

Preservation Watch at the National Archives of The Netherlands

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Abstract

In 2015 a new preservation policy of the National Archives of The Netherlands (NaNeth) was approved. Part of our policy is the implementation of the so called preservation watch.

Preservation watch as a concept was first minted in the European PLANETS project (2007-2011, <http://www.planets-project.eu>). It is part of the PLANETS functional model which is an elaboration of the OAIS function Preservation Planning.

The PLANETS functional model describes the functions and processes of a preservation planning component of a digital repository. It has three important preservation functions: watch, planning and action. Preservation Watch monitors a variety of internal and external entities, including the content preserved in the digital repository itself. Critical or imminent risks are passed to Preservation Planning for further analysis and planning of subsequent Preservation Action.

Preservation Watch will be included in the next revision of the OAIS standard.

Preservation Watch has already partly been implemented at NaNeth. In 2018, however, we will fully implement an enhanced preservation watch in all departments of the organization: a 'horizontal' sustainable accessibility plan that is model-based, process-based and based on international standards and community best practices. The core of this plan is the structured monitoring of our own and external environment. For instance, the Collections department will monitor the state of the digital archives we keep in our repository, Public Services will monitor the needs of our user communities, Account Management will monitor

developments within the ministerial departments whose archives in time will be transferred to us. The results of all these monitoring activities, under the coordination of preservation specialists, will be analysed for risks and opportunities in regular cycles. This will enable us to intervene in good time if the sustainable accessibility of information objects is threatened.

We will also enlarge the model by adding the other OAIS functions (besides Planning): Creation, (pre)Ingest, Archival Storage, Data Management and Access. In this way we will cover the complete lifecycle of information objects, from creation to access.

Eventually, we foresee a Preservation Watch on a national scale, under the umbrella of the Digital Heritage Network (DHN). The experiences of NaNeth in implementing a preservation watch function will be expanded to other organizations and domains in The Netherlands. The development of a collaborative knowledge base is also necessary as we evolve more and more towards a national preservation network.

Conference Theme(s) Addressed:

- Sustainable digital preservation approaches and communities
- Collaboration and capacity-building

Keywords

preservation watch, digital preservation, community resource, (inter)national cooperation, international standards

Introduction

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The PLANETS functional model describes the functions and processes of a preservation planning component of a digital repository. It has three important preservation functions: Watch, Planning and Action. Thus, the Preservation Watch function is a part of a larger whole, but it is right at the core of this model. For this reason the term Preservation Watch is used by NaNeth as a designation for the whole framework.

Preservation Watch monitors a variety of internal and external entities. These are:

- Administration
The digital repository where our collections are preserved (collection management)
- User Community
Our users knowledge and wishes
- Organisation
Our own organisation's objectives and means
- Producer
Our suppliers, both government agencies and private parties
- Technical Environment
Of our Organisation, the User Community and/or Producer

Critical or imminent risks are passed to Preservation Planning for further analysis and planning of subsequent Preservation Action.

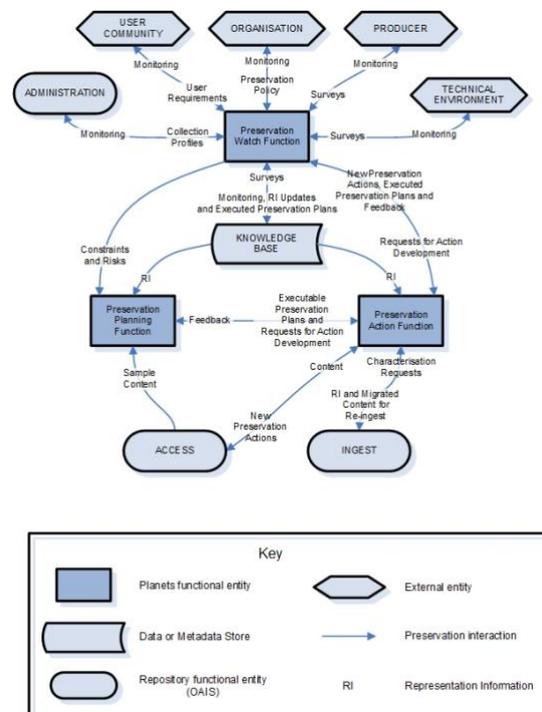


Figure 1: PLANETS functional model

Implementation of the Preservation Watch at NaNeth

Elements of the Preservation watch have already been implemented at NaNeth. In 2018, however, we will fully implement an enhanced Preservation Watch in all departments of the organization. The core of this Watch is the structured monitoring of our internal and external environments. We will also enlarge the model by adding the other principal OAIS functions (besides Planning): Creation, (pre)Ingest, Data Management, Archival Storage and Access. In this way we will methodically cover the complete lifecycle of information objects, from creation to access. Here's how we plan to move forward:

Preservation at Creation

Record managers and preservation advisers will provide asked and unasked for advice to government agencies, right at the start of the

information chain, about the importance of sustainable accessibility and (tooling for) quality control. Possible topics are selection of information systems, preferred formats or the applicability of archival legislation.

Preservation at (pre)Ingest

Ministries and other government agencies are transferring their electronic archives to the NaNeth digital repository. In the last two years these transfers have been more and more standardized. They are always preceded by an impact analyses in which we assess if the archive in question holds up to the standards that have been developed by the National Archives. This assessment includes (but is not limited by) a technical appraisal on datasets, representative for the whole archive. With a variety of software tools (including FITS, veraPDF and C3PO) we characterize the dataset (meaning identification and validation of and property extraction from the electronic objects) before it is ingested in the digital repository. This gives valuable information about the state of the digital archive. After eventual fixes have been applied we ingest the archive in our repository, during which characterization tests are run again with a different tool set (among others DROID and Jhove). The results are analyzed, for the time being by preservation specialists. Eventually these duties will be transferred to collection managers in our Collections department.

Preservation at Data Management

Data Management is the OAIS-function that manages the Descriptive Information (metadata) of information objects. At NaNeth the Collections department manages the metadata in the digital repository and the collections management system. In quarterly meetings between Collection and preservation specialists, relevant developments are discussed.

Preservation at Archival Storage

The architecture of the digital repository is constantly updated and developed. Preservation specialists meet regularly with architects and technicians of the Infrastructure department to monitor and discuss these developments.

Preservation at Access

User feedback is analysed in the Monitor User Community function. Preservation specialists will provide advice concerning the rendering

framework used on the NaNeth website, ensuring information objects and their Representation Information are presented correctly and meaningfully.

When information objects are published, a persistent identifier (PID) is created: a unique identification code of a digital object, that is guaranteed to remain operational even if an organization's website is altered.

Preservation Watch, Planning and Action

As mentioned before, the core of this plan is the *Preservation Watch* function: the structured monitoring of our internal and external environments, including the content preserved in the digital repository itself. For instance, the Collections department will monitor the state of the digital archives we keep in our repository, Public Services will monitor the needs of our user communities, Account Management will monitor developments within the ministerial departments whose archives in time will be transferred to us. The results of all these monitoring activities, under the coordination of preservation specialists, will be analysed for risks and opportunities in regular cycles. This will enable us to intervene in good time if the sustainable accessibility of information objects is threatened.

Critical or imminent risks are passed to *Preservation Planning* for further analysis. It evaluates available preservation options and then trials them on Sample Content. It assesses the results of those trials and identifies the most appropriate options. Plans for implementing the selected preservation options are then created and passed to Preservation Action for implementation. The National Archives has a just-in-time policy, meaning that preservation actions will only be carried out in case of critical risks. So far, none have been identified. However, in preparation we have drawn up scenarios and created templates for preservation action plans. We regularly perform test migrations on content in our digital repository.

Preservation Action performs actions on Content to ensure its continued accessibility and sends appropriate feedback to Preservation Watch (including Executed Preservation Plans). If, for instance, Preservation Planning requires that a migration be performed, a Preservation Plan is passed to Preservation Action, describing the required process. The appropriate tools

and services to perform the action are identified and will be deployed in (or, if need be, outside of the) the digital repository. The preservation action will then be executed on the appropriate content and evaluated.

Preservation Watch on a national scale

Eventually, we foresee a Preservation Watch on a national scale, under the umbrella of the Digital Heritage Network. The DHN is a partnership in the Netherlands that focuses on developing a system of national facilities and services for improving the visibility, usability, and sustainability of digital heritage. Within the sustainability layer, partners are working together in establishing a nationwide network of preservation services. National policy is targeted to connect as many heritage institutes as possible to this network. As this begins with policies, a preservation policy creation helper has been developed. This tool is based on the SCAPE policy elements and guides institutes through the elements of a preservation policy. The experiences of NaNeth in implementing a preservation watch function will be expanded to other organizations and domains in The Netherlands as a next step towards development of a collaborative framework for preservation watch. This will be a logical expansion of the nationwide network of services and the policy guidance. Having a collaborative knowledge base is a necessity as we evolve more and more towards a national preservation network.

Inclusion in OAIS

Preservation Watch is based on the functional model developed in the PLANETS-project, in which NaNeth was a partner. It describes preservation best practices and, because of the increased monitoring activities, has a broader view than the Preservation Planning function of the OAIS-referencemodel (ISO 14721:2012). The OAIS standard is reviewed every five years. During the last review in 2016 the proposal was made to include the broader PLANETS concept in the next revision of the OAIS standard. In March of 2018 this proposal has been accepted: the Preservation Watch function will be part of the revised version of OAIS and the diagram in which the

Preservation Planning functional entity is illustrated (Figure 4-6) will be adapted accordingly.

Conclusion

In 2018 the National Archives of The Netherlands will implement preservation watch, planning and action and additional processes, derived from OAIS. In short, we call this the Preservation Watch. It is an integrated sustainable accessibility plan that is model-based, process-based and based on international standards and community best practices. The implementation of Preservation Watch will be reviewed regularly and adjusted (if need be) according to a Plan-Do-Check-Act cycle. In this way Preservation Watch will be embedded in the regular work processes at the different departments of The National Archives and become part of our daily work.

References

Preservation watch as a concept was first minted in the European PLANETS project (2007-2011). See <http://www.planets-project.eu> and PLANETS deliverable 'Planets_PP7-D6_EvaluationOfPPWithinOAIS.pdf'

The *Reference Model for an Open Archival Information System (OAIS)* is the fundamental standard in digital preservation.

For inclusion of Preservation Watch in the next revision of the OAIS standard, see <http://digitalpreservation.nl/seeds/preservation-watch-suggested-change-in-oais-review/> and http://review.oais.info/show_bug.cgi?id=120

For more on the Digital Heritage Network (DHN), see <http://www.netwerkdigitaalergoed.nl/en/>

<https://wegwijzerduurzaamheidsbeleid.nl> [the preservation policy guidance of the Digital Heritage Network will be launched officially in the autumn of 2018]

For the SCAPE Catalogue of Preservation Policy Elements, see <http://wiki.opf-labs.org/display/SP/Catalogue+of+Preservation+Policy+Elements>