Assessment Information

CoreTrustSeal Requirements 2020–2022

Repository:	Netherlands Institute for Sound and Vision
Website:	www.beeldengeluid.nl
Certification Date:	16 December 2020

This repository is owned by: **Netherlands Institute for Sound and Vision**

Netherlands Institute for Sound and Vision

Notes Before Completing the Application

We have read and understood the notes concerning our application submission.

True

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:

CORE TRUSTWORTHY DATA REPOSITORIES REQUIREMENTS

Background & General Guidance

Glossary of Terms

BACKGROUND INFORMATION

Context

R0. Please provide context for your repository.

Repository Type. Select all relevant types from:

Domain or subject-based repository, National repository system; including governmental, Archive

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

Brief Description of Repository

Repository type:

a. Domain or subject-based repository (data type is AV)

b. Archive, in particular Audiovisual Archive

c. National repository system

All key activities, policies and procedures of the Netherlands Institute for Sound and Vision (NISV) are described in 3 overarching documents:
Preservation Policy Document : https://publications.beeldengeluid.nl/pub/679/
Collection Plan: https://publications.beeldengeluid.nl/pub/683
Multiyear Policy Plan: http://files.beeldengeluid.nl/beleidsplan/2016-2020/
A NISV business model* represents the organizational structure and the main business processes.

The NISV (https://www.beeldengeluid.nl/en) was founded in 1997 from a merge between the central public broadcast archive (AVAC), the Film Research Foundation (SFW), the Film Archive of the Government Information Service (RVD-FA) and the Dutch Broadcast Museum. It consists of an (audio-visual) archive and a museum. The NISV has since been formally responsible for collecting, preserving and presenting the national audio-visual heritage. The public task is twofold: the organization acts as a national media-institute for academic research, education and the general public, and as a corporate AV-programme Archive for the Netherlands Public Broadcasting Organization (Nederlandse Publieke Omroep – NPO, the overarching administrative organisation of all Dutch public broadcasters). The institute has been given the mandate of preserving the collections by the government. Furthermore, the NPO and the representing Dutch organisations of copyright holders have granted permission for preservation and for cultural, academic and educational usage of the collections. The NISV is structurally funded from the government media budget, added to by funds, sponsors, EU projects and lottery proceeds.

The NISV collections consist of digital born audio-visual productions and analogue and digitized legacy collections (film, audio, and video). File-formats are controlled by accepting a limited choice of formats. The collection amounts to over 1 million hours of AV materials. More recently, selections of web video, websites and games are being added to the collection, as well as written press documents. The repository is referred to as the Digital Archive. Its contents (2020) count over 26 Petabyte, including back-ups.

NOTE

Documents throughout the application marked with an asterix* have been made available to the reviewers and CoreTrustSeal Board as extra information and are not public. These (internal) documents specify and clarify the information that is being provided by the publicly available (policy) documents, guidelines and websites, by giving more detail and examples. They may also hold confidential information, as is the case with actual contracts and certain business processes.

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

Brief Description of the Repository's Designated Community.

As a national media institute the NISV considers the Dutch public as its Designated Community. Curation and preservation are aimed at long term access for public interest. In presenting all archived material the NISV aims at four user communities:

a. General public: access via a general portal, dedicated mobile platforms and by presentation on the NISV-premises (museum and viewing facilities).

b. Media professionals: access via a restricted media professional portal, ordering and download services and customized search facilities.

c. Academic researchers (humanities, data and information science): access to all data and metadata via a shared service hosted by a research community.

d. Teachers and students (all educational levels): access via a dedicated NISV-portal with dedicated proxies for use at schools and universities.

A general view on the NISV's user communities and on the handling of copyrights can be found on:
https://www.beeldengeluid.nl/en/knowledge/knowledge-themes/users

For details on the management of the user portals see description under R2.

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

Level of Curation Performed. Select all relevant types from:

A. Content distributed as deposited, B. Basic curation – e.g. brief checking; addition of basic metadata or documentation, C. Enhanced curation – e.g. conversion to new formats; enhancement of documentation

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

Comments

The institute preserves its collections at Curation Level A, B, and C (i.c. from additional basic metadata to extensive additional description and contextualization), from bit preservation to full preservation, depending on the cultural value of the material and/or the contracts with the data producers.

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

Insource/Outsource Partners. If applicable, please list them.

Not applicable.

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

Summary of Significant Changes Since Last Application (if applicable).

Since the last (DSA) certification in 2016, the NISV has undergone several changes that demonstrate that the work on the construction of a controlled preservation environment has progressed substantially, both in terms of policy and expertise and in respect to actual implementation. Some examples: the launch of a new Media Asset Management (MAM) system in 2018 with new modules for import, workflow management, quality control and IPR management; the development of more formalized policies and procedures for preservation planning. Also, in 2019, the Collection Policy was recalibrated to include new collection areas, for which new preservation strategies were developed. All changes and their effects are referenced and described in the Preservation Policy Document, edition 2019, in the Introduction and in various Chapters: https://publications.beeldengeluid.nl/pub/679/

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

Other Relevant Information.

As an institute for media culture, consisting of both an archive and a museum, the NISV plays a key role in documenting, interpreting and presenting Dutch socio-cultural history, as recorded in media. Based on practical work and on research, the NISV develops, collects and actively disseminates knowledge and information on media history and on all aspects of (digital) audio-visual archiving.
-The NISV functions as an AV-node in the Digital Heritage Network of the Netherlands (NDE): https://www.netwerkdigitaalerfgoed.nl/en/ Within this infrastructure, five institutions serve as nodal points for the rest of the country's heritage institutions: the Royal Library, the Royal Netherlands Academy of Science, the National Archives, the Netherlands Agency for Cultural Heritage and the Netherlands Institute for Sound and Vision. NDE is collaborating on the development of a system of national facilities and services to improve the visibility, usability and sustainability of digital heritage.
-The NISV is a founding member of AVA_Net, the audio-visual archive network of the Netherlands: https://www.avanet.nl In this role the institute is responsible for the maintenance of the AVA_Net Knowledge bank for audio-visual archiving and other knowledge sharing initiatives on a national level.
-The NISV leads and takes part in several national and international R&D projects that focus on the innovation of access and preservation functions: https://www.beeldengeluid.nl/en/knowledge/projects
-The NISV is one of the partners in the CLARIAH consortium which primary goal is to develop a digital infrastructure that enables researchers in the humanities to conduct innovative and data-intensive research. CLARIAH project page of the NISV: https://beeldengeluid.nl/en/knowledge/projects/clariah

Reviewer Entry

Reviewer 1

Comments:

Accept

Reviewer 2

Comments:
Accept

ORGANIZATIONAL INFRASTRUCTURE

1. Mission/Scope

R1. The repository has an explicit mission to provide access to and preserve data in its domain.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository

Response:

The main assignment of the NISV is to collect and sustainably preserve AV-collections considered to be of national cultural and historical importance, and to ensure accessibility to the collections for research, re-use and exploitation purposes. The NISV has been appointed as the national AV-Archive by the Dutch government and is structurally funded through the:
Media Act: https://wetten.overheid.nl/BWBR0025028/2018-05-30
The NISV's goals are reflected in the :
-Preservation Policy Document, Chapter 2 Mission and Organization:
https://publications.beeldengeluid.nl/pub/679/
-Collection Plan: https://publications.beeldengeluid.nl/pub/683
-The Multiyear Policy Plan: http://files.beeldengeluid.nl/beleidsplan/2016-2020/
- NISV Statutes*

The obligation of sustainable (digital) preservation and access is the automatic consequence of the NISVs mission and

assignment (https://www.beeldengeluid.nl/en/about/mission-and-vision) that are implemented by the provision of its Digital Archive and associated services, legal frameworks, policies and workflows, and the partnerships with data producers/depositors, commissioners and donors. The mission statement is issued under the authority of the CEO and approved by the Supervisory Board of the institute. The chair(wo)man of the board is appointed by the Minister of Education, Culture and Science (OCW). Three out of seven board members are appointed by the Netherlands Public Broadcasting Organization (NPO.) The other board members are appointed by the Supervisory Board itself and represent Dutch academic and cultural communities. The Supervisory Board establishes the multi-year budget and the derivative activity plans. The Ministry of Education, Culture and Science requests the advice from the NPO on the annual and long-term budgets, before adopting it.

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

2. Licenses

R2. The repository maintains all applicable licenses covering data access and use and monitors compliance.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository

Response:

Positioned as intermediary between users and rights holders, the NISV functions as a gateway where all transactions are registered. Material can only be published or viewed according to what is specified in a license agreement with the copyright owner or the licensor. The NISV MAM system manages the licenses between the data producers from the

broadcast production by an integrated licence module that pushes all contractual conditions through to the applicant. Automated rights management mechanisms ensure that material is only delivered after these rights owners have given their consent to the type of reuse requested. For usage outside of the broadcast environment (by the general public and by businesses) the NISV also functions as a license broker. Changes and updates of license terms are preserved. There is an API available that can be used for different publishing purposes. This API can be configured according to the rights regulations, as applicable for portals directly connected to the MAM system. Copyright information is also made accessible in the catalogued metadata per individual asset (on collection, series, programme and sequence level). All access and usage conditions are described in the
Preservation Policy Document, Chapter 9 Access, Discovery, Copyright and Licensing:
https://publications.beeldengeluid.nl/pub/679/
and are communicated via the various NISV search portals.

A. The Media Professionals Portal MPP provides exclusive online access (i) to the Digital Archive via a User ID. The professional user needs to apply for a personal account at the front office of NISV. This account is managed in the MAM-system itself. All user actions are logged in an audit trail and summaries of these actions and events are preserved (iii).The MPP database and the general access regulations, included in terms and conditions for licensing and rights, are available on the (restricted) website. These conditions and procedures for access, ordering, reuse and licensing are also laid down in a collective service agreement (ii) between the NISV and the public broadcasters that is annually reviewed.
(i) Media Professionals Portal info: https://www.beeldengeluid.nl/en/collection/collection-media-professionals
(ii) Service Agreement Public Broadcasters*
(iii) Security Policy Document NISV, Chapters 2,3 and 4*

B. The General Public Portal GPP is accessible online without a login and offers metadata about all AV-materials(i).User names, actions/events and IP-addresses are logged and preserved in a summarized format (v).
Material can be ordered for private use only (ii). Procedures for search and order services are laid down in online general conditions(iii). The collections themselves can be viewed on site, in the NISV's museum and in the Customer Contact Centre. If IPR-regulations allow for this (iv), the material can also be viewed online .
(i) General Public Portal: https://www.beeldengeluid.nl/en/collection
(ii) Ordering for private use: https://www.beeldengeluid.nl/en/collection/order-private-use
(iii) General conditions for private use:
https://www.beeldengeluid.nl/collectie/bestellen-voor-privegebruik/algemene-voorwaarden-en-bijzondere-voorwaarden
(iv) Flowchart IPR Handling Online publication:
https://www.beeldengeluid.nl/en/knowledge/knowledge-themes/users/copyright/flowchart
(v) Security Policy Document, Chapter 2,3 and 4*

C. Education Portal. The NISV makes material available on the streaming platform Sound and Vision At School (i) via User ID's. Any institute that is a member of the named national educational organisations, may apply for a login. All user actions are logged in an audit trail and summaries of these actions and events are preserved (iv). For browsing, viewing

and online editing of the low res files in educational settings, the original rights owners have granted general permission in an Archive Agreement (ii) between the NISV and the rights owners with the NISV. Materials can only be played out through a login, and authentication is taken care of by the Dutch national educational organizations SURFnet and Kennisnet, as is explained on the NISV At School website (iii).
(i) Education Portal: https://beeldengeluidopschool.nl/#/home
(ii) Archive Agreement*
(iii) Education Portal, conditions access and usage : https://beeldengeluidopschool.nl/#/over
(iv) Security Policy Document, Chapters 2,3 and 4*

D. Research platforms. The institute also presents selected AV materials on international (academic and educational) platforms (i). Any person that is a member of a Clariah associated university or institute can gain access via the login service of the institute. For conditions and terms for the actual use of the materials, visitors of the academic and educational platforms are referred back to the information on rights and licensing handling at the main NISV portal.
(i) Platforms:
-NISV Clariah project page: https://beeldengeluid.nl/en/knowledge/projects/clariah
-Euscreen: http://www.euscreen.eu/
-Europeana: https://www.europeana.eu/portal/nl

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

3. Continuity of access

R3. The repository has a continuity plan to ensure ongoing access to and preservation of its holdings.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository

Response:

The NISV has been formally appointed as the national AV-archive by the Dutch government in 1997. It's assignment and funding structure is laid down in the Media Act (i). The main assignment of the NISV is to collect and sustainably preserve AV-collections considered to be of national cultural and historical importance, and to ensure accessibility to the collections for research, re-use and exploitation purposes. The obligation of sustainable (digital) preservation and access is the automatic consequence of this assignment. The NISV's responsibilities regarding sustainable preservation and access are directly reflected in its Statutes (ii), its Preservation Policy Document (iii), its Collection Plan (iv) and its Multiyear Policy plan (v). The elaboration of the responsibilities and agreements is outlined in detail in the collective or individual contracts and agreements (vi) that are made up with all data producers. All contracts contain sections on the agreed access and preservation level.
(i)Media Act: https://wetten.overheid.nl/BWBR0025028/2018-05-30
(ii) NISV Statutes*
(iii) Preservation Policy Document, Chapter 2 Mission and Organization and 3 Strategic Policy Framework: https://publications.beeldengeluid.nl/pub/679/
(iv) Collection Plan: https://publications.beeldengeluid.nl/pub/683
(v) Multiyear Policy Plan: http://files.beeldengeluid.nl/beleidsplan/2016-2020/
(vi) Contracts and Agreements:
-Digital Archiving Services Agreement https://publications.beeldengeluid.nl/pub/463
-Donation Agreement https://publications.beeldengeluid.nl/pub/407
-Archive Agreement*
-Service Agreement Public Broadcasters*

The NISV's operations are paid for by the media budget of the Ministry of Education, Culture and Science, concluded by the Government and set for 4 year. Additional funding comes from the government cultural budget, subsidies, project funds and lottery proceeds. The NISV controls continuity of its operations by regularly monitoring all organizational, financial, technical and staff changes that may affect the continuity of the Digital Archive (vii).The NISV's public broadcast collections accrue to the Dutch Government, i.e. the NPO as the central administrative body of all Dutch public broadcasters The entire broadcast collection is stored on separate tape groups in the Digital Archive, for easy management and identification. For the collections that originate in the non-public broadcasting domain, exit provisions are provided for in the contracts with the individual or collective data producers.
(vii) Preservation Policy Document, Chapter 8 Preservation Planning and Control: https://publications.beeldengeluid.nl/pub/679/

Reviewer Entry

Reviewer 1

Comments:

Accept

Reviewer 2

Comments:
Accept

4. Confidentiality/Ethics

R4. The repository ensures, to the extent possible, that data are created, curated, accessed, and used in compliance with disciplinary and ethical norms.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository

Response:

General information on the conditions for (re)use of the collections, on copyright issues and on the valid codes of user conduct is available on all NISV portals (i) for media professionals, the general public and the educational users. In the collective Service Agreement (ii) with the public broadcasters, more rules are included. Conditions for consultation, use and user conduct for the educational domain are formally laid down in the agreement with Surfnet, the Secondary Education Council (VO Raad), Stichting Kennisnet, the Clariah Consortium, NPO and with the rights holders (iii).
(i) NISV portals media professionals (restricted) general public and educational users:
https://www.beeldengeluid.nl/en/collection/collection-media-professionals
https://www.beeldengeluid.nl/collectie#collectiehergebruik
https://beeldengeluidopschool.nl
(ii) Service Agreement Public Broadcasters, Chapter 2 Service Conditions*
(iii) Archive Agreement*

The NISV has documented policies and fixed protocols (iv) in place regarding privacy protection, the anonymizing of data, blocking of materials and online publication:
(iv) Privacy Policy Statement: https://beeldengeluid.nl/en/sound-and-vision-website-privacy-statement

(iv) Flowchart IPR Handling Online Publication:
https://www.beeldengeluid.nl/en/knowledge/knowledge-themes/users/copyright/flowchart
(iv) Ethical Checklist*
(iv) Security Policy Document, Chapter 5.4 Data Confidentiality*

A procedure for request to anonymize certain materials is part of the Service Agreement (v) with the public broadcasters. The NISV performs standardized procedures (vi) regarding the request for blockage of broadcast programmes or sequences. In case individual persons object to the accessibility of controversial data, or when mistakes are detected, the metadata may be changed or corrected. Media professionals can request for a blockage of certain material via a special form The NISV also uses an internal standard procedure: blocked material cannot be ordered or re-used, only the metadata can be viewed in the NISV Catalogue (vii). In some cases the catalogue description may be discarded, in consultation with the data producer. Confidential data is not available for non-authorized users outside of the Digital Archive. Users may request special permission to access this content. The Customer Contact Centre is the NISV department that processes these kind of requests and sends them through to Metadata Management for verification and effectuation. The NISV's Privacy Officer is responsible for the design and implementation of the policies and procedures and for sensibilizing and training the staff on these issues (viii).
(v) Service Agreement Public Broadcasters, Appendix 5*
(vi) Blocking procedure MAM system*
(vii) Preservation Policy Document, Chapter 9 Access, Discovery, Copyright and Licensing :
https://publications.beeldengeluid.nl/pub/679/
(viii) Security Policy Document, Chapter 5.4 Data Confidentiality*

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

5. Organizational infrastructure

R5. The repository has adequate funding and sufficient numbers of qualified staff managed through a clear system of governance to effectively carry out the mission.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository

Response:

The NISV's assignment and funding structure are laid down in the Media Act (i). Per department annual budget plans are made, based on the resources required for regular activities and for projects. The institute's Digital Archive has been inspired by the OAIS model in structuring its organisation (ii), its technical infrastructure and its preservation functions. In 2018 the NISV implemented an organizational approach based on the requirements of its user communities or target groups. The functions ingest, access, storage and data (information) management are embedded in the organisational structure. The functions for administration are currently a joint responsibility between the Information Governance Board (iii), the ICT department and the information managers. Preservation planning is a shared task of preservation managers and the ICT-department. Preservation watch is being performed by ICT and R& D staff, by the Customer Service Centre and by access managers.

A business model (iv) and various processes models (v) have been developed for modelling and carrying out the functions of the Digital Archive. The planning and execution of preservation planning on a detailed level is laid down in the Policy Memo Preservation Planning (vi) and in separate preservation plans per collection or per process(vii).
(i) Media Act 2008: https://wetten.overheid.nl/BWBR0025028/2018-05-30
(ii) Preservation Policy Document, Chapter 2 Mission and Organization: https://publications.beeldengeluid.nl/pub/679/
(iii) Information Governance Board: https://publications.beeldengeluid.nl/pub/681/
(iv) NISV Business model*
(v) Process models ingest, storage, preservation and access*
(vi) Policy Memo Preservation Planning*
(vii) Preservation plan Games (example)*

In total appr. 30 FTE are dedicated to digital preservation processes. They work in different departments throughout the organization. Selection, ingest and transferring workflows are conducted by the media ingest managers and by ICT staff. Storage processes and application management are the responsibility of ICT. Metadata specialists and information managers control the workflows and the metadata. Providing access and customer contact is done by access managers and the Customer Contact Centre.

All required skills of the employees that work on digital preservation are outlined in the Preservation Policy Document (viii). Skills and competences are regularly updated by in house and external training (ix) (e.g. the NISV Knowledge café's, IRP

workshops and the Winterschools for AV-archiving; NDE training Digital Preservation, annual FRAME training INA) and national and international conference attendance, e.d. NDE conferences and conferences and seminars organised by FIAT-IFTA, IASA, PASIG and Ipres. Internal and external knowledge building and sharing takes place via the, the online national knowledge AVA_Net centre (ix), and by NISV's own public publication site (x) that presents manuals, user guides, fact sheets, white papers and other publications on aspects of media archiving, access and digital preservation.
(viii) Preservation Policy Document, Chapter 8 Preservation Planning and Control; Appendix II Staff Competences: https://publications.beeldengeluid.nl/pub/679/
(ix) AVA_Net: https://www.avanet.nl/
(x) NISV Publications site: https://publications.beeldengeluid.nl/page/1

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

6. Expert guidance

R6. The repository adopts mechanism(s) to secure ongoing expert guidance and feedback (either inhouse or external, including scientific guidance, if relevant).

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository

Response:

The NISV employs dedicated digital preservation expert staff (https://www.beeldengeluid.nl/kennis/experts) that provide for advice and feedback to senior management and the Information Governance Board, in order to enhance the functions

of the Digital Archive.
- Preservation officer for policy advise on strategic, tactical and operational preservation aspects
- Information officers for policy advise on information policy, access and data management
- Specialists user studies
- Specialists new media
- Legal expert on collection and access policies, contracts and copyright policy issues.
- Privacy officer

Knowledge on digital preservation is gathered via active participation and involvement in national and international digital preservation expert platforms (NDE, FIAT/IFTA, IASA, AMIA, PASIG, IFLA, Ipres, FIAF, UNESCO Memory of the World Committee, OPF) and by annual visits to dedicated IT conventions (IBC and NAB).

The organisation stays current with the requirements of the Designated Community by regularly negotiating the agreements with the user communities and by regularly organizing user feedback groups for media professionals and for representatives of the educational domain. Requirements of the general public are monitored by the R&D staff.
See Preservation Policy Document, Chapter 8 Preservation Planning and Control:
https://publications.beeldengeluid.nl/pub/679/

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

DIGITAL OBJECT MANAGEMENT

7. Data integrity and authenticity

R7. The repository guarantees the integrity and authenticity of the data.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:

4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository

Response:

The Digital Archive's requirements for digital object management are addressed in the NISV's Quality Criteria, based on ISO 16363 (i). All the NISV's workflows, checks, procedures and preservation levels set up to guarantee integrity and authenticity, are described in the Preservation Policy Document (ii). Chapter 7 contains the NISV 'preservation menu' clarifying the different preservation scenarios or 'levels' of delivery, storage and access that are offered. All the agreements relating to the preservation specifications are set out in detail in the contracts and the service level agreements with the data producers, depositors and donors.
(i) Quality Criteria Digital Archive, section B : https://publications.beeldengeluid.nl/pub/403
(ii) Preservation Policy Document, Chapter 5 Preservation Strategies; Chapter 6 The Preservation Workflow and Chapter 7 Preservation Levels: https://publications.beeldengeluid.nl/pub/679/

Integrity (iii)
The NISV's storage management system DIVArchive calculates checksums in MD5-format for all incoming objects. These can be verified with the checksums as delivered by the data producer, depositor or donor. In case these parties cannot meet checksum requirements, the Digital Archive will generate the checksum at ingest. The stored checksum is used for checking whether backup copies are identical and files have been copied properly throughout their lifecycle.
(iii) Policy Memo Archival Storage*

All files and metadata - from whichever source they may come - are ingested into the same MAM system (iv) (a customized Viz One MAM product of supplier ViZrt) through standardized import workflows (v), managed by the workflow system MAYAM Tasks. By default, all MXF files are analyzed by analysing software (Baton1) to check whether the file meets the specifications of the profile that is provided by the data producers (public broadcasters). For MXF files, an additional quick check is performed on the header and footer for completeness of the file.
(iv) MAM system DAAN: https://www.beeldengeluid.nl/collectie/voor-makers-en-professionals/daan
(iv) MAM System Technology Architecture*
(v) Import workflows MAM system*

Authenticity (vi, vii, viii)
The provenance of all ingested items, along with the descriptive metadata and the technical metadata is captured, with references to the source system and a source ID. Date of ingest and ingest method are recorded. DivArchive logs and stores the provenance data with the file. By way of a naming convention, data producers/depositors are identified in the various ingest workflows and an internal persistent identifier is generated, establishing a link between metadata and files. Different data producers/depositors will deliver files to different watch folders, in order to create yet another way to keep track of their identity. New versions of a programme (re-offered by the broadcaster after small corrections have been

made) will be detected and the files will be added to the original entry. The older versions will be blocked from the portals. In the rare case that a file needs to be repaired, the new version is regarded a new ingest with the archive date reset. A remark will be made that points to the archive date of the original.

The output of all processes is logged and structured and can be used as an overview of the life cycle of the files from ingest through to storage and access. The MAM system logs the history of tasks/actions in order to demonstrate that all actions on a file or a collection of files have been performed according to agreed specifications. A business intelligence tool is currently being developed to map, integrate and structure pre-defined preservation metadata registered in different applications for the purpose of collection management and preservation planning. Preservation plans are set up for (new) acquisitions, for (collective) migration/transformation actions and for all updates or alterations to the workflows and components of the preservation system environment, at any time these occur).
(vi) Preservation Policy Document, Chapter 8 Preservation Planning and Control:
https://publications.beeldengeluid.nl/pub/679/
(vii) Policy Memo Preservation Planning*
(viii) Preservation plan Games (example)*

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

8. Appraisal

R8. The repository accepts data and metadata based on defined criteria to ensure relevance and understandability for data users.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository

Response:

Selection criteria for data that fall within the mission of the NISV are defined in the Collection Plan (i). Data that do not comply with this mission are not taken in. Data are ingested in the Digital Archive only in formats that suit the access and re-use requirements of the NISV's various user groups (ii). Requirements for descriptive metadata, the NISV metadata model and the search facilities on the platforms are also tailored to these requirements (iii).
(i) Collection Plan: https://publications.beeldengeluid.nl/pub/683
(ii) Preservation Policy Document, Chapter 4 Preservation Principles; Chapter 5 Preservation Strategies and Appendix I NISV Formats and Preservation Strategies: https://publications.beeldengeluid.nl/pub/679/
(iii) NISV Metadata model: https://publications.beeldengeluid.nl/pub/671

Public broadcasters
The NISV's digital infrastructure is directly connected to the public broadcast production network via a central digital facility (DDV, De Digitale Voorziening) where all data producers from the broadcast environment submit their programmes before broadcast. A data producer can only deliver video files (MXF) after these files have been certified. After being broadcast, the files and accompanying metadata are automatically ingested into the Digital Archive provided they comply with the selection criteria based on the Collection Plan. All specifications, guidelines and conditions concerning the selection of programmes, required file formats and metadata specifications are laid down in the Service Agreement Public Broadcasters (iv).

Other data producers
To data producers and depositors outside of the public broadcast environment, who donate their collections to the NISV (gifts and bequests) a list of file specifications is provided as is a template, indicating the mandatory metadata. The list is extracted from the Preservation Metadata Dictionary (v) that describes all attributes of all the NISV's preservable formats. In case these data producers/ depositors cannot meet format- and checksum requirements, the Digital Archive may (help to) transcode the files to a preservable format (vii).

When storage and preservation is carried out as a temporary or permanent service to other cultural and media institutions, format and metadata requirements are a formal part of the Digital Archive Service Agreement for non-public broadcast data producers/depositors (viii).

The MAM system automatically checks the data quality of the metadata at ingest, in adherence to the format and (preservation) metadata specifications (ix). The system has rejection criteria for metadata built in, as well as a workflow for repairing, logging and documenting errors. The NISV can reject and/or correct the material if upon submission it does not comply with the agreed specifications. In case of structural errors , the data producers/ depositors will be contacted by the media managers in order to improve the quality. In principle, no items are removed from the collection, once ingested and stored in the Digital Archive (viii). Before ingest, programmes are appraised. Media managers Ingest select programmes for long term preservation by valuing them with a certain status. The programmes produced by the public broadcasters are appraised with either a B (core collection) or a C (non-core collection). The materials that the NISV acquires from non-public broadcasters is either appraised with an A (rare, unique productions) or a B. The (automatically ingested) metadata that is associated with the ingested programmes, may be contextualized or added to in case the programme

meets specific formal criteria or for reasons of topicality. The Digital Archive can decide to eventually discard files that are labelled with a C or a D (D: items that are irrelevant to the collection) by excluding them from preservation (migration) actions. The appraisal mechanisms do not apply to materials that are ingested and preserved as a service.
(iv) Service Agreement Public Broadcasters, Appendices*
(v) Preservation Metadata Dictionary 2.0 : https://publications.beeldengeluid.nl/pub/615
(vi) SIP Requirements for a TIFF Format (example)*
(vii) Preservation Policy Document, Chapter 4 Preservation Principles and Appendix I NISV Formats and Preservation Strategies https://publications.beeldengeluid.nl/pub/679/
(viii) Digital Archive Service Agreement for non public broadcast data producers/depositors: https://publications.beeldengeluid.nl/pub/463
(ix) Metadata Checks MAM system*

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

9. Documented storage procedures

R9. The repository applies documented processes and procedures in managing archival storage of the data.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository

Response:

All storage, maintenance, backup and risk management procedures (i) within the NISV's ICT department comply with ITIL methods and are described in the
(i) Preservation Policy Document, Chapter 10 Technical Infrastructure: https://publications.beeldengeluid.nl/pub/679/
(i)Operational IT policy document*
(i) Policy Memo Archival Storage*
(i) Storage Prognoses 2020-2025*

Summary of processes and procedures
Files that are stored on tape are managed by the storage management system DiVArchive, that is responsible for creating backup copies and ensuring that these are identical to the primary archival copy. Files arrive on a disk cache and can only be removed after at least one successful copy has been made on tape. Browse files of the preservation masters are also backuped on tape, to ensure restore possibilities and direct availability in case of contingencies. Files that are kept on file servers are mirrored and a tape backup is created every night. This process is strictly monitored. For the key archival data sets extensive backup procedures have been implemented. The nightly backup includes all database files that contain the catalogued metadata and the database of the storage management system. In case of data loss, backup copies can be restored from tape. In case of database defects, the nightly backup can be used for restore. As a policy rule, backup restore tests are performed regularly, to ascertain that the production environment can be fully restored in case of emergency. The stored checksum information is used for checking whether backup copies are identical and files have been copied properly. More customized options are available in case higher levels of accessibility and/or security are required. Detailed backup procedures are laid down in the collective or individual contracts and SLA's with the data producers.

One back-up of the Digital Archive is placed with a professional commercial partner at the Mediapark in Hilversum. A 2nd backup facility with full power feed has been implemented at the Royal Library in The Hague to function as a disaster recovery facility. Periodically all data in the Digital Archive, including the back-up services, are being tested. These recovery tests take place in a separate Acceptance environment, in order not to disrupt the ingest, storage and access processes in the main Production environment. For geographical risk spreading, a disaster recovery approach is used.

The Digital Archive has already performed multiple migrations of the OAIS-type 'refreshment' on the LTO-tape storage media and file servers. Deterioration of storage media is handled by pro-actively migrating to new LTO versions every 5-7 years. During migration, checksums ensure that new copies of archival objects are consistent with the original versions. Deterioration of disk storage is handled by regularly replacing servers that are older than 5 years.

The strategy for risk management is informed by regularly performing a security audit and by the monitoring of technical, organisational and financial developments within the digital storage domain, such as the process of evolving LTO generations or new functionalities and services offered by suppliers of storage software. Error logs are checked to make sure all components are able to carry out the procedures of the infrastructure, according to the specifications. Risk management is carried out by using all this information to plan ahead, in order to ensure future storage volumes can be handled, techniques will remain affordable etc.

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

10. Preservation plan

R10. The repository assumes responsibility for long-term preservation and manages this function in a planned and documented way.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository

Response:

The NISV is a legal entity, specifically a foundation, that has been given the mandate of preserving the collections by the government (i). The public broadcasters, united in the Netherlands Public Broadcast organization NPO, in association with the representatives of the Dutch organisations of copyright holders, have granted permission for preservation (copying, multiplication) and for cultural and educational usage of the collections (ii). The strategic and tactical approach to long term preservation by the NISV is described in the Preservation Policy (iii) that is updated on a three to four year basis.

The institute preserves its collections at Curation Level A, B, and C (i.c. from basic metadata to extensive additional description and contextualization, from bit preservation to full preservation), depending on the cultural-historical value of the material, as described in the Collection Plan (iv), the re-use value and/or the contracts with the data producers/depositors.

A basis for future migration plans (data tapes and storage media) is laid down in the Storage Prognoses (v). The migration of MXF-formats, when deemed necessary, will be carried out in consultation with the data producers, the public

broadcasters. On an operational level detailed preservation plans are set up for the preservation (migration, emulation) of specific (newly acquired) media types and/or for updates or alterations to the workflows or the components of the system environment, at any time these occur. Significant properties are selected from the Preservation Metadata Dictionary (vi) and set per individual transformation. Part of the preservation plans is a prior analysis of the technical, access and re-use requirements of the contemplated user community of the collection concerned (vii).

With all data producers/ depositors detailed contract is concluded. The data producers/ depositors can select from various preservation levels within a range from plain storage to full managed preservation service (Preservation Policy Document, Chapter 7 (iii). Each preservation level implies the fulfilment of specified format (and metadata) requirements that are linked to a set of guarantees, ranging from mere bit preservation and data integrity to full permanent access and long term preservation. Conditions for the submission of essence and metadata (viii) need to be agreed on before ingest. The contract and the SLA that are eventually concluded, describe the agreed level of preservation and accessibility and the guarantees for digital sustainability in detail. Handover of custody is confirmed by quarterly reports per ingested collection to data producers. The MAM system logs the history of all tasks in order to demonstrate that all actions on a file or a collection of files have been performed according to the agreed preservation level.
(i) Media Act 2008: https://wetten.overheid.nl/BWBR0025028/2018-05-30
(ii) Archive Agreement*
(iii) Preservation Policy Document, Chapter 2 Mission and Organization; Chapter 7 Preservation Levels and Chapter 8 Preservation Planning and Control: https://publications.beeldengeluid.nl/pub/679/
(iv) Collection Plan: https://publications.beeldengeluid.nl/pub/683
(v) Storage Prognoses 2020-2025*
(vi) Preservation Metadata Dictionary 2.0: https://publications.beeldengeluid.nl/pub/615
(vii) Preservation plan (example, analysis Designated Community for Games)*
(viii) Manual for making a Submission and Order Agreement: https://publications.beeldengeluid.nl/pub/400

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

11. Data quality

R11. The repository has appropriate expertise to address technical data and metadata quality and ensures that sufficient information is available for end users to make quality-related evaluations.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository

Response:

Data and metadata are ingested and processed in formats tailored to the access and re-use requirements of the NISV's user communities. Preferred formats for (meta)data (i), the NISV metadatamodel (ii) and the dedicated search platforms are based on these requirements. The institute stays current with the requirements through regular training and feedback sessions with key representatives of the user communities.

In order to facilitate the availability and usage of the collection by the different user communities, all browse copies of the master materials are preserved. In the case masters have a format that cannot be delivered directly for re-use (e.g. the DPX format), mezzanines are made in advance, to ensure that this material can be quickly available. With regard to the current broadcast format (both master and browse copy), the NISV complies with the quality and resolution requirements of the data producer, i.c. the public broadcasters.

The Digital Archive requests all data producers and depositors to provide basic metadata for automatic ingestion into the catalogue. These metadata may be manually enriched and contextualized by the NISV media managers after ingest, depending on the appraisal status of the ingested production (A, B or C) and/or the designated usage by specific user communities (e.g. the research community; the media professional community). The guidelines for data producers in the public broadcast environment are accessible on the Media Professional Platform MPP and in the Service Agreement Public Broadcasters (iii). The daily ingest of metadata from the broadcast domain, is imported directly from external source broadcast production systems like Publieke Omroep Media Service (POMS) and Whats'On, to the Digital Archive.

To data producers outside of the public broadcast environment, a template is provided indicating the required metadata that can be imported into the MAM by a Generic Metadata Importer (GMI). If necessary, the Digital Archive offers the possibility of making additional agreements for the capturing of extra metadata. For data producers (cultural and media organisations from outside of the public broadcast domain) for whom the NISV preserves digital materials as a service, (meta) data requirements and the level of accessibility are a formal part of the Digital Archiving Services Agreement (iii). Data producers and depositors are assisted and supervised by media managers Ingest during the processing of files and metadata. Prior to the ingest into the Digital Archive the quality and completeness of the delivered materials is tested. If it doesn't comply to the agreements and the requirements, it will either be rejected or corrected. If structural errors occur,

the data producers will be contacted by the media managers in order to improve the quality. During ingest, technical and process metadata are automatically extracted by the system.

(i) Preservation Policy Document, Appendix I NISV Formats and Preservation Strategies:
https://publications.beeldengeluid.nl/pub/679/
(ii) NISV Metadatamodel: https://publications.beeldengeluid.nl/pub/671
(iii) Service Agreement Public Broadcasters, Appendix 3*
(iv) Digital Archiving Services Agreement: https://publications.beeldengeluid.nl/pub/463

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

12. Workflows

R12. Archiving takes place according to defined workflows from ingest to dissemination.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository

Response:

On a general level all workflows are laid down in the Preservation Policy (i). A generic OAIS compliant information model (ii) a business model (iii) and a series of detailed workflow schema’s (iv) for the actual acquisition, ingest, storage, preservation planning and access processes, define all workflow events, agents involved and (meta)data objects submitted to the Digital Archive. Events, rights, technical characteristics and provenance have been pre-defined in the

Preservation Metadata Dictionary (v). The lifecycle of all ingested files is logged in the MAM system and in the DIVArchive storage management system. By using the BI Tool that is currently being set up, it will be possible to generate quantitative outputs like the life cycle of a file or a group of files, for reporting and preservation planning purposes (vi).

Selection, ingest and transferring workflows are conducted by media managers Ingest and ICT staff. The Digital Archive maintains a standardized process for acquiring material and metadata and negotiates for information with the data producers. The contracts with all types of data producers and depositors hold provisions on the data producer, the composition of the digital objects (essence, metadata and additional context information) to be ingested, copyright information, the required (formal, descriptive and administrative) metadata to accompany the files, submission instructions and access level. In order to guide data producers and depositors in the delivery of the appropriate metadata, instructions are included in the contracts and agreements (vii).

(i) Preservation Policy Document, Chapter 6 The Preservation Workflow and Chapter 10 Technical Infrastructure: https://publications.beeldengeluid.nl/pub/679/
(ii) NISV Information Model 1.0: https://publications.beeldengeluid.nl/pub/389
(iii) NISV businessmodel*
(iv) Process models acquisition, ingest, storage, preservation and access*
(v) Preservation Metadata Dictionary 2.0: https://publications.beeldengeluid.nl/pub/615
(vi) Policy Memo Archival Storage*
(vii) NISV Manual for making a Submission and Order Agreement: https://publications.beeldengeluid.nl/pub/400
(viii) Contracts and Agreements:
-Digital Archiving Services Agreement: https://publications.beeldengeluid.nl/pub/463
-Donation Agreement: https://publications.beeldengeluid.nl/pub/407)
-Service Agreement Public Broadcasters, Appendix 3*

Examples of workflows for change management and decision handling:
1.Order Handling Process:
To support change management, a project has been set up to provide insight into the possible improvement of this process. Several applications are involved and different operators have to process information during the workflow. The workflow is used for communication and to help to define the requirements.
2. MXF repairflow:
Decision handling regarding data transformation.This workflow has been designed to create a managed repairflow on a large set of files in the repository. Depending on the outcome of the quality analysis, separate flows are being set up to handle the files. In some cases extra backup procedures are accounted for. The workflow defines the design of the actual infrastructure that has to be designed. The decision on this repairflow was made by the Information Governance Board, based on a migration plan and is thus in line with the Policy Preservation Planning.
3.Handling completeness check:
Depending on the type of ingest, different completeness checks have to be performed. This workflow shows the complexity of tasks and their status during these checks. The workflow was designed to fix some irregularities in the

system and to support the writing of manuals for operators who handle the exceptions.
4.IPR assessment-workflow:
https://www.beeldengeluid.nl/kennis/kennisthemas/gebruikers/auteursrecht/stroomschema
In order to determine whether materials can be offered open and online, the NISV has drawn up an online flow chart that serves as the basis for all rights research that is carried out within the collection.

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

13. Data discovery and identification

R13. The repository enables users to discover the data and refer to them in a persistent way through proper citation.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository

Response:

The NISV offers extensive search facilities. On the various web outlets a search engine is provided as are ordering and delivery services with search, editing and presentation facilities tailored to the requirements of the various user communities: the media professionals, the general public, users from the educational domain and researchers.

All metadata is searchable and retrievable via the online catalogue that offers access to the entire collection in the Digital Archive. The levelled way in which the underlying metadata model (i) is structured, is inspired by the IFLA-FRBR model (ii).Keywords, names, genres and locations are defined in the Thesaurus system (iii) that supports the index and search

processes.
(i) NISV Metadatamodel: https://publications.beeldengeluid.nl/pub/671
(ii) IFLA-FRBR Model: https://www.ifla.org/publications/functional-requirements-for-bibliographic-records
(iii) NISV Thesaurus webpage:
https://www.beeldengeluid.nl/kennis/kennisthemas/metadata/gemeenschappelijke-thesaurus-audiovisuele-archieven

The MAM system facilitates various search portals:
1. The Media Professional Portal MPP
https://www.beeldengeluid.nl/en/collection/collection-media-professionals
that provides exclusive online access to the Digital Archive for professional users (consultation and viewing in low-res and keyframes; online ordering and retrieving of high-res material on a restricted website).
2. The General Public Portal GPP (https://zoeken.beeldengeluid.nl/) a dedicated online portal where all types of not logged-in users can search through the collections and play selected audio and video sequences: (foreign) media professionals without an account or teleworkers; all sorts of individuals from the general public; museum visitors, researchers, media historians etc. A theme channel with free downloadable AV-content (http://in.beeldengeluid.nl/) is part of the service to the general public.
3. The Education Portal (https://beeldengeluidopschool.nl/#/home)
provides source material for end users (teachers and students) to edit, structure and contextualize in educational settings. The NISV clusters and thematises the offered material. Metadata for the complete collection is searchable and a large selection (+/- 100.000 assets) can be retrieved and used.
Besides these portals and the internal NISV search interface Studio, two separate platforms: the NISV wiki (https://wiki.beeldengeluid.nl/index.php/Hoofdpagina) and the Music Encyclopedia (http://www.muziekencyclopedie.nl/) offer extensive contextual information to NISV's collections.

By use of automatic tagging techniques like speaker labelling, face recognition and keyword extraction on the basis of 888 Teletext, the descriptive metadata in the catalogue descriptions and search index is automatically added to. In order to improve the accessibility and reliable search ability the NISV performs frequent quality control on the automatically generated labels so the accuracy overall is above 90-95%. Furthermore, search configuration, advanced search options and search relevancy are periodically updated according to changing user requirements.

Harvesting via OAI-PMH protocol is permissible, and has been enabled for portions of the collection for dedicated partners. This data service is used by heritage data aggregators, by the educational platform and for the research repository. The NISV also provides restricted API's for specific partners and customers on request. Persistent Identifiers, a formal defined attribute category in the NISV's Preservation Metadata Dictionary (viii), were implemented in 2019. The NISV has selected the URN:NBN system for these PIDs in order to guarantee that handles are globally unique and can be resolved on the Internet (vi). All ingested archival objects (AV-files, photographes, metadata records) that are published on the portals are assigned a urn:nbn persistent identifier, from early 2020 on (v, vi, vii). All items previously stored in the Digital Archive are assigned a PID retrospectively.
(v) Live example of PID assignment to individual programmes:
1. At zoeken.beeldengeluid.nl (NISV catalogue) : search for a programme title (e.g. 'NOS Journaal september 2020')

2. Open one of the programme in the results list. At the top there is the PID as link. Link references resolver without resolving.
3. Click on the link, the resolver will open
4. Check whether the URL in de resolver is identical to the URL at zoeken.beeldengeluid.nl
(vi) PID's : Process and Maintenance*
(vii) Preservation Policy Document, Chapter 9 Access, Discovery, Copyright and Licensing: https://publications.beeldengeluid.nl/pub/679/
(viii) Preservation Metadata Dictionary 2.0: https://publications.beeldengeluid.nl/pub/615

The NISV repository is included in Europeana and CLARIAH as registries of audiovisual resources. NISV's copyrighted materials are published under Creative Commons Share Alike license. Data citations have to comply with the instructions in this license form or with the citation arrangements as laid down in the contracts with the data producers and donors.

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

14. Data reuse

R14. The repository enables reuse of the data over time, ensuring that appropriate metadata are available to support the understanding and use of the data.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository

Response:

The NISV takes structural measures to guarantee long-term preservation of the digital objects and sustainable access and usability for its user communities. To this end, the NISV stays current with the access demands of these user groups (e.g. video quality, play out requirements, metadata requirements, search and navigation facilities).

Data are ingested and preserved in high quality formats in order to enable the different delivery and re-use requirements of the various NISV's user communities. Delivery format and metadata requirements per user community come down to:

- Media professionals: industry standard file formats ; layered metadata (programme, shot, sequence).
- General Public: consumer delivery file formats for PC, tablets and smartphone; contextual descriptive metadata.
- Educational users: 'common' delivery formats, upload facilities, streaming access; enriched, dedicated metadata.
- Researchers: (open) delivery formats, suitable for different types of research; extensive time-coded metadata

Community monitoring mechanism are described in the Preservation Policy (i).The NISV is continuously refining its technology watch mechanisms for monitoring access user demands and new technology developments (formats, playout and delivery devices, network) in relation to the technical play out environments of its various user groups in a structured and accountable way. Momentarily, the institute stays current through regularly negotiating service agreements with the media professionals and the user groups from the educational domain, taking into account the feedback given to the Customer Contact Centre and the Access department, the outcome of access training sessions, and surveys that inventorize the needs of (representatives of) user groups and depositors (ii). By appointing target group managers and product managers, the responsibility for monitoring each individual designated community is clearly assigned to an official. Expliciting the user requirements, resulting in preferenced file formats and metadata is thus becoming more and more common.

Technical user expectations (i.c. delivery standards) are monitored in Tech Watch procedures, performed by ICT and R&D staff. Technological developments (of infrastructure, file formats and applications) are anticipated by participating in (inter)national innovative pilots and projects, by dedicated research in case of end-of-life cycles of infrastructural components and by visiting international technical conventions and conferences. For new types of acquisition (e.d. games, websites, webvideo) prior analysis are made of the technical, access and re-use requirements of the contemplated user group, as part of a preservation plan for any newly ingested collection (iii).
(i) Preservation Policy Document, Chapter 2 Mission and Organization and Chapter 8 Preservation Planning and Control: https://publications.beeldengeluid.nl/pub/679/
(ii) Service Agreement Public Broadcasters, Chapter 3 Maintenance*
(iii) Policy Memo Preservation Planning*
(iii) Preservation Plan (example, analysis Designated Community for Games)*

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

TECHNOLOGY

15. Technical infrastructure

R15. The repository functions on well-supported operating systems and other core infrastructural software and is using hardware and software technologies appropriate to the services it provides to its Designated Community.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository

Response:

General quality requirements for the ICT environment are laid down in NISV's Quality Criteria for the Digital Archive based on ISO 16363 (i). Specified rules and regulations regarding IT systems, standards and procedures are clearly defined in the IT Operational Policy Plan (ii) and apply to all IT environments. Storage, maintenance and backup procedures within NISV's IT department comply with ITIL methods. All ICT activities within the organization are centralized. Technical documentation on systems, software, workflows and hardware is stored and made available in a documentation system, maintained by the ICT department. Infrastructural changes and developments are based on the permanent monitoring of all relevant technical standards.

The NISV's Preservation Policy (iii) describes in detail how the organization has set up and divided its system infrastructure, so that the critical archival and access processes are managed in a separate environment, the Production environment. Tests, updates and alterations to this environment take place in an exact copy, the Acceptance environment. Here also new software products are tried out that have been created by R&D, or that are supplied from the outside. The Museum environment manages the group of systems that facilitate exhibits in the museum. The Office environment, with

its office applications and facility systems, supports all these processes. In the Hosting environment, the NISV websites and portals are managed.

Within the various ICT environments, both employees and external user groups are served. The services are based on different types of agreements, both with external users and with the suppliers of the systems and applications. NISV's network infrastructure and the connected network equipment are essential for making the IT services available inside and outside the organization. The network consists of the following components:
-The back-end (i.e. the core network components, such as the routers and the firewall);
-The cabling between back and front end;
-The front-end (switches) and WiFi access points NISV provides
-The possibility of a VPN connection to allow internal and external users to access the internal network.

At the heart of the Production environment, the MAM system (iv) is installed, a proven VizOne product of supplier ViZrt. The standard functionalities of VizOne have been substantially supplemented with a number of functions, tailored to NISV's preservation functions. Additional modules for import, workflow management, IRP management and quality control have been set up. Storage and access to the source files is controlled by DivArchive (Front Porch), as a 'go between' between the MAM system and the actual storage units (v), including the tape libraries. In addition, the Physical Asset Management System (PAM) is in place, that holds information about the physical carriers in the collection. There is a direct interface for daily updates (i.c. the output from digitization actions) from PAM to DAAN. The systems are directly connected to the Digital Provision (DDV), the central infrastructure of the broadcast production environment. For non-broadcast material separate import facilities for files and metadata are in place. The MAM system directs all ingest workflows and is responsible for the management of the metadata. A Thesaurus system supports the index and search processes (vi).

(vii) The frequency of backups and the duration of the recovery time is determined per ICT environment. All vital datasets that sit within the various ICT environments are identified and located. This concerns either irreplaceable components of the digital collections, or data and metadata that are indispensable for the continuity of the archival processes and services. For these datasets, extra back-up mechanisms are set up. The backups made internally (such as the backups to tape) are stored as copy, away from the NISV's premises. Data restore is checked periodically. This is done by performing remedial actions, in parts, or for all of the data. Because of the necessity to have the Production Environment permanently available, these tests are carried out in the Acceptance Environment.

A disaster recovery plan is implemented, including a third back-up location (viii). The irreplaceable data from the critical business systems will be synchronized frequently to the third geographical location as an extra backup. This third backup location is not intended as a back-up location. In case of emergency, as there is no live inflow to this environment. The data stored in this environment only serves to restore an original (or new) location to a working archival environment in case of calamities, with no recovery guarantee in time. The data set for recovery should be available in as current a form as possible.

(i) NISV's Quality Criteria for the Digital Archive V1.2 (section C): https://publications.beeldengeluid.nl/pub/403

(ii) IT Operational Policy Plan*

(iii) Preservation Policy Document, Chapter 10 Technical Infrastructure: https://publications.beeldengeluid.nl/pub/679/

(iv) MAM infrastructure*

(iv) MAM System Technology Architecture*

(v) Storage infrastructure*

(vi) Thesaurus web page:

https://www.beeldengeluid.nl/kennis/kennisthemas/metadata/gemeenschappelijke-thesaurus-audiovisuele-archieven

(vii) Backup infrastructure *

(viii) Data recovery infrastructure*

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

16. Security

R16. The technical infrastructure of the repository provides for protection of the facility and its data, products, services, and users.

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:
4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:
4 – The guideline has been fully implemented in the repository

Response:

All security policies and procedures are laid down in the Preservation Policy (i). More detail is to be found in the Security Policy (ii) and in the Operational IT Policy. (iii).

(i) Preservation Policy Document, Chapter 10 Technical Infrastructure: https://publications.beeldengeluid.nl/pub/679/
(ii) Security Policy Plan*
(iii) IT Operational Policy Plan*

Regularly, a monitoring system performs pre-set checks of the critical business systems, i.e. the databases, the production server devices, selected office and support services and the metadata base of the core collection. Alarms and events that entail significant risks, automatically flow into a ticket registration system. These alerts may be sent to duty managers who will carry out the appropriate actions. All occurring incidents and disruptions within the ICT environments are recorded. The construction of this knowledge database reduces the chance of future disruptions. The implementation of security solutions is regularly tested on the various IT environments and on the network and the connected equipment. An independent party conducts audits on available documentation (procedures) and enforcement (policy) of the procedures. Also penetration tests are performed.

To secure internal access to the workplace and the applications, two layers of security are deployed in the relevant environments: a pass word and a two-way authentication. User accounts have limited rights, but temporary exceptions can be made under strict regulations. Data security procedures guarantee the protection of data that fall under the Personal Data Protection Act falls under NISV's responsibility. Strict rules for authorization, storage and security risk management apply. Any exchange of data between information systems as a rule is executed via an automated method. Company data stored in the Google Drive environment (administrative data, manuals, concepts, working documents etc.) is not to be shared with external persons. A strict level of security is needed for a large part of the actual NISV collection, due to copyright considerations. Further security measures are guaranteed by having installed a separate network and portal, accessible only to connections from IP-addresses that are included in the NISV whitelisting.

The MAM system holds the option to provide access to specified parts of the collection as part of a preservation service to data producers from the cultural heritage and media domain. After ingest, these data producers or 'tenants' may access and/or download their own materials from within this MAM, based on user and password authentication. Access for other parties is not permitted. The internal MAM system remains only accessible to the NISV administrators. Tenant access level, rights and restrictions are specified in the Digital Archiving Service Agreement: https://publications.beeldengeluid.nl/pub/463

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

APPLICANT FEEDBACK

Comments/feedback

These Requirements are not seen as final, and we value your input to improve the CoreTrustSeal certification procedure. Any comments on the quality of the Requirements, their relevance to your organization, or any other contribution, will be considered as part of future iterations.

Response:

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments: