

# **Digital Preservation Management Tools: Helping Organizations Build Sustainable Programs**

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# DP Standards and Practice

What does a Digital Preservation Program need to do?

TDR: Trusted Digital Repositories, 2002

What Technical environment is needed to do that?

OAIS: Open Archival Information System Reference Model

ISO 14721: 2003 & 2012 & 2017...

Who provides the digital content and how?

PAIMAS: Producer Archive Interface Method Abstract Standard

ISO 2005 and specification pending

What kind of metadata is needed for digital preservation?

PREMIS: Preservation Metadata Implementation Strategies

version 1.0 in 2005, 2.1 in 2011, and 3 in 2015

How do we demonstrate good practice?

Audit and Certification of Trustworthy Digital Repositories

ISO 16363: 2012 based on Trustworthy Repositories Audit & Certification (TRAC), 2007

# Attributes of a Trusted Digital Repository (TDR)

**OAIS Compliance** – conform with ISO standard

**Administrative Responsibility** – explicit high-level commitment

**Organizational Viability** – capacity and intention to preserve

**Financial Sustainability** – designated funding

**Technological and Procedural Suitability** – appropriate for you

**System Security** – daily protection and for emergencies

**Procedural Accountability** – transparency and cumulative evidence

# DP Management Tools and Techniques

## OAIS Compliance

**Principles:** Digital Curation and Preservation Principles

## Administrative Responsibility

**Policy:** Digital Preservation Policy Framework

**Scope:** Digital Content Reviews (high-level inventory)

## Financial Sustainability

**Costs:** Curation Cost Exchange

## Technological and Procedural Suitability

**Workflows:** Digital Content Management Workflows

## System Security

**Preparedness:** Disaster Preparedness for Digital Content

## Procedural Accountability

**Self-assessment:** Self-assessment and Audit (TRAC Review tool)

# Adopt operating principles

Principles that are grounded in standards and good practice

## Digital Preservation Principles

- Providing a high-level frame as a guide for developing the program
- Opening a high-level discussion about the current status at your organization
- Beginning to agree upon local use of terms and concepts

## DP Principles: Example

1. Identify the digital content within our scope of responsibility  
The repository is producing a high-level inventory of its existing and anticipated digital content.

# Example: Digital Preservation Principles

1. Identify digital content within **scope** of responsibility
2. Specify digital content to **preserve**
3. Establish requirements for storing files in **preservation formats**
4. Determine (and review) best option(s) for **storing digital content**
5. Verify that digital content is secure during **day-to-day** activities
6. Ensure that digital content is prepared for an **emergency**
7. Develop (and review) **plans for managing** digital content over time
8. Define standards-based **framework** to develop / manage program
9. Demonstrate that **long-term access** is goal of digital preservation
10. Stipulate that means to **deliver digital content** will remain current

# Develop DP Policy

Every TDR needs a high-level DP policy

## Digital Preservation Policy Framework

### Digital Preservation Management Model Document

**Version 3.0 Digital Curation and Preservation Framework: Outline**

Developed by Nancy McGovern, last revised September 2014

#### Overview

This document provides an outline for constructing a digital curation and preservation framework and offers a step towards identifying core components of a framework to encourage a community standard for organizations to use. The outline:

- Addresses explicitly the seven attributes of a Trusted Digital Repository
- Presents the high-level perspective of an organization's program
- Reflects current not future capabilities of the program
- Provides links to documents containing more detailed and frequently-updated documents, e.g., procedural documents
- Points to the organization's action plan for near-term priorities and timeframes
- Specifies the approval and maintenance process for the framework

The framework includes an introductory section on digital curation and preservation followed by one section for each of the seven attributes of a trusted digital repository: *OAIS compliance, Administrative Responsibility, Organizational Viability, Financial Sustainability, Technological and Procedural Accountability, System Security, and Procedural Accountability.*

# Components of DP Framework

## OAIS compliance

### Administrative responsibility

Purpose

Mandate

Objectives

### Organizational viability

Operating principles

Roles and responsibilities

Selection and Acquisition

Scope

Access and Use

Challenges

Note: Aligned with Attributes of a TDR (in **bold**)



# Components of DP Framework

## **Financial sustainability**

Institutional commitment

Cooperation and collaboration

## **Technological and procedural suitability**

## **Systems security**

## **Procedural accountability**

Audit and transparency

Policy framework administration

Definitions

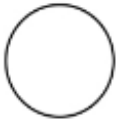
References



# Digital Content Review Steps

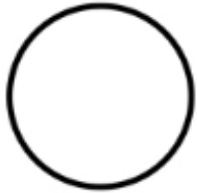
1. Individual digital content overviews (in example)
2. Individual digital content reports (report template)
3. Landscape view(s) of digital content (example)
4. Digital Content Review Dataset

# DCR Diagram Conventions



Circle:

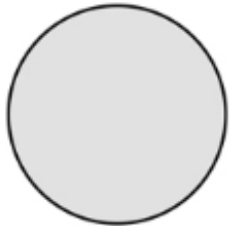
managed now



Relative size:

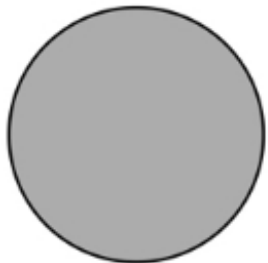
small

medium



large

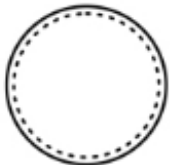
extra large



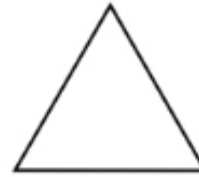
Shaded:

light = some here

dark = lots to come



dotted = digitized



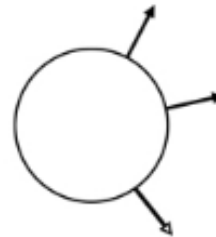
Triangle:

monitored



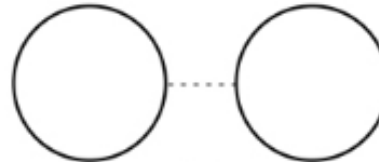
Square:

external services

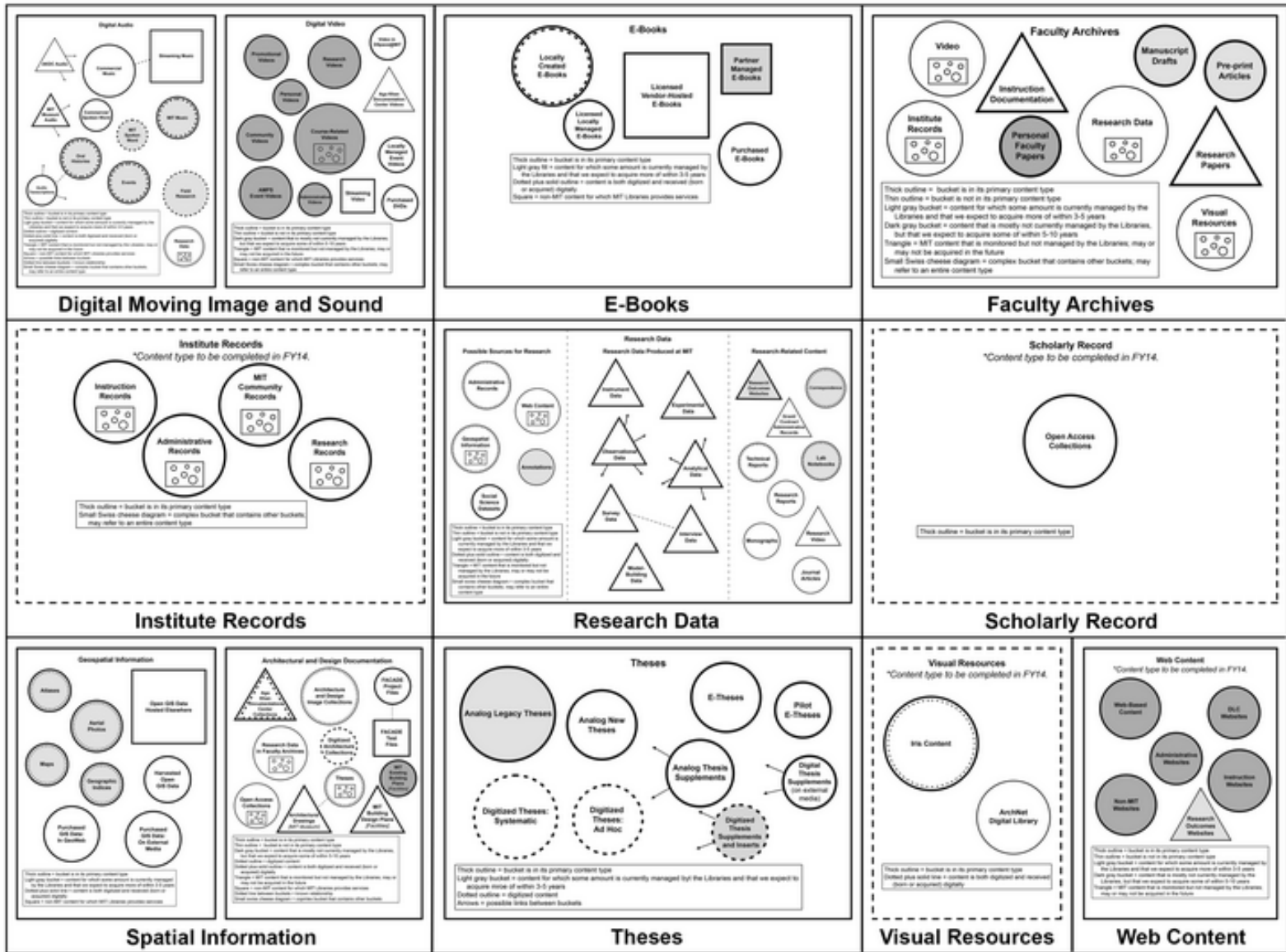


Lines:

relationships



# Digital Content Review: Process and Results



# Defining Inventory Categories

Categories of content in the diagrams is not by subject or file format

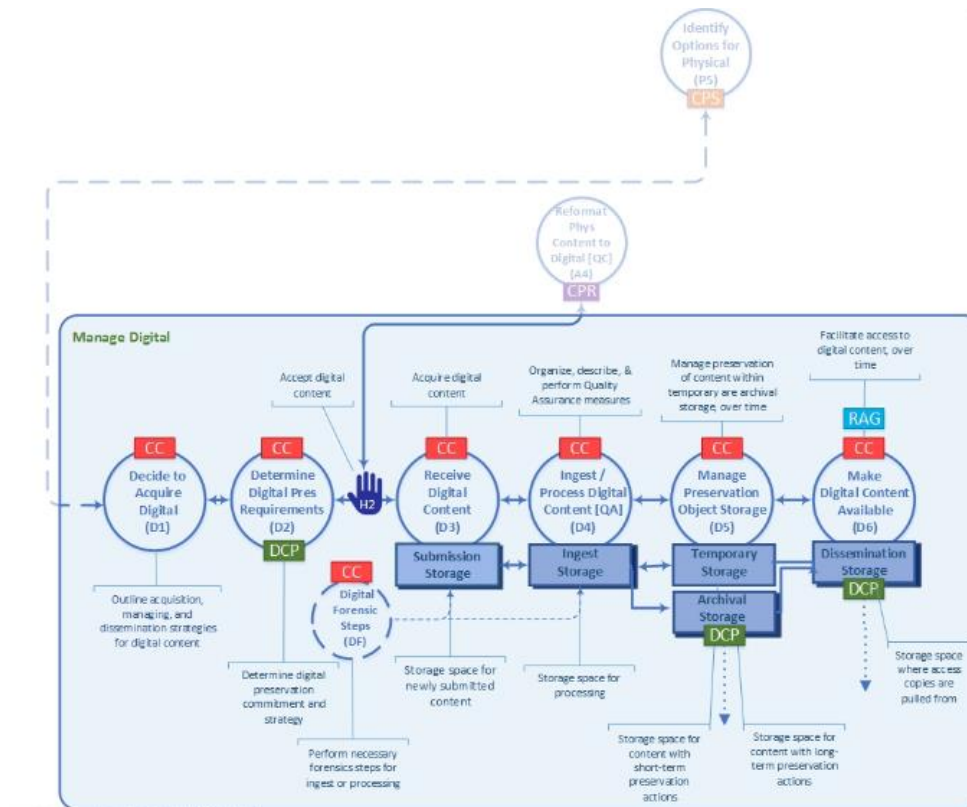
Factors that might determine the circles in the diagram include

- type of digital content (e.g., records, licensed)
- how content is received
- how it is processed
- how content is discovered and used
- how rights may effect use

# Document Human Workflows

Every TDR needs to document organizational workflows as evidence of good practice

## Digital Content Management (DCM) Workflows



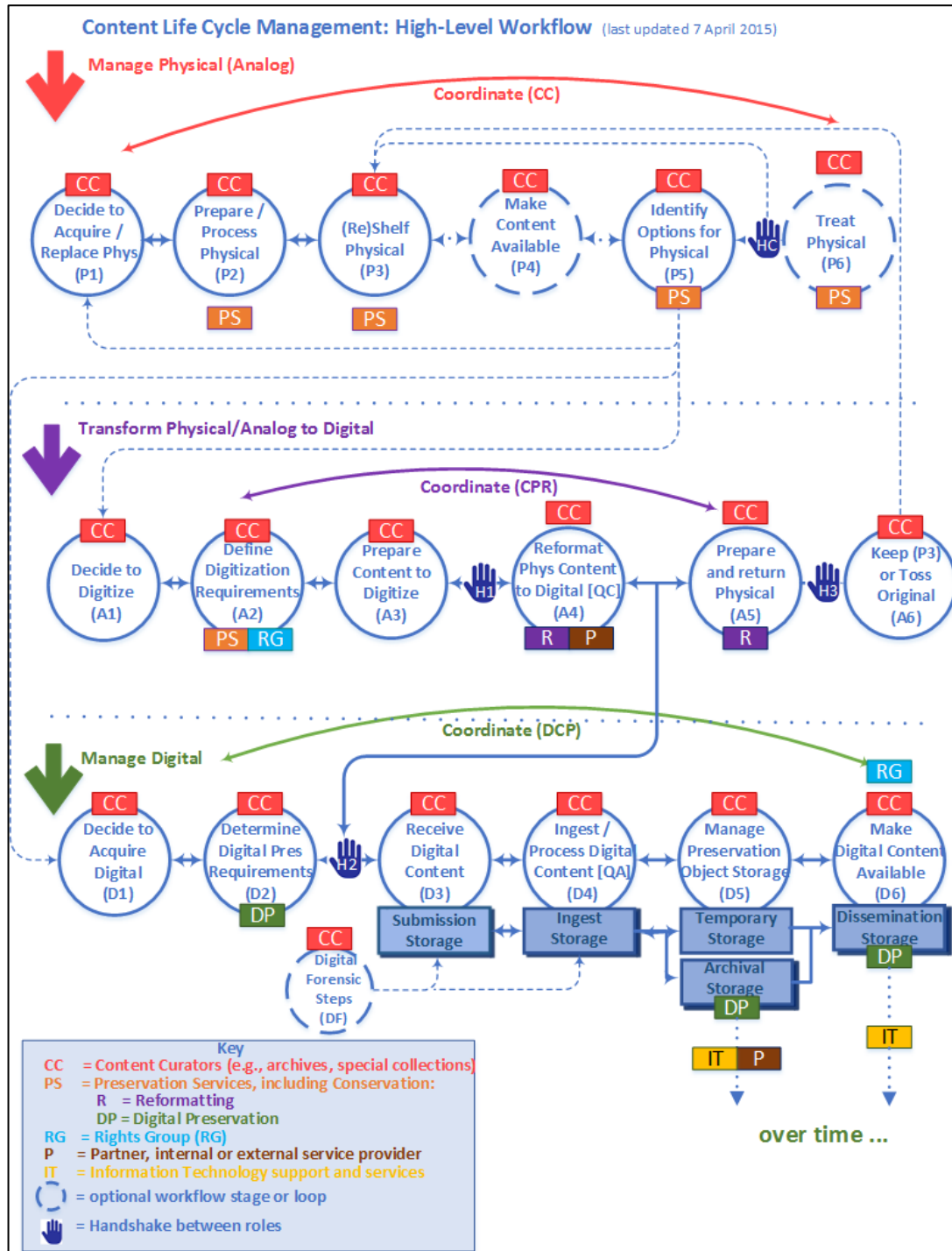
# High-level content management workflow

Physical/analog, Digitization, Managing Digital on one page

Stages, roles, dependencies

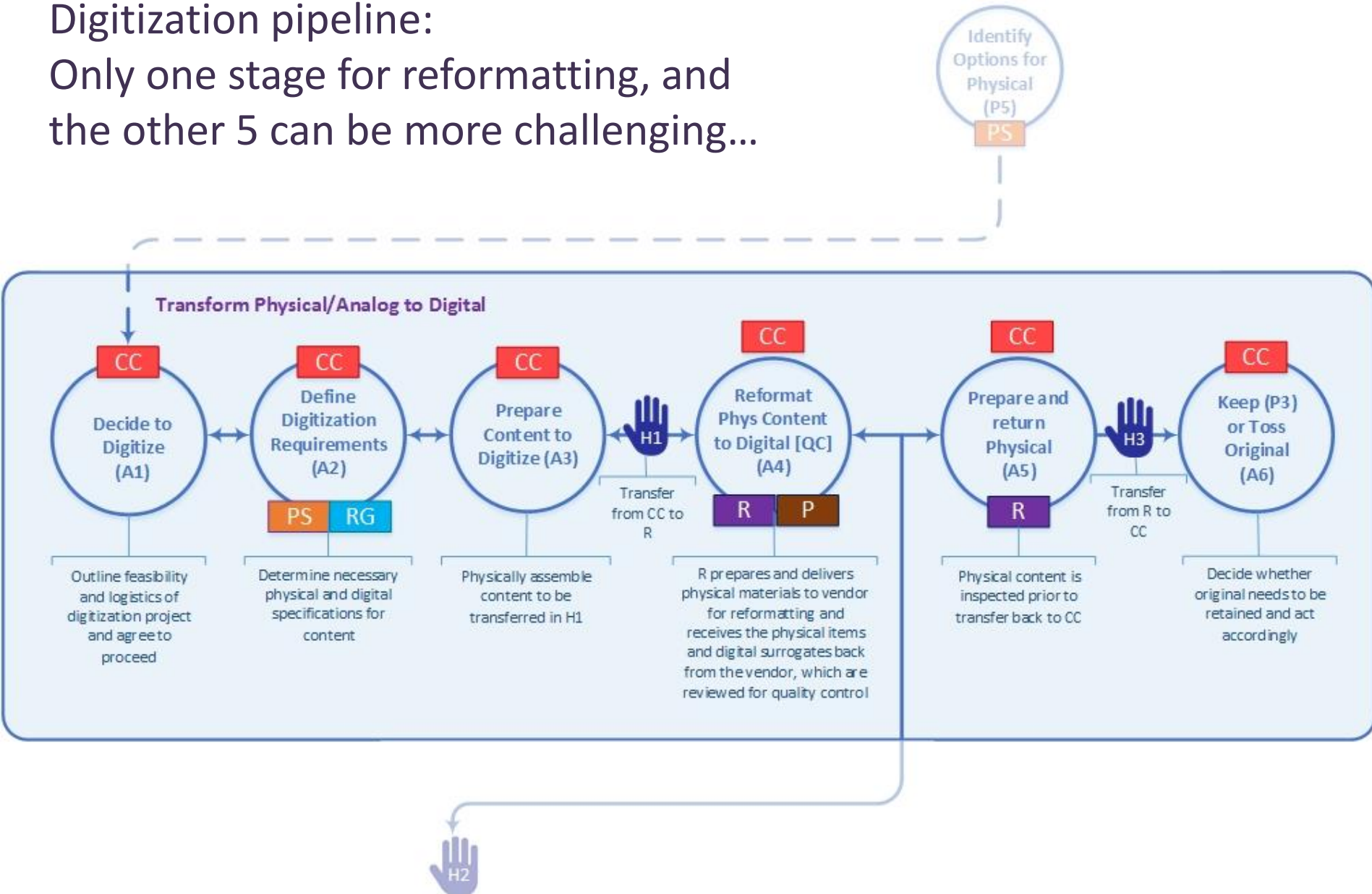
Purpose:

- Improve workflows
- Show compliance
- Discuss automation
- Enable scalability
- Support training staff

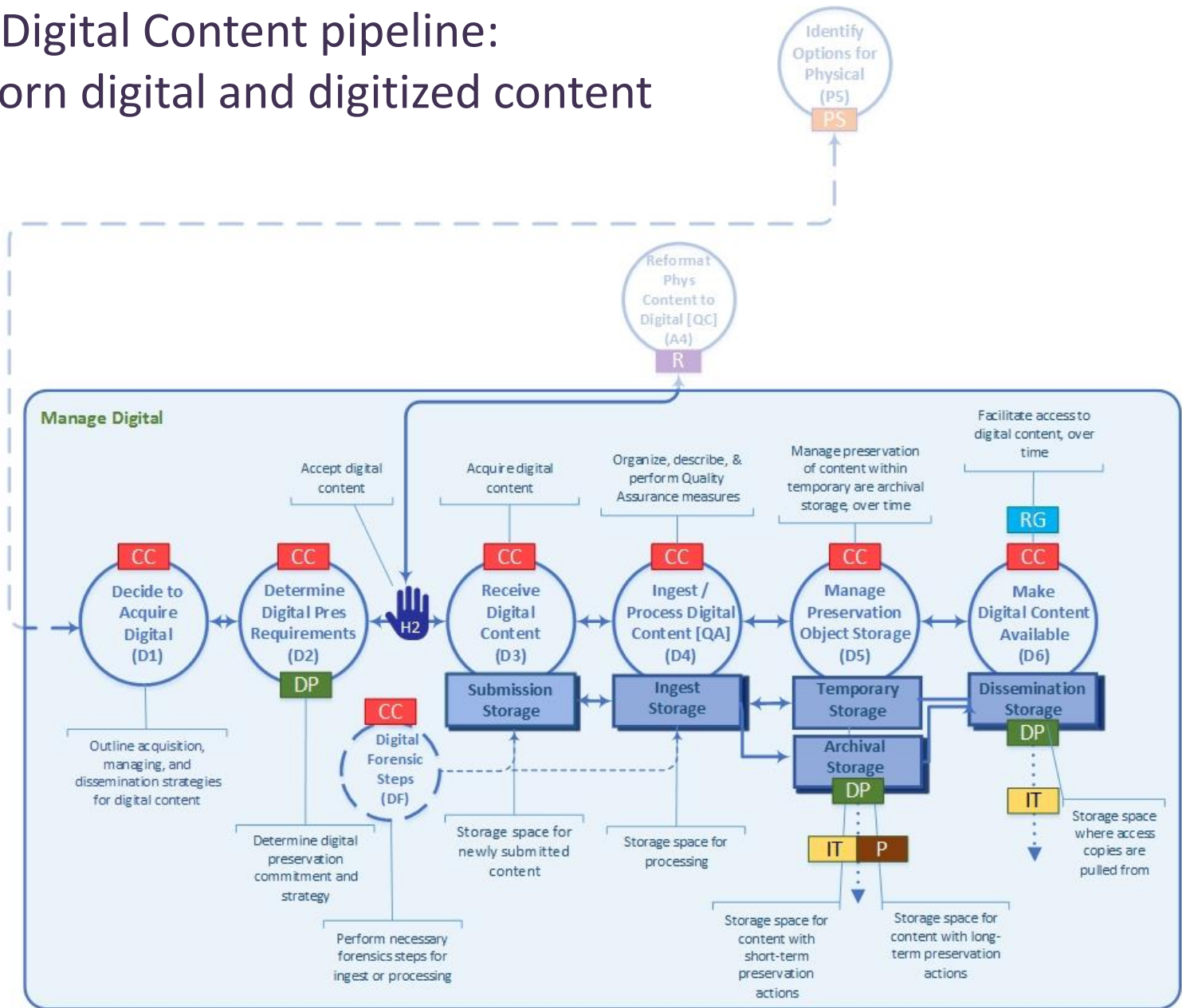




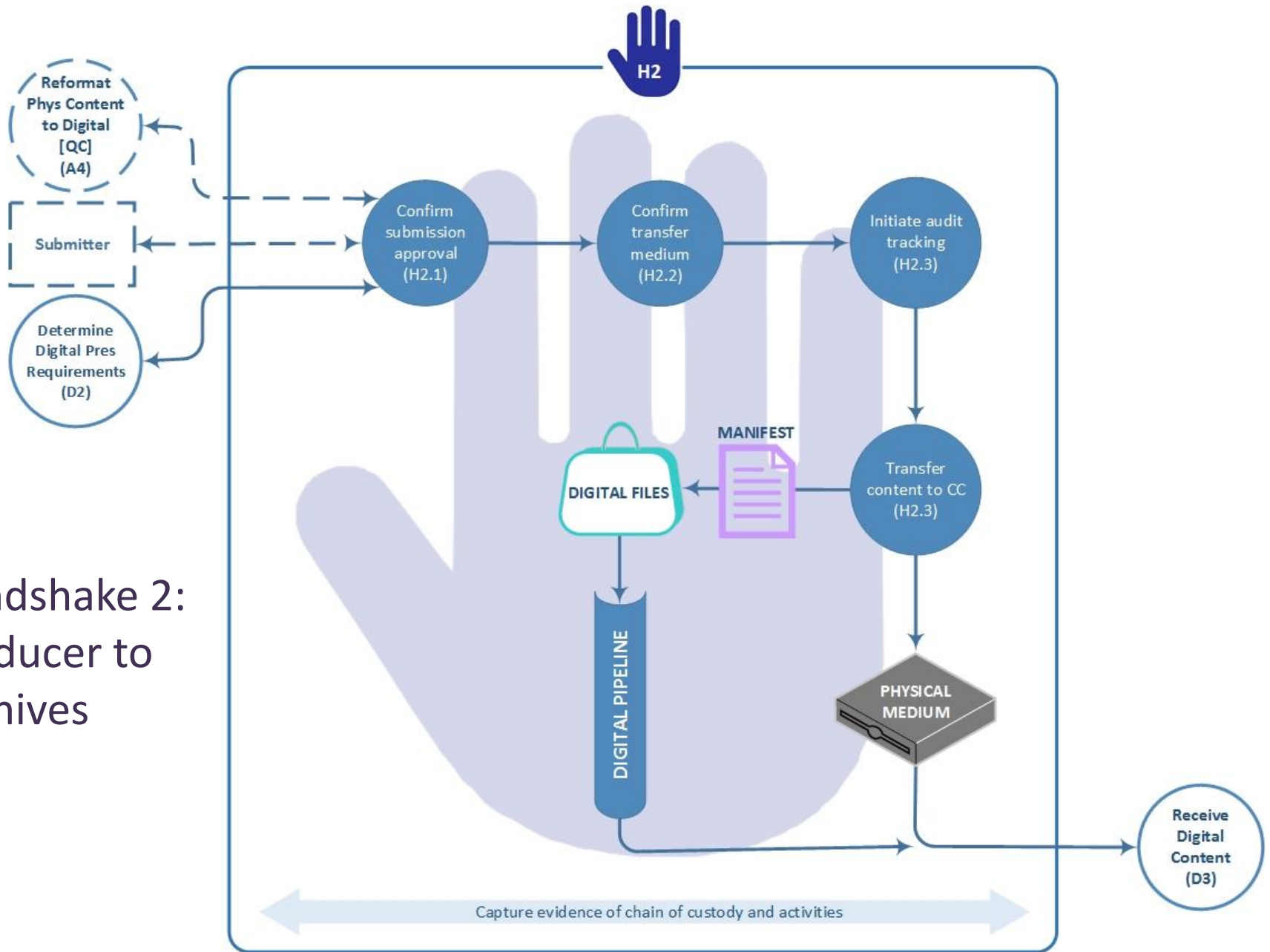
Digitization pipeline:  
 Only one stage for reformatting, and  
 the other 5 can be more challenging...



# Manage Digital Content pipeline: Covers born digital and digitized content

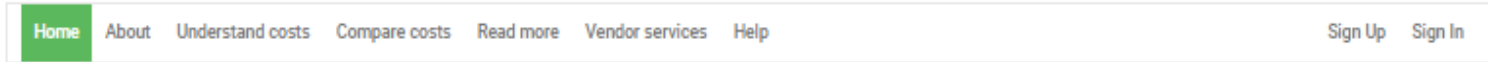
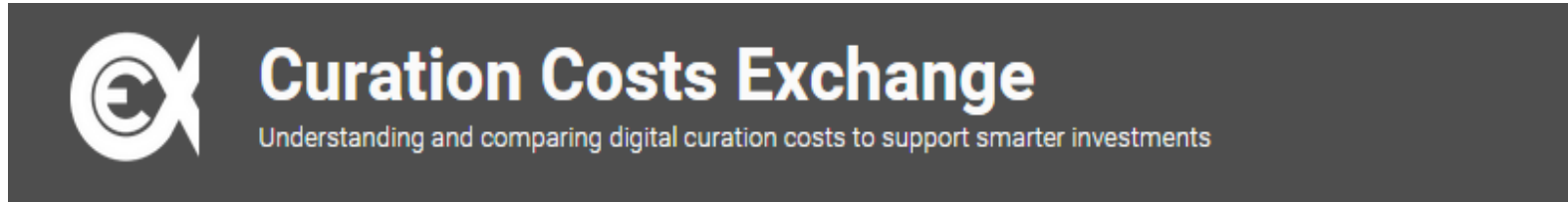


## Handshake 2: Producer to Archives



# Financial Sustainability

## Collaboration to Clarify the Costs of Curation (4C)



### All about the costs of curation

What am I spending, what are they spending, what should we be spending?

#### Understand costs

Assessing your costs and using cost models to make smart investments



#### Compare costs

Add your curation costs and see how they compare with others

<http://www.curationexchange.org/>

# Develop Disaster Response

Every TDR needs to prepare for and respond well to emergencies

## Disaster Preparedness for Digital Content

- **disaster plan policy**: developing an overall framework to document yo
- **communications plan**: thinking through communication scenarios ar
- **training plan**: developing then updating disaster preparedness training
- **roles and responsibilities**: identifying and explicitly assigning disaster

# Complete Gap Analysis

Every TDR needs to measure progress towards good practice

## Self-assessment and Peer Review Audit

TRAC

Home

Responsibilities

About

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## TRAC Review: Process and Progress

This page provides an overview of an organization's efforts to document its evidence for meeting the requirements of the CCSDS Audit and Certification of Trustworthy Digital Repositories [checklist](#) that was approved as ISO 16363 and is based on Trustworthy Repositories Audit and Certification (TRAC): Criteria and Checklist that was released in January 2007. A TRAC review is a self-assessment method for an organization to demonstrate good practice and conformance as a trusted digital repository to its designated communities and prepare for a peer review or other external audit. In many organizations, responsibilities for TRAC compliance are distributed throughout the organization, with specific units and committees having certain responsibilities for each requirement.

### Responsibilities

Each entity is assigned a role for each requirement using the RACI responsibility assignment matrix. The RACI Matrix describes participation by various organizational roles in completing tasks for a project. RACI is especially useful in clarifying roles in projects and processes requiring distributed responsibilities. See the [Responsibilities for TRAC](#) page for more information on RACI responsibilities, and a listing of units and committees that have roles in TRAC conformance.

### Requirements

Each TRAC requirement has its own page. Sub- and Sub-sub requirements are referred to on the relevant high-level requirement page. Current compliance with TRAC requirements is assessed on a rating system from 0 to 4 (see example: [SGDS report](#), page 14):

- 4 = fully compliant - the repository can demonstrate that has comprehensively addressed the requirement
- 3 = mostly compliant - the repository can demonstrate that it has mostly addressed the requirement and is on working on full compliance
- 2 = half compliant - the repository has partially addressed the requirement and has significant work remaining to fully address the requirement
- 1 = slightly compliant - the repository has something in place, but has a lot of work to do in addressing the requirement
- 0 = non-compliant or not started - the repository has not yet addressed the requirement or has not started the review of the requirement

Any group in the organization that is involved in defining policy and practice should update the status of relevant requirements. When listing evidence,

# Self-assessment Outcomes

Possible outcomes from a self-assessment of your DP program:

- Formalize policies
- Define roles and responsibilities
- Consider succession planning
- Designate funding
- Rationalize metadata
- Address preservation rights
- Prioritize technical developments



# TRAC Review Tool

## Status Summary

Section	Total Requirements *	Average Compliance Rating
<b>3. Organizational Infrastructure</b>	25	0.4000
<b>4. Digital Object Management</b>	60	0.0000
<b>5. Infrastructure and Security Risk Management</b>	24	0.0000

\* The total number of requirements include sub-requirements and sub-sub-requirements for which TRAC provides a basis for a compliance rating.

## Requirement Status

### 3.1 Governance and Organizational Viability

	Compliance Rating	Status
3.1.1 Mission statement	4	Accepted
3.1.2 Preservation Strategic Plan	3	Ready for review
3.1.2.1 Succession, contingency, and/or escrow plans	2	In progress
3.1.2.2 Organizational environment	1	Not started
3.1.3 Collection Policy	0	Not started





# Digital Preservation Management:

## Implementing Short-term Strategies for Long-term Problems

### Digital Preservation Management Tools and Techniques

Organizations that are responsible for managing digital content across generations of technology are expected to demonstrate conformance with community standards and practice for digital curation and preservation, which continue to evolve. To assist organizations in demonstrating good practice and becoming recognized as a trusted digital repository (TDR), this set of digital preservation management tools and techniques has been iteratively developed and tested in the course of presenting nearly 50 Digital Preservation Management (DPM) workshops since we offered the first course in 2003.

#### Scope

In demonstrating organizational readiness, there is a tool or technique to assist organizations in addressing and developing documentation in each of these areas:

- **Principles:** Adopt standards-based principles ([DCP principles](#))
- **Policy:** Develop a high-level policy framework ([DP model document](#))
- **Scope:** Complete a digital content review to define program scope ([DCR process](#))
- **Workflow:** Document workflows to improve and automate ([DCM workflows](#))
- **Preparedness:** Extend disaster preparedness to include digital ([disaster planning](#))
- **Self-assessment:** Engage in self-assessment to gauge progress ([self-assessment](#))

<http://dpworkshop.org/workshops/management-tools>

Thank you for your attention

Questions?

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