

SPRUCE / Northumberland Estates project

ISO 16363 Assessment

Document history

First draft	13/09/2013
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Final draft	01/11/2013

This document describes the process and results of a gap analysis focused on the current digital preservation capacity of Northumberland Estates (NE). The ISO assessment is explicitly intended to complement and enhance the assessment of the repository solution. The initial 'Product Analysis' provided a firm investigation into the functional requirements of each solution. We felt that in order to cover wider contextual issues which aren't necessarily included in technical considerations, an organisational analysis was required. The ISO 16363 Assessment will have the added benefit of providing a benchmark which can be used to progress and audit the implemented solution.

A cut-down and simplified version of ISO 16363, which retains only those requirements considered essential for the purposes of this project, was utilised for the purpose of this gap analysis. In particular, all of section 4 on Digital Object Management is not represented in this ISO assessment, since most of its essential detail is already expressed in the repository assessment document.

In completing the assessment, the "Intended practice" section uses statements from NE's User Story, and further information supplied by the project manager. The "How met / examples" section is ULCC's summary of how and whether each requirement has been met, or could be met in the future. The input from ULCC was vital in providing an independent expert and vendor neutral review of the "Intended practice" of each ISO 16363 requirement.

The scoring element uses the Five Organisational Stages model (Kenney / McGovern, <http://www.dpworkshop.org/>). The five stages of organisational response to digital preservation are:

1. **Acknowledge:** Understanding that digital preservation is a local concern;
2. **Act:** Initiating digital preservation projects;
3. **Consolidate:** Seguing from projects to programs;
4. **Institutionalize:** Incorporating the larger environment; and
5. **Externalize:** Embracing inter-institutional collaboration and dependency.

Organisational Infrastructure

Requirement	Mission Statement
ISO 16363 section number	ISO16363 3.1.1
Intended practice	<p>The issue is that Northumberland Estates (NE) is not a Memory Institution as such. We are a private business that has identified the need to preserve organisational digital content for the long term.</p> <p>Northumberland Estates' business strategy evolves from its past. Our responsibilities are to maintain and enrich the Estate so as to preserve the essential fabric and qualities for future generations. To achieve these goals our business strategy is to achieve structured growth, while maintaining tradition through a modern, efficient, and targeted business model. As a modern property investment business, we are looking ahead to the next 700 years.</p>
How met / examples	NE's mission statement can evolve from the declared intentions as recorded above.
Score	Stage 1, Acknowledge

Requirement	Preservation Plan
ISO 16363 section number	ISO16363 3.1.2
Intended practice	Northumberland Estates is committed to providing bit-level preservation along with the services and functions for the maintenance and retrieval of AIPs.
How met / examples	Bit-level preservation will be the foundation of the preservation plan. The preservation plan needs to be formally documented in official records to meet this requirement.
Score	Stage 1, Acknowledge

Requirement	Succession plan
ISO 16363 section number	ISO16363 3.1.2.1
Intended practice	Technology usage and Succession plans would also be useful but currently do not exist.
How met / examples	NE acknowledge the need for a succession plan and recognise this is a gap.
Score	Stage 1, Acknowledge

Requirement	Collection policy
ISO 16363 section number	ISO16363 3.1.3
Intended practice	<p>Data is appraised and selected for long-term curation and preservation. Retention schedules can be adopted to identify valuable content (schedules need further refinement). Re-appraisal may take place if the retention period expires before depositing it to long-term storage.</p> <p>Decisions on long-term value will include consideration of the following:</p> <ul style="list-style-type: none"> • Is there a legal requirement for retention associated

	<p>with the material?</p> <ul style="list-style-type: none"> • Is the material of high value for Northumberland Estates' business/mission? • Could it reasonably be considered to be an important example of its type?
How met / examples	The above description of intended practice has the makings of a sound collection policy. It would benefit from a more formal expression.
Score	Stage 2, Act

Requirement	Staff and skills
ISO 16363 section number	ISO16363 3.2.1
Intended practice	The current project will provide the justification for further investment and train relevant staff in order to deal with digital content.
How met / examples	Currently there is a staff and skills gap at NE for digital preservation.
Score	Stage 1, Acknowledge

Requirement	Defined Designated Community
ISO 16363 section number	ISO16363 3.3.1
Intended practice	<p>“Consumers” can be spilt into two groups:</p> <ol style="list-style-type: none"> 1. End users: organisational staff will require sporadic access to content within digital repository. Likely to vary depending on departmental function. This group can also be framed as the Designated Community. 2. Departmental users: specific users within Collections and Archives who have specific expertise required to use and preserve digital content. <p>Access must allow Consumers to request and receive information products. Functions include communicating with Consumers to receive requests, applying controls to limit access to specially protected information, coordinating the execution of requests to successful completion, generating response Dissemination Information Packages (DIP) and delivering responses to Consumers. Finding aids can be produced through CALM.</p>
How met / examples	The Designated Community has been identified as internal users within the organisation. The access mechanisms for classes of users have been well defined. Use of finding aids is already well established.
Score	Stage 3, Consolidate

Requirement	Preservation Policies
ISO 16363 section number	ISO16363 3.3.2
Intended practice	Preservation actions should ensure that data remains authentic, reliable and usable while maintaining its integrity. A number of business drivers have been identified which can only be

	<p>achieved if authentic and reliable data is available to Northumberland Estates:</p> <ul style="list-style-type: none"> • Legal and regularity compliance • Information reuse • Corporate memory • Business continuity • Protecting investment • Reputational protection • Collection development
How met / examples	Although there are no formal preservation policies, business drivers have been identified. This will assist the development of preservation policies.
Score	Stage 2, Act

Requirement	Audit Trail
ISO 16363 section number	ISO16363 3.3.3
Intended practice	All submitted content for the digital repository will include as much metadata as is reasonably expected. The Archivist/Digital Curator will use existing tools and processes to include administrative, descriptive, structural and technical metadata. Separate processes will be applied to content received from the EDRMS and legacy data. For example, EDRMS records should contain more structured metadata which would need to be verified and analysed separately.
How met / examples	The intended metadata practices will help to meet the audit trail requirements. This requirement will be met when there is a method for recording decisions made in the repository.
Score	Stage 1, Acknowledge

Requirement	Transparency
ISO 16363 section number	ISO16363 3.3.4
Intended practice	In order to meet preservation requirements NE will disclose methods for preserving digital content to the Designated Community and relevant stakeholders. Captured metadata will provide information for the understanding of the Estates IT landscape and how it relates to key business processes.
How met / examples	These intended practices are good, but NE may need to demonstrate compliance with standards and best practice in other areas (finance, contracts, governance).
Score	Stage 1, Acknowledge

Requirement	Integrity measures
ISO 16363 section number	ISO16363 3.3.5
Intended practice	Checksums have been identified as an essential requirement in the Repository Specification (008). Further mechanisms to incorporate integrity measures will develop once the repository is in place. These will include documentation of the procedures and an audit process.

How met / examples	The above suggests that integrity measures are not yet fully in place, but the requirement will be met as the proposed repository develops.
Score	Stage 1, Acknowledge

Requirement	Business planning
ISO 16363 section number	ISO16363 3.4.1
Intended practice	A suitable repository solution is currently under consideration along with the creation of a business case. The intended outcome is the award of the financial investment required to implement and sustain a best practice digital preservation environment. The business case will include short and long term financial planning projections.
How met / examples	Business planning processes to support the repository are not yet in place.
Score	Stage 1, Acknowledge

Requirement	Financial transparency
ISO 16363 section number	ISO16363 3.4.2
Intended practice	The repository will demonstrate that it is satisfying the needs of the Designated Community by complying with all internal NE auditing processes.
How met / examples	Transparent financial practices to support the repository are not yet in place.
Score	Stage 1, Acknowledge

Requirement	Contracts and agreements
ISO 16363 section number	ISO16363 3.5.1
Intended practice	Service levels and repository policies to be defined once business case results have been formalised. No formal deposit agreements are required as the organisation has a recognised Records Management policy which mandates the deposit of business critical/archival records.
How met / examples	NE already has a mandate for the preservation of some classes of digital archives. Existing policy simply needs to be articulated in the shape of formal policies and agreements.
Score	Stage 2, Act

Requirement	Deposit agreements
ISO 16363 section number	ISO16363 3.5.1.2
Intended practice	Written standard operating procedures to be formed once repository is in place.
How met / examples	No formal deposit agreements exist as yet.
Score	Stage 1, Acknowledge

Requirement	IPR and Copyright management
ISO 16363 section number	ISO16363 3.5.2
Intended practice	Intention is to preserve the material according to our own best

	practice methodologies.
How met / examples	Current best practice presumably includes a rights management dimension for non-digital material, which will extend to digital content.
Score	Stage 2, Act

Technology Infrastructure

Requirement	Infrastructure risk management
ISO 16363 section number	ISO16363 5.1.1
Intended practice	NE has identified the need to procure a suitable digital repository concerned with the entire preservation workflow based around OAIS principles. Currently no best practice digital preservation infrastructure exists but the introduction of a repository will introduce a system which is scalable, evolvable, and extensible.
How met / examples	NE's digital repository will go some way to meeting this requirement, but the ISO standard requires a pro-active assessment of the entire information environment with certain responsive measures in place.
Score	Stage 1, Acknowledge

Requirement	Technology watch
ISO 16363 section number	ISO16363 5.1.1.1
Intended practice	Technology watches are currently conducted manually through the Digital Curator. Formal processes for piloting and testing new technologies would be developed once repository has been implemented.
How met / examples	NE have a nominated member of staff in this role.
Score	Stage 2, Act

Requirement	Hardware and software support
ISO 16363 section number	ISO16363 5.1.1.2
Intended practice	Support for hardware and software is vital to ensure the long term viability of any implemented repository at the Estates. NE would require an appropriate level of support provided by a vendor Service Level Agreement (SLA). In conjunction with the internal IT department these support contracts would provide backup mechanisms, demonstrated preservation of system metadata, audit trails, and checksum values.
How met / examples	The above description has the makings of a robust plan.
Score	Stage 1, Acknowledge

Requirement	Detection mechanisms
ISO 16363 section number	ISO16363 5.1.1.3
Intended practice	Northumberland Estates is committed to providing bit-level preservation along with the services and functions for the

	maintenance and retrieval of AIPs. The implemented repository must reflect this commitment with best practice support mechanisms to detect bit corruption or loss (e.g. checksum validation).
How met / examples	The above shows that the institutional will is present to construct compliant detection mechanisms. Checksum validation may be sufficient for NE's business needs.
Score	Stage 1, Acknowledge

Requirement	Security updates
ISO 16363 section number	ISO16363 5.1.1.4
Intended practice	Access to the digital repository will be limited and controlled to key stakeholders. In combination with IT or a SLA security updates and relevant documentation should be maintained.
How met / examples	The institutional will is present to build robust security procedures.
Score	Stage 1, Acknowledge

Requirement	Storage media and hardware change
ISO 16363 section number	ISO16363 5.1.1.5
Intended practice	NE IT currently manages hardware support, maintenance, and replacement of storage media and hardware. Repository solution will be incorporated within this framework. Strong links currently exist between IT and Collections and Archives but further work is required to identify media migration, hardware obsolescence, and hardware support which will assist the repository.
How met / examples	If staff links already exist between collections management and IT, these can be strengthened to achieve compliance with this requirement. NE recognise the amount of work that needs to be done.
Score	Stage 2, Act

Requirement	Critical processes
ISO 16363 section number	ISO16363 5.1.1.6
Intended practice	<p>Critical processes have been identified as:</p> <ul style="list-style-type: none"> • Access • Archival storage • Data management • Ingest • Security processes <p>A staged process of monitoring will be put in place to meet the mandatory requirements that the repository will perform.</p>
How met / examples	The relevant issues for critical processes have been identified and will be acted on.
Score	Stage 2, Act

Requirement	Managed locations of digital objects
ISO 16363 section number	ISO16363 5.1.2
Intended practice	Currently there is very little technological infrastructure to support managed digital objects. Capacity is limited but the introduction of a repository would help develop best practice management of digital objects. The requirements for managed locations will be achieved through the introduction of a repository for NE. Further procedures can then be developed which meet the criteria of 5.1.2.
How met / examples	It seems likely that most of NE's requirements for authenticity can be met by the repository implementation, but the planned additional procedures are also encouraging.
Score	Stage 1, Acknowledge

Requirement	Security Risk Management
ISO 16363 section number	ISO16363 5.2.1
Intended practice	An initial risk assessment using the SPOT methodology will be carried out as part of the business case. Using this as a benchmark, a regular systematic review will be carried out. Further security risk factors will be integrated into any Service Level Agreements.
How met / examples	A security risk management gap exists, but plans are in place to address this.
Score	Stage 1, Acknowledge

Requirement	Security controls
ISO 16363 section number	ISO16363 5.2.2
Intended practice	Internal access necessitates that security controls will be managed in line with existing security procedures for the provision of NE digital content.
How met / examples	If existing NE security procedures for digital content can be extended to the repository policies, then NE will move to Stage 3 very quickly for this requirement.
Score	Stage 2, Act

Requirement	Disaster plan
ISO 16363 section number	ISO16363 5.2.4
Intended practice	NE has an existing IT disaster plan. The repository will incorporate into this plan by providing at least one of-site backup of all preserved information.
How met / examples	Stage 2, Act
Score	If the existing NE disaster plan can be extended to the repository policies, then NE will move to Stage 3 very quickly for this requirement.