

# Community presentation from the Digital Preservation Coalition

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Digital**Preservation**Coalition

# About the DPC

- We support our members to 'do' Digital Preservation
- Not for profit, charity
- Member funded, member led
- c. 125 members
- Founded in 2002, initially UK focused, but now international



# About our Members



# A project

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

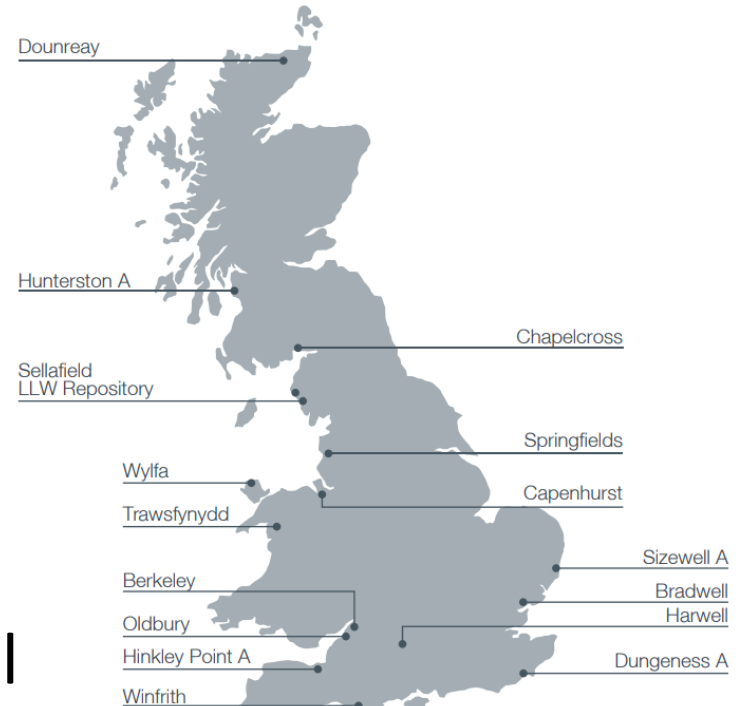
In November 2018 the DPC and the UK Nuclear Decommissioning Authority began a 4 year collaborative digital preservation project.



# 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 – eg: 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

# Project aims

To advise, guide and develop policy that will enable the NDA to:

- Access and secure critical **legacy** data and systems
- Adapt **current** data and systems to ensure long term viability
- Commission **future** data and systems with long term resilience from the outset

Working within the DPC Membership to share challenges and outputs and validate approaches.

# Maturity Modelling – DPC RAM

## Also in this section

What is digital preservation?

Discover Good Practice

Implement Digital Preservation

Rapid Assessment Model

Who can use DPC RAM?

How long will it take?

How to use DPC RAM

How often should it be used?

What to do after DPC RAM

How to level up with DPC RAM

Still

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## DPC Rapid Assessment Model

Maturity Modelling

### What is DPC RAM?

The DPC Rapid Assessment Model (RAM) is a digital preservation maturity modelling tool that has been designed to enable rapid benchmarking of an organization's digital preservation capability.

This model aims to be:

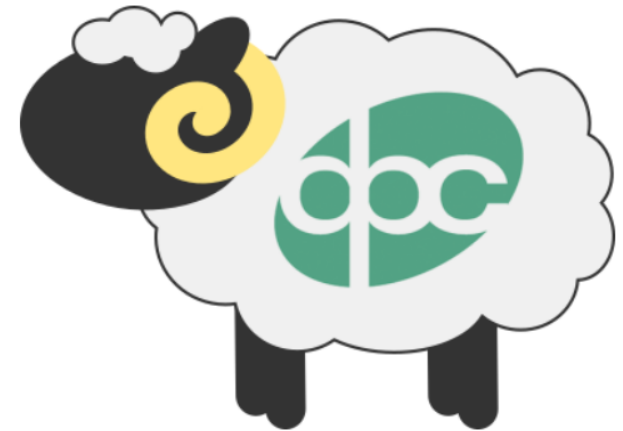
- Applicable for organizations of any size and in any sector
- Applicable for all content of long-term value
- Preservation strategy and solution agnostic
- Based on existing good practice
- Simple to understand and quick to apply

### Download DPC RAM

The model is freely available to all.

The current version of DPC RAM is version 2 (released in March 2021). Version 1 is still available and can be accessed from the ['Previous versions'](#) page.

- [The DPC Rapid Assessment Model](#) - the full model, introductory text and a worksheet
- [Digital worksheet](#) - an Excel worksheet to record and visualize your assessment results





# DPC RAM sections

## Organizational capabilities

A	<a href="#">Organizational viability</a>	Governance, organizational structure, staffing and resourcing of digital preservation activities.
B	<a href="#">Policy and strategy</a>	Policies, strategies, and procedures which govern the operation and management of the digital archive.
C	<a href="#">Legal basis</a>	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	<a href="#">IT capability</a>	Information Technology capabilities for digital preservation activities.
E	<a href="#">Continuous improvement</a>	Processes for the assessment of current capabilities, the definition of goals and the implementation of improvement plans.
F	<a href="#">Community</a>	Engagement with and contribution to the digital preservation community.

0 - Minimal awareness

1 – Awareness

2 – Basic

3 – Managed

4 – Optimized

## Service capabilities

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

# DPC RAM – Bitstream preservation

## H - Bitstream preservation

Processes to ensure the storage and integrity of digital content to be preserved.

0 - Minimal awareness	The organization has minimal awareness of either the need for bitstream preservation or basic principles for applying it.
1 – Awareness	The organization is aware of the need for bitstream preservation, and has an understanding of basic principles.
2 – Basic	The organization has implemented a basic process for bitstream preservation, for example: <ul style="list-style-type: none"><li>• Dedicated storage is available to meet current preservation needs.</li><li>• Staff know where content is stored.</li><li>• Replication is based on simple backup regimes.</li><li>• Checksums are generated for all content.</li><li>• There is an understanding of which staff members should be authorized to access the content.</li></ul>

# DPC RAM – Bitstream preservation

3 – Managed	<p>The organization stores content in a managed way consistent with preservation good practice for replication and integrity checking. For example:</p> <ul style="list-style-type: none"><li>● Content is managed with a combination of integrity checking and content replication to one or more locations.</li><li>● Decisions on the frequency of integrity checking and the number of copies held take into consideration risks, value of the content and costs (both financial and environmental).</li><li>● Content failing integrity checks is repaired.</li><li>● Authorizations to access the content by staff are enforced and documented.</li><li>● Tests are routinely carried out to verify the effectiveness of backups, replication and integrity checking.</li></ul>
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# DPC RAM – Bitstream preservation

## 4 – Optimized

The organization applies a highly managed storage regime with proactive risk management, for example:

- Geographically separated copies are held to minimise the risk of loss due to disaster.
- Different storage technologies or services are in use.
- Future storage needs are regularly predicted and updated and storage capacity is monitored and revised accordingly.
- Content integrity and processes to ascertain integrity are independently reviewed
- All access to content is logged and reviewed for unauthorized use and/or changes made: which content, when and by whom.

# Bitstream preservation findings

- On average the community is sitting just above the level 2 (basic level)
- But they would like to be somewhere between managed (3) and optimized (4) levels
- One of biggest gaps between where people are now and where they would like to be
- Often a priority area in roadmap/forward plan
- We hope that we can support and help the community to move towards their goals

# Core Requirements for a DP System

- 10 high-level functional requirements
- Designed to be modified, e.g.
  - Add/remove requirements
  - “must” ↔ “should” ↔ “could”
- Linked to DPC’s Procurement Toolkit

# Core Requirements for a DP System

**6. The system must support replication and storage management. The system must have the ability to store multiple copies of ingested digital content on different storage systems in different geographical locations.**

Rationale: Keeping multiple, managed copies of digital content helps identify and fix errors.

# Core Requirements 6 in detail...

6.1 The system must automatically manage the replication of digital content to multiple storage locations (potentially in different geographical locations).

6.2 The system should perform regular system backups.

6.3 The system should be able to regularly test and report on its backup and restore capabilities.

6.4 The system should create and retain management reports on replication, storage management, backup and restore activities.



# NDA storage requirements

- A very strong use-case for storage that is...
  - Robust
  - Reliable
  - (Super) Resilient
  - (Very!) Long-term
  - Low environmental impact

# Thanks for listening

- You can find the Rapid Assessment Model (DPC RAM) on our website: <https://www.dpconline.org/digipres/implement-digipres/dpc-ram>
- ...and 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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