From Ray Cats to DPC RAM:
How Best to Preserve a Digital Memory of the Nuclear Decommissioning Process

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A project

“Reliable, Robust and Resilient Digital Infrastructure for Nuclear Decommissioning”

In November 2018 the DPC and the UK Nuclear Decommissioning Authority (NDA) began a 4 year collaborative digital preservation project.
Mission: to clean up the UK’s nuclear sites safely, securely and cost-effectively with care for people and the environment.

Decommissioning and demolishing all buildings, as well as the treatment and disposal of associated waste, both radioactive and conventional.
Digital preservation challenges

• Significant legacy data (including waste records)
• Data often dependent on legacy hardware and software
• Knowledge of many systems is dependent on an aging staff contingent
• Complex data objects – e.g.: 3D digital engineering
• Semi-active records
• Large quantity of analogue audio-visual content
• High value records and long retention periods
• Communication required across multiple sites
“...it is not just a question of handing down a message, but of keeping that message interpretable, meaningful, credible and usable over time”
Figure 1.3. *Image from the documentary “The Ray Cat Solution”*

Digital preservation policy and procedure

Case studies...including:
  - Preservation of records from EDRMS
  - Preservation of legacy databases
  - Preservation of 3D engineering models
  - Preservation of geospatial data
  - Digital preservation system requirements
  - Digital preservation competencies/skills
  - Digitisation standards

Assessment and benchmarking
Benchmarking with DPC RAM

• Our Rapid Assessment Model (RAM) is a maturity model for digital preservation
• It allows you to understand where you are and where you would like to be
  – ...and track your progress over time
• Within the DPC it also allows for benchmarking against others.
• It is relatively quick and easy to carry out a self-assessment
## DPC RAM sections

### Organizational capabilities

<table>
<thead>
<tr>
<th></th>
<th>Capability</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Organizational viability</td>
<td>Governance, organizational structure, staffing and resourcing of digital preservation activities.</td>
</tr>
<tr>
<td>B</td>
<td>Policy and strategy</td>
<td>Policies, strategies, and procedures which govern the operation and management of the digital archive.</td>
</tr>
<tr>
<td>C</td>
<td>Legal basis</td>
<td>Management of contractual, licensing, and other legal rights and responsibilities relating to acquiring, preserving and providing access to digital content (e.g. licencing, copyright, terms and conditions of use, data protection regulation).</td>
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<tr>
<td>D</td>
<td>IT capability</td>
<td>Information Technology capabilities related to digital preservation activities.</td>
</tr>
<tr>
<td>E</td>
<td>Continuous improvement</td>
<td>Processes for the assessment of organizational capabilities, the definition of goals and strategies.</td>
</tr>
<tr>
<td>F</td>
<td>Community</td>
<td>Engagement with and contribution from the digital preservation community.</td>
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### Service capabilities

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<tbody>
<tr>
<td>G</td>
<td>Acquisition, transfer and ingest</td>
<td>Processes to acquire or transfer content and ingest it into a digital archive.</td>
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<tr>
<td>H</td>
<td>Bitstream preservation</td>
<td>Processes to ensure the storage and integrity of digital content to be preserved.</td>
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<tr>
<td>I</td>
<td>Content preservation</td>
<td>Processes to preserve the meaning or functionality of the digital content and ensure its continued accessibility and usability over time.</td>
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<tr>
<td>J</td>
<td>Metadata management</td>
<td>Processes to create and maintain sufficient metadata to support preservation, management and use of preserved digital content.</td>
</tr>
<tr>
<td>K</td>
<td>Discovery and access</td>
<td>Processes to enable discovery of digital content and provide access for users.</td>
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DPC RAM results

Digital Preservation Coalition Rapid Assessment Model (DPC RAM):
Anonymous Archive

- A. Organizational viability
- B. Policy and strategy
- C. Legal basis
- D. IT capability
- E. Continuous Improvement
- F. Community
- G. Acquisition and Ingest
- H. Bitstream Preservation
- I. Logical Preservation
- J. Metadata Management
- K. Discovery and Access

Target Level vs Current Level

where am I?
where would I like to be?
EDRMS Preservation Toolkit

Offers advice on the preservation of records within an EDRMS:

• Flags up some of the key challenges that you may face
• Provides you with the questions that you need to ask within your own organisation
• Maps-out a process for moving forward
• Provides examples of how others have tackled the challenge

https://www.dpconline.org/digipres/implement-digipres/edrms-preservation-toolkit
Core Requirements for a DP System

• 10 high-level functional requirements
• **Designed** to be modified
  – Add/remove requirements
    *must ↔ should ↔ could*

[https://www.dpconline.org/digipres/implement-digipres/procurement-toolkit](https://www.dpconline.org/digipres/implement-digipres/procurement-toolkit)
Preserving 3D design records


Now on general release

http://doi.org/10.7207/twr21-01
New Technology Watch Guidance Notes

- Preserving 3D
- Preserving CAD
- Preserving GIS
- Preserving Audio
- Preserving Moving Images
- Preserving Raster Images
- Preserving Databases
- Preserving Documents
- Preserving Email
- Preserving Spreadsheets
Workforce Development

• A new Competency Framework
• A Competency Audit Toolkit
• Being piloted with a handful of DPC Members

— (see further announcements at this conference!)
What’s next?

- Working with A/V content
- Building on CAT results
- Preservation of databases
- A further phase?
Thanks for listening

Further details of our project with the NDA here: https://www.dpconline.org/digipres/collaborative-projects/nda-project

...or email us with any questions:
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