

PRESERVATION POLICY

Het Nieuwe
Instituut

PRESERVATION POLICY

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INTRODUCTION

The scope of digital preservation extends over the entire life cycle of digital objects, including all processes involved in the creation, acquisition, selection, processing, storage, management and access to that object. Such a spectrum requires a carefully designed environment in which the various processes can take place in a controlled and coherent manner. Standardising, formalising and documenting digital objects, metadata and the workflows in which they are processed, stored, and made accessible largely meet the requirements of such an environment. But these are not the only things that need to be arranged.

In 2015, TNO carried out a study into the degree of maturity, the possibilities and the necessary measures Het Nieuwe Instituut needs to meet the challenges associated with the acquisition, processing and sustainable management of born-digital archives.⁽¹⁾ The findings and recommendations from this research can be considered as the starting point for Het Nieuwe Instituut's activities in the field of maintaining sustainable access to digital collections. An important first step is embedding these in the organisation and its policy. Het Nieuwe Instituut's preservation policy ensures the strategic and tactical integration of Het Nieuwe Instituut's preservation activities.

However, a preservation policy is not static; it must have a long-term perspective and be able to respond to changes within and outside the organisation. The preservation policy of Het Nieuwe Instituut is a living document that describes the main policy outlines relating to digital preservation, and forms a link with further elaborations such as a file format policy, access policy, selection policy, ICT policy, etc.

Het Nieuwe Instituut's preservation policy sets out how Het Nieuwe Instituut will ensure that the digital information it manages remains authentic, secure and usable. The policy also contains conditions for producers of digital information that help to make digital information more efficient and effective over time, also so that (future) users can continue to access this information. In addition, this policy describes the division of responsibilities within the organisation.

(1) Michel Emde, Michiel Stornebrink, Henk Wiersema, *Born Digital Preservation bij Het Nieuwe Instituut*. TNO report, TNO 2015 RI0806. 1 June 2015. At the request of Behrang Mousavi, General Manager Heritage & General and Technical Support Services.

CONTEXT

Based on current developments, Het Nieuwe Instituut's activities are intended both to increase public appreciation of the cultural and social significance of architecture, design and digital culture, and to strengthen the interaction between these disciplines.⁽²⁾ This is Het Nieuwe Instituut's mission.

When applied to the profile, this means that Het Nieuwe Instituut is a supporting institution with sectoral tasks. It operates in the field of the creative industry, and does so as the State Archive for Dutch Architecture and Urban Planning, as the Museum for Architecture, Design and Digital Culture, and as the Agency for Architecture, Design and Digital Culture. Research & Development forms the link between these roles.⁽³⁾

The mission, task and responsibilities of Het Nieuwe Instituut automatically result in a preservation obligation. This is the only way Het Nieuwe Instituut will be able to provide permanent access to its user groups. This mission is the starting point for the policy and strategy that Het Nieuwe Instituut will pursue with regards to sustainable digital preservation. The ways in which digital preservation will be organised at Het Nieuwe Instituut will be decided from the perspective of why (for what purpose), what (what materials) and for whom (the users).

To carry out this task, Het Nieuwe Instituut is working on developing and implementing a digital facility for the management and accessibility of its digital archives. This facility is being developed within the framework of the Digital Archive Installation Project (Project "Inrichting Digitaal Archief, PIDA") and includes the infrastructure and facilities required for this purpose. The development and implementation of a digital archive at Het Nieuwe Instituut takes place incrementally. The first step is the establishment of a 'digital archive laboratory' to acquire practical experience with processing digital archives. This approach is necessary because of the complexity of the material that will be processed and managed.

(2) https://hetnieuweinstituut.nl/sites/default/files/beleidsplan_het_nieuwe_instituut_2017-2020.pdf, p. 2.

(3) https://hetnieuweinstituut.nl/sites/default/files/beleidsplan_het_nieuwe_instituut_2017-2020.pdf, p. 3.

THE AIM OF THE PRESERVATION POLICY

Digital information is a broad concept, not only in terms of collections, but also when it comes to materials and sources. Making and keeping digital information sustainably accessible involves major challenges:

- The ongoing changes to media and technology;
- The wide variety of software formats, file formats and information carriers;
- The exponential growth of digital information;
- Identifying which information should be stored;
- The complexity of information objects in terms of form, structure, coherence and interdependence;
- Providing access to information objects along with contextual information relevant to the user.

This preservation policy underscores the accountability for the definition of preservation and Het Nieuwe Instituut's approach. This is aimed at:

- Internal: employees, management and supervisory board of Het Nieuwe Instituut
- External: archive creators (as suppliers of archives), researchers, end users, grant providers, partners.

TO WHICH INFORMATION DOES THE PRESERVATION POLICY APPLY?

The preservation policy of Het Nieuwe Instituut is applicable to all digital information that Het Nieuwe Instituut manages. We make these distinctions:

- Material digitised by Het Nieuwe Instituut itself;
- Born-digital material;
- Information about Het Nieuwe Instituut's collections/archives.

A number of important premises are:

- The distinction between digitised archives and born-digital archives is not important for the preservation tasks as such. However, other actions may be required with regard to quality control, metadata and the requirements and restrictions for access.
- This preservation policy does not apply to the paper archives present at Het Nieuwe Instituut. However, if portable media are added, this policy will apply on the understanding that a project-based approach to the processing of the digital legacy is necessary for its preservation.
- This preservation policy is limited to the digital archive of Het Nieuwe Instituut itself. In time, the policy will also be about so-called preservation-in-place; in other words, the outsourcing of preservation to third parties.
- This preservation policy does not encompass the issue of appraisal (what substantive choices do we make when acquiring collections?), but it does depend on the choices we make in this respect.
- Nor does this preservation policy describe the policy with regard to access and target groups, but here too, it is largely governed by the choices that have been or will be made.

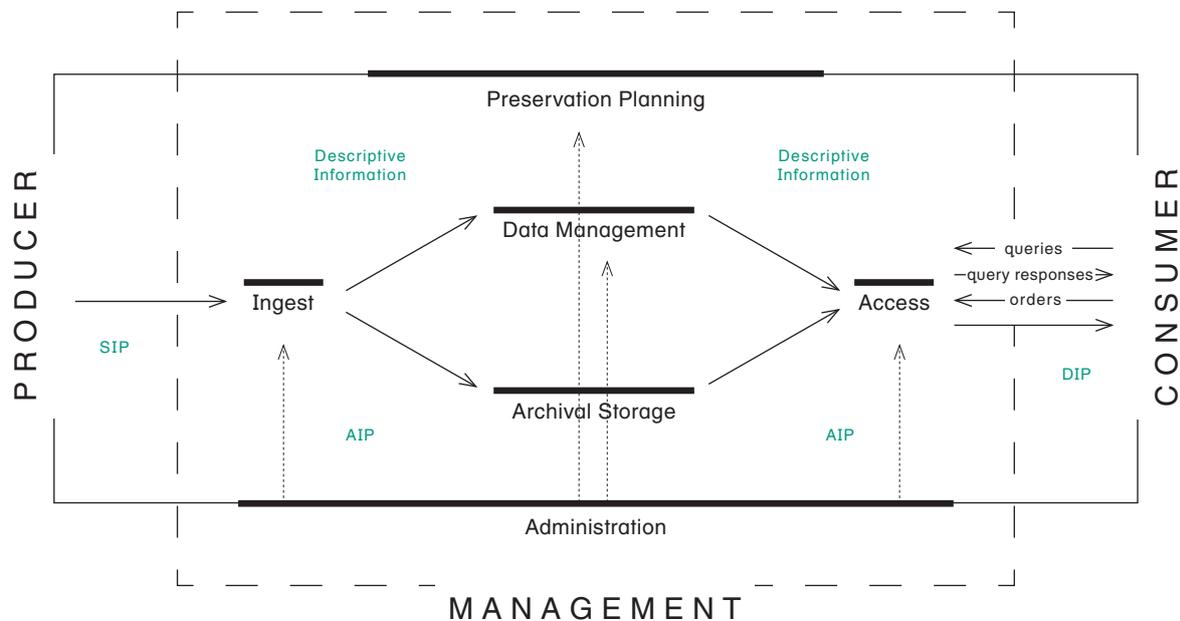
WHAT DO WE MEAN BY PRESERVATION AT HET NIEUWE INSTITUUT?

It is important to define the term ‘preservation’ properly to establish the extent of the related activities and define the responsibilities. After that, the necessary strategies can be determined.

Het Nieuwe Instituut defines ‘preservation’ as:⁽⁴⁾

Documenting, storing, managing and ensuring that digital documents (in the broadest sense of the word) are accessible such that they can also be accessed and consulted, and remain authentic over time.

This definition is based on the reference model for an “Open Archival Information System Reference Model” (OAIS). This standard work from 2002 defines the frameworks and procedures for the preservation of digital information. The OAIS model identifies the tasks needed for sustainable management and provides a common terminology.⁽⁵⁾



(4) This preservation policy employs the terminology that is used by the international preservation community as and specified in the ISO norm ISO 14721 Space data and information transfer systems – Open archival information system (OAIS) – Reference model.

(5) For a concise description of the OAIS model, see: Barbara Sierman, *Het OAIS-model, een leidraad voor duurzame toegankelijkheid*. Handboek Informatiewetenschap, Vol. 62 (2012) https://www.kb.nl/sites/default/files/docs/sierman_oiasmodelned.pdf

The tasks involved in sustainable management, as defined and described in the OAIS model, are:

- Ingest: retrieving the data; the data consist of digital information objects and their associated metadata;
- Data management: the management and inspection of the digital information and associated metadata;
- Archival storage: storing the digital objects;
- Administration: coordinating the activities of the other functions;
- Preservation planning: planning the sustainable management of digital objects;
- Access: providing information to users.

The most important aspects of preservation are:

- The information provided (digital objects and accompanying metadata and contextual information);
- The form and structure of the information object;
- The technique used (software and hardware);
- The characteristics that are assigned to the information (the essential characteristics);
- The desired method of making it accessible.

STANDARDS AND RESPONSIBILITIES

Het Nieuwe Instituut's preservation policy is based on a number of standards. The policy is designed to align with the frameworks within which Het Nieuwe Instituut operates and applies to all digital information managed by Het Nieuwe Instituut.

Standards

In developing the preservation policy, we based ourselves on the following standards:

- ISO 14721 Space data and information transfer systems – Open archival information system (OAIS);
- ISO 16363 Space data and information transfer systems – Audit and certification of trustworthy digital repositories;
- CoreTrustSeal Data Repositories Requirements; ⁽⁶⁾
- I3008:2102 Information and documentation – Digital records conversion and migration process;
- NEN-ISO 23081 Standard for metadata;
- Digital Heritage Reference Architecture (DERA).
Version 2.0 has been outlined and published in September 2018⁽⁷⁾

Responsibilities of the administrator

As a manager of digital information objects, Het Nieuwe Instituut has six main responsibilities:⁽⁸⁾

- Making agreements about delivery. Het Nieuwe Instituut makes agreements with the creator of the digital archives. These agreements relate to the form and the way in which information is provided. Ideally these agreements should be recorded in a submission agreement.⁽⁹⁾
- Arranging rights. To this end, a transfer document is drawn up which specifies the intellectual property rights. Het Nieuwe Instituut must be able to undertake measures to ensure not only that the digital information objects are permanently accessible but also to preserve them. The creator must grant us permission to do this.
- Determining the users. Together with the creator, Het Nieuwe Instituut determines the designated community – the intended and future users – of the digital information objects. After all, the intended users determine the degree of accessibility.

(6) <https://www.coretrustseal.org>. For more on certification and certification tools, see the guide *Certificering ontwikkeld door het Netwerk Digitaal Erfgoed*, www.wegwijzercertificering.nl

(7) <https://www.netwerkdigitaalerfgoed.nl/kennis-en-voorzieningen/dera/>

(8) Barbara Sierman. 'Het OAIS-model, een leidraad voor duurzame toegankelijkheid'. *Handboek Informatiewetenschap*, Vol. 62 (2012)

(9) The submission agreement includes agreements on access rights and preservation rights (what Het Nieuwe Instituut can and cannot do?), the time schedule and the method of delivery. The creator should preferably also provide a detailed description of the context and structure of the archive supplied.

- Making information usable and understandable. Het Nieuwe Instituut ensures that users are able to understand and use the information that is made available.
- Preventing damage. Het Nieuwe Instituut designs and employs processes to ensure that digital information is not damaged or disappears. Absolutely no information will be removed. Deleting information is not permitted unless the deletion is part of an (approved) strategy. If Het Nieuwe Instituut ceases to exist as an organisation, measures will be taken to safeguard the information.
- Guaranteeing authenticity. Het Nieuwe Instituut guarantees the authenticity of the digital information from the moment it registers it. Authenticity means: reliable, complete and usable.

Legal framework

Het Nieuwe Instituut undertakes various tasks that are associated with different target and user groups. Het Nieuwe Instituut operates under the following denominators:

- The State Archives for Dutch Architecture and Urban Planning
- The Museum of Architecture, Design and Digital Culture
- The Agency for Architecture, Design and Digital Culture

As the Netherlands' State Archive for Dutch Architecture and Urban Planning, Het Nieuwe Instituut is responsible for the (provisional) framework of this preservation policy. The new Dutch Heritage Act came into force on 1 July 2016. For the time being, preservation activities will be based on this law. ⁽¹⁰⁾

(10) https://hetnieuweinstituut.nl/sites/default/files/beleidsplan_het_nieuwe_instituut_2017-2020.pdf

IMPLEMENTATION

This section outlines the implementation of the preservation policy at Het Nieuwe Instituut. The INK management model is used for this purpose. This model has three components:

- Objectives: which direction does the organisation follow on the basis of developments within and outside the organisation?
- Implementations: which strategy and policy result from this choice?
- Operations: which main processes follow from this, and what are the consequences for the various stakeholders?

Objectives

Applying the OAIS model

Het Nieuwe Instituut's preservation policy follows the OAIS model. This model is used to design the infrastructure and necessary processes. The OAIS model identifies the functions required for sustainable management and provides a common terminology.

Quality

Het Nieuwe Instituut's preservation functionality is based on bit preservation. This means that acquired digital archives will in any case be preserved at bit level. Insofar as it is possible, digital archives will be approached and treated as a whole. Extensive digital archives will be seen as 'big data' and will be preserved at the level of ones and zeros. In addition, carefully selected parts of these archives will be managed at a higher level. We call this functional preservation. Digital information should remain accessible for future use in an authentic and integer form. This requires more than just bitstream preservation. Preservation plans are drafted for this purpose. These contain basic principles for anticipating changes, determining the consequences of those changes, and intervening when the integrity of information objects is threatened.

Cost model

We also draw up a cost model for preservation. We do this together with the Digital Heritage Network. The cost model provides insight into the costs. In this way we can continually compare the costs of preservation (in time and money) to the benefits – the basic quality of the information.

Certification Trustworthy (Digital) Repository

Het Nieuwe Instituut will begin a certification process for Trustworthy (Digital) Repository status as soon as it has an operational digital archive and practical experience. A certification process based on the Core Trust Seal will commence no earlier than 2020, but no later than 2021. Certification contributes to the recognition of Het Nieuwe Instituut's role.

Existence and continuity

The existence of Het Nieuwe Instituut is anchored in the Heritage Act as regards its role and function in relation to the Dutch architecture collection. Het Nieuwe Instituut also has a role to play in the development of collections and the sustainable management of digital culture. This will be integrated into the preservation policy at a later stage.

Open data

Het Nieuwe Instituut strives as much as possible to make archives available via linked open data.

Making Choices 2.0

Content selection, acquisition and sustainable management are based on the collection policy of Het Nieuwe Instituut. This is described in the project Making Choices 2.0.

Implementations

Submission agreement

Het Nieuwe Instituut makes agreements with each creator (supplier of digital archives). These agreements specify the form and manner in which information objects will be delivered. The agreements are recorded in a submission agreement. This agreement is in line with current agreements made in relation to the delivery of analogue archives.⁽¹¹⁾

Designated community

Het Nieuwe Instituut outlines who the users of the managed digital archives are and, where possible and desirable, determines together with the creator how it will be made accessible to the various user groups. Het Nieuwe Instituut will have to carefully monitor the wishes, requirements and actual use before defining its use and the user groups. Het Nieuwe Instituut has to formulate policy with regard to the access and use of its digital archives: who are these users, which user profiles can be discerned, and how can we define different types of use.

Open source and open standards

The central government and the Digital Heritage Network encourage the use of open data, open standards, persistent identifiers and open source software. Het Nieuwe Instituut endorses this where possible.

(11) The submission agreement contains, among other things, the agreements on access rights and presentation rights, essential characteristics of the digital objects, the time schedule and method of delivery and a detailed description of the structure of the archives to be delivered.

Metadata

Metadata is information about relations between and information about information objects. There are several types:

- Descriptive metadata. These describe the information objects in terms of content characteristics;
- Technical metadata. These describe the information objects themselves and are necessary to ensuring long-term access;
- Structural metadata. These describe the structure of the archives and the relationships between them within an archive.
- Het Nieuwe Instituut is working on a Metadata Guideline. It will specify which metadata should be stored, within which systems, and which relations it has.

File formats and essential characteristics

At present, Het Nieuwe Instituut does not impose any restrictions on the number or type of deliverable file formats. There is no legal framework for this. However, Het Nieuwe Instituut will draw up a list of preferred formats, which will be compiled on the basis of the experience gained in 2018-2019 within the laboratory environment. Establishing preferred formats – a file-format policy – will simplify sustainable access to the administered archives.

Automation

Het Nieuwe Instituut does as much as possible to automate the ingest of digital objects. This also applies to the execution of the management, preservation and accessibility protocols. This is feasible with regard to bit preservation. If we examine selected parts of archives in more detail and apply functional preservation, the amount of automation will decrease. In general, this requires customisation.

Compression

To minimise the risk of information loss, Het Nieuwe Instituut makes as little use as possible of compression techniques. If the information objects have already been compressed, we make a record of this when they are delivered.

Accessibility

Het Nieuwe Instituut ensures that users can analyse and use the information that is made available. We do this by making the digital information – and the metadata – accessible via websites and portals, which have viewers and download options.

Encryption and access rights

According to the OAIS reference model, access must be provided to digital information. Het Nieuwe Instituut would therefore prefer to receive unencrypted information objects when they are delivered to the digital archive.

Content, technical and functional management

Het Nieuwe Instituut will further define, describe and assign roles, tasks and responsibilities relating to the preservation of digital archives in 2019.

Operations

The main processes are described according to the six OAIS functionalities.

Pre-ingest

In this phase, Het Nieuwe Instituut will implement the submission agreement.

The following parameters will always be checked:

- The technical formats of the information objects that are supplied;
- Limitations resulting from digital signatures, compression and other technical processing;
- The presence of metadata;
- The agreements regarding (re)use and access.
- A risk assessment will also be conducted on the formats used: how sustainable is the format? On this basis, certain formats may be converted to a more sustainable format. Both formats – and the metadata – will be preserved. At the end of the pre-ingest there is an integral and usable submission information package (SIP). Het Nieuwe Instituut assesses the integrity and completeness of the SIP by means of a checksum.

Ingest

A number of assessments and identification procedures take place during the ingest of the SIP. These are important preconditions for the proper administration and making accessible of digital information. The following are involved:

- Characterisation;
- Integrity evaluation;
- Virus control and security check;
- Check the submission agreement.
- These preconditions and (file-format) identifications will be elaborated on to include the processes and the tools involved therein.

Storage

The specifications for the storage environment will be further elaborated on in 2018. These will be based on:

- Expected growth of digital archives;
- Requirements with regard to sustainable storage;
- Requirements with regard to accessibility determine the type of storage (tiered storage, cached storage, cloud storage);
- Available financial resources and cost-benefit aspects.

Data management

Data management involves storing data about the information objects.

In other words, it contains all the control, logging and a record of changes to the metadata in the e-Depot facility and the collection management system, and in the information objects themselves.

Preservation planning

Het Nieuwe Instituut's e-Depot will be designed for bit preservation and functional preservation. This will be done by:

- Maintaining one original and at least one copy of each bitstream;
- Guaranteeing the integrity of the bitstream (checksum) and setting up a control cycle;
- Being able to demonstrate and document these actions.

The actual implementation of planning functionality and the scheduling of preservation actions will be based on the wishes and requirements arising from within the laboratory environment and implemented in 2019-2020. To this end, Het Nieuwe Instituut will integrate a preservation watch function into its digital archive infrastructure. Where possible, this preservation watch function will be linked to an existing facility for this purpose. Possible partners in this are: CCA, National Archives, LIMA, EYE and IISG. The preservation watch function involves, among other things:

- Monitoring (inter)national developments in technology, standards, and the hardware and software used by creators;
- Regularly reviewing the user groups;
- Conducting risk assessments on the information objects and metadata in the digital archive;
- Monitoring the creator, consumer and our own organisation for changes that may affect the sustainable accessibility of the information objects.

Access

The access functionality supports the accessibility, readability and practical application of information objects, the handling of information and service requests, and single aggregation-friendly links for consumer interfaces, including authorisation schemes. A DIP is made available via the link with the collection management system and the access workflow. This is done incrementally. Depending on the designated community or user, the information can be made available in various ways, for example, via a viewer or download option. The method of making the information available depends on Het Nieuwe Instituut's policy in regard to this and the preservation watch functionality.

Administration

The administration functionality provides all the facilities, services, functionalities and tasks for the daily management of all other functionalities. It is the nerve centre of the OAIS archive. Administration is an (historical) overview of workflows, reports, tools and security.

LINKS

The preservation policy of Het Nieuwe Instituut describes the policy relating to digital preservation. Further elaborations on this policy with regard to processes and procedures will be described in detailed documents. The Framework for the preservation policy is given by related policy documents, including:

- Het Nieuwe Instituut's policy plan 2017–2020;
- Het Nieuwe Instituut's collection plan;
- Digitisation of heritage by Het Nieuwe Instituut
- Het Nieuwe Instituut's ICT policy;
- Making Choices 2.0;
- Target group policy.

Content of the preservation policy to be described:

- File format policy;
- Detailed description of roles, tasks and responsibilities;
- Description of workflows and procedures;
- Description of the essential characteristics of the managed archives;
- Access rights;
- Description of the technical and functional architecture of Het Nieuwe Instituut's digital archive.

