Assessment Information

[CoreTrustSeal Requirements 2017–2019](#)

Repository:	Regionaal Archief Zutphen (part of Gemeente Zutphen)
Website:	https://erfgoedcentrumzutphen.nl/
Certification Date:	24 March 2020

This repository is owned by: Gemeente Zutphen

Regionaal Archief Zutphen (part of Gemeente Zutphen)

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:

Library/Museum/Archives

Brief Description of Repository

The statutory task (Archiefwet 1995 https://wetten.overheid.nl/BWBR0007376/2018-07-28) of the Regionaal Archief Zutphen (RAZ) (Regional Archive of Zutphen) is to function as a repository for decentralised, local government organisations such as municipalities, communal schemes and Water Authorities. The RAZ also manages private archives, and archives of organisations, institutes or people in the region.

Brief Description of the Repository's Designated Community.

The RAZ distinguishes between two Designated Communities: the producers of the digital archive (governmental bodies or private individuals, who are both providers and consumers), and the public in the broadest sense of the word (who are consumers).
We use the following argumentation to distinguish these groups:

Producers:
The RAZ derives its reason for existence largely from the Archiefwet 1995 (Public Records Act 1995). 'Depositors' (refer to the Archiefwet 1995 article 1.d. for an explanation of this term) are obliged to transfer their archives to a repository after 20 years on the basis of article 12, clause 1 of this Act. The RAZ was designated by the depositors of Zutphen, Brummen and Lochem as the repository for their archives. As indicated in R0 'Repository Type', the RAZ also manages private archives, and archives of organisations, institutes or people in the region. After transferral to the repository, the archive documents are made public (according to Archiefwet 1995, article 14). This changes the producer from being a provider to being a consumer.
The RAZ created a transfer protocol and connection plan specifically for this designated community. It contains

descriptions of the (national) standards that archive material must meet if the depositor wishes to be able to transfer it. For example, preferred file formats, meta data, etc. The protocol, connection plan and standards are described in detail in various sections, including R2, R7 and R8. In order to be able to respond to changes in the requirements of this target group, the documents are regularly discussed with the depositors. The results of these discussions may prompt us to change our policy or to implement (technical) changes in relation to delivery or access.

Public:
As archives are open to everyone it is impossible to ascertain in advance who will consult archive documents in the future. The producer (provider) of the archive may be future consumers, but future consumers could just as easily be the 'public'. For example, user groups such as journalists and researchers. It depends entirely on future interest in the contents of the documents. 'The public' is therefore our second designated community.

In our capacity as an archive service, our statutory task does not imply that we are experts on the contents of the archive documents. We therefore have limited domain expertise of our user groups at our disposal. The archives are managed and opened in accordance with laws and regulations and applicable standards. This makes it possible for everyone to conduct research. To ensure that the public can understand the contextual information of our archive collections our website contains a 'help with research' page: https://erfgoedcentrumzutphen.nl/help. This information enables everyone to conduct research in our collections.

The archive document consultation process is the same for producers and consumers. This is entirely related to the fact that archives are open to 'everyone' on the basis of article 14 of the Archiefwet 1995. The information status of a producer (who is both provider and consumer) is the same as that of the public.

Our policy points of departure concerning designated communities are included in the 'storage and management strategy e-depot RAZ 1.1' chapter 2.2. This can be consulted via
https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Bewaar_en_beheerstrategie_e-depot_RAZ_11.pdf
A specification as described above is included in the 'preservation plan e-depot RAZ 1.1' chapter 4.3. This can be consulted via https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Preserveringsplan_e-depot_RAZ_11.pdf

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

Level of Curation Performed. Select all relevant types from:

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

Comments

Outsource Partners. If applicable, please list them.

Picturae Holding b.v. supplies the software, storage and hosting of our digital archive. Agreements are laid down in contracts and a Service Level Agreement (SLA). The SLA (including the 'Addition SLA Archivematica') can be consulted via https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/201501NL-PIC-AVSLAHOS-web.pdf and https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Picturae_SLA_addition_regarding_Archivematica_20191028.pdf

Picturae utilises a management system that complies with the requirements of standard NEN-ISO 27001:2017 applicable to the long-term storage of digital heritage content. The RAZ is registered as a beneficiary of the Picturae Escrow Arrangement. This is in case the continuity of Picturae is threatened. Picturae is also 9001 certified (quality management). Picturae will provide data for certification requirements R7, R9, R15 and R16.

Other Relevant Information.

The RAZ is one of the partners of the Heritage Centre Zutphen, and the other partners are Archaeology, Museums and Monuments. Its operational region consists of the municipalities of Zutphen, Brummen and Lochem. The RAZ is an operational team of the municipality of Zutphen. Service contracts (SCs) have been signed with Brummen and Lochem.

ORGANIZATIONAL INFRASTRUCTURE

I. 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

Response:

Extract from long-term policy plan RAZ 2017-2020:

"The mission of the RAZ is to include, manage and provide access to and make available digital objects (regardless of the form) of the participating governmental bodies, and also archives of citizens and businesses.

In addition, the RAZ and involved municipal heritage disciplines are jointly developing the knowledge centre on the history of Zutphen.

Typifying characteristics of the Regionaal Archief Zutphen are accessibility, expertise and client focus."

The explicit mission is therefore based on the Archiefwet 1995 and concerns archive objects regardless of form. Access to and preservation of data objects is delivered for digital archive documents with the same care and quality as for analogue archives. Chapter 2b of the policy plan examines the accessibility of digital archives in more detail. Chapter 3b studies making digital archives available in more depth. The policy plan includes the following definition of digital archive or e-depot: "An e-depot is the entirety of organisation, policy, processes and procedures, financial management, personnel, data management, data security and on-site hardware and software that facilitate the long-term management and consultation of digital archive objects to be stored." (from ED3: http://www.provincialearchiefinspecties.nl/pdf/ED3-v2.pdf). The digital archive is implemented on the basis of this definition.

The long-term policy plan was adopted by the executive council of the municipality of Zutphen in the meeting of 9 May 2017.
The long-term policy plan RAZ 2017-2020 (Beleidsplan RAZ 2017-2020) can be consulted via
https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Beleidsplan-RAZ-2017-2020.pdf

Reviewer Entry
Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

II. 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:

Archive objects (regardless of the form) under the stewardship of the RAZ are open to the public and can be consulted by users unconditionally on the grounds of the Archiefwet 1995. There are no licences or admission criteria. At most, it is possible to impose publication restrictions on archive objects for a specific period of time on the grounds of Article 15, 16 and 17 Archiefwet 1995. The provider of the archive object indicates which dossiers are subject to publication restrictions, for what period and on what grounds. This can be due to the following reasons:

• Respect for personal living conditions/quality of life

• The interests of the State or its allies

• Disproportionate advantage or disadvantage

The RAZ believes that it is important to thoroughly coach and prepare providers for the transferral of their archives. Clause 2 of appendix 1 'bijzondere bepalingen digitale archiefbescheiden' (special regulations for digital archive documents) of the SCs between the RAZ and affiliated municipalities states that a 'provision contract' is the basis for agreements on ingestion of a digital archive. This is why a connection plan has been created for the affiliated municipalities. A part of the steps to connection is the more detailed specification of the transfer. Chapter 2.3 A part 5 of the connection plan describes 'publication and access'. This states that a provider must check which archive documents they wish to exclude from the public domain in accordance with the Archiefwet 1995 article 15, 16 and 17. The archive objects are named in a 'transfer declaration' (Connection Plan chapter 2.3 E part 1) in accordance with Archiefbesluit (Archive Decree) 1995 article 9 and 10 (https://wetten.overheid.nl/BWBR0007748/2013-01-01). The RAZ uses documentation of the Landelijke Organisatie Provincial Archief Inspecteurs (LOPAI) (national organisation of provincial archive inspectors) to draw up the transfer declaration: http://www.provincialearchiefinspecties.nl/thema.overbrenging.php The declaration states that the dossiers in question can only be consulted after written permission from the Mayor and Councillors of the municipality (depositor) that transfers the archive to the RAZ.

Moreover, the provider is responsible for registering the publication in the meta data of every archive object (Connection Plan chapter 2.3 C part 2). So if restrictions are imposed on access to archive objects, this is included in the meta data. The standards and requirements relating to meta data are described in R11.

We present the dossiers that are excepted from the public domain in the transfer declaration and the meta data supplied with the archive by the provider in our access information. It is therefore clear to everyone which archive objects are excepted from the public domain and which are not. We present limits to the access at two levels:

1. At archive level: An example of a non-public archive is provided here: https://erfgoedcentrumzutphen.nl/onderzoeken/archieven/details/NL-ZuRAZ-0500/keywords/burgemeester/withscans/0/start/0/limit/10/flimit/5. It is therefore stated under the heading 'voorwaarden en raadpleging voor gebruik' (conditions and consultation for use) that if someone wishes to nevertheless peruse this type of dossier an appropriate written request must be addressed to the executive council of the depositor. This then determines whether the data may be viewed.

2. At the level of individual records: An example of a non-public record is provided here: https://erfgoedcentrumzutphen.nl/onderzoeken/archieven/file/0b5163fe2ae442489e208278c4d39a23 In the latter case, the request module ensures that this specific record cannot be supplied to the applicant. Every 2 January, the Archivist automatically checks whether the restriction can be discontinued. If someone wishes to nevertheless peruse this type of dossier prior to the date of publication an appropriate written request must be addressed to the executive council of the depositor. This then determines whether the data may be viewed.

Depositors of private archives can also request publication restrictions when depositing their archive. However, our mission strongly motivates us to make archives accessible and available because we wish to be a centre of knowledge on the history of Zutphen for our target group. This is why there is limited compliance in terms of publication restrictions on private archives.

The service contract with the municipality of Lochem can be consulted via
https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/DVO-Archiefbeheer-Lochem-en-RAZ.pdf
The service contract with the municipality of Brummen is currently renewed and therefore not yet available.
The connection plan (Aansluitplan) can be consulted via
https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Aansluitplan-e-depot-RAZ-1.0.pdf

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

III. 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:

Firstly, the operation of the digital archive is guaranteed due to its statutory task as a repository. The Archiefwet 1995 stipulates that governmental bodies indicate a repository. Archives (regardless of form) are deposited, managed and made accessible and available in the repository.

Nevertheless, a wide range of threats can obstruct the continuous operation of the digital archive. To map out these threats and implement appropriate measures, the RAZ has adopted a continuity plan, mandated by the executive council of the municipality of Zutphen on 4 May 2017. The management summary of the plan is stated below.

Management summary

Purpose

The purpose of the Continuity plan is to provide an overview of the arrangements that are needed to secure the digital archive objects in the e-depot against threats.

A threat or emergency is an event that has such negative consequences that the progress of the vital business processes of the e-depot are disrupted and the service is discontinued.

These may be threats that can occur in relation to any party in the e-depot – the management organisation, the depositor and the supplier of the e-depot repository environment.

Approach

This continuity plan for the e-depot of the RAZ was produced by the E-Depot RAZ project team. An overview has been drawn up of the threats and emergencies that can disrupt the operation of and service provided by the e-depot. The specific risks for the management organisation, depositor and supplier have been listed for each separate threat. A category and factor are determined for each risk, and it is recorded how we can limit the risk. We have described how and in what the measures to be implemented must be laid down. It is also determined for which measures the management organisation, the depositor and the supplier are responsible, and who implements them.

Conclusion and recommendations

The Continuity Plan is a tactical plan in which we describe measures and actions that require further operational detailing in the contracts concluded by the e-depot partners and the plans that they draw up.

The project team recommends including measures in:

• The Service Contracts (SCs) between depositors and the management organisation.

• The Archive Regulation of the individual depositors.

• The contract (SLA) between the supplier and the management organisation.

The following measures designated a high risk in the continuity plan have been implemented:

• The RAZ is registered as a beneficiary of the Picturae Escrow Arrangement. This is important if Picturae is no longer able to guarantee continuity as an organisation. The source codes and documentation of the application curated by the escrow agent are given to the end user (the RAZ).

• A Service Level Agreement (SLA) with Picturae contains agreements on performance relating to processes and procedures for aspects such as back-up & restore, fixity controls, Exit-strategy, service provision and hosting.

• Organisational and financial continuity of the management organisation (RAZ) because we are part of the governmental organisation of the municipality of Zutphen. The executive council of Zutphen is the depositor, which is the person/organisation lawfully charged with the stewardship of the archive objects, on the basis of Archiefwet 1995 article 1.d. Out statutory task obliges the municipality of Zutphen to maintain a digital archive. The RAZ is designated as the repository on the basis of the archive regulation of the participating depositors. However, the SCs with the municipalities of Lochem and Brummen are not of decisive important for the continuity of our digital archive.

It may theoretically be the case that the municipality of Zutphen discontinues the RAZ as the management organisation and executes its statutory task elsewhere. For example, in a collective scheme. However, the responsibility for the stewardship of the archives of the municipality of Zutphen can never be transferred to a different organisation. Even if continuity problems at the RAZ cause the archive tasks to be executed elsewhere, the municipality of Zutphen always retains the stewardship and therefore the responsibility. Never will this be transferred to another (governmental) organisation.

The SLA with Picturae can be consulted via
https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/201501NL-PIC-AVSLAHOS-web.pdf
The addition to the SLA regarding Archivematica can be consulted via https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Picturae_SLA_addition_regarding_Archivematica_20191028.pdf
This continuity plan (Continuiteitsplan) can be consulted via
https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/04052017_Continuiteitsplan_Edepot_RAZ_11.pdf

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

IV. 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 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 answer to this question is in line with the answer to R2. In principle, the archives are open to the public on the grounds of the Archiefwet 1995. At most, it is possible to impose publication restrictions for a certain period. The depositor indicates the documents to which this applies, for what period and on what grounds. The RAZ complies with this by excluding the dossiers from the public domain during this period. We record this in the meta data. It is only possible to deviate from this if the executive council receives written permission from the depositor. This is therefore the responsibility of the depositor, not the RAZ. This process is documented in the Connection Plan (also stated in R2). This connection plan is created to effectively arrange the ingestion of the digital archive as described in the appendix 'bijzondere bepalingen digitale archiefbescheiden' (special regulations for digital archive documents) in the SC between RAZ and the participating municipality. Chapter 2.3.A. part 5 of the Connection Plan states that 'publication and access' of and to the archive objects is specified. This is registered in the meta data at record level (Connection Plan chapter 2.3.C.). More on meta data in R11.

Besides the Archiefwet 1995, governmental bodies bringing data into the public domain are also subject to the Algemene Verordening Gegevensbescherming (AVG) (General Data Protection Regulation) (https://autoriteitpersoonsgegevens.nl/nl/onderwerpen/avg-europese-privacywetgeving/algemene-informatie-avg) . The Archiefwet 1995 and AVG conflict with each other. The Archiefwet 1995 is geared to active publication. However, the AVG prescribes that (government) organisations must be cautious with the publication of personal data. Logically, archive documents contain a great deal of personal data. For example, the data on an applicant for a building permit. The RAZ complies with the AVG by not making personal data in digital archives publicly available. The depositor will have to take account of this when compiling the meta data. For example, by not including names of people in the meta data. The procedure developed for this by the RAZ is included in the connection plan, as is the procedure for restrictions on the basis of the Archiefwet 1995 (Chapter 2.3.A. part 5 of the Connection Plan)

The connection plan (Aansluitplan) can be consulted via
https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Aansluitplan-e-depot-RAZ-1.0.pdf

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

V. 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 continuity of financial resources to maintain the digital archive is guaranteed due to its statutory task. The Archiefwet 1995 prescribes that governmental organisations must designate a repository. Archives (regardless of form) are curated, managed, made accessible and available in this repository. Naturally, the council of the repository (in the case of the RAZ this is the executive council of the municipality of Zutphen) is compelled to comply with the law. The required financial resources are included in the long-term budget of the municipality of Zutphen (see also preservation plan chapter 3.2). This chapter states that investment credit was used in 2017 and 2018. This was one-off credit for the preparation and creation of the digital archive (e.g. the investment in software). The municipality of Zutphen annually includes a structural item with sufficient resources for further development and maintenance in the municipal budget. The latter is therefore a structural, annual item (annually indexed) that is used to, for example, make contractual payments to suppliers. In principle, this annual item is ongoing, unless changes occur that affect the sum. For example, when a depositor joins or leaves or if contracts are signed with a different supplier. In that case, the budget must be reviewed. The municipal executive council must always ensure that sufficient financial resources are available to guarantee the stewardship of the archive on the basis of the statutory task (Archiefwet 1995).

Besides financial stability, the organisational infrastructure of the digital archive is also geared to stability, quality and continuity. This is already partially described in R1. (mission) and R3. (continuity). As a supplement to this:

The technical management, by which we mean the software, storage and hosting at the e-depot, is provided by Picturae Holding b.v. This company specialises in the digital management and disclosure of heritage collections. The RAZ and Picturae have cooperated on tasks including the construction of our heritage portal and Memorix Maior and Memorix Archieven management systems since 2005.

The infrastructure (hardware) for storage in the e-depot is managed by Picturae. This involves them using their own facilities in Heerhugowaard and the data centre at Global Switch in Amsterdam. All data storage is mirrored, and Global Switch is the primary site.

Picturae uses a management system that complies with the requirements of standard NEN-EN-ISO 27001:2017, applicable to the long-term storage of digital heritage (see also preservation plan chapter 3.3)

The digital archive is included in the budget of the municipality of Zutphen. The budget cycle covers 4 years. Sufficient funds for personnel, IT resources and training are available in the budget to guarantee that we can maintain and develop a digital archive in accordance with our definition in the long-term policy plan 2017-2020 ("An e-depot is the entirety of organisation, policy, processes and procedures, financial management, personnel, data management, data security and on-site hardware and software that facilitate the long-term management and consultation of digital archive objects to be stored.").

The descriptions of tasks executed by the digital archive – and the necessary skills – are included in the preservation plan chapter 5.8. As regards the depth of expertise, organisation and personnel, it is stated that we are sufficiently equipped to be able to create and maintain a digital archive and can therefore execute our mission, but we, as a relatively small archive service, do not develop our own products. We do not take a leading role in the formulation of e-depot standards or sustainability policy. We emulate the Nationaal Archief (National Archive) and outsource tasks such as software development, storage and hosting to experts in this field. We manage on the basis of SLAs and contracts. This is all included in chapter 5.8 of the preservation plan.

The preservation plan (Preserveringsplan) can be consulted via https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Preserveringsplan_e-depot_RAZ_11.pdf

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

VI. 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

Response:

Objective advice from experts, besides that of our own organisation, can be obtained in a number of ways. The archive sector is rich in national and international expertise groups that share knowledge, draw up standards and provide advice. The RAZ participates in a number of these expertise groups in order to share knowledge.

The 'Adviseurs Digitale Informatie' (ADI) (advisors digital data) working group consists of a network of experts that meet regularly to share substantive knowledge in the field of digital archives/e-depots. The topics vary and are always relevant. For example, discussions on certain types of data objects, technical issues and functional standards. The working group communicates on the knowledge platform https://kia.pleio.nl (closed environment).

The Nationaal Archief (NA) is a pioneer in this field. It is expected to provide the expertise that Regionaal Historische Centra (RHCs) (regional historic centres) and regional archive services can apply in their organisations. For example, the NA draws up standards as a meta data model or an exchange standard. The products drawn up by the NA are public and are frequently implemented as standard by many digital archives in the country.

There are also organisations such as KING, which develop standards such as the Gemeentelijke Model Architectuur (municipal model architecture) (GEMMA https://www.gemmaonline.nl/index.php/Gemeentelijke_Model_Architectuur_(GEMMA)) and the Nederlandse Overheid Referentie Architectuur (Netherlands government reference architecture) (NORA https://www.noraonline.nl/wiki/NORA_online).

Het Heritage Centre Zutphen (in which the RAZ is one of its partners) participates in the Dutch Digital Heritage Network

(Netwerk Digitaal Erfgoed (NDE)). The mission of this network is to develop – with all of the heritage institutions in the Netherlands – a system of facilities and services for improving the visibility, usability and sustainability of the digital heritage (https://www.netwerkdigitaalerfgoed.nl/en/).

The RAZ participates in the 'e-depot Picturae users' working group to exchange knowledge on a user's platform of purchasers of the same e-depot software expertise. This group provides mutual support in terms of content. Expertise on our Archivematica management environment can be found in a national community and an international community https://groups.google.com/forum/#!forum/archivematica and https://github.com/artefactual/archivematica. You can request substantive support and feedback via these platforms. Documentation of the software can be consulted without restriction on the Archivematica website https://www.archivematica.org/en/ and is current. Picturae has a wiki on the specific set-up of Archivematica for users at https://wiki-archives.memorix.nl/ (not freely accessible).

The RAZ can call on the assistance of the municipality of Zutphen for expertise in the field of purchasing, legal issues, privacy, data security, i-advies (i-consulting) and management.

These channels give the RAZ access to leading and objective organisations possessing expertise that we can use.

DIGITAL OBJECT MANAGEMENT

VII. Data integrity and authenticity

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

Compliance Level:

3 – The repository is in the implementation phase

Comments:
3 – The repository is in the implementation phase

Response:

Background:
As stated previously, the RAZ is bound to the Archiefwet 1995 and related regulations. In addition, the RAZ uses relevant (inter)national standards and guidelines to set up the digital archive. The most important standard is the Open Archival Information System (OAIS http://www.oais.info/). This standard and its use by the RAZ is described in the RAZ e-depot storage and management strategy. The ED3 standard (http://www.provincialearchiefinspecties.nl/pdf/ED3-v2.pdf) is important for the set-up of the digital archive, and it is also described in the storage and management strategy. Other standards used include METS, EAD, TMLO, PREMIS, ToPX. These standards will affect the subsequent answers to the questions and are also described in the storage and management strategy and preservation plan.

Data integrity:
The RAZ e-depot storage and management strategy stipulates that archive files submitted must be accompanied by meta data in compliance with the Toepassingsprofiel Metadata Lokale Overheden (application profile meta data local government) (TMLO) (https://www.nationaalarchief.nl/archiveren/kennisbank/tmlo). A checksum is compulsory as a meta data element (TMLO 21.7 Physical Integrity) in TMLO. This means that when ingest takes place a checksum is known for every file, and the fixity is therefore testable. The ingest process is described in chapter 5.6.2. of the preservation plan.

The completeness of the data and meta data supplied is also checked during the ingest procedure. This takes place by means of various jobs in the 'Verify transfer compliance' micro-service. For example, the jobs check the validity and completeness of meta data on the basis of a diagram (ToPX-2.3_1.xsd https://www.nationaalarchief.nl/sites/default/files/field-file/topx-2.3_1.xsd), package contents, double files, viruses, identification of the file format, etc. This is documented in chapter 5.6.2 of the preservation plan. After ingesting, the digital archive files are entered into the storage environment as an Archival Information Package (AIP) (see OAIS).

Corruption of data objects is prevented at the storage facility by permanent checksum checks at the block level. A checksum is created from a block with every write command. If a checksum is incorrect, system management is notified automatically. System management executes the correction manually.

The entire ingest procedure and all changes in data, version management and meta data in storage are logged in the Meta Data Encoding and Transmission Standard (METS) meta data file (http://www.loc.gov/standards/mets/). This METS file is stored with the digital archive documents in the AIP.

Authenticity:
The RAZ cooperates with the depositor of the digital archive on drawing up a connection plan based on the transfer protocol. This contains data on the archive, including:
• A description of the data objects to be transferred (title, period in which the material originated, etc.).
• The structure of the archive – structured data objects with linked meta data.

- The essential features.
- The application in which the data objects are stored.
- The manner in which the application is exported.
- Data on possible migration, destruction or compression of data objects in the archive.
- An overview of the meta data (assigned both manually and automatically).
- The presence of encrypted files.
- The presence of digital signatures.
- Checking the data objects for viruses.
- The size of the data objects in Megabytes, Gigabytes or Terabytes.
- The file formats present.
- Possible publication restrictions.
- Possible applicable copyrights.
- The manner in which the data objects are packaged (an example SIP).
- The manner in which the archive is transferred via a secure connection, such as HTTPS.

The meta data includes the management activities until the moment of transfer. Various checks are executed during the ingest, including whether the data is corrupt and the checksums are correct, which file formats are present and whether the meta data is complete, correct and valid. If errors occur, the data set will be returned to the depositor for improvement. The complete ingest process is laid down in the METS file. This guarantees the authenticity of files on ingest.

In principle, data objects are stored unchanged. The RAZ complies with the preference formats policy of the NA (see storage and management strategy). Data objects can only be changed if file formats deviate from the preferred formats or acceptable formats as determined by the Nationaal Archief. A migration scheme – retaining the original file as supplied – can be a possibility. However, although it is part of our strategy, we are not expecting to have to implement migrations in the next few years. Other change strategies, such as emulation, are not, as yet, part of the (technical) options of the digital archive (see preservation plan chapter 5).

The management activities in the storage are recorded in the METS meta data (see preservation plan chapter 5.5.).

The storage and management strategy (Bewaar- en beheerstrategie) can be consulted via
https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Bewaar_en_beheerstrategie_e-depot_RAZ_11.pdf
The preservation plan (Preserveringsplan) can be consulted via
https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Preserveringsplan_e-depot_RAZ_11.pdf
The connection plan (Aansluitplan) and transfer protocol (OVerdrachtsprotocol) can be consulted via
https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Aansluitplan-e-depot-RAZ-1.0.pdf and
https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Overdrachtsprotocol-e-depot-RAZ-1.0.pdf

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

VIII. 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:

The Archiefwet 1995 is the most important reference for the selection of data eligible for archiving. Governmental bodies are obliged by this law to preserve archives more than 20 years old by transferring them to an appropriately designated repository. The RAZ is the repository for a number of governmental organisations in the region and therefore receives the selection of archives eligible for permanent storage on the basis of this statutory obligation. The Archiefwet 1995 does not apply to private archives. The policy line around the acquisition of private archives is included in the long-term policy plan 2017-2020 chapter 1, heading 'Acquisition policy'. The acquisition plan must offer realistic options for the ingest and opening of new archives. The wishes of the participating government organisations – which, after all, pay annual archive costs per metre – are carefully inventoried.

The digital archive has an ingest process (described as SIP in OAIS) centred on quality controls to guarantee the completeness and comprehensibility of the data ánd metadata to be received. This ingest process is described in the preservation plan, chapter 5.6.2. It takes place on the basis of micro-services during Transfer and Ingest in the digital depot. This is based completely on OAIS. For example, this process involves checking whether all files described in the meta data are present and the meta data is complete, and subsequently validating against the meta data diagram. Error messages are reported. We send this report to the producer of the archive for recovery. It is only possible to generate and store an AIP when the process is executed error-free. The results of the procedure are recorded in the METS meta data file and stored with AIP.

The storage and management strategy stipulates that meta data must meet TMLO, the Dutch meta data standard for local government, when it is supplied by a producer. This standard includes requirements for the ingest of meta data suitable for long-term preservation. If it becomes apparent during the ingest process that not all of the compulsory (preservation) data is included, the system will automatically halt the ingest. A report stating the errors will be produced. The producer will first have to correct these errors before supplying the data and metadata again.

The RAZ makes a pre-ingest tool available to the provider so that they can create a SIP and check that it is correct and complete. This pre-ingest tool is called the 'ToPX creator'. The operation of this tool is described in chapter 5.1 of the transfer protocol. The tool is not online or accessible by the public but can only be used in the IT environment of the provider. Some functionalities of the tool are the conversion of meta data into ToPX format (for the .xml translation of TMLO see; https://www.nationaalarchief.nl/archiveren/kennisbank/metadata-en-het-e-depot), checking the completeness of data in relation to the meta data, the generation of technical meta data such as hash code (sha256), file format (PRONOM https://www.nationalarchives.gov.uk/PRONOM/Default.aspx) and file size. In principle, the ingest process will be successful if the SIP is created with this tool.

The storage and management strategy stipulates that the RAZ conforms with the preferred formats of the Nationaal Archief. Depositors are informed of this. During the ingest process a quality check is used (identify file formats see chapter 5.6.2. preservation plan) to ascertain whether the depositor has conformed with the preferred formats. The storage and management strategy stipulates that the policy on the supply of data objects that are not in the preferred or acceptable formats is to examine each case on its merits. The expertise groups (see R6.) can be asked for advice in these cases.

The transfer protocol (overdrachtsprotocol) can be consulted via
https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Overdrachtsprotocol-e-depot-RAZ-1.0.pdf
The long-term policy plan 2017-2020 (Beleidsplan RAZ 2017) can be consulted via
https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Beleidsplan-RAZ-2017-2020.pdf
The storage and management strategy (Bewaar- en beheerstrategie) can be consulted via
https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Bewaar_en_beheerstrategie_e-depot_RAZ_11.pdf
The preservation plan (Preserveringsplan) can be consulted via
https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Preserveringsplan_e-depot_RAZ_11.pdf

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

IX. Documented storage procedures

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

Compliance Level:

3 – The repository is in the implementation phase

Reviewer Entry

Reviewer 1

Comments:
3 – The repository is in the implementation phase

Reviewer 2

Comments:
3 – The repository is in the implementation phase

Response:

Processes and procedures are documented in the storage and management strategy, the preservation plan and the SLA (including the 'Addition SLA Archivematica') with Picturae. Picturae utilises a management system that complies with the requirements of standard NEN-ISO 27001:2017 applicable to the long-term storage of digital heritage content.

The digital archive provides long-term storage based on the OAIS points of departure, which are thoroughly described in our storage and management strategy. They describe how the OAIS points of departure are applied at the strategic, tactical and operational level. Processes and procedures are laid down at the implementation level – the preservation plan. This document includes a change procedure (see chapter 2.2) for the simple implementation of changes in processes and procedures in the plan. For example, the ingest process and data storage are described in chapter 5 of the preservation plan (see chapter 5.6.2 and 5.6.3), and chapter 6 describes the specific measures for back-up & recovery and security. The continuity plan was drawn up to document risks and threats to the digital archive and to describe measures. Below, we discuss a number of specific data requested in relation to this issue (R9):

For all Archivematica environments which Picturae hosts and facilitates for its customers (two per customer: a test and a production environment), including all files these environments contain, backups are created each night and these backups are kept for 62 days (= two months) before the backup cycle starts again (ie on day 63, the backup of day 1 will be overwritten). For this backup strategy good automatic monitoring and notification functionalities are in place which enables the Picturae system administrators to act in time in case something goes wrong, so it's guaranteed that customers will not be put in a position that they will have no backup available.

In addition to this Picturae has fixity checks at block level in place for all its hosting and storage environments, including the Archivematica environments, which means that a file (any file) gets a fixity check each time it is consulted, either with read or write access. On top of this each month fixity checks are run on the entire hosting and storage environment, in order to guarantee that files which are not often consulted still get a regular fixity check.

Data recovery is implemented as follows: Depending on what must be recovered, the data can just be copied back, or a database can be read in again. This is limited to the storage period of the back-ups.

Various aspects are worked out in more detail in R15 and R16.

The SLA with Picturae can be consulted via

https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/201501NL-PIC-AVSLAHOS-web.pdf

The Addition SLA Archivematica can be consulted via https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Picturae_SLA_addition_regarding_Archivematica_20191028.pdf

The storage and management strategy (Bewaar- en beheerstrategie) can be consulted via

https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Bewaar_en_beheerstrategie_e-depot_RAZ_11.pdf

The preservation plan (Preserveringsplan) can be consulted via

https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Preserveringsplan_e-depot_RAZ_11.pdf

This continuity plan (Continuiteitsplan) can be consulted via

https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/04052017_Continuiteitsplan_Edepot_RAZ_11.pdf

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

X. 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 RAZ has drawn up policy on preservation in a 'storage and management strategy'. This describes principles, definitions, points of departure and standards applied. The practical result of this 'storage and management strategy' is the RAZ Preservation Plan. The preservation plan is part of the entirety of measures to facilitate the long-term accessibility of RAZ digital archives. The plan ensures that preservation actions can be executed consistently and that all actions executed are documented, together with their context, motives, criteria and tools. It therefore permits accountability for the actions taken, thereby clarifying the authenticity of a digital object.

The preservation plan covers a wide range of subjects. In chapter 3 it describes the organisational framework for aspects including the organisation structure, financial resources and personnel. Chapter 4 discusses the preservation strategies, including the user groups, essential properties and preservation levels. Chapter 5 is the preservation action plan in which file formats and meta data are discussed and work processes are detailed. It also describes job profiles and responsibilities. For example, the role of e-conservator (e-curator), which guarantees that preservation activities are executed and documented. Chapter 6 provides more insight into the technical side of preservation, including hardware, back-up policy, fixity checks, etc. The tools, management and opening systems are also discussed. The appendices of this plan include a transfer protocol and a connection plan that contain conditions and procedures for the transfer of digital archives.

The preservation plan, continuity plan, SC and SLA provide all activities that are necessary for the acceptance of responsibility for the management. The transfer of management and responsibility are clearly described in the Archiefwet 1995.

The service contract with the municipality of Lochem can be consulted via

https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/DVO-Archiefbeheer-Lochem-en-RAZ.pdf

The service contract with the municipality of Brummen is currently renewed and therefore not yet available.

The storage and management strategy (Bewaar- en beheerstrategie) can be consulted via

https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Bewaar_en_beheerstrategie_e-depot_RAZ_11.pdf

The preservation plan (Preserveringsplan) can be consulted via

https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Preserveringsplan_e-depot_RAZ_11.pdf

This continuity plan (Continuiteitsplan) can be consulted via

https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/04052017_Continuiteitsplan_Edepot_RAZ_11.pdf

The SLA with Picturae can be consulted via

https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/201501NL-PIC-AVSLAHOS-web.pdf

The Addition SLA Archivematica can be consulted via https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Picturae_SLA_addition_regarding_Archivematica_20191028.pdf

Reviewer Entry

Reviewer 1

Comments:
Accept

XI. 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:

Quality requirements for digital archive documents are mostly laid down in the Archiefwet 1995 and related regulations. Article 3 of the Archiefwet 1995 stipulates that government organs are obliged to ensure that the archive documents entrusted to them are and remain in good, orderly and accessible condition. The approach of the RAZ to quality of data and meta data is derived primarily from these requirements for good, orderly and accessible condition.

The Archiefregeling (https://wetten.overheid.nl/BWBR0027041/2014-01-01) (archive regulation) art. 17 stipulates that the following aspects of every archive document can be recorded at any time:

a. the content, structure and form when ingested or created by the government organ, in as far as these aspects had to be knowable for the execution of the work process in question,

b. when, by whom and on the basis of what task or work process it was ingested or created by the government organ,

c. the connection with other archive documents ingested and created by the government organ,

d. the management activities executed in relation to the archive documents, and

e. the software or application software with which the archive documents are stored or managed.

Article 19 Archiefregeling, clause 2, stipulates that the depositor links meta data to archive documents, on the basis of which it is possible to convert the aspects referred to in Article 17 at all times. Articles 21 to 26 specifically discuss special

regulations for digital archive documents to be stored. The RAZ only ingests archives to be stored permanently (see also R8 'Valuation'). The quality of the meta data and data therefore depends on the degree to which depositors comply with the requirements in the Archiefwet and Archiefregeling.

Checking the quality of data and meta data is largely secured in automatic processes. This is described in chapter 5 of the preservation plan. Meta data is checked/validated against a diagram on ingest. This diagram is the xml translation of the TMLO application profile, which is based on meta data requirements in the Archiefregeling. The completeness, integrity and authenticity (see also R7 'Data integrity and authenticity') is checked during ingest.

Prior to ingest – before the transfer – the producer contacts the digital archive in connection with the transfer and storage. This is detailed in a transfer protocol. The Archivist will evaluate data and meta data jointly with the e-conservator. The ingest process is executed by the e-conservator. If it is apparent that the depositor fails to meet the quality requirements in the Archiefwet and regulations, the ingest is rejected and the depositor must first ensure compliance before ingesting can be considered again.

The preservation plan (Preserveringsplan) can be consulted via
https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Preserveringsplan_e-depot_RAZ_11.pdf
The transfer protocol (Overdrachtsprotocol) can be consulted via
https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Overdrachtsprotocol-e-depot-RAZ-1.0.pdf

Reviewer Entry
Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

XII. 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:

The defined work processes from the ingest to the distribution are included in the preservation plan. The work processes in the digital archive are completely based on OAIS and, naturally, apply the requirements of the Archiefwet 1995 and Archiefregeling. This is all in order to enable us to perform our mission. Various references to documentation and descriptions of processes are already included in the answers to different questions. The preservation plan includes descriptions of functions and responsibilities. Specific work processes such as an ingest or a preservation activity can only be executed by authorised functionaries.

The requirement for clear communication with the products and users on handling data is laid down in Archiefwet 1995 and therefore also in our mission. RAZ manages the repository and the transferred archives. We ensure that the archives are ingested, managed and made accessible and available. The offering party remains the depositor of the archives. Archives are public unless there are weighty reasons to exclude archives from the public domain (see R2 and R4).

Valuation and selection of data stem from the Archiefwet 1995, our mission and the Acquisition Plan (see also R8 'Valuation').

The preservation plan (Preserveringsplan) can be consulted via https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Preserveringsplan_e-depot_RAZ_11.pdf

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

XIII. 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:

3 – The repository is in the implementation phase

Response:

In compliance with the OAIS model, on ingest a DIP of the digital archive is created in order to make the archive available. The DIP is opened via the Memorix Archieven collection management system and made available on the heritage portal in the archive inventories: https://erfgoedcentrumzutphen.nl/onderzoeken/archieven/. The inventory is presented in HTML and can be viewed/downloaded as PDF or XML.

Memorix Archieven is built on archive standards such as:

ISAD(G): General International Standard Archival Description
ISAAR (CPF): International Standard Archival Authority Record for Corporate Bodies, Persons and Families
ISDIAH: International Standard for Describing Institutions with Archival Holdings
The archive inventories are constructed with an EAD structure.

Using these internationally accepted standards makes it possible to search through and exchange the archives. The heritage portal provides search aids for the collections, including the collections inventories, via https://erfgoedcentrumzutphen.nl/hulp-bij-onderzoek/2-deelnemerinformatie/108-collectie-archieven.

The archive provides options for automated harvesting of meta data. Metadata and the DIP can be harvested via the OAI-PMH. This open standard is used by sites including Archives Portal Europe to harvest data from the RAZ.
In chapter 6.3 of the preservation plan 'Picture 4: Architecture picture e-depot' illustrates how the information flow from ingest to access and harvesting is controlled.

Every record in the archive inventories on our website includes a quotation instruction. The English translation of this instruction is as follows:
"When quoting in annotation and accountability the archive must be stated at least once, completely and without abbreviation. An abbreviated reference will suffice thereafter."
An example of a complete quote:
"Regional Archive Zutphen, Inventory of the archive of the Department for Social Affairs of the municipality of Zutphen (1919-1964), access number 0282, inventory number 1"

An example of an abbreviated quote:

"NL-ZuRAZ, Department Social Affairs municipality of Zutphen, 0282, inv.no. 1"

See example: https://erfgoedcentrumzutphen.nl/onderzoeken/archieven/file/d84a333558363c95bf030193b1836cd9 and open the record to view the quotation instruction.

Currently, Permalinks is used to work with individual records. This link refers to the ID of the record in the database containing the information. Consequently, the link will continue to exist when changes are made in the website. For example: https://erfgoedcentrumzutphen.nl/onderzoeken/archieven/file/1a2a5ab8dad23d6484d67070005b75b3 and open the record to view the Permalink.

The provision of persistent identifiers for records in our archive inventories is in the implementation phase. The first phase of implementation was building the functionality into the Archivematica system. This was achieved thanks to the efforts of and financing from the Internationaal Instituut voor Sociale Geschiedenis (IISG). The functionality is now available for every Archivematica user. A micro-service named 'BindPIDs' is executed during the ingest of digital archives (see Preservation plan chapter 5.6.2). This service ensures that persistent identifiers are assigned to a record and the information is sent to a Handle Server (see: https://www.archivematica.org/en/docs/archivematica-1.7/user-manual/administer/dashboard-admin/ heading 'Bind PIDs'). The latter must be configured on the basis of a subscription to the PID service. The intention is to achieve this in the near future in cooperation with Picturae in order to complete the implementation.

We do already provide persistent identifiers for our genealogical collections. This is done with the Handle System via SurfSara. For example: https://hdl.handle.net/21.12104/ade7e2f8-0e85-11e0-bd00-21973653728c

Information on our open data policy is included under https://erfgoedcentrumzutphen.nl/deelnemers/erfgoedcentrum/wat-wij-doen heading 'Open Data'. At the present time, the genealogical data sets (16 sets) are published on https://opendata.picturae.com/. These sets are reused by websites including:

WieWasWie

Open Archieven

Collectie Gelderland

Europeana

The preservation plan (Preserveringsplan) can be consulted via https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Preserveringsplan_e-depot_RAZ_11.pdf

Reviewer Entry

Reviewer 1

Comments:
Accept. When the permalinks become globally unique and persistent there is a clear perspective of Compliance Level 4.

Reviewer 2

Comments:

Accept

XIV. 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:

Various stipulations relating to meta data are already laid down in R11. When a digital archive is supplied it is required that the meta data meets the TMLO standard and is supplied in the XML format ToPX. TMLO is a standard determined by the NA and used by local government bodies throughout the country due to standardisation, exchange options and long-term storage.

The preferred and acceptable format policy of the Nationaal Archief is followed. Action to be taken on formats that deviate from this is assessed on a case-by-case basis (as laid down in the preservation plan).
Possible changes in formats are entered in the PRONOM database (http://www.nationalarchives.gov.uk/PRONOM/Default.aspx) and in the preferred format policy of the Nationaal Archief.
Preservation in the digital depot is set up to handle required changes in format (see preservation plan chapter 5). If this is needed, a re-ingest is implemented to migrate the file formats with retention of the original content.
There are no plans for a future migration yet at the time of application for certification. We do not expect to implement this in the next few years. However, migration is part of our strategy and can be carried out if necessary.

The comprehension of the data and use over time is guaranteed in several ways. There is the meta data standard and the preferred formats policy. Every AIP in Archivematica also contains a README file describing the content of the AIP. For example, how the METS file is put together.

As indicated in R2, our archives are open to the public in principle, which means that there is always permission for re-use.

The preservation plan (Preserveringsplan) can be consulted via https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Preserveringsplan_e-depot_RAZ_11.pdf

TECHNOLOGY

XV. 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

Response:

The technical infrastructure is described in chapter 6 of the preservation plan. We will now specifically discuss the questions in this requirement for which proof must be provided.

Regarding infrastructure, Archivematica is based on the OAIS model. The infrastructure is expanded in proportion with need. There is a plan, but this is more of a budget for alterations that are required to facilitate the growth of the infrastructure.

Equipment is housed in professional data centres. The data centres use the following standards and references: ISO 9001, 14001, 27001, 50001. OHSAS 18001. ISAE 3402. AMS-IX. PCI-DSS.

The hardware and software used were designed and developed by Picturae for the specific target groups.

Picturae has 2 data centres, which are linked to each other with a double glass fibre connection. Both environments are set up with complete redundancy and meet the highest standards for security and reliability. The main site is located in Amsterdam, the co-site in Heerhugowaard. The secondary system in Heerhugowaard can replace the entire primary system in an emergency.

Important points in the architecture are:

1. Replication of data

The stored data is constantly replicated from the primary to the fail-over site. This ensures that all data is secured at geographically separate sites

2. On snapshots

Instead of creating back-ups, Picturae works with snapshots. This technology is unique for the file system with which Picturae works (ZFS). Snapshots make it possible to go back in time to a snapshot (increments of 1 hour) up to the last saved back-up. This is also possible in the case of, for example, encryption (ransomware cybercrime, etc.). It is an extremely advanced method of security and certainty without the administrative and storage burden of (incremental) back-ups (to prevent confusion we do use the term 'back-up' when answering the questions, even though they are 'snapshots'. The term 'back-up' is also used in the storage and management strategy and the preservation plan).

3. Specific servers are set up for different tasks in the architecture. For example, image servers, streaming servers, file conversion servers, application servers, etc. The division of tasks makes it easy to deploy extra strength per task if necessary.

4. The system works with Parity storage. This means that the data is stored on the disks extremely securely, which ensures that the storage is consistently "healthy". Bitrot or other forms of file degradations are automatically healed by the system.

The preservation plan (Preserveringsplan) can be consulted via
https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Preserveringsplan_e-depot_RAZ_11.pdf

Comments:
Accept

XVI. 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

Response:

The RAZ has signed a processor's contract with Picturae. To be able to conclude this contract Picturae must demonstrate that it has complete command of data security and the protection of personal data. Picturae has demonstrated an appropriate security level with the ISO-27001 certificate. The certificate specifically states the scope: "The digitisation of heritage (including audio/visual heritage) and the development of web-based solutions for the benefit of the management, enrichment, opening and long-term storage of digital heritage." Picturae has taken various measures, including:

• Logical access control – using strong passwords that are changed very regularly

• Screen locks

• Physical measures for access security

• Securing network connection using TLS technology (formerly SSL)

• Purpose-specific access to personal data

• Checking assigned authorities

The adequacy of data security was revealed by an audit executed by the Chief Information Security Officer (CISO) of the municipality of Zutphen, who declared on 30 November 2018: "The certification shows the set-up and existence of the technical and organisation measures. This, combined with the supplied SLA are, for now, sufficient to guarantee the availability and integrity and confidentiality of the data processed by Picturae on behalf of the municipality of Zutphen".

The continuity plan of the RAZ was mentioned earlier (R3). Picturae is ISO 9001 certified for quality management

systems.

The following can still be stated specifically on back-up and recovery:
Critical components of the infrastructure are installed with full redundancy. The entire environment is also monitored in order to detect disruptions early.

Checksumming and data scrubbing are used. The correctness of the data is checked and repaired if necessary with every read command. The correctness of all data is checked monthly. If a checksum is incorrect, system management is warned automatically. If a discrepancy is detected by the system, system management will take action and, for example, replace a pre-failing disk. Data loss will be recovered using a back-up. Back-ups are checked daily. If an error occurs, the system management is notified automatically.

When a storage system is replaced, all data is synchronised with the new system and checked with the aid of checksums. The new system will be taken into use when they are in sync.

The preservation plan (Preserveringsplan) can be consulted via
https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Preserveringsplan_e-depot_RAZ_11.pdf
The processor contract with Picturae can be consulted via
https://erfgoedcentrumzutphen.nl/images/Archief/e-depot/Verwerkersovereenkomst-RAZ-en-Picturae.pdf

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 core certification procedure. To this end, please leave any comments you wish to make on both the quality of the Catalogue and its relevance to your organization, as well as any other related thoughts.

Response:

A great deal of overlap in questions. Answers occur at several places.