



Digital Repository Audit & Certification

On behalf of CRL, RLG-OCLC, NARA, the DCC, DPE and nestor

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Digital Preservation Today

- Growth in creation of digital information with **scholarly**, **scientific** and **cultural** value continues to accelerate
- Practical approaches aimed at ensuring long-term **authenticity**, **integrity** and **understandability** of digital materials are emerging at a similar pace
- The discipline remains immature though:
 - Are adopted approaches **successful**?
 - What is the **metric** for defining success?
 - Which approaches are **appropriate** for particular digital preservation challenges?
 - Which preservation services and/or service providers can be **trusted**?



Trust, Trustworthiness and Safe Stewardship

- Evolution of the Digital Preservation (specifically Repository) Landscape:
 - **Defining** the problem
 - *Preserving Digital Information*
 - *Trusted Digital Repositories: Attributes & Responsibilities*
 - **Practical Responses** to the problem
 - repository software [DSPACE, ePrints, Fedora];
 - metadata schema [PREMIS];
 - reference models [OAIS];
- This work focuses on **determining the success of the solutions we propose or have already deployed**
- *"Stewardship is easy and inexpensive to claim; it is expensive and difficult to honor, and perhaps it will prove to be all too easy to later abdicate"* Lynch (2003)



Repository Environments

- Ten principles conceived for Digital Repositories
- An intellectual context for the work:
 - Commitment to digital object maintenance ● ●
 - Organisational fitness ●
 - Legal & regulatory legitimacy ●
 - Effective & efficient policies ●
 - Acquisition & ingest criteria ○
 - Integrity, authenticity & usability ○
 - Provenance ○
 - Dissemination ○
 - Preservation planning & action ○
 - Adequate technical infrastructure ●





Chronology of this work

- **2002:** *Trusted Repositories Attributes & Responsibilities*
- **2002:** *Reference Model for an Open Archival Information System* (standardised as ISO 14721 in 2003)
- **2005:** *RLG/NARA Draft Audit Check-list for Repository Certification* released for public comment
- **2006-2007:** CRL and DCC Pilot Repository Audits

- **Dec 2006:** *Catalogue of Criteria for Trusted Digital Repositories* published (en) by nestor
- **Feb 2007:** *Digital Repository Audit Method Based on Risk Assessment (DRAMBORA)* published by DCC/DPE
- **Mar 2007:** *Trustworthy Repositories Audit & Certification (TRAC) Criteria and Check-list* published by CRL



Trustworthy Repositories Audit & Certification (TRAC) Criteria and Check-list

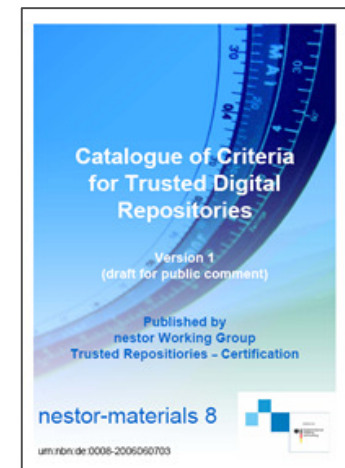
- RLG/NARA assembled an **International Task Force** aimed at addressing issue of repository certification in 2003
 - a set of criteria applicable to a **range of digital repositories** and archives, from academic institutional preservation repositories to large data archives and from national libraries to third-party digital archiving services.
- Provides **tools for the audit, assessment, and potential certification** of digital repositories
- Establishes **documentation requirements** required for audit
- Delineates a **process** for certification
- Establishes **appropriate methodologies** for determining the soundness and sustainability of digital repositories.





nestor *Catalogue of Criteria for Trusted Digital Repositories*

- nestor - Working Group Trusted Repositories – Certification developed a **Catalogue of Criteria**
 - aimed at memory organisations (libraries, archives, museums) and institutions, service providers devising, planning and implementing digital repositories
 - provides guidance, tools for self-checking, and potentially certification
- **Abstract criteria**
 - applicable for a range of digital repositories, and valid over a longer period,
- *Explanations, examples, references:*
 - internationally discussed and standardised
 - render the state-of-the-art
 - reflect specific, national conditions (legal framework, national organisational structure)
- Basic principle: **Adequacy**
 - evaluation is always based on the objectives and tasks of the individual digital repository concerned



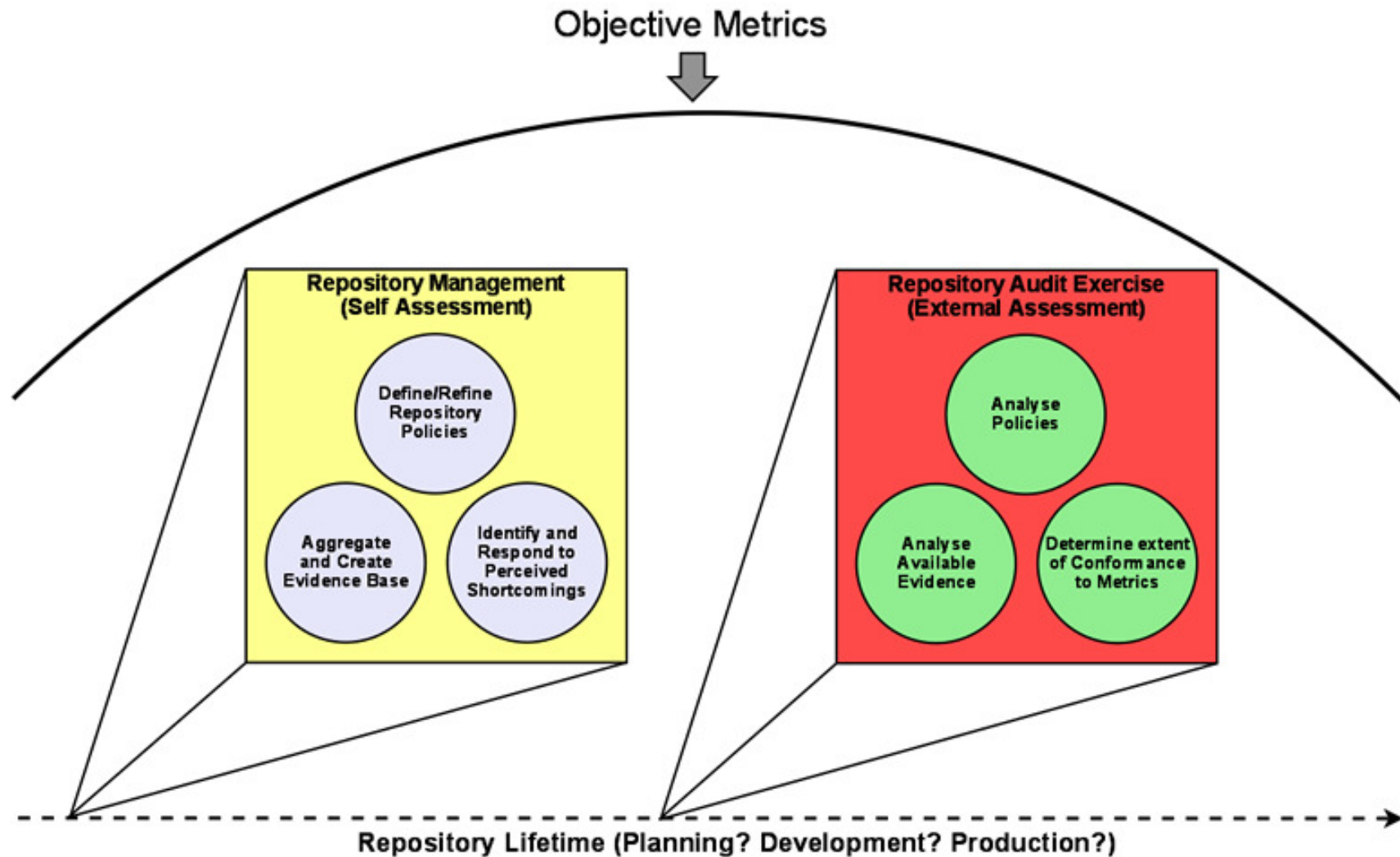


Digital Repository Audit Method Based on Risk Assessment (DRAMBORA)

- *"A trusted digital repository will understand threats to and risks within its systems."* – from the introduction to the TRAC Criteria & Checklist
- Developed by DCC & DPE, DRAMBORA encourages repositories to:
 - **develop an organisational profile**, describing and documenting mandate, objectives, activities and assets;
 - **identify** and **assess** the risks that impede their activities and threaten their assets;
 - **manage** the risks to mitigate the likelihood of their occurrence
 - establish effective **contingencies** to alleviate the effects of the risks that cannot be avoided.
- Methodology, tools and associated examples support:
 - **Validation** [*"Are my efforts successful?"*]
 - **Preparation** [*"What must I do to satisfy external auditors?"*]
 - **Anticipation** [*"Are my proposals likely to succeed?"*]



How they fit together





International Coherence

- Practical aspects of the collaboration:
 - Definition of **shared set of Digital Repository principles**
 - Active **cross pollination of ideas and personnel**
 - **Ongoing pilot audit** programmes of CRL, DCC, DPE and nestor
 - Mutual **review of documentary outputs**
- Implicit aspects of the collaboration
 - Pursuing a **shared vision with a culture of shared action**
 - A successful international program of assessment requires **community consensus**, rather than competing strategies for repository audit and certification.
- Some differences reflect **geopolitical obstacles** – but the commonalities are much more noteworthy
- Efforts are ongoing to overcome such impediments



Benefits of TRAC, nestor and DRAMBORA

- Support the **planning** of new repositories or repository functions
- Facilitate organisational **self-awareness** of repository successes and shortcomings
- **Engender trust** from depositors, users, funders and other stakeholders
- Provide a necessary **precursor to the viability** of widespread preservation repository services
- Present an intellectual foundation upon which **formal certification services** can be built



Beneficiaries

- Repository **administrators** or those **planning to develop** repository infrastructures
- Those considering utilising repository services
 - Information **creators**
 - Information **depositors**
 - Information **end-users**
- **Funding bodies**
- **Repository management**
- **Accredited certifying agencies**



The Bottom Line

- Mechanisms for measuring & demonstrating success are **vital**
- Recent years have seen an increased sense of the importance of **performance and capability measurement**
- This consortium represents an **international consensus** corresponding to a unified international drive of activity
- Integrated not simply by consortium agreements, but by a **shared will** in favour of delivering that which is required and expected by the international community
- With
 - **international applicability;**
 - **immediate and demonstrable value;**
 - an implicit **culture of coordination and collaboration;** and
 - a **conscious will to fulfil urgent and fundamental needs**

the efforts of this consortium deserve the highest recognition that this community can offer



URLs

- Trustworthy Repositories Audit & Certification (TRAC) Criteria and Checklist
 - <http://www.crl.edu/PDF/trac.pdf>
- nestor Catalogue of Criteria for Trusted Digital Repositories
 - <http://www.nbn-resolving.de?urn:nbn:de:0008-2006060703>
- DCC/DPE Digital Repository Audit Method Based on Risk Assessment (DRAMBORA)
 - <http://www.repositoryaudit.eu/download>
- Ten basic characteristics of digital preservation repositories
 - <http://www.crl.edu/content.asp?l1=13&l2=58&l3=162&l4=92>