,
Kevin DeVorsej,
Jay Gattuso,
Steve Knight,
Peter McKinney

Acquiring and processing Born-digital data using the BitCurator environment
Christopher A. Lee

1-2PM

LUNCH VENUE: QUEEN'S HALL

2-5PM

Digital Preservation Systems Showcase

(Note: continuation of morning workshop; ends 5.15pm)

Modelling file formats and technical environments using the NSLA Digital Preservation Technical Registry (DPTR)

(Note: continuation of morning workshop)

Acquiring and processing Born-digital data using the BitCurator environment

(Note: continuation of morning workshop)

5.30-7.30PM

Welcome reception:
Sue Roberts
CEO and State Librarian

GENEROUSLY SPONSORED BY EMC

Wednesday 8 October 2014

8AM-5PM	REGISTRATION		
9-9.20AM	Opening and welcome: Anne-Marie Schwirtlich (Co-Convenor) Director-General National Library of Australia		
9.25-10.25AM	Keynote address: Preservation, Innovation and Collaboration Professor Shaun Hendy FRSNZ MacDiarmid Institute for Advanced Materials and Nanotechnology Professor of Physics and Director of Te Pūnaha Matatini – the Centre for Complex Systems and Networks – at the University of Auckland Chair: Steve Knight, National Library of New Zealand		
10.25-10.30AM	HOUSEKEEPING		
10.30-10.55AM	MORNING TEA VENUE: CONFERENCE CENTRE		
11-11.30AM	<p>Session Chair: Erin O'Meara, Gates Archive</p> <p>Linked Data Registry: A New Approach To Technical Registries Maïté Braud, James Carr, Kevin Leroux, Joseph Rogers, Robert Sharpe</p>	<p>Session Chair: Janet Delve, University of Portsmouth</p> <p>New Perspectives on Economic Modeling for Digital Curation Neil Grindley, Ulla Bøgvad, Hervé L'hours</p>	<p>Session Chair: David Anderson, University of Portsmouth</p> <p>11-11.20am Achieving Canonical PDF Validation Duff Johnson</p>
11.30AM-12PM	<p>A next generation technical registry: moving practice forward Peter McKinney, Steve Knight, Jay Gattuso, David Pearson, Libor Coufal, Kevin Devorsey, David Anderson, Janet Delve, Ross Spencer, Jan Hutař</p>	<p>11.30-11.50am Developing costing- models for emulation based access in scientific libraries Euan Cochrane, Dirk Von Suchodoletz, Klaus Rechert</p>	<p>11.20-11.40am Making the strange familiar: Bridging boundaries on database preservation projects Peter Francis, Alan Kong</p> <p>11.40am-12pm Addressing the personal digital archives needs of a contemporary artist Sam Meister</p>
12-12.30PM	<p>Automatic Discovery of Preservation Alternatives Supported by Community Maintained Knowledge Bases Rudolf Mayer, Johannes Binder, Stephan Strodl</p>	<p>11.50am-12.10pm Networked Instruction for Research Data Curation Education: The CRADLE Project Helen Tibbo, Thu-Mai Christian</p>	<p>Virtualisation as a Tool for the Conservation of Software-Based Artworks Patricia Falcao, Alistair Ashe, Brian Jones</p>
12.30-1.30PM	LUNCH VENUE: QUEEN'S HALL		

1.30-2PM	<p>Session Chair: Nancy McGovern, Massachusetts Institute of Technology</p> <p>Risk Driven Selection of Preservation Activities for Increasing Sustainability of Open Source Systems and Workflows</p> <p>Tomasz Miksa, Rudolf Mayer, Stephan Strodl, Ricardo Vieira, Goncalo Antunes, Andreas Rauber</p>	<p>Panel: Getting to Digital Preservation Tools that “just work”</p> <p>Paul Wheatley, Stephen Abrams, David Clipsham, Janet Delve, Ed Fay, Christopher A. Lee, Andrea Goethals</p>	<p>Session Chair: Serena Coates, State Library of Queensland</p> <p>Management and Orchestration of Distributed Data Sources to Simplify Access to Emulation-as-a-Service</p> <p>Thomas Liebetraut, Klaus Rechert</p> <p>A Persistent Identifier e-Infrastructure</p> <p>Barbara Bazzanella</p> <p>Access and Preservation in the cloud: Lessons from operating Preservica Cloud Edition</p> <p>Kevin O’Farrelly, Alan Gairey, James Carr, Maite Braud, Robert Sharpe (Note: ends 2.50pm)</p>
2-2.30PM	<p>Epimenides: Interoperability Reasoning for Digital Preservation</p> <p>Yannis Kargakis, Yannis Tzitzikas, René van Horik</p>		
2.30-3PM	<p>A Novel Metadata Standard for Multimedia Preservation</p> <p>Walter Allasia, Werner Bailer, Sergiu Gordea, Wo Chang</p>		
<p>3-3.25PM AFTERNOON TEA VENUE: THE COURTYARD</p>			
3.30-4PM	<p>Session Chair: David Pearson, National Library of Australia</p> <p>Sustainability Assessments at the British Library: Formats, Frameworks, & Findings</p> <p>Maureen Pennock, Paul Wheatley, Peter May</p>	<p>Panel: Preserving Government Business Systems</p> <p>Cassie Findlay, Neal Fitzgerald, Andrew Waugh, Richard Lehane</p>	<p>Session Chair: Andrea Goethals, Harvard University</p> <p>Converting WordStar to HTML4</p> <p>Jay Gattuso, Peter McKinney</p>
4-4.30PM	<p>A Model for Format Endangerment Analysis using Fuzzy Logic</p> <p>Roman Graf, Sergiu Gordea</p>		<p>VPlan – Ontology for Collection of Process Verification Data</p> <p>Tomasz Miksa, Ricardo Vieira, José Barateiro, Andreas Rauber</p>
4.30-5PM	<p>Occam’s Razor and File Format Endangerment Factors</p> <p>Heather Ryan</p>		<p>The Dendro research data management platform: Applying ontologies to long-term preservation in a collaborative environment</p> <p>João Rocha Da Silva, Joao Castro, Cristina Ribeiro, João Correia Lopes (Note: ends 4.50pm)</p>
<p>5.15PM & 5.30PM TOURS OF THE STATE LIBRARY OF VICTORIA (OPTIONAL)</p>			
<p>7.45-10PM DINNER VENUE: TO BE ANNOUNCED (NOTE: DINNER AT DELEGATES’ OWN EXPENSE)</p>			

Thursday 9 October 2014

8AM-5PM	REGISTRATION		
9-10AM	<p>Keynote address: The Value of Digital Preservation: Exploring the benefits of preserved data to researchers, institutions and nations Dr. Ross Wilkinson Australian National Data Service Chair: Christopher A. Lee, University of North Carolina at Chapel Hill</p>		
10-10.05AM	HOUSEKEEPING		
10.05-10.30AM	<p>Quick-fire Posters and Demonstrations Promo Chair: David Pearson, National Library of Australia</p>		
10.30-10.55AM	MORNING TEA VENUE: THE COURTYARD		
11-11.30AM	<p>Session Chair: Helen Tibbo, University of North Carolina at Chapel Hill A Perspective on Archiving the Scholarly Web Andrew Treloar, Herbert Van de Sompel</p>	<p>Session Chair: Andreas Rauber, Vienna Institute of Technology Building Information Modeling – A Game Changer for Interoperability and a Chance for Digital Preservation of Architectural Data? Michelle Lindlar</p>	<p>Session Chair: Seamus Ross, University of Toronto Supporting Analysis and Audit of Collaborative OAIS's by use of an Outer OAIS – Inner OAIS (OO-IO) Model Eld Zierau, Nancy McGovern</p>
11.30AM-12PM	<p>Identifying Digital Preservation Requirements: Digital Preservation Strategy and Collection Profiling at the British Library Michael Day, Ann MacDonald, Akiko Kimura, Maureen Pennock</p>	<p>11.30-11.50am DRM and digital preservation: A use case at the German National Library Tobias Steinke, Stefan Hein</p>	<p>11.30-11.50am Shaping a national consortium for digital preservation Darryl Mead</p>
12-12.30PM	<p>Then and Now: The Evolution of Digital Preservation and Collecting Requirements Over a Decade Leigh Rosin, Kirsty Smith (Note: ends 12.20pm)</p>	<p>11.50am-12.10pm Preservation of ebooks: from digitized to born-digital Sophie Derrot, Jean-Philippe Moreux, Clément Oury, Stéphane Reecht</p>	<p>11.50am-12.10pm The process of building a national trusted digital repository: Solving the Federation Problem Sharon Webb, Aileen O'Carroll</p>
12.30-1.30PM	LUNCH VENUE: QUEEN'S HALL		

1.30-3PM Posters and Demonstrations

3-3.25PM AFTERNOON TEA VENUE: THE COURTYARD

3.30-4PM
Session Chair:
Jose Borbinha,
Lisbon Technical University
A pragmatic approach to significant environment information collection to support object reuse
Fabio Corubolo, Anna Grit Eggers, Adil Hasan, Mark Hedges, Simon Waddington, Jens Ludwig

Session Chair:
Neil Grindley, JISC
The SCAPE Policy Framework, maturity levels and the need for realistic preservation policies
Barbara Sierman

4-4.30PM
4-4.20pm
Integrating e-government systems with digital archives
Kuldar Aas, Janet Delve, Ricardo Vieira, Ross King

Self-assessment of the Digital Repository at the State and University Library, Denmark - a Case Study
Gry V. Elstrøm, Jette G. Junge

4.30-5PM
4.20-4.40pm
Decommissioning of legacy systems: A methodology for identifying and preserving records of ongoing business value in legacy business systems
Ingrid MacDonald, Adrian Cunningham, Anna Morris, Neal Fitzgerald

A Digital Preservation Environment Maturity Matrix for NSLA Libraries
Sarah Slade, David Pearson, Libor Coufal

7-11PM **CONFERENCE DINNER** VENUE: QUEEN'S HALL
(NOTE: DINNER IS INCLUSIVE FOR FULL REGISTERED DELEGATES)

GENEROUSLY SPONSORED BY PRESERVICA

Friday 10 October 2014

8-9AM	REGISTRATION		
9-10AM	Keynote address: When I say NOW, it's already over Herbert Van de Sompel Los Alamos National Laboratory Chair: Ross King, Austrian Institute of Technology		
10-10.05AM	HOUSEKEEPING		
10.05-10.30AM	MORNING TEA VENUE: THE COURTYARD		
10.30AM-12PM	Panel/debate: Are we Succeeding? Facilitator: Shaun Hendy Andreas Rauber, Barbara Sierman, Ross Wilkinson, Seamus Ross, Ed Faye, Helen Tibbo		
12-12.20PM	Closing remarks: Andrew Treloar, Australian National Data Service Chair: Sarah Slade, State Library of Victoria		
12.20-12.30PM	Conference close		
12.30-1.30PM	LUNCH VENUE: QUEEN'S HALL		
1.30-4.30PM	Workshop: Applying the TIMBUS Approach to Preserving Context in Digital Libraries Carlos Coutinho, Paul Gooding	Workshop: Surveying ISO Standards for PDF: archive, accessibility, engineering, metadata, 3D data and PDF itself Duff Johnson	Workshop: Leveraging Web Archiving Tools for Research and Long-Term Access Lori Donovan

CONTENTS

LONG AND SHORT PAPERS

Linked Data Registry: A New Approach To Technical Registries Maïté Braud, James Carr, Kevin Leroux, Joseph Rogers, Robert Sharpe.....	20
New Perspectives on Economic Modeling for Digital Curation Neil Grindley, Ulla Bøgvad, Hervé L'Hours.....	29
Achieving Canonical PDF Validation Duff Johnson.....	39
A next generation technical registry: moving practice forward Peter McKinney, Steve Knight, Jay Gattuso, David Pearson, Libor Coufal, Kevin Devorsey, David Anderson, Janet Delve, Ross Spencer, Jan Hutař.....	44
Developing costing models for emulation based access in scientific libraries Euan Cochrane, Dirk Von Suchodoletz, Klaus Rechert.....	51
Making the strange familiar: Bridging boundaries on database preservation projects Peter Francis, Alan Kong.....	59
Automatic Discovery of Preservation Alternatives Supported by Community Maintained Knowledge Bases Rudolf Mayer, Johannes Binder, Stephan Strodl.....	65
Networked Instruction for Research Data Curation Education: The CRADLE Project Helen Tibbo, Thu-Mai Christian.....	75
Addressing the personal digital archives needs of a contemporary artist Sam Meister.....	79
Virtualisation as a Tool for the Conservation of Software-Based Artworks Patricia Falcao, Alistair Ashe, Brian Jones.....	83
Risk Driven Selection of Preservation Activities for Increasing Sustainability of Open Source Systems and Workflows Tomasz Miksa, Rudolf Mayer, Stephan Strodl, Ricardo Vieira, Goncalo Antunes, Andreas Rauber...91	91
Management and Orchestration of Distributed Data Sources to Simplify Access to Emulation-as-a-Service Thomas Liebetraut, Klaus Rechert.....	101
Epimenides: Interoperability Reasoning for Digital Preservation Yannis Kargakis, Yannis Tzitzikas, René van Horik.....	110
A Persistent Identifier e-Infrastructure Barbara Bazzanella.....	118
A Novel Metadata Standard for Multimedia Preservation Walter Allasia, Werner Bailer, Sergiu Gordea, Wo Chang.....	128

Access and Preservation in the cloud: Lessons from operating Preservica Cloud Edition Kevin O'Farrelly, Alan Gairey, James Carr, Maite Braud, Robert Sharpe.....	137
Sustainability Assessments at the British Library: Formats, Frameworks, & Findings Maureen Pennock, Paul Wheatley, Peter May.....	141
Converting WordStar to HTML4 Jay Gattuso, Peter McKinney.....	149
A Model for Format Endangerment Analysis using Fuzzy Logic Roman Graf, Sergiu Gordea.....	160
VPlan – Ontology for Collection of Process Verification Data Tomasz Miksa, Ricardo Vieira, José Barateiro, Andreas Rauber.....	169
Occam's Razor and File Format Endangerment Factors Heather Ryan.....	179
The Dendro research data management platform: Applying ontologies to long-term preservation in a collaborative environment João Rocha Da Silva, Joao Castro, Cristina Ribeiro, João Correia Lopes.....	189
A Perspective on Archiving the Scholarly Web Andrew Treloar, Herbert Van de Sompel.....	194
Building Information Modeling – A Game Changer for Interoperability and a Chance for Digital Preservation of Architectural Data? Michelle Lindlar.....	199
Supporting Analysis and Audit of Collaborative OAIS's by use of an Outer OAIS – Inner OAIS (OO-IO) Model Eld Zierau, Nancy McGovern.....	209
Identifying Digital Preservation Requirements: Digital Preservation Strategy and Collection Profiling at the British Library Michael Day, Ann MacDonald, Akiko Kimura, Maureen Pennock.....	219
DRM and digital preservation: A use case at the German National Library Tobias Steinke, Stefan Hein.....	228
Shaping a national consortium for digital preservation Darryl Mead.....	232
Then and Now: The Evolution of Digital Preservation and Collecting Requirements Over a Decade Leigh Rosin, Kirsty Smith.....	235
Preservation of ebooks: from digitized to born-digital Sophie Derrot, Jean-Philippe Moreux, Clément Oury, Stéphane Reecht.....	239
The process of building a national trusted digital repository: Solving the Federation Problem Sharon Webb, Aileen O'Carroll.....	244

A pragmatic approach to significant environment information collection to support object reuse Fabio Corubolo, Anna Grit Eggers, Adil Hasan, Mark Hedges, Simon Waddington, Jens Ludwig.....	249
The SCAPE Policy Framework, maturity levels and the need for realistic preservation policies Barbara Sierman.....	259
Integrating e-government systems with digital archives Kuldar Aas, Janet Delve, Ricardo Vieira, Ross King.....	267
Self-assessment of the Digital Repository at the State and University Library, Denmark - a Case Study Gry V. Elstrøm, Jette G. Junge.....	271
Decommissioning of legacy systems: A methodology for identifying and preserving records of ongoing business value in legacy business systems Ingrid MacDonald, Adrian Cunningham, Anna Morris, Neal Fitzgerald.....	279
A Digital Preservation Environment Maturity Matrix for NSLA Libraries Sarah Slade, David Pearson, Libor Coufal.....	284

PANELS

Getting to Digital Preservation Tools that “just work” Paul Wheatley, Stephen Abrams, David Clipsham, Janet Delve, Ed Fay, Christopher A. Lee, Andrea Goethels.....	293
Preserving Government Business Systems Cassie Findlay, Neal Fitzgerald, Andrew Waugh, Richard Lehane.....	295
Are we Succeeding? Facilitator: Shaun Hendy Andreas Rauber, Barbara Sierman, Ross Wilkinson, Seamus Ross, Ed Faye, Helen Tibbo.....	297

CLOSING REMARKS

A Geek’s Perspective on iPres 2014 Andrew Treloar.....	300
--	-----

WORKSHOPS AND TUTORIALS

Defining a Roadmap for Economically Efficient Digital Curation - A 4C Project Workshop Neil Grindley, Katarina Haage, Paul Stokes.....	302
Born Digital Appraisal, Ingest, and Processing Jessica Moran (Chair), Leigh Rosin, Douglas Elford, Emma Jolley, Somaya Langley, Donald Mennerich, Ben Fino-Radin, Christopher A. Lee, Erin O’Meara.....	305
PREMIS Implementation Fair Workshop Peter McKinney, Eld Zierau, Rebecca Guenther.....	306
ICA-Atom, Archivematica and Digital Preservation Lise Summers, Meg Travers.....	309



Preserving Data to Preserving Research: Curation of Process and Context Angela Dappert, Rudolf Mayer, Stefan Pröll, Andreas Rauber, Raul Palma, Kevin Page, Daniel Garijo.....	310
Memento. Uniform and Robust Access to Resource Versions Herbert Van de Sompel.....	313
Digital Preservation Systems Showcase.....	315
Modelling file formats and technical environments using the NSLA Digital Preservation Technical Registry (DPTR) Jan Hutar, Ross Spencer, Libor Coufal, Kevin DeVorsej, Jay Gattuso, Steve Knight, Peter McKinney.....	322
Acquiring and processing Born-digital data using the BitCurator environment Christopher A. Lee.....	324
Applying the TIMBUS Approach to Preserving Context in Digital Libraries Carlos Coutinho, Paul Gooding.....	326
Surveying ISO Standards for PDF: archive, accessibility, engineering, metadata, 3D data and PDF itself Duff Johnson.....	328
Leveraging Web Archiving Tools for Research and Long-Term Access Lori Donovan.....	330
POSTERS AND DEMONSTRATIONS	
Functional Access to Electronic Media Collections using Emulation-as-a-Service Thomas Bähr, Michelle Lindlar, Klaus Rechert and Thomas Liebetraut.....	332
The Digital POWRR Project: Enabling Collaborative Pragmatic Digital Preservation Approaches Stacey Erdman.....	335
E-Ark Project – Best Practice Survey on the Archiving of Digital Material David Anderson, Clive Billenness and Kathrine Johansen.....	337
State Records NSW Digital Archives Cassie Findlay.....	340
Lessons learned in developing digital preservation tools the right way (and the wrong way) Paul Wheatley.....	342
Preservation of Web Content - An Emulation-based Case Study Dennis Wehrle, Thomas Liebetraut and Klaus Rechert.....	345
Sustainable, justifiable, repeatable: A digital preservation strategy using metrics-based (re) appraisal Brent West, Joanne Kaczmarek and Jordan Phoenix.....	348
Presto4U- European Technology for Digital Audiovisual Media Preservation Jacqui Gupta.....	351

Quality Assurance Tools for Digital Repositories Roman Graf.....	354
Metadata Representation and Risk Management Framework for Preservation Processes in AV Archives Werner Bailer, Martin Hall-May and Galina Veres.....	357
ROHub - A Digital Library for Sharing and Preserving Research Objects Raul Palma, Oscar Corcho, Jose Manuel Gomez-Perez and Cezary Mazurek.....	360
A Biological Perspective on Digital Ecosystems and Digital Preservation Michael J. Pocklington, Anna G. Eggers, Fabio Corubolo, Mark Hedges, Jens Ludwig and Sándor Darányi.....	363
Legal Aspects for Digital Preservation Domain Barbara Kolany, Marzieh Bakhshandeh, Jose Borbinha and Silviya-Aleksandrova Yankova.....	366
Demonstrating a Digital Curation Workflow using the BitCurator Environment Christopher A. Lee.....	372
Curation Cost Exchange platform Luis Faria, Neil Grindley.....	374
Demonstration of an Integrated System for Platform-independent Description of Human-Machine Interactions Oleg Stobbe, Klaus Rechert, Dirk von Suchodoletz.....	377
Reviving Antique Software: Curation Challenges and the Olive Archive Daniel Ryan, Gloriana St. Clair.....	379
NLA Software and File Formats Knowledge Base Dr Mark Pearson, Gareth Kay.....	383
