Emerging Needs for Data Interoperability to address the post-2015 Development Agenda and the Sustainable Development Goals (SDGs)

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Desk Assessment Findings

1.1 The repository shall have a mission statement. Not Compliantfully Satisfactory. While “archiving” is mentioned, “preservation” is not specifically addressed, leaving the question unanswered about its commitment to long-term preservation.

1.2.1 The repository shall have an appropriate, formal succession plan. Implicit succession plan? Dependency on NSSDC

1.2.1.1 The repository shall have identified and established the duties that it needs to perform. Staff professional development plan? Certificates of training, accreditation, and regular reviews of these plans?

1.2.1.2 The repository shall have in place an active professional development program.

2.1 The repository shall have an ongoing commitment to analyze and report on risk, benefit, investment, and expenditure. Report describing potential risks and planned or implemented responses?

2.2 The repository shall document the final disposition of all SIPs. The final disposition of the SIP is not sufficiently documented. This process needs to be better documented and included in an end-to-end ingest process that also includes SIP verification (4.1.5), AIP creation (4.2.2), and PDI information acquisition (4.2.6).

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3.3.1 The repository shall have mechanisms in place for monitoring its preservation environment. Description looks like preparation, not monitoring

3.3.2 The repository shall have mechanisms in place for monitoring and notification when representation information is inadequate. Description looks like preparation, not monitoring

3.3.3 The repository shall manage the number and location of copies of all digital objects. Locations of first two copies not specified. Copy at NSSDCA is at risk, since the test audit of NSSDCA found no evidence of a recovery plan in place.

Key Principles Adopted from the Open Archival Information System Reference Model

- Have a mission statement that reflects a commitment to the long-term preservation of digital information
- Have defined its designated community and the associated knowledge base
- Have persistent, unique identifiers
- Have implemented Information Objects and Information Packages
- Provide the following categories of information
  - Identification – allows information object to be discovered and accessed.
  - Representation/Format - allows a data object to be interpreted.
  - Fixity - ensures the information object has not been unintentionally altered.
  - Provenance – essential for authenticity
  - Context - describes the environment in which the data object was created.
  - Reference - allows the information objects to be referenced.
  - Access Rights - identifies the access restrictions pertaining to the data

Findings Mapped to Mandatory Responsibilities

ISO 16363 Section | Satisfied Metrics | Unsatisfied Metrics | Total Metrics |
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Governance and Organizational Viability | 20 | 5 | 25 |
Digital Object Management | 57 | 3 | 60 |
Infrastructure and Security Risk Management | 23 | 1 | 24 |
Total | 100 | 9 | 109 |

References

1 ISO 14721:2012 - Space data and information transfer systems -- Open archival information system (OAIS) -- Reference model
2 ISO 16363:2012 - Space data and information transfer systems – Audit and certification of trustworthy digital repositories
3 Consultative Committee for Space Data Systems (CCSDS), 2012a. Audit and Certification of Trustworthy Digital Repositories. Also Published as ISO 16363:2012. https://public.cc SDS.org/Pubs/652x0m1.pdf
5 NASA. PDS: The Planetary Data System. https://pds.nasa.gov/