From Ray Cats to DPC RAM:

How Best to Preserve a Digital Memory of the Nuclear Decommissioning Process

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DigitalPreservationCoalition

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.

What does the NDA do?

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.
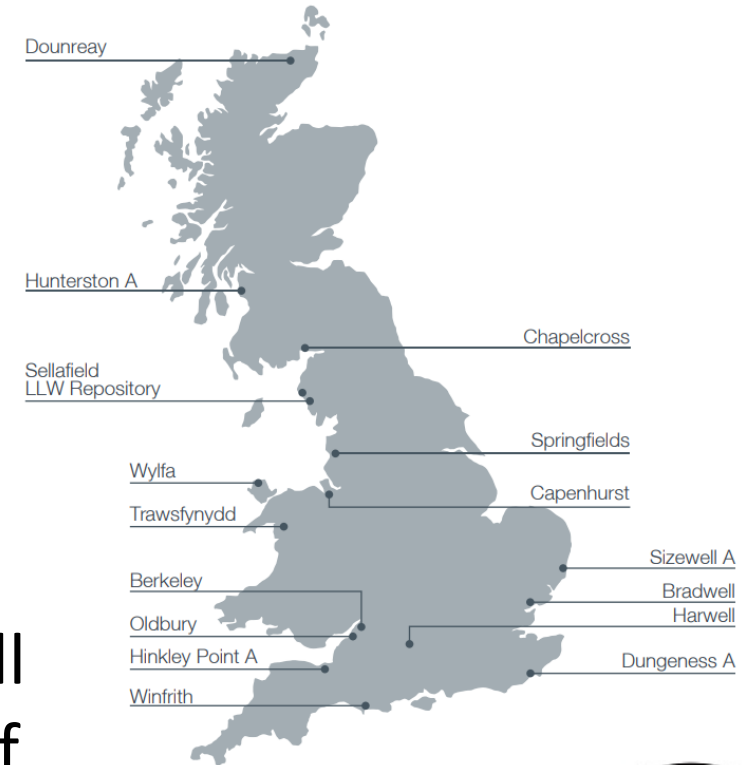
Digital preservation challenges

- 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

Earlier thinking

"...it is not just a question of handing down a message, but of keeping that message interpretable, meaningful, credible and usable over time"
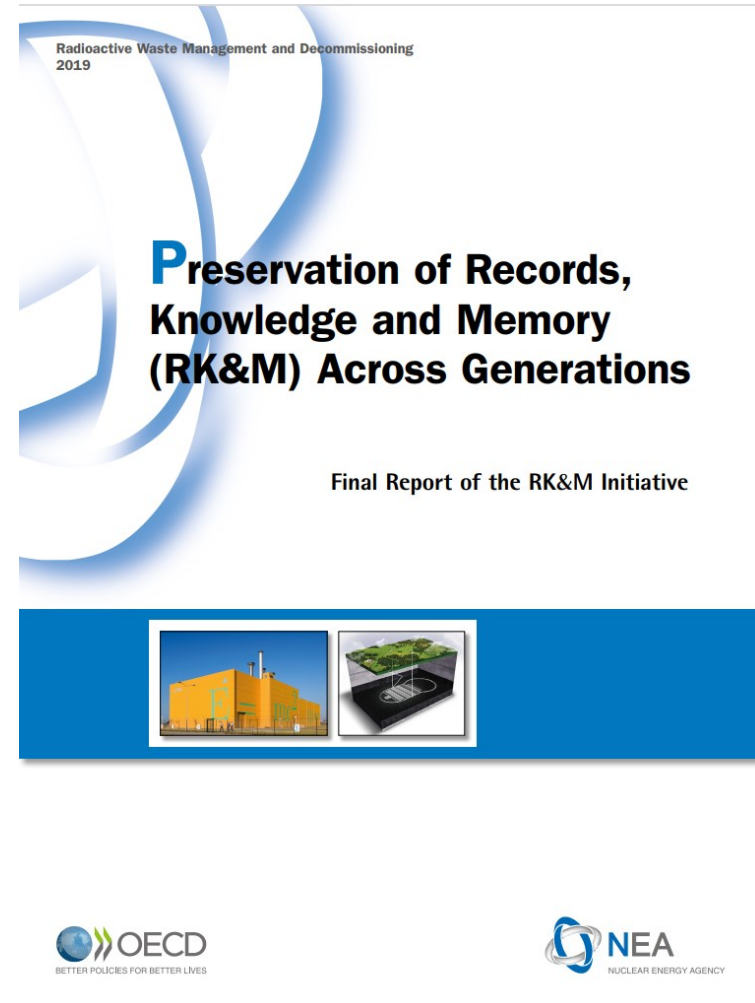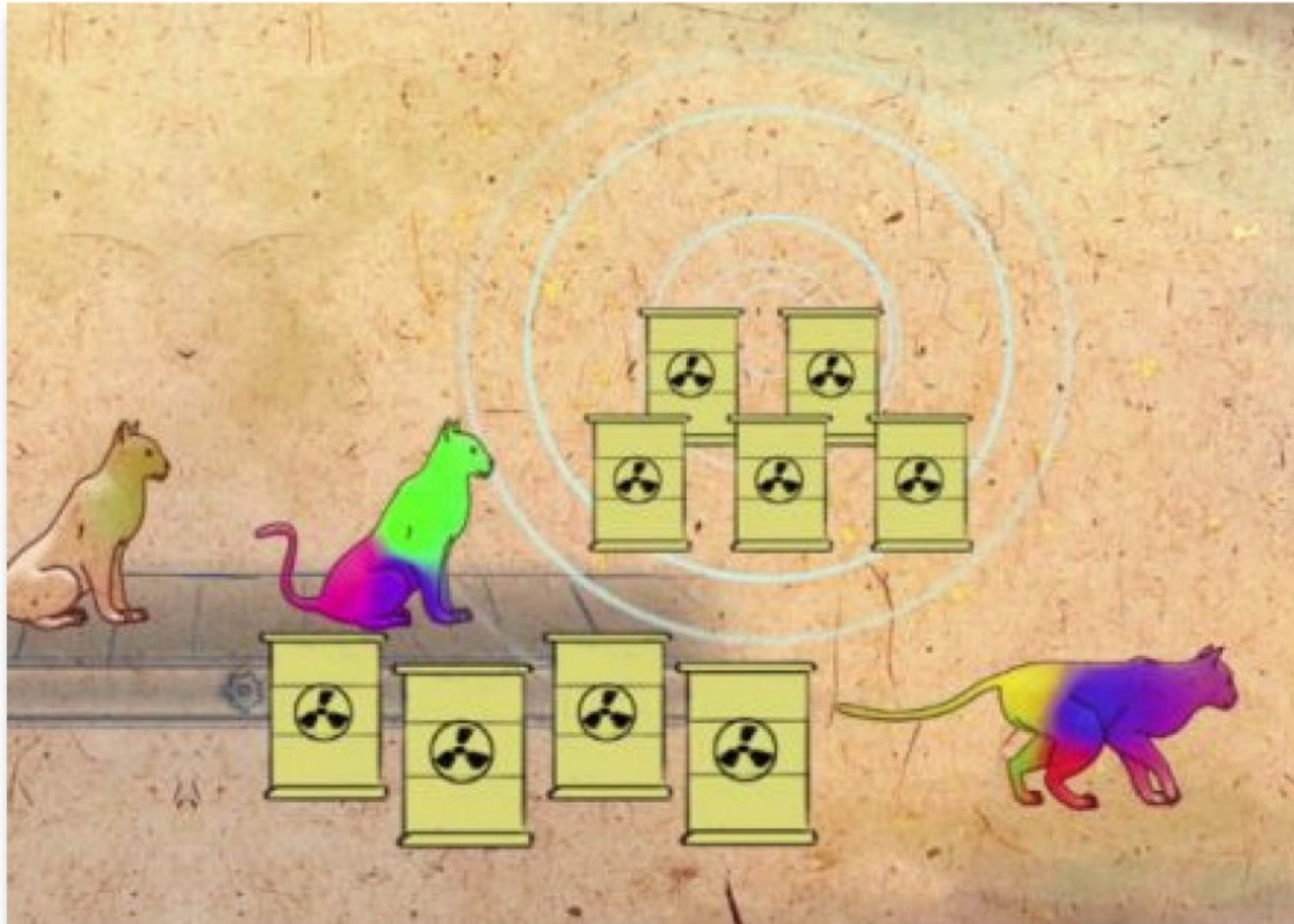
Radioactive Waste Management and Decommissioning 2019

Preservation of Records, Knowledge and Memory (RK&M) Across Generations

Final Report of the RK&M Initiative

OECD
BETTER POLICIES FOR BETTER LIVES

NEA
NUCLEAR ENERGY AGENCY

Figure 1.3. **Image from the documentary "The Ray Cat Solution"**

Source: Benjamin Huguet (2015).

What have we been working on?

- 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

A	Organizational viability	Governance, organizational structure, staffing and resourcing of digital preservation activities.
B	Policy and strategy	Policies, strategies, and procedures which govern the operation and management of the digital archive.
C	Legal basis	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).
D	IT capability	Information Technology capabilities for supporting digital preservation activities.
E	Continuous improvement	Processes for the assessment of current capabilities, the definition of goals and ...
F	Community	Engagement with and contribution to the community.

0 - Minimal awareness
1 – Awareness
2 – Basic
3 – Managed
4 – Optimized

Service capabilities

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

DPC RAM results

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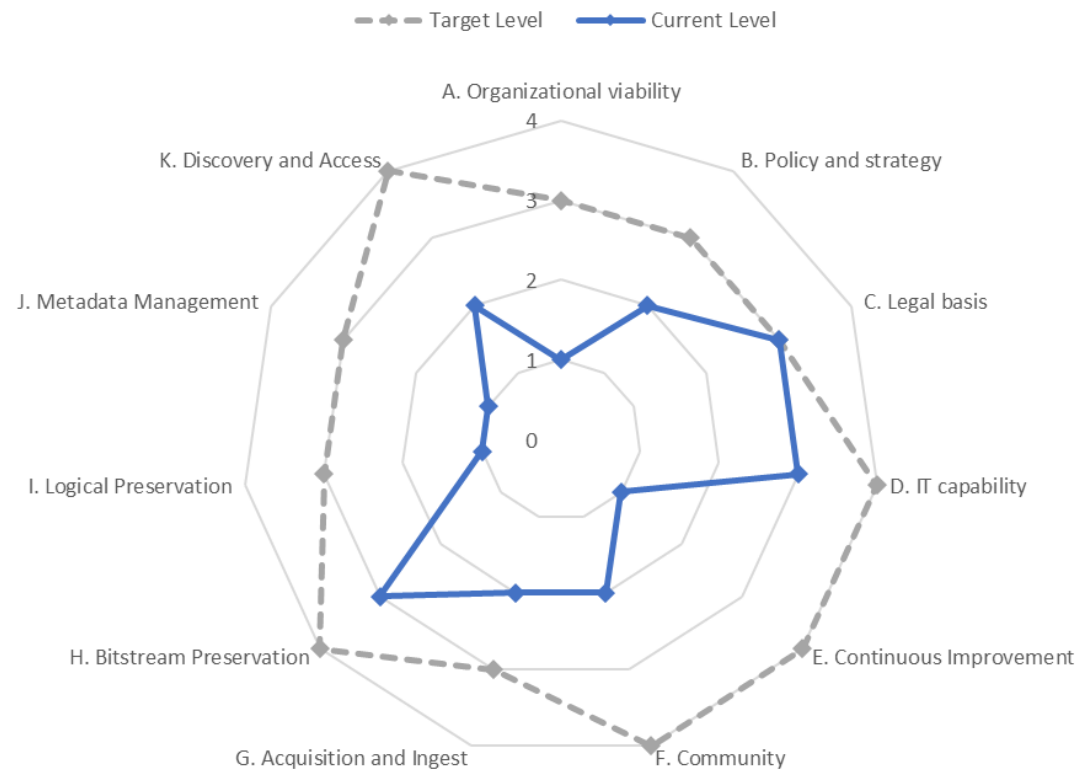
EDRMS Preservation Toolkit

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
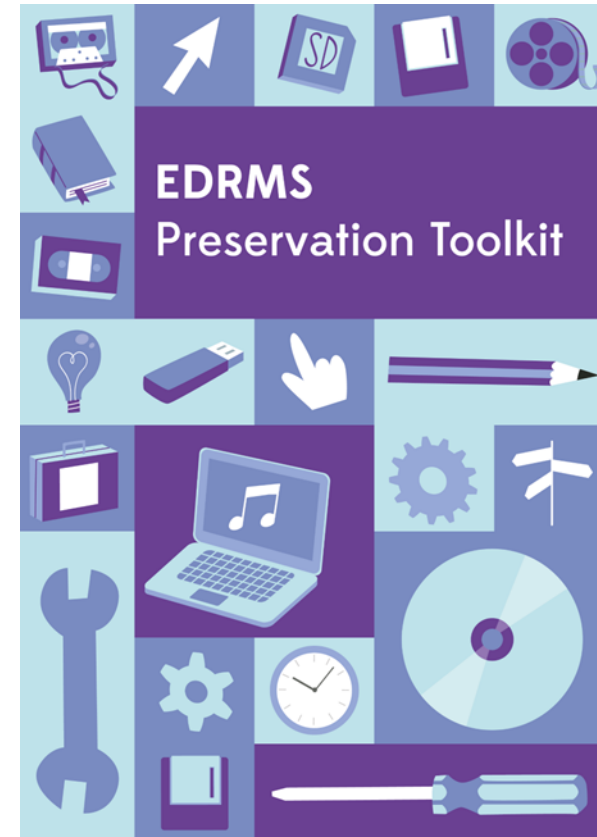
Core Requirements for a DP System

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

https://www.dpconline.org/digipres/implement-digipres/procurement-toolkit

Preserving 3D design records

Technology Watch Report on Preserving Born-Digital Design and Construction 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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