



Assessment Information

[CoreTrustSeal Requirements 2020–2022](#)

Repository:

ARCHE

Website:

<https://arche.acdh.oeaw.ac.at/>

Certification Date:

9 July 2021

This repository is owned by:

Austrian Center for Digital Humanities and Cultural Heritage

CoreTrustSeal Board

W www.coretrustseal.org

E info@coretrustseal.org



ARCHE

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, Institutional repository, Publication repository, Research project repository

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

Brief Description of Repository

ARCHE [1] is one of the central services of the Austrian Centre for Digital Humanities and Cultural Heritage (ACDH-CH) [2] at the Austrian Academy of Sciences in Vienna [3]. It is provided by the “Services and Infrastructure” core unit, one of the four main core units of the institute [4].

ARCHE's primary mission is to provide long term preservation as well as easy and sustainable access to digital research data and resources for researchers in the humanities. To this end, the use of open access and open data policies is promoted and a set of policies and standards as well as consulting is offered. ARCHE is mainly meant to accommodate resources concerning Austria, that is both those that have been collected or created in Austria and those pertaining to a geographical area or historical period that is of interest to Austrian scholars. However, we do not categorically exclude resources without direct relation to Austria. The collection policy [5] details the types of data the repository is willing to accept and store.

Because of the focus on humanities, ARCHE can be classified as a “domain or subject-based repository”. The type “institutional repository” applies because ARCHE is hosted at the Austrian Academy of Sciences and accepts data from its various humanities institutes. ARCHE was designed to primarily archive research data as it is produced in projects (“research project repository”) and enable its publication with respective documentation and PIDs (“publication repository”).

[1] <https://arche.acdh.oeaw.ac.at>

[2] <https://www.oeaw.ac.at/acdh>

[3] <https://www.oeaw.ac.at>

[4] <https://www.oeaw.ac.at/acdh/about-acdh-ch/structure>

[5] <https://arche.acdh.oeaw.ac.at/browser/collection-policy>

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

Brief Description of the Repository's Designated Community.

ARCHE welcomes data from all humanities researchers, be they based at the Academy, or elsewhere at the national and international level. As part of the CLARIAH-AT infrastructure, ARCHE is primarily intended to be a digital data hosting service for the humanities in Austria [6]. Thus data from all humanities fields including modern languages, classical languages, linguistics, literature, history, jurisprudence, philosophy, archaeology, comparative religion, ethics, criticism and theory of the arts are equally welcome. While ARCHE's predecessor, CLARIN Centre Vienna / Language Resources Portal was dedicated to digital language resources, ARCHE offers services open to a broader range of disciplines. The service is designed to cover a wide range of humanities research data. We accept digital texts, annotated digital texts, lexical resources, tabular data, databases, images, collections containing GIS, 3D or CAD data, multimedia files (sound and/or video), websites and social media data, etc. We also accept software (applications, source code, etc.). The collection policy [7] details the types of data the repository is willing to accept and store.

[6] <https://arche.acdh.oeaw.ac.at/browser/about-service>

[7] <https://arche.acdh.oeaw.ac.at/browser/collection-policy>

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

File format conversion is executed in accordance with the data provider if only accepted formats instead of preferred were submitted, e.g JPEG to TIFF conversion. Enhancement of documentation is done by a qualified curator in close cooperation with the data provider. ARCHE will not edit the content of deposited data at any time.

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:

Accept

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

The services offered by ACDH-CH, and especially ARCHE receive extensive and dedicated support from reliable partners within the Academy and beyond. The computing centre of the Academy (ARZ [8]) ensures sufficient hardware capacities for storage, computing power, and networking. Since its foundation in 1976, it is the sole responsibility of the ARZ to provide computing services such as networking and server hosting, E-mail, network shares, or cloud services to all the institutes and departments of the Academy [9]. ACDH-CH and ARZ communicate regularly and intensively to resolve any issues arising from the cooperation, supported by a professional ticket tracking system. The ARZ has a set of elaborated backup and security policies.

ACDH-CH cooperates with the Max Planck Computing and Data Facility (MPCDF [10]) in Garching, Germany. This allows for a regular off-site replication of the data managed by ACDH-CH, via the B2SAFE service [11] provided by MPCDF for the purpose of disaster protection.

As a CLARIN centre, ARCHE uses Persistent Identifiers (PIDs) from the ePIC [12] consortium. Besides, our deep involvement in the two pan-European projects of ERIC, CLARIN and DARIAH [13], ensures a firm embedment of all the institute's activities and the sharing of state-of-the-art expertise and best practices with the European Digital Humanities community at large. The institute is also involved in the build-up of the European Open Science Cloud (EOSC) in the context of the SSHOC project [14].

[8] <https://www.oeaw.ac.at/en/arz>

[9] <https://www.oeaw.ac.at/en/arz/ueber-das-arz/wir-ueber-uns>

[10] <https://www.mpcdf.mpg.de>

[11] <https://www.eudat.eu/catalogue/B2SAFE>

[12] <https://www.pidconsortium.net>

[13] <https://www.dariah.eu>

[14] <https://sshopencloud.eu/about-sshoc>

Reviewer Entry

Reviewer 1

Comments:

Accept

Reviewer 2

Comments:

Accept

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

Since the last application in 2017, the technology underlying ARCHE has been fundamentally overhauled, while still preserving all data, resolution of persistent identifiers (PIDs), and the user interface and APIs exposing data to external applications. For more details on the updated architecture see “Technical Setup” [15] and Requirement 15.

With respect to funding: while in the first five years of its operation, large parts of the infrastructural work were financed by a dedicated start-up financing, 2020 has been a transition year, in which the institute and the praesidium of the Academy reached an agreement for moving the key infrastructure staff onto perpetual contracts financed from the global budget. This agreement assures long-term capacities and thus sustainability for the operation of ARCHE.

Additionally, as mentioned in the previous application, the “Preservation Policy” has been published (see Requirement 10). Also, the planned Business Plan mentioned in the previous application was abandoned in favour of a more extensive Preservation Policy (e.g. section Funding and Sustainability) and because the minimum required funding is secured by the global Academy budget.

[15] <https://arche.acdh.oeaw.ac.at/browser/technical-setup>

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

Other Relevant Information.

ARCHE pursues the principles of open access and open data. It encourages data depositors to use open licences, like CC-BY, adhere to rules for good scientific practice, and apply the FAIR Data Principles [16].

ACDH-CH is a contributor to two ESFRI initiatives (CLARIN and DARIAH) and acts as their national coordinator while actively collaborating with other partners within several working groups.

ARCHE provides well-documented APIs including an OAI-PMH endpoint, which allows third-party aggregators to harvest the metadata describing resources and disseminate them via additional channels. Currently, this mechanism is used to serve metadata to Europeana, via the Austrian aggregator Kulturpool, as well as to the Virtual Language Observatory by CLARIN, which aggregates linguistic data.

ARCHE is listed on re3data and OpenDOAR.

[16] <https://www.force11.org/group/fairgroup/fairprinciples>

[17] <https://www.re3data.org/repository/r3d100012523>

[18] <https://v2.sherpa.ac.uk/id/repository/9675>

Reviewer Entry

Reviewer 1

Comments:

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:

ARCHE is the successor of CLARIN Centre Vienna / Language Resources Portal (CCV/LRP). While the build-up was jointly funded by the Austrian Academy of Sciences and the Austrian Federal Ministry of Science, Research and Economy, its continuous service is ensured through dedicated funding by the Austrian Academy of Sciences. The mission of CCV/LRP was to provide easy and sustainable access to digital language resources and provide depositing services for language resources created in Austria.

ARCHE extends the scope of CCV/LRP as it aims to offer advanced and reliable data management and depositing service open to a broader range of humanities fields in Austria [19]. We recognise the challenges of ensuring sustainability, long-term preservation and accessibility in the face of the dramatically increasing amount and the rapidly changing nature of data. Therefore we aim for the continuous pursuit of technological and scientific development and the implementation of internationally accepted standards.

ARCHE is a central part of ACDH-CH's mission to foster the change towards the digital paradigm in the humanities [20]. ACDH-CH has undergone a dramatic development in the last two years, evolving from the predecessor Institute for

Corpus Linguistics and Text Technology (ICLTT) with its focus on language data to an institutional and national centre of expertise in digital humanities. ACDH-CH pursues a dual agenda of conducting digitally-enabled research and providing technical expertise and support to the research communities at the Academy, on the national, and international levels.

[19] <https://arche.acdh.oeaw.ac.at/browser/about-service>

[20] <https://www.oeaw.ac.at/acdh/about-acdh-ch/mission> and <https://www.oeaw.ac.at/acdh/about-acdh-ch/history>

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:

In principle, CC0 [21] applies to all metadata in ARCHE [22]. The data provider retains all intellectual property rights to their data [23]. The depositor must grant distribution rights to ARCHE by signing a Deposition Agreement [24] and choose an access mode (public, academic or restricted) and an applicable licence [25]. The depositors are encouraged to choose from standard and open licences [26] listed in a dedicated SKOS vocabulary (such as Creative Commons or dedicated open software licences) [27]. For restricted data sets explicit permission from the depositor is required in which case the user has to authenticate to access the dataset.

The Terms of Use [28] and resource-specific licences apply both for the use of the repository and the access to the resources. By using the resources, the user agrees to comply with the disciplinary and ethical norms as specified in The European Code of Conduct for Research Integrity promulgated by ALLEA (ALL European Academies [29]).

The access mode and licensing of every resource are clearly displayed to the users. For resources with limited access, like academic or restricted, users will be required to authenticate with their institutional account via Federated Login [30] (Shibboleth [31]) or to acquire a separate account.

In case of non-compliance with the terms and regulations, the user can be excluded from accessing the resources and general legal consequences according to national and international laws are applicable. A public policy for non-compliance with the terms described here will be prepared until 2022.

[21] <https://creativecommons.org/share-your-work/public-domain/cc0>

[22] <https://arche.acdh.oeaw.ac.at/browser/deposition-agreement> § 6, d

[23] <https://arche.acdh.oeaw.ac.at/browser/deposition-agreement> § 5, n

[24] <https://arche.acdh.oeaw.ac.at/browser/deposition-agreement>

[25] <https://arche.acdh.oeaw.ac.at/browser/deposition-agreement> § 3

[26] <https://arche.acdh.oeaw.ac.at/browser/deposition-agreement> and <https://arche.acdh.oeaw.ac.at/browser/faq>

[27] https://vocabs.acdh.oeaw.ac.at/arche_licenses/en

[28] <https://arche.acdh.oeaw.ac.at/browser/terms-of-use>

[29] <https://allea.org/allea-publishes-revised-edition-european-code-conduct-research-integrity>

[30] <https://arche.acdh.oeaw.ac.at/browser/faq#faq-shibboleth>

[31] <https://www.shibboleth.net>

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:

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:

ARCHE is a core service provided by the Austrian Centre for Digital Humanities and Cultural Heritage (ACDH-CH), an institute at the Austrian Academy of Sciences in Vienna. Continuity of access is secured by the funding of the institute. This funding is a combination of a base state financing via the global budget of the Academy, and a mix of national and international third-party financed projects, either conducted directly by the institute or by several external cooperation partners. In the first five years of operation, the build-up of the centre and the infrastructure was additionally supported with a dedicated start-up financing by the National Endowment. This start-up financing run out by the end of 2020. However, the Academy agreed to take key personnel under perpetual contracts, thus ensuring continuity of operation at least for the next five to ten years.

ACDH-CH is the national coordinator of CLARIAH-AT, a consortium of partners involved in the two large Digital Humanities European Research Infrastructure Consortia (ERICs) CLARIN and DARIAH, and as such it acted as a coordinating instance for elaborating the national strategy for Digital Humanities in Austria in 2015. One of the central goals of the strategy is the long-term preservation of research data (Leitlinie 4). A measure proposed to achieve this goal is the establishment of a national repository federation. The idea of the repository federation is to ensure long-term continuity of access to data hosted by individual partners, which include the University of Graz (host of the repository GAMS) and University of Vienna (host of the repository PHAIDRA), by exchanging expertise, sharing technologies, and interlinking repository resources.

The implementation of the measures supporting Leitlinie 4 is part of the CLARIAH-AT consortium's agenda for the upcoming three-year period (2021-2023). A first step was already taken by agreeing upon a joint metadata schema to enable a federated search via a common metadata catalogue across the partner repositories. This is now being implemented as part of of the project DiTAH - Digital Transformation of the Austrian Humanities, and will be available by the end of 2021.

ARCHE's "Preservation Policy" [32] provides further details on how additional funding is acquired and what measures are taken to address risks to digital continuity.

[32] <https://arche.acdh.oeaw.ac.at/browser/preservation-policy>

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:

Every submission of resources is handled by the repository management team and is dealt with in direct communication with the depositor to ensure that the deposited resources meet the requirements and sensitive information is kept out, obfuscated or protected with the help of special access modes. Licensing, IPR and issues regarding ethical norms are cleared before the resources are accepted for deposition. [33]

For example, resources containing personal information have to be deposited in anonymised form, except for cases of explicit consent of the involved persons. For resources containing geographical information about endangered archaeological find-places, the exact geographical coordinates have to be obfuscated or left out.

The depositor must sign an agreement [34] acknowledging that he has the right to deposit the data, allows ARCHE to disseminate the data according to chosen access modes, and has considered and taken care of any legal or ethical issues.

[33] <https://arche.acdh.oeaw.ac.at/browser/deposition-process>

[34] <https://arche.acdh.oeaw.ac.at/browser/deposition-agreement>

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:

ARCHE is hosted by the ACDH-CH [35], which is an institute of the Austrian Academy of Sciences (ÖAW [36]), a major non-university research institution in Austria. ACDH-CH is financed by a base state financing via the global budget of the Academy and a mix of national and international third-party project fundings. IT resources are provided by the computing centre of the Academy (ARZ [37]).

Currently, ACDH-CH employs over 130 persons, who have a background in a wide range of disciplines, including Natural Language Processing, Literature, Linguistics, History, Archaeology, Social Sciences, Anthropology and Music. The ACDH-CH is organised into four core units: Central Office, Service and Infrastructure, Digital Humanities Research, and Cultural Heritage Research [38]. They are managed by a Board of Directors. Central Office takes care of day to day administration, and communication within the institute, but also serves as a first contact point for researchers interested in collaborating with the institute. The maintenance and development of ARCHE, as well as curation of data to be ingested into ARCHE, is performed by a dedicated task force within the core unit Service and Infrastructure.

This task force, devoted solely to data preservation in general and ARCHE in particular, is concerned with processing the deposition requests, but also discussing current technical and organisational, as well as policy issues and upcoming developments, proposing and implementing changes in the system or workflows, in agreement with the supervisors and, in more prominent cases, with the board of directors.

Currently, five staff members, an equivalent of 3,5 FTEs, are solely dedicated to the development and the curation of ARCHE. Of these, 2 FTEs are concerned with the technical development of ARCHE, while 1,5 FTEs are filled by data archiving specialists. These positions are all funded until 2021, and an equivalent of 2,5 FTEs is under permanent contract. Efforts are being made to ensure the continuity of the service and strengthen its position by officially anchoring ARCHE as the central archiving service of the Academy for research data in the humanities.

Financing for ARCHE also covers advanced training and participation in international conferences, meetings, and specialist training. This is detailed in Requirement 6.

[35] <https://www.oeaw.ac.at/acdh/acdh-ch-home>

[36] <https://www.oeaw.ac.at/en>

[37] <https://www.oeaw.ac.at/arz>

[38] <https://www.oeaw.ac.at/acdh/about-acdh-ch/structure>

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:

In terms of in-house guidance, the Austrian Centre for Digital Humanities and Cultural Heritage employs a plethora of interdisciplinary experts who are not necessarily directly involved in the development and service of ARCHE but can offer expert information upon request. During regular meetings, such as the ACDH-CH's fortnightly "Research Lunch", ARCHE staff has the opportunity to exchange knowledge with other ACDH-CH peers involved in other digital humanities projects. For a list of the current ACDH-CH team please visit: <https://www.oeaw.ac.at/acdh/team/current-team>

ACDH-CH is a key player in CLARIAH-AT, the Austrian national consortium for the key humanities European research infrastructure consortia CLARIN and DARIAH, to which it has substantially contributed over the last years. This year-long involvement resulted in a large and dense network of national and international contacts within a broad range of disciplines, available for consulting and expert guidance.

Furthermore, ACDH-CH intends to establish an external flow of information with similar centres and institutions around the world. In November 2016, ACDH-CH joined a mailing list bringing together members from different archival institutions, including ADS, IANUS, and DANS, in order to exchange experiences and ask other digital archivists for their advice when needed.

Funding for ARCHE also covers advanced training and participation in international conferences and meetings. In addition, ACDH-CH organises many knowledge transfer events (e.g. Tool Galleries, ACDH-CH Lectures) with regular participation of external experts [39]. Furthermore, the staff at ARCHE participates in the Austrian network of repository managers (RepManNet [40]), is informed by and involved in the activities of the Research Data Alliance (RDA [41]) and the World Data System [42]. Since 2019 an ARCHE team member is also involved in the activities of the COST Action 18128, Saving European Archaeology from the Digital Dark Age (SEADDA [43]), a network dedicated to all issues revolving around the long-term preservation of digital data from archaeology.

ACDH-CH is strongly committed to continuing and increasing the knowledge transfer between in-house, external and international experts which surely benefits ARCHE in every respect.

[39] <https://www.oeaw.ac.at/acdh/events/archive>

[40]

<https://datamanagement.univie.ac.at/forschungsdatenmanagement/netzwerk-fuer-repositorienmanagerinnen-repmannet/>

[41] <https://www.rd-alliance.org/>

[42] <https://www.worlddatasystem.org/>

[43] <https://www.cost.eu/actions/CA18128/> and <https://www.seadda.eu/>

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:

ARCHE recognises its responsibility to ensure the integrity and the authenticity of data in direct communication and cooperation with the depositor.

Our guidelines “Deposition Process” [44] and “Filenames, Formats and Metadata” [45] contain fundamental information for both depositors and repository staff to make sure that the data is properly prepared and documentation of the data is complete. A dedicated command line application (“repo-file-checker” [46]) was developed to help automate this process. Additionally, detailed descriptions and procedures for repository staff are documented in the internal wiki system, which is described in more detail in Requirement 12. For each collection being curated a curation log in our internal wiki system is kept. It records all changes and actions made in the process of transforming the SIP into the AIP.

We utilise SHA1 checksums to verify the integrity of binary resources stored in the repository. A checksum is automatically computed and stored in the resource’s metadata upon every binary data ingestion (both creation and update). A user can check if the downloaded file matches the originally ingested one by comparing the downloaded file checksum with the checksum stored in the resource's metadata. All the checksums are also regularly compared against actual resource content on a monthly basis to detect silent data corruption in the storage layer. If such an error is detected, the resource is restored from the backup.

If new versions of resources become available, they are identified by a timestamp, allowing to refer consistently and unequivocally to every version, which is identified by a persistent identifier. Linking to previous versions is also anchored in the metadata with a dedicated property (acdh:isNewVersionOf [47]).

As a principle, all resources in our repository must have metadata for which a dedicated ontology with respective cardinality settings for individual properties was developed. Metadata is automatically versioned in the underlying database of our core system. In case rich metadata is available for resources in a dedicated format (CMDI, EAD, LIDO),

which cannot be losslessly mapped into ARCHE's metadata schema, the corresponding metadata records are stored as separate binary objects and linked to the resources with a dedicated metadata property (acdh:isMetadataFor). There is a two-way link between the resource and the metadata record in the repository browser, allowing access to either. The OAI-PMH endpoint can expose any of these records through the OAI-PMH protocol customisable via a flexible configuration.

To apply custom business logic, ensure the validity of the ingested data, make sure that the resources and the metadata fulfil our requirements, and check that the required metadata fields are filled with correct values, a single point of access was developed: the doorkeeper [48]. Additional checks are performed after the ingestion using the "Dashboard" [49], which is a curation tool that allows orthogonal aggregated views on the data, listing all metadata fields and their values as well as individual queries on the metadata. This way it is possible to keep an overview and detect any possible inconsistencies due to metadata schema and controlled vocabulary improvements on a repository and collection level. ARCHE aims to deliver PREMIS conformant metadata. After the complete overhaul of our core system, currently only level one of conformance, conformance through mapping [50], is reached. It is planned to fully support and deliver PREMIS metadata for tracking provenance information to strengthen data integrity and make all changes to data transparent to the users in the next years.

Currently, ARCHE does not offer self depositing, which is why data depositors have to get in contact with the ARCHE team (either via e-mail or telephone) before depositing. A first proof of the depositors' identity is their institutional email address, e.g. for staff members of the ÖAW. Usually, at least one face to face meeting is arranged, especially with first-time depositors, during which problems with identity may be detected. Depositing in ARCHE also requires a signed Deposition Agreement which also collects the contact information of the depositor.

[44] <https://arche.acdh.oeaw.ac.at/browser/deposition-process>

[45] <https://arche.acdh.oeaw.ac.at/browser/formats-filenames-and-metadata>

[46] <https://arche.acdh.oeaw.ac.at/browser/technical-setup> and <https://github.com/acdh-oeaw/repo-file-checker>

[47] <https://github.com/acdh-oeaw/arche-schema>

[48] <https://github.com/acdh-oeaw/arche-doorkeeper>

[49] <https://github.com/acdh-oeaw/arche-dashboard>

[50] <https://www.loc.gov/standards/premis/premis-conformance-20150429.pdf>

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:

ARCHE declares in its Collection Policy [51] that it functions as a digital data hosting service for the humanities in Austria. Consequently, all humanities fields, including modern languages, classical languages, linguistics, literature, history, jurisprudence, philosophy, archaeology, comparative religion, ethics, criticism and theory of the arts all fall into our fields of relevance.

In these relevant fields of the humanities, our repository accepts a wide range of research data such as digital texts, lexical resources, tabular data, databases, images, file collections like GIS, 3D or CAD, multimedia files such as sounds and videos, websites and social media data, relevant digital tools, software and scripts.

The resources and data must meet our requirements and conform to the suitable formats and standards, which are defined on our “Deposition Process” [52] and “Filenames, Formats, and Metadata” [53] guidelines. If this is not the case, ARCHE provides consulting and assistance to achieve the said standards. For more details see Requirement 7.

The primary mechanism of quality control checks to ensure the completeness and understandability of data is the tight collaboration between the depositor and the ARCHE curators. After an initial automatic check, our data curators investigate the provided metadata to verify the consistency, understandability and completeness of data. If any issues arise, the data curator contacts the depositor and offers further assistance. If the research data does not fall into our field of relevance then we still offer support and share our knowledge and contacts to find the most appropriate repository for the data in question.

All resources included in ARCHE are intended to be retained permanently. Data may be removed at the depositor's request, although ARCHE will preserve at minimum a reference to show that the data was there. Metadata will therefore be retained indicating that the data itself was removed. The assigned PID will be preserved, pointing to a tombstone page that displays the metadata.

[51] <https://arche.acdh.oeaw.ac.at/browser/collection-policy>

[52] <https://arche.acdh.oeaw.ac.at/browser/deposition-process>

[53] <https://arche.acdh.oeaw.ac.at/browser/formats-filenames-and-metadata>

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:

To ensure well-defined processes, the procedures in place are documented in the internal wiki system. These procedures are backed on a higher level by our policies. Each instance of a collection submitted for deposition is managed via an internal issue tracking system, which supports the workflow by keeping track of the status and involved persons for each task.

After submission of the SIP, integrity checks are executed when appropriate information was submitted by the depositing side. The submitted SIP is left untouched while a copy of it serves as a basis for transformation to the AIP. During curation, data is stored on a network storage provided, monitored, and backed up by the computing centre of the academy (ARZ).

Our archiving system is built in a modular, service-oriented manner, consisting of multiple interconnected components communicating through well-defined APIs. The full code is available on GitHub, including technical documentation [54].

The repository system has three instances: one for the development of the system components, one for staging of curated data, and a third one serves as the main productive instance.

The primary server storage of the productive instance is a RAID-6 [55] configuration that makes it possible to sustain read and write operations in the presence of up to two concurrent disk failures. Every week, the live data stored on the repository production server is copied to ARZ's NetApp [56] production storage, of which numerous snapshots are stored on ARZ's backup system in a separate location. Metadata is backed up in full while binaries are backed up incrementally. Additionally, the data is encrypted on our side and then copied every week to a long-term storage in the computing centre run by the Max Planck Computing and Data Facility (MPCDF) in Garching. The storage service provided by MPCDF is part of the B2SAFE [57] service.

ARCHE checks backups for integrity via MD5 checksums to verify the integrity of data. Recovery measures and steps are not only documented but also tested to ensure swift recovery in case of emergency on the side of ARCHE.

A monitoring system based on the open source solution Icinga [58] is used to continuously check the availability of all services run by ACDH-CH, notifying the system administrators and the head of the technical core unit in case of any irregularities.

Monitoring of deterioration of any other storage media besides the aforementioned server storage systems is not required.

[54] <https://acdh-oeaw.github.io/arche-docs>

[55] https://en.wikipedia.org/wiki/Standard_RAID_levels#RAID_6

[56] <https://www.netapp.com>

[57] <https://www.eudat.eu/b2safe>

[58] <https://icinga.com>

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:

As its primary preservation strategy, ARCHE performs migration of formats as opposed to providing software emulation.

Further details regarding ARCHE's long-term preservation strategy are given in the "Preservation Policy" [59].

The policy documents how the OAIS model is respected by describing how the mandatory responsibilities are met. It also includes information about the file formats used for long term preservation, describes the roles and responsibilities around ARCHE, outlines the core funding sources, and lists relevant standards ARCHE adheres to.

The policy was written with the consultation of international best practices and examples including the Data Preservation Handbook (by the Data Preservation Coalition), the Preservation Plan of DANS, the materials about Managing digital continuity (by The National Archives, UK), the IT-Empfehlungen (by IANUS), the Standard Recommendations (by CLARIN), the Digital Preservation Strategies (by the British Library), documentation by the Open Preservation Foundation, and information about preservation provided by the Library of Congress.

[59] <https://arche.acdh.oeaw.ac.at/browser/preservation-policy>

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:

ARCHE employs two mechanisms to evaluate and ensure the quality of data: automatic validation and manual data curation by experienced curators.

Automatic validation and checking are done upon ingest with a dedicated command line application, repo-file-checker [60], and the doorkeeper component, which also allows for the validation of metadata against the ARCHE metadata schema [61]. We plan to improve this process by creating a user-friendly web interface that will help depositors to deliver data in standard formats and to provide the required metadata. Information about mandatory and recommended metadata properties is available for depositors [62]. The metadata set includes properties to establish relations to other publications and sources as well as to related data [63].

The metadata schema for ARCHE takes into account international standards like the Dublin Core Metadata Initiative [64] and Component Metadata by CLARIN [65]. It is generic and flexible enough to preserve the documentation of heterogeneous resources.

After submission automated checks are executed with dedicated software tools and any errors are reported back to the depositors with a request for action or confirmation of proposed measures. Data curators perform additional manual quality checks, including understanding the directory structures, file relationships and naming conventions used, check for any quality or usability issues in the data as well as in the provided documentation and metadata. Any unaddressed legal issues, especially regarding copyright violations and sensitive data should be detected. Since ARCHE's designated community is multidisciplinary, it is necessary to work in close cooperation with the depositors. A data curator inspects the provided metadata to verify the consistency, understandability and completeness of the data. If any issues arise, the data curator contacts the depositor for further actions. As far as possible, ARCHE will assign the curation of the deposited data to staff with a matching disciplinary background.

[60] <https://arche.acdh.oeaw.ac.at/browser/technical-setup> and <https://github.com/acdh-oeaw/repo-file-checker>

[61] <https://github.com/acdh-oeaw/arche-schema>

[62] <https://arche.acdh.oeaw.ac.at/browser/formats-filenames-and-metadata#metadata>

[63] See the section "Relations to other projects, collections or resources" in the table in <https://arche.acdh.oeaw.ac.at/browser/formats-filenames-and-metadata#metadata>

[64] <https://www.dublincore.org/specifications/dublin-core/dcmi-terms>

[65] <https://www.clarin.eu/content/component-metadata>

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:

The data submission process is accompanied by a data curator who is in direct communication with the depositor throughout. Besides, the comprehensive deposition workflow is documented on the ARCHE website [66].

After an initial review to determine if the data is suitable for the repository, the curators counsel the depositor to facilitate the submission of data in preferred formats and accompanied by sufficient descriptive, administrative and structural metadata. In our guidelines, there is a section about “Filenames, Formats and Metadata” [67], which provides all necessary information on the preferred formats. ARCHE also specifies a list of accepted formats that can be converted to the preferred ones by the ARCHE team. Information about the workflow leading up to and following the deposition can be found in the section “Deposition Process” [68].

During the deposition process, the curators make sure that the data formats comply with the supported and recognised standards, the data is properly prepared, and the documentation is complete. Any changes to formats or to the documentation required are carried out in close interaction with the depositor. During the data ingestion, a persistent identifier is automatically assigned to every resource.

After automatic validation and checking and manual curation (described in Requirement 11), the ingestion into the repository system is executed with the help of a script and its corresponding configuration file to ensure a reproducible and

consistent workflow. The ingest is first performed against a staging instance of the repository, where the data undergoes checking by the depositor and another curator. Any issues identified lead to another round of curation and review. Since the repository is open for a broad range of subjects, almost any data type is allowed, as long as they are provided in formats suitable for long term preservation. If any new data formats are being ingested into the repository, the list of formats of the Preservation Policy is changed after an assessment of the format. Furthermore, the changes are documented in the internal wiki system and communicated to all team members.

If a depositor's data does not match our collection policy, we still offer support to identify and recommend the most appropriate repository for the data in question.

Our internal wiki and project management system is based on the project management system Redmine and covers two major areas: technical development and data curation. For each area, a separate wiki space was set up and contains descriptions of workflows and procedures, which are administered and updated by the task force described in Requirement 5. Previous versions are saved by automatic versioning provided by Redmine.

For technical development, issues and bug tracking as well as documenting feature requests and the roadmap function are extensively used. An overall documentation for the system can be found in the wiki, which points to more extensive documentation on GitHub.

For data curation, a ticket template with sub-issues representing the curation workflow has been set up. Each of these issues contains a short description of the task and points out the software and tools to be used. This template is copied and used for each new data collection that is ingested into ARCHE. If changes in the workflow occur, the template is changed accordingly.

Redmine offers custom user roles with different permissions, thus allowing for a clear assignment of editing rights for each user.

A third Redmine project with a public wiki [69] was set up to communicate basic tools and handling of different data types and formats to a wider audience for data preparation. It is planned to incorporate this into the documentation on GitHub in the course of 2021.

[66] <https://arche.acdh.oeaw.ac.at/browser/deposition-process>

[67] <https://arche.acdh.oeaw.ac.at/browser/formats-filenames-and-metadata>

[68] <https://arche.acdh.oeaw.ac.at/browser/deposition-process>

[69] <https://redmine.acdh.oeaw.ac.at/projects/arche-wiki-for-curation-tasks/wiki>

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:

ARCHE offers an easy-to-use web interface [70], where users can browse and perform a variety of search actions to discover stored data. In principle, our repository requires metadata for every resource and all metadata is openly searchable via our web interface. Users can select predefined search filters (facets) and enter their keywords.

Additionally, the repository provides several interfaces to search and retrieve its data in programmatic ways (see “API Access” [71]). For example, it exposes a public OAI-PMH endpoint, which is already regularly harvested by the Virtual Language Observatory (VLO) [72], CLARIN’s main metadata catalogue, and Kulturpool [73].

The repository systematically assigns Handles [74] to published resources to ensure persistent referenceability of digital objects, irrespective of their future location. Furthermore, each resource page features a recommended citation. In case the published data with a Handle is withdrawn, a tombstone page containing the metadata will be kept.

The web interface provides a basic user-friendly view of selected metadata associated with the resources as well as an expert view displaying all available metadata. The metadata is also available as RDF/XML or in JSON format. The system is equipped with a growing set of dissemination services [75] for displaying specific data types, so that the users can view the resource directly and seamlessly. A typical example is a TEI file [76] (or any other XML) that can be transformed to HTML or PDF for viewing. Another example would be accessing images through the IIIF protocol. The various dissemination formats can be requested by appending the requested parameters to the URI.

[70] <https://arche.acdh.oeaw.ac.at/browser>

[71] <https://arche.acdh.oeaw.ac.at/browser/api-access>

[72] <https://vlo.clarin.eu>

[73] <http://www.kulturpool.at/display/kupo/Home>

[74] <http://www.handle.net>

[75] <https://arche.acdh.oeaw.ac.at/browser/technical-setup> and <https://arche.acdh.oeaw.ac.at/browser/api-access>

[76] <https://tei-c.org>

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:

Long-term accessibility and understandability of data are the priorities of ARCHE. Thus, the sections “FileNames, Formats and Metadata” [77] and “Deposition Process” [78] of our web-platform contain information about mandatory and recommended metadata for the benefit of the users.

As stated in Requirement 11, the metadata schema for ARCHE was developed respecting international standards. Mandatory metadata is required to ensure the inner workings of the repository system, while the recommended metadata was selected to increase the understandability of data. The metadata is encoded in RDF/XML and provided as CC0, which maximises the interoperability between ARCHE and the depositors and other service providers, which harvest our metadata.

We strongly encourage our depositors to provide the resources in standard formats suitable for long-term preservation and acknowledged by the respective international research communities. We also provide support in converting the data if this is necessary and feasible.

Formats ingested into the repository are carefully monitored for possible obsolescence and when a migration becomes necessary, a bespoke migration plan will be tailored for the resources affected.

[77] <https://arche.acdh.oeaw.ac.at/browser/formats-filenames-and-metadata>

[78] <https://arche.acdh.oeaw.ac.at/browser/deposition-process>

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:

The repository implements the tasks and functions of the Open Archival Information System reference model [79]. It distinguishes between workflows for ingest of data as Submission Information Packages (SIP), processing and archiving as Archival Information Packages (AIP) and providing data to users as Dissemination Information Packages (DIP) via our APIs and the browser interface.

All mandatory responsibilities described in the OAIS reference model [80] are already implemented in ARCHE. Negotiations for appropriate information that take place during the deposition process are based on the Collection Policy [81] and further auxiliary documentation detailing the requirements for deposition of research data. The Deposition Agreement [82] ensures that ARCHE obtains sufficient control of the information for long term preservation. The designated community is likewise specified in the Collection Policy. The independent understandability of data is ensured by our metadata requirements [83] and data quality checks as described in Requirement 11. The preservation procedures to follow are formalised in the Preservation Policy (Requirement 10) and detailed in the internal wiki system described in Requirement 12. Lastly, the preserved information is already disseminated via ARCHE's web interface.

We maximise the quality of our data and the interoperability of our repository service by following the international and community standards and principles such as Handles, OAI-PMH [84], W3C standards [85], Linked Data Platform [86], Dublin Core Metadata Initiative [87] and Component Metadata of CLARIN [88].

Regarding data formats suitable for archiving, we primarily refer to the "IT-Empfehlungen" by IANUS [89], which in turn take into account several international standards and recommendations. For curation tasks like format validation or format conversion ARCHE relies on tools and services provided by renowned digital archiving institutions, as e. g. the tools collected in the E-ARK project [90] or by the Open Preservation Foundation [91], as well as PRONOM [92] as a file format registry. We strive to use widely adopted open software whenever possible.

The technical setup of the repository is detailed in a respective user information page [93] and all of its components are publicly available via GitHub [94]. All modules and functions are implemented in PHP 7 [95].

The embeddedness of ARCHE in the institutional context of ACDH-CH and the ÖAW provides a stable institutional framework for the continuous development of the repository according to relevant standards and practices. The use of a suitable hardware setup with sufficient capacity and measures against hardware failure is ensured through close interaction and consultation with the computing centre of the academy (ARZ). See Requirement 16 for further details of the technical setup.

The ARZ itself aims to respect renowned international and national standards for the hardware and services they provide, including ISO/IEC 27001, ISO/IEC 27002, and the Austrian manual for information security (Österreichisches Informationssicherheitshandbuch [99]).

[79] <https://public.ccsds.org/Pubs/650x0m2.pdf>

[80] <https://public.ccsds.org/Pubs/650x0m2.pdf> (page 3-1)

[81] <https://arche.acdh.oeaw.ac.at/browser/collection-policy>

[82] <https://arche.acdh.oeaw.ac.at/browser/deposition-agreement>

[83] <https://arche.acdh.oeaw.ac.at/browser/formats-filenames-and-metadata#metadata>

[84] <https://www.openarchives.org/pmh>

[85] <https://www.w3.org/standards/>

[86] <https://www.w3.org/TR/ldp>

[87] <https://www.dublincore.org/specifications/dublin-core/dcmi-terms>

- [88] <https://www.clarin.eu/content/component-metadata>
[89] <https://www.ianus-fdz.de/it-empfehlungen>
[90] <http://www.eark-project.com/resources/eark-tools>
[91] <https://openpreservation.org>
[92] <http://www.nationalarchives.gov.uk/PRONOM/Default.aspx>
[93] <https://arche.acdh.oeaw.ac.at/browser/technical-setup>
[94] <https://github.com/acdh-oeaw?q=arche>
[95] <http://www.php.net>
[96] <https://www.sicherheitshandbuch.gv.at>

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:

There is a clear internal agreement on the division of roles between the ARCHE team at ACDH-CH, the system administrators at ACDH-CH and the computing centre of the academy (ARZ) concerning the technical infrastructure. ARZ

is responsible for the maintenance and provision of server hardware (computing and storage capacity), including physical security measures, network configuration, firewall setup and the basic virtualisation layer.

Security is assured on different levels:

a) Data backups

Back up of data and metadata is described in Requirement 9. It includes local backups managed by the ACDH-CH, institutional backups managed by ARZ and an external backup into the network of B2SAFE [97]. The latter allows for major disaster recovery.

b) Live monitoring

We use the Icinga software to provide live monitoring of all vital services. For the repository, we are monitoring the state of all important software components (arche-core, the website, the OAI-PMH endpoint, and the local resolution service). In the same way, we are monitoring system resources usage (available RAM, CPU and storage space). If one of the tests fails, a notification is automatically sent to the system administrators.

c) Failover

Different failover procedures are prepared for different kinds of failures.

Data storage failures are handled by levels two to four of the data backup strategy described in a). Failures related to level two don't cause any downtime because of the nature of the RAID. Issues related to level three can be handled within minutes by reconfiguring the virtualisation host to use the spare data matrix. Recovery procedures related to level four may take up to a few days.

Virtualisation host failures are handled by migrating all the software components to a different host. As all components are prepared as Docker containers with their source kept in git repositories (on GitHub) and the data storage is network-attached, migration to another virtualisation host is straightforward and takes as long as physically copying the software code and the data from the backup location. The procedure of setting up the whole software stack within a Docker-enabled environment is described within the documentation of the repository in our internal Wiki system described in Requirement 12.

d) Network security

Network security is assured by ARZ. ARZ provides a firewall between the Internet and data centres network and enforces strict routing rules. Only incoming HTTPS connections are accepted from external networks and from the ACDH-CH local network only HTTPS and SSH connections are routed. ARCHE's VM is using its own firewall accepting only HTTPS and SSH connections. All connections are encrypted and the available cipher configuration is updated according to the current CertBot [98] settings.

e) Physical security

Physical security of the hardware is assured by ARZ. The data centre in use is placed in dedicated locked rooms, with only authorised personnel able to access it.

f) Software lifecycle

The ARZ data centre uses VMware vSphere 6.7 virtualisation software which is supported until 15-10-2022. A migration to a newer version is performed in due time. Virtual machines' operating system is CentOS 7 with support provided until 30-06-2024. For the Docker (version 1.13.1. currently in use) updates, we rely on CentOS package updates. All other software components (PHP, Drupal) are continuously updated as new stable releases become available.

g) Authorisation

The repository implements multiple levels of access rights. Resource creation and update writes are limited to designated data curators. Read rights to repository resource binaries are granted on a per-resource basis according to depositors decision. There are three levels of reading access: public, academic (all users authenticated with the Shibboleth SSO) and restricted to particular users. Authorisation is provided by the arche-core software module providing the repository storage layer making it impossible to bypass it. While the arche-core allows to enforce access rights also on metadata it has been decided to keep read access to all metadata public.

Authorisation is provided by the CLARIN-ERIC [99] and eduGAIN [100] identity federation (with Shibboleth) as well as the repository's local user database. The local database allows to grant access to users without accounts in the identity federation and provides an easy to use authorisation method to be used in non-interactive and non-GUI repository access scenarios. It is possible to share the same user login between the Shibboleth and local users database.

A comprehensive documentation of the setup is publicly available via the respective GitHub repositories and on ARCHE's web page.

Potential risks on the technical side are addressed with the storage procedures in place and documentation of recovery procedures. Risks regarding data preservation, especially format obsolescence, are addressed in the Preservation Policy as well as possible risks for ARCHE as a whole.

[97] <https://www.eudat.eu/b2safe>

[98] <https://certbot.eff.org>

[99] <https://www.clarin.eu/content/service-provider-federation>

[100] <https://edugain.org/>

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:

In Requirement 16 the risk analysis tool DRAMBORA is mentioned. This is not maintained anymore (see the last sentence on <https://www.dcc.ac.uk/tools/drambora>). Unfortunately, the information page at DCC (<https://www.dpconline.org/handbook/risk-and-change-management>) is also quite outdated as e.g. the first resource they list (ISO/PAS 22399:2007) is withdrawn. One more up to date set of materials could be <https://www.nationalarchives.gov.uk/information-management/manage-information/policy-process/digital-continuity/risk-assessment/>

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:

[Note from Secretariat: Thank you for this information on DRAMBORA, it will be relayed to the Board and noted for future iterations of the CoreTrustSeal Requirements.]