

# Digital Assessments, Audits and Certifications and Our Community

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May 2021

# Topics

Reviewing digital repository assessment and audit using the cycle of community good practice development and evolution:

- Need for self-assessment, audit, and certification
- Community standards and guidelines
- Tools and techniques
- Using lessons learned

# Cycle of good practice for communities

1. *Identify*: define and specify a challenge or an unmet need
2. *Specify*: develop standards and guidelines
3. *Implement*: build tools and techniques to apply standards
4. *Improve*: evolve using experience and changing needs

# 1. Identify

## 1996 PDI Report

Seminal community document:

Called out the need for audit and certification, defined the issues, suggested actions

### **Preserving Digital Information**

**Report of the Task Force on Archiving of Digital Information**

**commissioned**

**by**

**The Commission on Preservation and Access**

**and**

**The Research Libraries Group**

May 1, 1996

## 2. Specify

### **TDR 2002**

Implications for our community  
for doing audits and assessment

Starting point for TRAC

**Trusted Digital Repositories:  
Attributes and Responsibilities**

An RLG-OCLC Report

RLG  
Mountain View, CA  
May 2002

## 2. Specify: examples



- TRAC Checklist, 2007 – ISO 16363: 2012, pending revision
- nestor Catalogue of Criteria for Trusted Digital Repository, 2004
- Ten Principles (for digital repositories), 2007
- Data Seal of Approval, 2008

# Audit and Certification of Trustworthy Digital Repositories



Recommendation for Space Data System Practices

## AUDIT AND CERTIFICATION OF TRUSTWORTHY DIGITAL REPOSITORIES

RECOMMENDED PRACTICE

CCSDS 652.0-M-1

MAGENTA BOOK  
September 2011

ISO 16363: 2012  
2021 pending  
based on TRAC

Trustworthy Repositories  
Audit & Certification:  
Criteria and Checklist



preservation repository CRL specifications certification  
criteria RLG Programs OCLC audit digital object management  
NARA trustworthy metadata preservation repository  
CRL specifications Certification criteria RLG Programs  
OCLC audit digital object management NARA trustwor-  
thy metadata preservation repository CRL specifications  
certification criteria RLG Programs OCLC audit digital  
object management NARA trustworthy metadata pres-  
ervation repository CRL specifications certification criteria  
RLG Programs OCLC audit digital object management NARA  
trustworthy metadata preservation repository CRL  
specifications certification criteria RLG Programs OCLC au-  
dit digital object management NARA trustworthy meta-  
data

### Contents:

#### Introduction

Establishing Audit and Certification Criteria  
Towards an International Audit & Certification Process  
Using this Checklist for Audit & Certification  
Applicability of Criteria  
Relevant Standards, Best Practices & Controls  
Terminology

#### Audit and Certification Criteria

Organizational Infrastructure  
Digital Object Management  
Technologies, Technical Infrastructure & Security  
Audit Checklist

#### Glossary

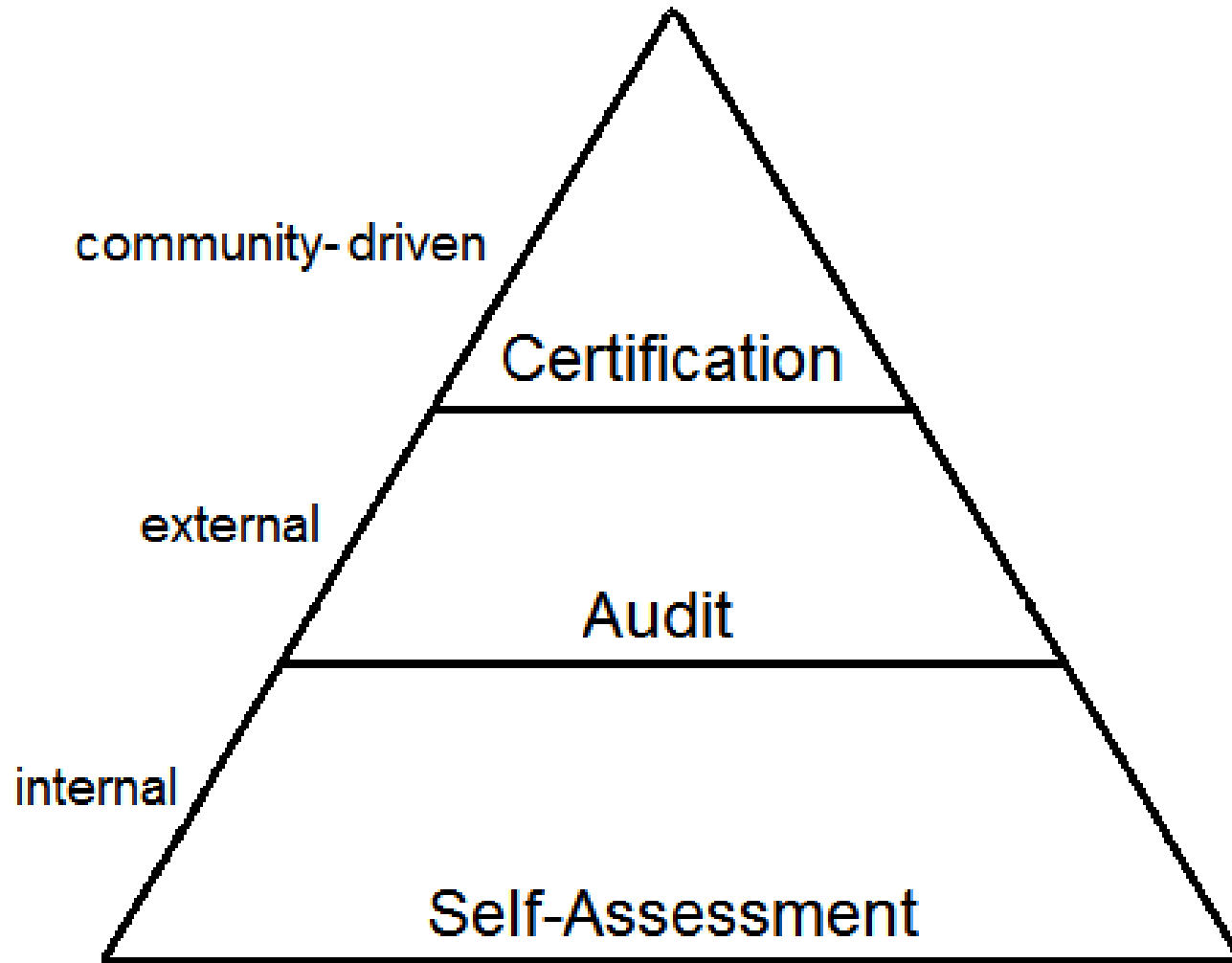
#### Appendices

Version 1.0

February 2007

# 3. Implement

In Practice...





# Early assessment tools and approaches

- DINI (Germany) – archive certifications
  - A certification example for TRAC in place by early 2000s
- DRAMBORA (DCC, DPE) – risk management tool for collections
  - A means for managing evidence launched around 2005
- Test audits using TRAC since 2006
  - Process and documentation example that informed ISO 16363
- DPM Self-assessment Tool version 1
  - Capture documentation for incremental improvement (c 2010)

# Ten Principles

1. Commits to continuing maintenance of digital objects for identified community/communities.
2. Demonstrates organizational fitness (including financial, staffing structure, and processes) to fulfil its commitment.
3. Acquires and maintains requisite contractual and legal rights and fulfils responsibilities.
4. Has an effective and efficient policy framework.
5. Acquires and ingests digital objects based upon stated criteria that correspond to its commitments and capabilities.
6. Maintains/ensures the integrity, authenticity and usability of digital objects it holds over time.
7. Creates and maintains requisite metadata about actions taken on digital objects during preservation as well as the relevant production, access support, and usage process contexts before preservation.
8. Fulfils requisite dissemination requirements.
9. Has a strategic program for preservation planning and action.
10. Has technical infrastructure adequate to continuing maintenance and security of its digital objects.<sup>6</sup>

# PLATTER

## Planning Tool for Trusted Electronic Repositories 2008

Business Plan

Staffing Plan

Data Plan

Acquisition Plan

Access Plan

Preservation Plan

Technical System plan

Succession Plan

Disaster Plan

<i>Strategic Objective Plan</i>	<i>Responsibilities</i>	<i>Corresponding Core Principle(s)</i>
Business Plan	Financial planning, monitoring, and reporting	2
Staffing Plan	Acquisition and maintenance of relevant skillset for managing repository	2
Data Plan	Specification of data and metadata objects, formats, and structures for ingest, storage, and dissemination, together with the relevant transformations and mappings.	5,6,7,8
Acquisition Plan	Management of the relationship with depositors and other data providers. Appraisal policy.	3,5
Access Plan	Management of relationship with end users. Access Policy.	1,8
Preservation Plan	Ensure that access and usability of material in repository is not adversely affected by technological change and obsolescence	9
Technical System Plan	Specifies goals for hardware, software and networking	10
Succession Plan	Manage obligation to ensure preservation of material beyond the lifetime of the repository	1
Disaster Plan	Respond to rapid changes to the repository environment	1,6

# DPM Self-assessment & Audit Tool

Ongoing self-assessment and audit

- Version 1.0 at ICPSR – TRAC
- Version 2.0 at MIT Libraries – ISO 16363

## 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

# DPM Self-assessment Tools: Roles

The list below consists of the stakeholder groups that have a role to play in TRAC compliance. TRAC roles and responsibilities are enumerated.

- [Senior Management](#)
- [Coordination Group](#)
- [Operations Group](#)
- [Information Technology](#)
- [Administration: Finance or HR](#)
- [Acquisitions](#)
- [Preservation](#)
- [Dissemination](#)
- [Rights Management](#)
- [External Advisory Group](#)

TRAC Home Responsibilities Login

Home

## Senior Management

This page consists of a RACI chart to assist in assigning and tracking the TRAC for an outline of roles included in the following RACI chart. For additional information, see the [Roles](#) page.

**Responsible**

- [3.1.2 Preservation Strategic Plan](#)
- [3.1.3 Collection Policy](#)

**Accountable**

- [3.1.1 Mission Statement](#)
- [3.2.1 Identified Required Competencies and Appointed Staff](#)

**Support**

**Consulted**

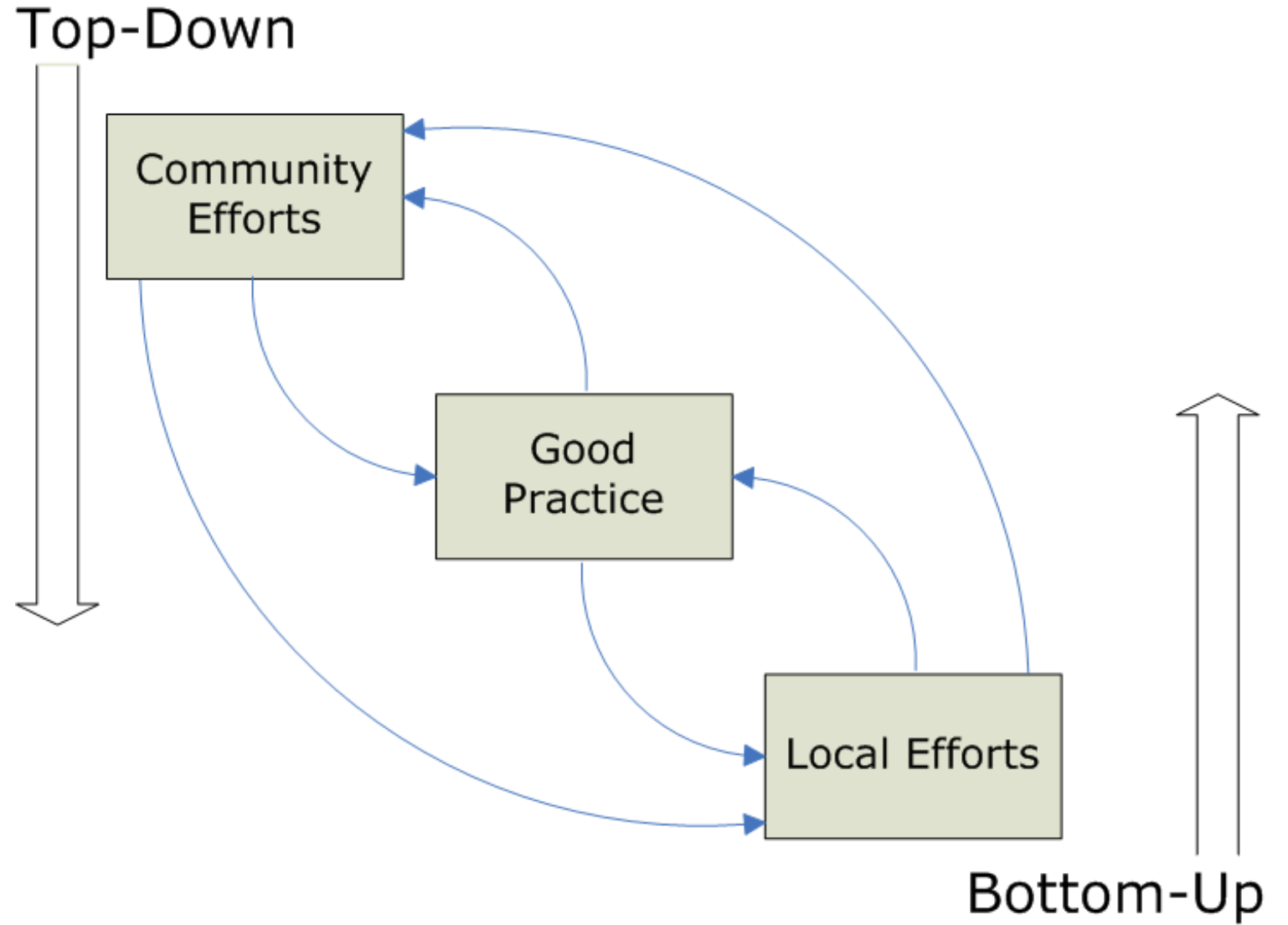
**Informed**

# Outcomes of self-assessment and audit

Completing a self-assessment or audit may lead a repository to:

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

# 4. Improve



# Evolving good practice using lessons learned

## Community developments from lessons learned:

- **NDSA Levels of Digital Preservation v. 1 2011; v. 2 2020**
  - 2011: help repositories get started
  - 2020: informed by using 2011; added assessment tool
- **Outer OAIS - Inner OAIS (OO-IO) Model, 2016**
  - Addresses audit for repositories and providers (Zierau and McGovern)
- **Core Trust Seal, 2017**
  - World Data Systems (WDS) + Data Seal of Approval (DSA)
  - related: FAIR Principles (Findable, Accessible, Interoperable, Reusable), 2016
- **DPC Rapid Assessment Model (RAM) v. 1 2019; v. 2 2021**
  - Making it easier for repositories to do a gap analysis



# Objectives

With our ongoing assessment and audit developments we are trying to:

- Improve our ability to define, build, demonstrate and measure (compliance, users) trust in our repositories
- Incorporate standards-based practice into day-to-day
- Highlight benefits and value of self-assessment & audit
- Make demonstrating good practice ongoing, efficient, productive – and enjoyable?

# Next improvements?

My wish list:

Add tools to make self-assessment and audits easier:

- create, capture, update documentation for audit and assessment
- use assessment results to prioritize development needed
- support peer review audits
- collaboratively complete self-assessments and audits with providers
- share results from assessments and audits

How do we find out who has been certified?

Who should be audited or certified?

Who should do audits and certification?

Thank you!

Questions?

## Digital Assessments, Audits and Certifications and Our Community

### Slide 1: Title Slide:

Digital Assessments, Audits and Certifications and Our Community

### Slide 2: Topics

Reviewing digital repository assessment and audit using the cycle of community good practice development and evolution:

- Need for self-assessment, audit, and certification
- Community standards and guidelines
- Tools and techniques
- Using lessons learned

### Slide 3. Cycle of good practice for communities

1. *Identify*: define and specify a challenge or an unmet need
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### Slide 4. Phase 1. Identify

- 1996 Preserving Digital Information report
- Seminal community document that called out the need for audit and certification, defined the issues, suggested actions
- An international effort that crossed domains: archives, libraries, museums, other

### Slide 5. Phase 2. Specify

- Trusted Digital Repositories (TDR) 2002
  - Defined Attributes and Roles of a TDR
  - Explored the meaning of trust
  - TDR considered implications for our community for doing assessments and audit
  - A starting point for TRAC

### Slide 6. Phase 2. Specify: examples

- TRAC Checklist, 2007 – ISO 16363: 2012, pending revision
  - TRAC authors moved away from certification and focused on assessment and audit
  - Intended to help improve practice not penalize
- nestor Catalogue of Criteria for Trusted Digital Repository, 2004
  - coaching style for smaller repositories
- Ten Principles (for digital repositories), 2007
  - A community effort by several teams – more on that in a bit
- Data Seal of Approval, 2008
  - Developed by data archives in the Netherlands but adapted for broader use – it can be a great way to get started – and it evolved into an international effort

## Slide 8. Audit and Certification of Trustworthy Digital Repositories

### In Practice...

- Certification: Not all repositories need to be certifiers – TRAC developers speculated that national repositories and providers of services might choose to
- Audit: I will come back to audit options a bit later – audit is a good and necessary step to improve your documentation and help you improve because we tend to use local acronyms and to not explain familiar things we do
- Self-assessment: every repository should complete periodic self-assessments – a challenge is that the first one requires a repository at its early stages to complete a baseline and that is hard but it gets easier after that

## Slide 9 Early assessment tools and approaches

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## Slide 10. Ten Principles

- Led by Robin Dale, chair of the RLG-NARA task force that produced TRAC
- Contributors: the DRAMBORA team, the nestor criteria team
- It is better for our community when developers of good practice come together than proceed separately – it is a better use of limited resources, the results lead more clearly to good practice, it avoids conflicting or confusing options

## Slide 11. PLATTER

- Planning Tool for Trusted Electronic Repositories, 2008
  - Business Plan
  - Staffing Plan
  - Data Plan
  - Acquisition Plan
  - Access Plan
  - Preservation Plan
  - Technical System plan
  - Succession Plan
  - Disaster Plan
- Challenge: most repositories do not have these documents and our community has few examples or standards for developing and sharing these kinds of documents

## Slide 12. DPM Self-assessment & Audit Tool

- Ongoing self-assessment and audit
  - Version 1.0 at ICPSR – TRAC
  - Version 2.0 at MIT Libraries – ISO 16363
- Developed in Drupal because it was available and flexible
- Provides a cumulative status
- For each requirement, rate your compliance and share evidence of conformance

#### Slide 13. DPM Self-assessment & Audit Tool: Roles

- Shared responsibility not a solo activity
- RASCI – responsible, accountable, support, consulted, informed – project management model
- Coordinate and collaborate on self-assessment
- Consider peer-review audit to validate and improve your documentation, identify gaps
- Peer review: identify 5 or 6 repositories that are your peers – you work with them, they are like you, other – and invite 1 or 2 external experts to review with you then each peer takes their turn to complete their audit

#### Slide 14. Outcomes of self-assessment and audit

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#### Slide 15. Developing community practice model

- Good practice is organic
- Innovations might occur at any level
- a repository might develop something to fill a gap and their solution gets shared then a community effort might develop a common approach, tool or standards
- a community effort might be initiated to consolidate local efforts or develop a standard
- a test of community standards is if they get used
- if enough local repositories use or adopt something, it emerges as good practice
- more than one way to do something – good practice, not best practice
- best practice suggests a competition that somebody won

#### Slide 16. Evolving good practice using lessons learned

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