Assessment Information

CoreTrustSeal Requirements 2017–2019

Repository:	ZBW Digital Long-Term Archive
Website:	https://zbw.eu
Certification Date:	17 December 2019

This repository is owned by: **ZBW Leibniz Information Centre for Economics**

ZBW Digital Long-Term Archive

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:
Accept

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, Library/Museum/Archives

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

Brief Description of Repository

ZBW – Leibniz Information Centre for Economics (ZBW) belongs to the German National Specialist Libraries which are responsible for the provision of information and literature for their respective subject areas and the preservation of their content.

The ZBW is the world's largest research infrastructure for economic literature, online as well as offline. Its subject-based repository EconStor provides a large collection of more than 162,588 articles and working papers in Open Access. EconBiz, the portal for international economic information, allows students and researchers to search among nine million datasets. The ZBW edits two journals in economic policy, Wirtschaftsdienst and Intereconomics. The ZBW is a member of the Leibniz Association and has been a foundation under public law since 2007. It is affiliated with the Christian-Albrechts-University of Kiel. The number of staff is 280 persons. Its holdings amount to 4.43 million books and other literature in printed and increasingly in digital format.

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

Brief Description of the Repository's Designated Community.

The description of the designated community of the ZBW concerning the Digital Preservation is included in its Preservation Policy and depends on its mandate and task:

"2.1. Mandate, tasks, target groups
As the German National Library of Economics it is the task of the ZBW to acquire literature and subject-specific information from the field of economics, to index it, and to ensure its lasting availability to its target groups.

An ever increasing part of the collections, e.g. dissertations and working papers, is provided in digital form. The ZBW in its

function as a subject-specific National Library is responsible for the long-term and sustainable availability of all digital content which it collects, licenses or produces by retrodigitization of its collections, and which it archives on its own servers.

The economic research community at home and abroad counts to the ZBW user group for Digital Preservation. Private enterprises and the interested public can also use the services and the holdings of the ZBW. The interests of these external groups must be taken into consideration by the Digital Preservation handling, although the Digital Preservation system of the ZBW itself is a so-called “dark archive”, which does not provide direct external access. Other target groups of the Digital Preservation are those ZBW colleagues who are responsible for those electronic services which are to be provided sustainably (e.g. the staff members responsible for the open access server EconStor)“ [Preservation Policy of the ZBW: https://www.zbw.eu/en/about-us/key-activities/digital-preservation/preservation-policy/].
The group Digital Preservation in the ZBW watches and documents the trends concerning digital long term preservation.

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

All URLs last accessed on 15th of November 2019.

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments:

Outsource Partners. If applicable, please list them.

In the field of Digital Preservation, the ZBW cooperates with the two other German National Specialist Libraries. These are the
- TIB Leibniz Information Centre for Science and Technology University Library (TIB) in Hannover [Cooperation partner TIB: https://www.tib.eu/en/] and
- ZB MED Information Centre for Life Sciences (ZB MED) in Cologne [Cooperation partner ZB MED: https://www.zbmed.de/en/]

The relationship is described in a cooperation agreement (confidential) and in a common Preservation Policy [Preservation Policy of the German National Specialist Libraries: https://www.zbw.eu/en/about-us/key-activities/digital-preservation/preservation-policy-national-libraries/] that sets the frame for the individual preservation policies of these libraries. The relationship is called Digital Preservation Network of the German National Subject Libraries.

The ZBW Digital Long-Term Archive is based on the Rosetta System developed by Ex Libris. The TIB has a license for the Rosetta System and acts as a host for the digital archives of ZB MED and the ZBW which hold sub-licenses for Rosetta. The TIB is also responsible for the systems administration and maintains the computing center necessary for the hosting of Rosetta. All digital objects and the corresponding metadata are stored in this computing center. TIB, ZB MED and the ZBW create their own workflows and are free to ingest their own digital material into this system.

The ZBW and the TIB have received the Data Seal of Approval in 2015 and the nestor-seal in 2017 [https://www.langzeitarchivierung.de/Webs/nestor/EN/Zertifizierung/nestor_Siegel/siegel.html].

There is a Cooperation Agreement and a contract for the sub-licensing for Rosetta which include service level and support agreements.

These certification requirements of the CoreTrustSeal are affected by the relationship to the TIB:

R9 Documented storage procedures

R15 Technical Infrastructure

R16 Security

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

Other Relevant Information.

Digital dark archive:
The ZBW Digital Long-Term Archive is a dark archive whose sole purpose is to guarantee the long term availability of the objects stored in it. The storage for the ZBW's digital objects and their representation platforms is maintained by the ZBW division IT-Infrastructures and is not part of the tasks of the group Digital Preservation. The content that the ZBW provides is accessible via special representation platforms. The special representation platforms are:

EconStor: an open access publication server for literature on business and economics

ZBW DIGITAL ARCHIVE: it contains born digital material from the domains of business and economics. The content of this archive is accessible in open access via EconBiz, the subject portal for business and economics of the ZBW.

National and Alliance Licenses: the ZBW negotiates and curates licenses for electronic products on a national level. This is processed under the framework of the German Research Foundation as well as the Alliance of Science Associations, partly with third party funding, partly solely funded by the ZBW. A part of these electronic products is already hosted by the ZBW and counts among the items that are preserved in the digital archive.

20th Century Press Archive: a portal with access to archival material consisting of press clippings from newspapers covering the time period from the beginning of the 20th century to the year 1949.

Amount of digital objects ingested into the Digital Preservation system of the ZBW:
In August 2018, there are 403,010 digital intellectual entities in the ZBW Digital Long-Term Archive consisting of 1,419,736 files.

Networking in the field of Digital Preservation:
The ZBW and its cooperation partners are members of:
- nestor – the network of expertise in long-term storage of digital resources in Germany [nestor webpage: https://www.langzeitarchivierung.de/Webs/nestor/EN/Home/home_node.html]
- The Open Preservation Foundation[http://openpreservation.org/]

They are actively working in several working groups of these networks. These networking activities of the ZBW and its partners aim at learning about best practices in digital long term preservation and the developing of new best practices.

As Rosetta users they are also active in the German and international user networks (DRAG/RUG).

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

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

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 ZBW is active in Digital Preservation of the digital documents and objects in its holdings because according to its statutes it is responsible for the sustainable provision of information for business and economics in Germany. The library ensures that its digital holdings are held in appropriate technical and organizational environments for eternity. This is one of its tasks in its role as German National Subject Library for Economics.
In its statutes the following paragraph is relevant for preservation activities of all kind:
§ 2 “Task of the foundation”: “The foundation collects and makes accessible economic literature from all over the world. It offers comprehensive services which facilitate the efficient, effective and sustainable usage of economic information”. (Emphasis added by the author) [Statutes of the ZBW: https://www.zbw.eu/fileadmin/pdf/ueber-uns/satzung-e.pdf].
The ZBW considers this task in its strategy 2015 – 2020.
„Goal II.1: The ZBW converts to a digital library.

Strategic procedure:

Digital Preservation secures the sustainable usage of digital services of the ZBW.
The ZBW collaborates in the field of Digital Preservation with the German National Specialist Libraries. This secures the bundling of resources for Digital Preservation and a high effectiveness of the necessary processes.” [ZBW Strategy 2015-2020, (in German, relevant extract see above in English) http://www.zbw.eu/fileadmin/pdf/ueber-uns/2015-strategie.pdf].
The tasks of Digital Preservation are part of the ZBW Preservation Policy and of the ZBW Preservation Planning activities which concern digital long term preservation for all material that it collects, licenses and stores on its servers. The aims of archiving and the time period for preservation are clearly defined in these documents. The preservation policy of the ZBW says:
“2.1. Mandate, tasks, target groups
As the German National Library of Economics it is the task of the ZBW to acquire literature and subject-specific information from the field of economics, to index it, and to ensure its lasting availability to its target groups.
An ever increasing part of the collections, e.g. dissertations and working papers, is provided in digital form. The ZBW in its function as a subject-specific National Library is responsible for the long-term and sustainable availability of all digital content which it collects, licenses or produces by retrodigitization of its collections, and which it archives on its own servers.” [Preservation Policy of the ZBW: https://www.zbw.eu/en/about-us/key-activities/digital-preservation/preservation-policy/].
The ZBW has established a risk management concept and a concept for preservation planning that derives from its Preservation Policy [Risk Management and Preservation Planning of the ZBW: https://www.zbw.eu/en/about-us/key-activities/digital-preservation/risk-management/].

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:

The ZBW digitizes and archives media/items which are considered to be no longer subject to copyright law or may be used according to special clauses in copyright law, such as the limitation provision for works that are orphaned, § 61 et seq. Copyright Act (UrhG) or works that are out of print § 51 Act on the Management of Copyright and Related Rights by Collecting Societies (VVG). In all cases, due diligence is applied to legal requirements and risk assessment regarding the legitimacy of planned usage.
Third parties who upload electronic publications to the servers of the ZBW are requested in the web interface to acknowledge and accept the rules of the ZBW [e.g. the EconStor model deposit license:
http://www.zbw.eu/elektronische_angebote/docs/econstor_deposit_license.pdf
or the model deposit license for the DIGITAL ARCHIVE:
http://www.zbw.eu/fileadmin/pdf/nutzungsvereinbarung/ea-d-nutzungsvereinbarung-kuenftige-pub-zbw.pdf
http://www.zbw.eu/fileadmin/pdf/nutzungsvereinbarung/ea-e-nutzungsvereinbarung-kuenftige-pub-zbw.pdf
], by which they grant permission to the ZBW to store, copy and process the objects and subsequently provide public access to them. Permission for long-term preservation is requested under clause 4 and includes the permission to convert digital contents into another data format.
Copyright-protected works which are not subject to legal exceptions [see first section] are made accessible and archived by the ZBW only if the right holder has granted such rights either by an individual contract or by an open content license (e.g. Creative Commons Licenses). The ZBW uses model contracts to regulate the provision of public access to these works. These contracts also obtain permission for the long-term preservation of these works. The contracts for Open Access publications and for licensed products within the framework of Alliance licenses [Model license agreement for National and Alliance licenses:
http://www.nationallizenzen.de/tools/al-musterlizenz/at_download/file] can be found on the National licenses website. They are the basis for the bargaining with the publishing houses. According to the results of these processes, the model contracts may be adopted to the wants of the contract partners.
The ZBW protects the data of its cooperation partners and the users of its electronic services as well as the personality rights of the authors and other persons mentioned in the documents it preserves in its long-term archive. It observes the provisions of the “General Data Protection Regulation” [General Data Protection Regulation:
https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2016.119.01.0001.01.ENG
] and the “Data Protection Act Schleswig- Holstein” [Data protection act of the State Schleswig-Holstein (in German only):
http://www.gesetze-rechtsprechung.sh.juris.de/jportal/?quelle=jlink&query=DSG+SH&psml=bsshoprod.psml&max=true&aiz=true] and it acts with a public mandate [See the legal mandate in the ZBWs law of foundation: https://beck-online.beck.de/?vpath=bibdata%2Fges%2FSHZBibWWStiftG%2Fcont%2FSHZBibWWStiftG%2EP2%2Ehtm]. The ZBW has

appointed a data protection officer who monitors the observation of the data protection rules. All users of our platforms can access the applicable usage regulations on the relevant website. The data ZBW processes and stores in its long-term archive are not confidential. In its long-term archive, the ZBW only stores personal data which has been published by the author beforehand and which is publicly available.
In the long-term archive of the ZBW are no objects that have to be classified as secret. Independent of this all employees of the ZBW are obliged to confidentiality as civil servants based on § 3 Abs. 2 TV-L. (The contract concerns pay and rules of conduct of civil employees in Germany). In the long-term archive there is a rights management system that regulates access to the objects by employees of the ZBW.
All users are obliged to comply with the Copyright Act (UrhG) [German Copyright Act: https://www.gesetze-im-internet.de/englisch_urhg/englisch_urhg.html] . The use terms governing the use of our sites in Kiel and Hamburg state the obligation of any user to comply with the Copyright Laws and applicable license agreements [Benutzungsordnung der ZBW / Terms of use of the ZBW https://www.zbw.eu/fileadmin/pdf/recherchieren/benutzungsordnung.pdf].
In general, the user always has to respect the applicable licenses of our data repositories. If a registration is necessary to access the data, the user has to actively agree to the terms of use by clicking a statement equivalent to "I accept the terms of use of this repository".
Our long-term archive is a dark archive. We provide access via other platforms. Below we describe the access regulations for the collections that are part of our archive. For those platforms where access limitations apply, there are technical provisions in place to ensure that the platforms can only be accessed in accordance with the set restrictions (e.g. only for registered users, only for viewing, no printing out).

EconStor
EconStor is an Open Access repository and can be accessed by everyone via Internet, without registration or other restrictions. The documents can be viewed, printed or saved for personal, non-commercial use according to the German copyright law or under the Creative Commons Licenses.
The usage regulations for EconStor are listed on the specific website “Terms of use” [Terms of Use of EconStor: https://www.econstor.eu/Nutzungsbedingungen?locale=en] [see R7]. The user agrees with these terms by the first use of a document that is published on EconStor. Furthermore, the URL to this site is part of the Dublin Core Metadata of each item within the metadata element “dc.rights” [Example Dublin core metadata with link to terms of use of EconStor http://dublincore.org/usage/terms/history/#rights-006
]. Lastly, the terms of use are provided to the user through a specific cover page added to each PDF file downloaded from EconStor, an example is given here [https://www.econstor.eu/bitstream/10419/176924/1/cesifo1_wp6905.pdf]. The cover page contains the following notes regarding the Terms of Use:
“Documents in EconStor may be saved and copied for your personal and scholarly purposes.
You are not allowed to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.
If the documents have been made available under an Open Content Licence (especially Creative Commons Licenses), you may exercise further usage rights as specified in the indicated license.”

ZBW DIGITAL ARCHIVE

The DIGITAL ARCHIVE of the ZBW contains born digital works that are presented either in Open Access or—if the ZBW does not have the permission to put them into Open Access—are only accessible for registered users of the ZBW. The metadata and the link to the content of the DIGITAL ARCHIVE are presented in the portal EconBiz of the ZBW.
Access and use of the content in the DIGITAL ARCHIVE are possible according to user agreements or an open content-license (CC-licenses included). Access to the documents can be technically differentiated between Open or Restricted Access for registered ZBW-users, or access for authorized staff of the ZBW only. This closed access is necessary e.g. if the agreements include embargos which means that there is a delay in putting the documents in Open Access.

National and Alliance Licenses material hosted by the ZBW

The material of these licenses is only available for certain institutions or registered users. In general a user can view, print and save the material. If non-registered users try to access the material, they are informed that only registered institutions or users can have access. A contact email address is shown, please see [Example for contact e-mail: http://nationallizenzen.zbw.eu/handle/10836/25420] for this information.
During the registration process [Registration side of National and Alliance licenses (in German only): http://www.nationallizenzen.de/ind_inform_registration] the user is requested to accept the terms of use for each collection before accessing the content. The terms of use are visible during the registration process and on the website of the National or Alliance Licenses [Example for user terms (EIU-Country Reports, Nutzungsbedingungen, in German only): https://www.nationallizenzen.de/angebote/nlproduct.2007-02-14.6534424837]. To successfully complete the registration the users have to agree to the terms.
In detail, the registration process for institutions is as follows:

- the institution needs an existing user account on www.nationallizenzen.de
- the institution applies for a licensed product by selecting this product
- the system generates a document where the director of the institution has to confirm that the terms of use of the license are accepted
- the institution sends the signed document to the ZBW
- the ZBW checks if the institution is an authorized institution according to the license agreement (agreement between ZBW and vendor)
- the ZBW asks the vendor to set up access for the institution

In detail, the registration process for individual users is as follows:

- A private person who is interested in accessing licensed material and who is unable to access the product through a library or similar institution can fill out an application form on www.nationallizenzen.de
- the person must have a permanent residence in Germany
- the person must agree to the terms of use for any product that he or she is interested in
- the “application document” must be sent by mail
- the individual user gets username and password

20th Century Press Archive

The content of this repository is in general Open Access for everyone via Internet. This repository deposits mainly older

copyright free content. If content is still under copyright (e.g. the creator of the article has been dead for less than 70 years), the content is not available on the website yet, in accordance with German law. These items become available in Open Access after a Moving Wall, under the principles of German Copyright Law.
For the digitized 20th Century Press Archive we have listed the terms of use on the website [(in German only) http://webopac.hwwa.de/digiview/docs/eigeneSache.cfm]. A small summary concerning the copyrights is also to be found on each landing page, e.g. for the “Länder-Sacharchiv”. As the website of the press archive is in German language only, there is no English version of the terms of use. In accordance with German law, content is not made available on the website unless the creator has been dead for more than 70 years.

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:

In principle, the archived objects have to be accessible for a not predefined amount of time. The ZBW ensures long-term availability to build trust for the data producers and data users. If during their scientific research they quote and point to objects hosted by the ZBW, they do not have to worry about long-term availability, the ZBW will take care of that. This means that the data always have to be kept in contemporary file formats [Preferred File Formats in the Digital Archive of

the ZBW: https://www.zbw.eu/en/about-us/key-activities/digital-preservation/file-formats/], the content has to be readable, accessible and findable [Metadata in the Digital Archive of the ZBW: https://www.zbw.eu/en/about-us/key-activities/digital-preservation/metadata/]. Therefore, the Digital Preservation team evaluates their preservation actions regularly [Risk Management and Preservation Planning of the ZBW: https://www.zbw.eu/en/about-us/key-activities/digital-preservation/risk-management/].
For preservation plans currently in action please see R10 (preservation plan) and for Data Reuse R13.
A cessation of funding is unlikely, as Digital Preservation is a fixed part of the library and not a limited project; there is an ongoing budget and a financial concept for Digital Preservation (see R5). Costs for Rosetta, the storage at the TIB and tools (currently only the Callas pdfaPilot https://www.callassoftware.com/de/produkte/pdfapilot) and cost for staff are planned for.
The ZBW Digital Preservation team does not distinguish between medium- and long-term plans. Whenever a file format which is frequently used in the Digital Archive is considered to bear a risk for long-term availability, a preservation plan is developed. So far, this has been necessary only for the PDF format, not because the PDF format is in any danger of becoming obsolete, but because of the very heterogeneous quality of the PDF-files in the Digital Archive. A preservation plan usually needs 1–2 years before any action is done in the ZBW Digital Long-Term Archive, as migration tools have to be evaluated and the preservation action has to be extensively tested in the test system.

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 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 Rosetta Digital Archive of the ZBW complies with the regulatory norms in German Law and especially acts in due diligence concerning the General Data Protection Regulation, the Data Protection Act of the State Schleswig-Holstein, the personal rights of persons who are affected as well as the German Copyright Act. The measures to act according to Copyright are described in R2 Licenses. In this chapter there will be the relevant information on data protection and personal rights.
The Rosetta Digital Archive of the ZBW and the representation platforms contain literature on the subject of business and economics. The personal data stored in the archive has been published by the author and is freely accessible. The ZBW conforms to all relevant provisions of the General Data Protection Regulation and the Data Protection Act of the State Schleswig-Holstein where the ZBW is situated as a foundation with a public mandate. The ZBW has appointed a data protection officer who monitors the observation of the data protection rules and implements appropriate technical and organizational measures to ensure a level of security appropriate to the risk.
In the Rosetta Digital Archive of the ZBW, there are no objects that have to be classified as secret. Independent of this, all employees of the ZBW are obliged to confidentiality as civil servants based on § 3 Abs. 2 TV-L. (This is the contract concerning pay and rules of conduct of civil employees in Germany). In the Rosetta Digital Archive there is a rights management system that regulates access to the objects by employees of the ZBW.
The press clippings which are digitized and presented in the 20th Century Press Archive are checked by staff of the ZBW to ensure that the data published on the Internet is processed in the sense of the General Data Protection Regulation.

Reviewer Entry

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:

Funding

The ZBW is member of the Leibniz Association, one of the four big research communities in Germany (these include also Max-Planck-Society, Helmholtz Association and Fraunhofer-Gesellschaft). Its institutional budget is financed by the federal government of Germany and by the community of German states. Apart from this, the ZBW applies successfully for third-party funds. The ZBW, like all other members of the Leibniz Association, is evaluated every seven years. According to the result of the evaluation, its funding bodies finance the institution for seven more years to the next evaluation or cease funding. The ZBW has been evaluated in September 2017 with a good and convincing result [Report on the Evaluation of ZBW in 2017 (in German only): https://www.leibniz-gemeinschaft.de/fileadmin/user_upload/ARCHIV_downloads/Archiv/Evaluierung/Senatsstellungnahmen/ZBW_-_Senatsstellungnahme_vom_20-03-2018_mit_Anlagen.pdf].
Budget planning of members of the Leibniz Association is performed with a so called “Program Budget”. A Program Budget brings together information about tasks, aims and results, as well as measures for the implementation of aims with information on resources of the organizational units that are responsible for certain results. The calculation of the budget is based on cost and activity accounting. The ZBW Program Budget is prepared two years in advance and includes also a mid-term financial planning for the next five years.
Digital Preservation is a permanent task of the ZBW. Therefore the organizational unit “Digital Preservation” of the ZBW is part of the ”Collection Care” [Organization-Chart of the ZBW, https://www.zbw.eu/fileadmin/pdf/ueber-uns/e-organisation-plan.pdf].
The planning of the financial resources is based on the tasks and aims of the Digital Preservation team. For the Digital Archive there is a budget planning and a concept for the financing. There are strong synergy effects which help to reduce costs by the cooperation with TIB and ZB MED (e.g. the sharing of costs for Rosetta, usage of one single computing center and so on). Up to now it has been possible to fulfil all needs for financial resources for Digital Preservation.

Personnel

The Rosetta Digital Archive of the ZBW is staffed sufficiently and there is an adequate budget for training and networking activities of the persons responsible for Digital Preservation. There are job specifications which are up to date and there is a plan for human resources development in Digital Preservation.
The four persons responsible for Digital Preservation at the ZBW cover all the important expert areas needed for best practice workflows and responsible use of the archive:
• Digital Preservation manager (several years of experience in Digital Preservation and Rosetta, very well connected with

the worldwide community, information scientist) with the following tasks:
- Head of the Digital Preservation group
- Project management and internal and external coordination of networking activities
- Development of new workflows for Digital Preservation and requirements for Rosetta in cooperation with external partners
- Ingest of data into the Rosetta Digital Archive and preservation planning in Rosetta
- Representation of the ZBW in Digital Preservation by attendance of conferences and presentation of results from projects in workshops, webinars and so on.
• Developer (for automation process, several years of experience in developing and in Digital Preservation) with the following tasks:
- Conception and development of archiving solutions for Digital Preservation
- Programming of interfaces between the applications containing data that have to be preserved and the archiving system.
• Metadata expert (several years of experience in metadata and archival metadata, as well as in handling objects in Rosetta) with the following tasks:
- Metadata management
- Quality management for metadata
- Conception and development of schemes for metadata
- Collaboration in projects concerning metadata / cataloguing
- Development of concepts for the improvement of information systems.
The ZBW staff members in Digital Curation either are information science or computer science professionals. Additional training for the staff members is regularly available and takes place either in-house or at conferences, training events or workshops. The ZBW staff members are active networkers and keep themselves informed constantly about other institutions' best practices. In addition to the usual communication with peers, the ZBW is involved in nestor [nestor: http://www.langzeitarchivierung.de/] and the Open Preservation Foundation [Open Preservation Foundation: http://openpreservation.org/].
• General Preservation Middle Management (several years of experience in all kinds of preservation of library objects and Digital Preservation, several years of experience in certification processes):
- Head of "Preservation Care" division and head of "User Services and Preservation Care" program area
- General management (budgeting, personnel, administrative functions…)
- Networking for Preservation Care especially for Digital Preservation.
These persons are assigned to Digital Preservation tasks either full- or part-time. All together the staffing amounts to 1.5 full-time equivalents (September 2018).
The ZBW supports all training activities and the professional development of its staff. There are internal and external possibilities to improve knowledge and to visit conferences, training units or workshops. Digital Preservation in collaboration with TIB and ZB MED is a source of expertise too.
An extended description of training and networking activities of the Digital Preservation group is to be found in R6.

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

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:

Expert feedback from the immediate community
There are three groups of experts with whom the ZBW Digital Preservation team discusses their workflows and decisions in varying depth and regularity.
• Practitioners of the Digital Preservation Network of the German National Subject Libraries
Every six weeks, there is a telephone conference of the whole ZBW Digital Preservation team with the practitioners from the two other German National Subject libraries, the TIB and ZB MED. All in all, ten experts with different types of backgrounds—digital archivists, developers, system administrator, librarians and library scientists—take part in these telephone conferences.
Thus, workflows and decisions are regularly discussed with outside experts who know the system, but are not members of the ZBW library. Feedback and advice is intensively looked for. Furthermore, networking via email, SKYPE, confluence wiki and jira takes place during the normal daily work.
• DRAG (German-speaking Rosetta users)
Once a year, the members of the DRAG meet in person for a 2-day conference. This is always hosted by one of the German-speaking Rosetta users. During this conference, the plans for the next year are presented to an audience of about 30 people from different backgrounds with a high expertise in Digital Preservation and Rosetta. Problems and

solutions are discussed.

• RUG (Rosetta User Group)

In a very similar way, but with much greater regularity and in much greater depth, the Rosetta User Group engages in networking and sharing their work. The RUG also meets once a year and consists of 30–50 participating members. Besides the presentations during the 3-day conference, four working groups hold telephone conferences four times a year. The ZBW is part of two of these: the Format Library Working Group and the Digital Preservation Working Group. This intensive networking avoids reinventing the wheel and gives insight into other people's workflows. Working via confluence wiki, basecamp and email during daily work is business as usual. Expert webinars were implemented in 2018. As the ZBW gets so much feedback from other Digital Preservation experts and is engaged in some special interest working group, it is highly unlikely that the ZBW Digital Preservation team would make decisions that are far away from the common best practice. The team will always test creative or unusual ideas by a broader audience of experts before implementing a workflow.

Preservation Watch

Furthermore, the Digital Preservation group observes the developments and best practices in the field of Digital Preservation thoroughly and contributes to them. From 2014 to its finalization in 2019, the ZBW had been co-leading the Open Preservation Foundation Format Interest Group [Format Interest Group; Formerly known as "Document Interest Group": http://wiki.opf-labs.org/display/Documents/DIG+Work+Plan].

Since 2014 the ZBW leads the nestor working group of format identification [nestor AG Formaterkennung: https://wiki.dnb.de/display/NESTOR/AG+Formaterkennung].

The ZBW is active in the field of software benchmarking for file validation and has tested validation tools for JPEG, TIFF, GIF and PDF [OPF-Blogs of Yvonne Tunnat: http://openpreservation.org/blog/author/ytunnat/] and published the findings as OPF Blogposts or papers. The knowledge from these analyses is always mirrored in the daily Digital Preservation workflows of the ZBW.

The ZBW has already undergone two certification processes: The Data Seal of Approval [Data Seal of Approval: https://www.coretrustseal.org/about/history/data-seal-of-approval/] in 2015 and the nestor Seal [nestor Seal: https://www.langzeitarchivierung.de/Webs/nestor/EN/Zertifizierung/nestor_Siegel/siegel.html] in 2017.

Designated Community

The Digital Preservation team communicates with the persons responsible for the representation platforms, e.g. the EconStor team. The EconStor team, however, is in constant contact with their users.

The ZBW analyses the working habits and needs of economics researchers on a regular basis in order to stay in touch with its target group. To deepen this, there are regular expert workshops. The ZBW also takes part in the big annual meetings of the professional associations in economics and holds sessions about infrastructural topics.

Changes concerning favourite access formats could therefore be quickly adopted by the EconStor team and would be mirrored in the files archived in Rosetta.

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

DIGITAL OBJECT MANAGEMENT

VII. 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:

Data integrity during the ingest

The integrity of the files is ensured within Rosetta via three checksums:

1. SHA1 [http://en.wikipedia.org/wiki/SHA-1]
2. MD5 [http://en.wikipedia.org/wiki/MD5]
3. CRC32 [http://en.wikipedia.org/wiki/MD5]

The ZBW has developed submission applications for the automated ingest to Rosetta. Ex Libris has created a SDK (Software Development Kit) in Java which the ZBW IT department uses for the development of the applications. Via the SDK it is possible to calculate a MD5 checksum for the files. The checksum is written to the METS file, which is transferred together with the object in Rosetta.

The administrative metadata are written in the Rosetta DNX profile, which is based on PREMIS. To illustrate what this looks like, see the following extract from the METS file on how it is transferred to Rosetta during ingest.

The checksum is checked and protocolled during the ingest process by Rosetta.

If any irregularities occur, the ingest process for the object stops and the staff take care of correction and a new ingest.

Besides this, during ingest all files are checked for viruses, an alert also leads to an ingest stop and a correction. Rosetta enables internal processes which check the checksums. These processes can run through the whole archived material regularly.

Data integrity in the archive

The TIB as the main responsible party for Rosetta, checks the files via ZFS Scrubbing [http://en.wikipedia.org/wiki/ZFS] and Fletcher4-checksums [http://en.wikipedia.org/wiki/ZFS]. The staff member generates a checksum for each block and saves it. After every access a new checksum is created and checked against the saved one. If the checksums do not match, the corrupt block is re-created via RAID 6-systems. The redundant copies are used for the “Disaster Recovery”. Checksums make sure that the mirrored copies are consistent with the original files.
A detailed description is available in German language on the TIB website; especially interesting for the ZBW as well are the chapters 5 to chapter 8 [TIB: Preservation of data integrity as part of the process routines https://wiki.tib.eu/confluence/display/lza/Preservation+of+data+integrity+as+part+of+the+process+routines].

Versions of an AIP (Archival Information Package)

To update or edit an AIP within the ZBW Digital Long-Term Archive, a copy of the AIP is created which then can be altered. During this process, the AIP will be inaccessible to other users to avoid conflicts. A change to an AIP needs to be confirmed by the responsible staff member. Then a new AIP is created and all the changes are documented in the archival metadata and the METS file. Both the new version and the old METS files are then stored in the permanent archive.
Possible scenarios for having to alter an AIP within the archive are e.g.:

- A preservation action was performed and the AIP gains a new representation
- An update representation was added, e. g. because the data producer has produced a new version.

Data integrity checks as quality control

As of June 2018, the EconStor staff was handed a table with all the ingested files since the very beginning with all necessary metadata and the MD5 checksum. The EconStor team checked the list against their files to make sure that no file change was missed. As the workflow for updating files is a manual one, it is necessary to check regularly for human errors.
As a side effect, the data integrity from the original files in EconStor to the archived ones in Rosetta was checked again. Any irregularities could be corrected (if there were any in the first place).

Data authenticity

The repository staff are responsible for the authenticity of all the electronic documents available on the presentation platforms, e.g. EconStor [EconStor: https://www.econstor.eu/] and the National Licenses [Nationallizenzen: http://nationallizenzen.zbw.eu/]. In the case of “mediated deposit”, the origin and the content of all documents will be checked by librarians before uploading them to the repository internally. In the case of “self-archiving” by the author or copyright holder, the authenticity of the submitted digital objects will be proved technically through MD5 fingerprints. Furthermore, before making a publication available to the public, each submission from third parties and the corresponding metadata must be checked by the ZBW’s repository staff. Legal issues concerning the submission are regulated by the EconStor Deposit License [EconStor Deposit License:

http://www.zbw.eu/elektronische_angebote/docs/econstor_deposit_license.pdf].
For digitized material like the digitized press archive of the 20th century [EconStor Deposit License: http://www.zbw.eu/elektronische_angebote/docs/econstor_deposit_license.pdf], the ZBW is the data producer and therefore responsible for the authenticity of the material.
In the ZBW Digital Long-Term Archive, however, the authenticity is ensured as follows:
• The original data is always saved as the Preservation Master. This version will not be changed. There cannot be more than one Preservation Master.
• Changes are always performed to a copy of the Preservation Master, which is labelled in the Digital Archive as a second representation named the Modified Preservation Master.
• All changes to the Modified Preservation Master are documented in the metadata. If a preservation plan was used, this is also saved and transparently reproducible in the ZBW Digital Long-Term Archive. If plugins were used, these are archived as well.

Data access
So far the ZBW Digital Long-Term Archive is only used as a dark archive. Access was performed for test purposes only. Rosetta enables to export AIPs as DIPs (Dissemination Information Packages) including all the metadata which have been created during the ingest process and in possible preservation actions during the archival time. This is also possible for a set of objects. There is a plethora of filter possibilities in Rosetta. For instance, the staff can choose all of the objects from one producer (e.g. all EconStor objects), files with a certain format or ingested during a certain period.
In case the object in the representation platform has become obsolete, it is possible to export the affected object from Rosetta and update the representation platform with the files from Rosetta. In practice, this case has not occurred yet. For testing purposes, Digital Preservation staff have created the concept of a Dismission Application to enable an automated update from Rosetta to DSpace. This application has not been built in as a full function yet, but it is believed that this would take a few weeks of development work.
An AIP exported from Rosetta consists of the following mandatory parts:
• METS-file
• Preservation Master
If needed, the following components can be added:
• Access rights
• Further representations (e. g. created via Preservation Planning)
• CMS Metadata

Quality Control Checks
When transferring objects, MD5-checksums are used to ensure the integrity of the data. For the 20th Century Press Archive, the quality of the metadata was extensively checked and extended. This is not necessary for the National Licenses hosted by the ZBW and the majority of the EconStor material, as the EIU publisher and the sources for the EconStor Material is well known to us and can be trusted. As for the EconStor self-upload, the producer is responsible for the publishing, see EconStor Policy [EconStor Policy, https://www.econstor.eu/policy?locale=en].

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
Accept

Response:

Selection of content

EconStor
The Open Access repository EconStor offers a detailed policy published on its website [EconStor Policy: https://www.econstor.eu/policy]. It describes which types of objects can be submitted to the repository and how these can be published. Especially, the submission process distinguishes between two cases:
1. The content will be submitted by an institution: https://www.econstor.eu/pubinfo/institutions
2. The content will be submitted by a single author: https://www.econstor.eu/pubinfo/authors

The EconStor team consists of economics graduates, who are capable of judging the content uploaded via self-archiving to the repository. Every submitted item will be checked according to subject relevance and formal quality of the bibliographic metadata and the document itself. Items can be rejected if necessary metadata are missing or wrong, asking the submitter for rectification.
For the content the EconStor team selects itself, the acquisition process follows a collection policy which is closely

coordinated with the collections managers of the ZBW library and its collection guidelines [EconStor Guidelines, https://www.zbw.eu/en/about-us/profile/collection-guidelines/]. The Dublin Core metadata on the website are created by the EconStor staff. For more information about metadata please see R14.

20th Century Press Archive
The material of the press archive was chosen and processed by economic archivists from 1909 onwards. At that time, press articles were the most recent news available. To compress the paper archive, the material from 1909 to 1945 was photographed. In a second step, the material after 1945 was photographed. When the press archive films were digitized, only material older than 70 years was selected for accessibility, since it was assumed that the material would be in the public domain according to German law.
With the press archive collection of persons of public interest, different criteria apply. The folders, originally consisting of paper clippings, were updated regularly even after death and discontinued only when the entire collection was closed. The decision was taken to digitize those folders that were started at least 70 years ago.

National and Alliance Licenses hosted by ZBW
This material was initially published by professional publishers like the EIU Country Reports. The material all went through extensive quality management before it was hosted and archived by the ZBW.

ZBW DIGITAL ARCHIVE
As with the content hosted by EconStor, the material for the ZBW DIGITAL ARCHIVE is also checked by economics graduates.

Metadata and preferred formats
The ZBW has a published metadata policy [Metadata in the Digital Archive of the ZBW: https://www.zbw.eu/en/about-us/key-activities/digital-preservation/metadata/] and has answered in detail about metadata in R11. The ZBW has a published data format policy [Preferred file formats in the Digital Archive of the ZBW: https://www.zbw.eu/en/about-us/key-activities/digital-preservation/file-formats/].

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:

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:

Our ZBW Digital Long-Term Archive is operated by the three German National Subject Libraries, which form the Digital Preservation Network of the German National Subject Libraries. For all the combined workflows and principles, a Preservation Policy of the Digital Preservation Network of the German National Subject Libraries has been developed [Preservation Policy of the three German National Subject Libraries: https://www.zbw.eu/en/about-us/key-activities/digital-preservation/preservation-policy-national-libraries/]. Furthermore, the ZBW has its own Preservation Policy which focusses on the institutional needs of the library [ZBW Preservation Policy: http://www.zbw.eu/en/about-us/key-activities/digital-preservation/preservation-policy/].
The permanent storage of the ZBW Digital Long-Term Archive is administrated by the TIB in Hanover. The TIB/UB operates a computing centre for the backup of the data. All details about this data centre, its servers and data integrity checks can be found in the TIB wiki [TIB wiki https://wiki.tib.eu/confluence/display/lza/Preservation+of+data+integrity+as+part+of+the+process+routines] (5 Deposit, 6 Transformation, 7.1 and 7.2). For more details, please see R15 and R16.

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:

Rosetta contains a Preservation Planning module which consists of a format library, a risk analysis, evaluation and the option to perform preservation actions. It is possible to add and edit risk identifiers which serve as a basis for the risk analysis. The format library is based on the PRONOM library [PRONOM Website: http://www.nationalarchives.gov.uk/aboutapps/pronom/] which already contains significant properties for each format and can be extended by more technical or organizational properties. The format library is updated periodically by Rosetta's Format Library Working Group which is composed of Preservation Managers serving at the different institutions using Rosetta.
Before the actual preservation action is performed permanently in the Rosetta system, the preservation plan is tested via a test set, which is defined by the staff.
Currently, the ZBW has one preservation plan in action. It concerns all PDF files in the Digital Archive which are not yet in the format PDF/A-2b. The Digital Preservation team uses the pdfaPilot of Callas for migration to PDF/A-2b.
The password-protected PDF files are exempted from the preservation action, as the tool is not able (and not allowed) to perform migration actions to those files. The ZBW takes care, however, that the number of password-protected files decreases and is already in contact with the data producers to ask them for permission to remove the password. For those which are password-protected, the preservation level can only be the bitstream preservation, as the ZBW is not allowed to alter the data. For other objects, though, the highest preservation level is aimed at, as long-term availability of the content is our responsibility and duty to our users.
All changes to the Modified Preservation Master are documented in the metadata. The preservation plan used is also saved and transparently reproducible in the Rosetta Digital Archive of the ZBW. Plugins that were used are archived as well.
Currently, there are no preservation plans for other file formats archived the ZBW's archive. However, the need for those is regularly evaluated and will be implemented, if a format does not seem to be suitable for long-term availability any more. Rosetta offers a detailed monitor system to collect the information about all archived file formats and their exact versions and numbers.
The ZBW's approach to preservation planning is published on the ZBW website [Risk management and preservation planning in the Digital Archive of the ZBW

https://www.zbw.eu/en/about-us/key-activities/digital-preservation/risk-management/].

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

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:

Digital objects hosted by the ZBW contain extensive descriptive metadata. This is true for EconStor and the ZBW DIGITAL ARCHIVE. The ZBW Cataloguing department composes the bibliographic descriptions for the material; furthermore, there is subject indexing for some content done by Academic Librarians specialized in Economics.
Bibliographic descriptions, which are produced by co-operative cataloguing in the library network GBV, and which are presented in the union catalogue GVK, are stored in the descriptive metadata standard “PICA” (Project for Integrated Catalogue Automation). During the transfer of the data to the Digital Archive, the metadata is translated to Dublin Core via an extensive metadata mapping and an SRU-API.
For collections of the ZBW which are not part of the union catalogue, such as the National Licenses [http://nationallizenzen.zbw.eu/] or the 20th Century Press Archive [http://zbw.eu/beta/p20/about.en.html], a mapping from the original metadata in different formats to Dublin Core is done during ingest. For most collections some fields are

mandatory as e.g. dc.identifier, but this varies and depends on the collection. This is done via a METS-xml [Library of Congress Mets: http://www.loc.gov/standards/mets/], which is generated for all the files which belong to one unit. We do not omit any available metadata. A digital object is understood as the whole object including all the metadata.
Besides the technical metadata belonging to the file, file format etc. is automatically extracted during ingest and saved within the Digital Archive.
There are other metadata also generated for the items, such as rights metadata, administrative metadata and process-related metadata due to actions (e.g. migration actions) performed on the object over time [Risk Management and Preservation Planning in the Digital Archive of the ZBW: http://www.zbw.eu/en/about-us/key-activities/digital-preservation/risk-management/].
All the metadata—descriptive and technical—are searchable in the Digital Archive. Detailed information about all the metadata used in the Digital Archive can be found here [Metadata in the Digital Archive of the ZBW: https://www.zbw.eu/en/about-us/key-activities/digital-preservation/metadata/].

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:

Digital Curation for content digitally acquired by the ZBW is mandatory if no further changes to the content in the near future are expected. In general, all the acquired digital content has to be available to our users over the long-term, therefore, Digital Preservation will be ensured for all our content eventually. Staff members who are responsible for the collection decide if the collection is ready for archiving.
Currently, four collections are archived in the ZBW Digital Long-Term Archive:
• EconStor
• National Licenses (EIU)
• 20th Century Press Archive
• ZBW DIGITAL ARCHIVE
The EIU and the completed parts of the 20th Century Press Archive are already archived completely in the ZBW Digital Long-Term Archive. EconStor and the ZBW DIGITAL ARCHIVE are growing collections, so a Submission Application takes care that newly acquired content is archived automatically.

Ingest
The ZBW Digital Long-Term Archive contains an extensive ingest module, with which the staff deposit the data into the Digital Archive. During the ingest process, a SIP is generated and all the metadata are gathered (e.g. from the union catalogue, see guideline 3) or extracted from the data.
Although Rosetta is currently conducted as a dark archive only, the access rights differ for each collection. Every collection which is not available in Open Access—currently only EconStor is available in Open Access—get its own access rights which can be edited once the archive is opened for public access.
Currently, the main focus is on automatic ingest workflows as the archived collections usually contain too many objects to make manual processing feasible.

Archival storage
The archival storage (permanent repository) is used for all approved and successfully enriched objects. The storage hardware is managed by the TIB (see guideline 6).

Data management
Via data management it is possible to form sets to perform further actions, such as preservation planning or other processes to edit or alter a set of intellectual entities.

Preservation planning
Detailed information about risk management and preservation planning can be found in the description document [Risk Management and Preservation Planning in the Digital Archive of the ZBW: http://www.zbw.eu/en/about-us/key-activities/digital-preservation/risk-management/]. More information about preservation planning can be found in R10 (Preservation plan). As preservation actions can lead to an altered representation of the content, the data producer agrees to such actions when submitting content.

Access
Detailed information can be found in R3. As the ZBW Digital Long-Term Archive is currently conducted as a dark archive,

there is no direct access for non-staff-members. Data can be accessed in several ways directly with a viewer within Rosetta without first downloading it locally for most common formats like PDF. Besides, there is the option to embed external viewers like the DFG Viewer.

Administration
Detailed information about the entire administrative process in the ZBW Digital Long-Term Archive is described extensively in the other guidelines. For instance, how decisions are made, how and where the processes are documented and which standards are used.

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:

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 the ZBW Digital Long-Term Archive is a dark archive, only staff members can directly access the data within the archive. However, all the material available in the ZBW Digital Long-Term Archive is accessible via other representation platforms to the designated community / library users.

EconStor

ZBW's Open Access repository provides access to currently (August 2018) 160,000 research papers and other types of documents [EconStor: http://econstor.eu/].

As its persistent identifier scheme, EconStor uses handle identifiers provided by the 'Handle.Net Registry' maintained by the Corporation for National Research Initiatives (CNRI), which is also part of the descriptive metadata in the ZBW Digital Long-Term Archive. The user is encouraged to use the Handle System IDs for citing, an example is available here [Handle System: http://www.handle.net/].

The data can be found and accessed by the user via several options. Firstly, it can be accessed via the EconStor website itself, where certain browsing and searching features are offered to the users, including a full text search. EconStor also offers its metadata in machine readable form through an OAI-PMH interface [EconStor OAI: http://www.econstor.eu/dspace-oai/request?verb=Identify]. Secondly, more search facilities are offered through EconBiz [EconBiz: http://www.econbiz.de/eb/en/about/hilfe-datenbanken/], the search portal for economics, developed and maintained by the ZBW, where the EconStor database is fully integrated. Deep searching is possible via the EconBiz API [EconBiz Api: https://api.econbiz.de/doc]. The EconBiz portal is known among the designated community in Germany—and because of the worldwide EconBiz partner network [EconBiz Partner Network: http://www.econbiz.de/eb/en/about/econbiz-partner-network/econbiz-partner-network/] it is established internationally also. Furthermore, due to search engine optimization many users can find content from EconStor or EconBiz through search requests in Google or Google Scholar.

ZBW DIGITAL ARCHIVE

Another ZBW Open Access publication server provides access to 1750 journal articles, yearbooks and books (August 2018) [ZBW DIGITAL ARCHIVE: https://zbw.eu/econis-archiv/].

As its persistent identifier scheme, the DIGITAL ARCHIVE uses handle identifiers provided by the 'Handle System' [Handle System http://www.handle.net/].

The data can be found and accessed by the user via several options. It can be accessed via numerous search facilities offered through EconBiz [Advanced Search in EconBiz: https://www.econbiz.de/Search/Advanced], the search portal for economics, developed and maintained by the ZBW, where the DIGITAL ARCHIVE database is fully integrated. In addition, it is also possible to use the DIGITAL ARCHIVE website, where certain browsing and searching features are offered to the users, including a full-text search. Furthermore users can find the content with search requests in Google.

National Licenses

All national licenses hosted by the ZBW are available on the website [Nationallizenzen: http://nationallizenzen.zbw.eu/]. Whenever a new license is acquired, all institutions registered at the website [https://www.nationallizenzen.de/ in German only] are notified by email. Academic Librarians in Germany responsible for economics and business studies are also notified by email.

As a persistent identifier, the URI (Uniform Resource Identifier) [https://de.wikipedia.org/wiki/Uniform_Resource_Identifier] is used. The user is encouraged to use the URI for citing and persistent access and verification. Furthermore, all the content hosted by the ZBW gets a handle [http://handle.net/] by default, which is conventional with DSpace repositories. The content is available on the ZBW hosting website [http://nationallizenzen.zbw.eu/handle/10836/1] in two different

forms:

• As a PDF document which consists of the whole intellectual entity.

• In the HTML format and all the different data formats according to the original formats.

Both versions are archived in the ZBW Digital Long-Term Archive.

20th Century Press Archive

The digital press archive can be found on the website [20th Century Press Archive: http://webopac.hwwa.de/PresseMappe20/docs/index_eng.cfm]. Parts of the archive, especially from the ‘biographical archives’ can be accessed as well via Wikipedia, the German biography [Deutsche Biographie: http://www.deutsche-biographie.de] and Hamburg Wissen Digital [http://www.hamburgwissen-digital.de/home.html]. The datasets are organized in folders. A folder contains documents with a variable number of pages. Many of the datasets have GND-numbers [GND: http://de.wikipedia.org/wiki/Gemeinsame_Normdatei] and are searchable with Beacons [20th Century Press Archive: http://webopac.hwwa.de/PresseMappe20/docs/beacon.cfm].

Reviewer Entry

Reviewer 1

Comments:
Accept

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:

The ZBW Digital Long-Term Archive serves to archive material we already host at our library. Therefore, we cannot influence the file format of material for which we already took responsibility. For newly acquired material, we recommend the PDF format (without password-protection), if the content of the data is suitable for the PDF format. As we mostly deal with text or image material, this is usually the case.

EconStor
Nearly 100% of the material in EconStor is available in the PDF format. A part of the material, e.g. appendices or original versions, however, consists of different formats like MS Excel or Postscript. We always archive the whole material and keep the original data in our archive. Migrated versions are always an extension and never a replacement.

ZBW DIGITAL ARCHIVE
The major part of the data are available in the PDF or the Excel format. We always archive the whole material and keep the original data in our archive. In some cases, additional are included, such as tables in the file format MS Excel, Rich Text Format or PDF. These can be research or statistical data, and are also archived.

20th Century Press Archive
All the digitized data are in the JPEG format.

National Licenses
The data are available in two versions:
1: As a PDF for the whole unit.
2: All of the original data in the file formats HTML, Excel, XML, TEI, GIF etc.
We always archive the entire unit including all the original files. If we detect something is missing or has not been uploaded completely, we contact the data producer to ask for the complete data.
Detailed information about metadata can be found in R11. Current preservation plans and preservation plan strategy is described in R10.

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

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

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 TIB is the service provider for the technical infrastructure of the ZBW Digital Long-Term Archive for all three National Subject Libraries. Handling with Archival Storage is published on the TIB website [TIB: Archival Storage, https://wiki.tib.eu/confluence/display/lza/Archival+Storage].
The TIB hosts its own computing center which the TIB IT Service administers. For archival storage, two independent file servers are provided, they are run as RAID-6-systems. The file servers are located in separate, closed, server racks in the computing center. The objects and their metadata are saved redundantly, the mirroring of the data is done every week. The storage is scalable.
The server racks have temperature control and one extinguishing system per shelf. There is a reporting tool for each file server which monitors the storage capacity, the condition of the discs and jobs such as data mirroring. If a disc is broken, the file server automatically reports to the administrator. The TIB has a service agreement with a service provider for replacement of broken hardware. Besides, the TIB IT service uses the BSI-standard [BSI-Standard: https://www.bsi.bund.de/SharedDocs/Downloads/DE/BSI/Grundschutz/Leitfaden/GS-Leitfaden_pdf.pdf?__blob=publicationFile].

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

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:

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:

IT security is in the hands of the TIB, as the TIB is the service provider for all matters of storage and administration for the Digital Archive. The workflows are documented on the TIB website [TIB: Archival Storage: https://wiki.tib.eu/confluence/display/lza/Archival+Storage] [TIB: Technical Infrastructure: https://wiki.tib.eu/confluence/display/lza/Technical+infrastructure].
A more detailed document about TIB's IT concept based on the BSI guide is currently a draft [Bundesamt für Sicherheit in der Informationstechnik, Leitfaden Informationssicherheit, https://www.bsi.bund.de/SharedDocs/Downloads/DE/BSI/Grundschutz/Leitfaden/GS-Leitfaden_pdf.pdf?__blob=publicationFile].
Since 2018, access to Rosetta by the library staff and all the communicating submission applications is enabled via https only. All the library applications communicating with Rosetta were updated.

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:

Reviewer Entry

Reviewer 1

Comments:

Reviewer 2

Comments: