



Assessment Information

[CoreTrustSeal Requirements 2017–2019](#)

Repository: TIB Digital Long-Term Archive
Website: <https://www.tib.eu>
Certification Date: 03 June 2020

This repository is owned by: **German National Library of Science and Technology (TIB) –
Leibniz Information Centre for Science and Technology and
University Library**



TIB 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:

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

The Technische Informationsbibliothek (TIB) – German National Library of Science and Technology in Hannover serves as the German national library of science and technology. In this capacity, TIB is an infrastructure facility for the provision of scientific information in Germany whose national tasks lend it importance for the country as a whole. TIB is a member of the Leibniz Association.

TIB's core task is to provide science and industry with both elementary and highly technical specialist and research information. TIB has globally unique collections in the subject areas of science and technology, as well as architecture, chemistry, computer science, mathematics and physics. Besides textual materials, the library's collections also include knowledge objects such as research data, 3D models and audiovisual media. More detailed information about TIB's mission can be found in Criteria 1 "Mission/Scope".

TIB's collection profile(1) determines which objects are digitally preserved. Different workflows are configured for the various object groups in the digital preservation system; these workflows are adapted to the specific requirements.

TIB is a member of the Digital Preservation Network of the German National Subject Libraries - formerly known as Goportis. Collaboration between the three German National Subject Libraries is further described under "outsourced partners". TIB, as well as ZBW, previously acquired DSA certification under the names "Goportis Digital Archive - German National Library of Science and Technology (TIB)", respectively "Goportis Digital Archive - German National Library of Economics (ZBW)". Due to the name change of the network as well as required certification of the separate institutions, TIB renamed its repository to "TIB Digital Long-Term Archive".

The three German national specialist libraries operate the digital archive collectively. The system is client compatible, enabling each institution to have and edit its own area, for which it is responsible. Irrespective of their role and authorisation, employees may only search and access their own institution's objects in the digital preservation system. TIB is responsible for the administration of the overall system, and is authorised to do so. Principles relating to overarching tasks and the demarcation of responsibilities are stipulated in a Consortium Agreement.

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

Brief Description of the Repository's Designated Community.

Users of the digital archive correspond to TIB's user groups, which are academic and commercial customers from the fields of science and technology, as well as architecture, chemistry, computer science, mathematics and physics:

- Scientists and researchers, teaching staff, students at universities, universities of applied sciences and non-university research institutions
- Employees involved in non-academic and commercial research
- Libraries
- Archives, museums and infrastructure facilities
- Project sponsors such as the German Research Foundation (DFG) and the Federal Ministry of Education and Research (BMBF), etc.

Designated communities' requirements

TIB's main designated communities are academic users from universities, universities of applied sciences and non-university research institutions, commercial customers from the realms of business and industry, members of Leibniz Universität Hannover and interested members of the public. The main use scenario for digitally preserved objects is for scientific purposes. According to the DCC Curation Lifecycle Model(2), this comprises:

- The publishing and citation of information
- Information and search
- Data reuse, for example in the context of complementary data

The following designated community requirements arise from the use scenario:

- Accessibility
- Preservation of the representation (preservation of the content elements, preservation of their position in the object)
- Prevalence of the target format within the relevant community
- Portability and platform-independent representation
- Trustworthiness (integrity and authenticity)
- Citability and persistence

These requirements have a clear impact on organisational and technical processes in the digital archive (see "R10 Preservation Plan").

Community watch

Various processes are established at TIB to monitor the designated communities' requirements, and to adapt them where needed (see "R06 Expert Guidance").

Links:

(1) Focus of TIB's collections: <https://www.tib.eu/en/search-discover/focus-of-collections/>

(2) DCC Curation Lifecycle Model, Access, Use and Re-Use, Transform:

<http://www.dcc.ac.uk/resources/curation-lifecycle-model>

Reviewer Entry

Reviewer 1

Comments:

Accept

Reviewer 2

Comments:

Accept

Level of Curation Performed. Select all relevant types from:

C. Enhanced curation – e.g. conversion to new formats; enhancement of documentation

Reviewer Entry

Reviewer 1

Comments:

Accept

Reviewer 2

Comments:

Accept

Comments

Librarians record metadata and create several representations (reference to pre-ingest).

IEs are enriched during ingest with technical, descriptive and structural metadata (see "R08 Appraisal" and "R12 Workflows").

The Rosetta data model(3) is based on PREMIS; an AIP in Rosetta is identical to an intellectual entity (IE) as defined in the PREMIS data model and described by a METS file (ie.xml)(4).

Representations are part of the IE: The original files are stored as the representation MASTER. Modifications made before ingestion to the digital archive, such as the sorting and numbering of individual files, are only performed on a copy of the original files; this copy is saved as the PRE-INGEST MODIFIED MASTER representation. Any access copies created are recorded as the DERIVATIVE COPY representation.

Links:

(3) Rosetta AIP Data Model v6.0:

https://knowledge.exlibrisgroup.com/@api/deki/files/70155/Rosetta_AIP_Data_Model.pdf?revision=3

(4) Rosetta METS Profile: <http://www.loc.gov/standards/mets/profiles/00000042.xml>

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

Outsource Partners. If applicable, please list them.

Together with its partner libraries ZB MED and ZBW, TIB operates a productive digital preservation system: "the Digital Archive of the German National Subject Libraries".

The Rosetta software program by the company Ex Libris is used within this system. Rosetta is a client compatible, scalable and extendable digital preservation system featuring an open architecture; the system integrates common metadata standards such as METS, MODS, Dublin Core and PREMIS. Open, documented interfaces, web services and a software development kit (SDK) are provided, enabling other applications, plug-ins and systems to be connected to Rosetta.

Together with its partners ZB MED and ZBW, TIB has established cooperative agreements concerning the use and operation of the digital preservation system (DP system). TIB hosts, operates and administers the DP system, and ensures its partner libraries have access to it. TIB operates archival storage in a designated data centre which is operated and maintained by TIB itself. TIB acts as a service provider to its partners.

Each partner library has its own area, featuring institutional configurations, in the digital preservation system; each partner library is responsible for its holdings and preservation actions. Each institution's objects are deposited in separate storage areas.

Irrespective of their role and authorisation, employees may only search and access their own institution's objects in the digital preservation system. TIB is responsible for the administration of the overall system, and is authorised to do so. Principles relating to overarching tasks and the demarcation of responsibilities are stipulated in a Consortium Agreement.

The partner libraries are referred to TIB documentation.

Reviewer Entry

Reviewer 1

Comments:
Accept

Reviewer 2

Comments:
Accept

Other Relevant Information.

TIB's digital preservation Wiki (TIB DP Wiki): <https://wiki.tib.eu/confluence/display/lza/>

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:

TIB is an incorporated public-law foundation of the Federal State of Lower Saxony. In its role as a German national specialist library, TIB undertakes the digital preservation of its collections under the first sentence of Section 2 of the TIB Act(1) and in accordance with its own objectives.

Acting as the German national library of science and technology, as well as architecture, chemistry, computer science, mathematics and physics, TIB takes responsibility for preserving its collections(2). TIB has the task of securing the

long-term use of its collections. The task of digital preservation is derived from this. TIB's mission is documented in its Strategy 2018-2022(3).

In its capacity as the University Library of Leibniz Universität Hannover, TIB takes responsibility for preserving university publications produced by Leibniz Universität Hannover as well as publications stored in Leibniz Universität Hannover Institutional Repository that are available Open Access.

The principles of digital preservation are documented in the TIB Preservation Policy(4).

In addition, TIB offers the service of digital preservation to other institutions(5).

Links:

(1) Act establishing the "German National Library of Science and Technology (TIB)" Foundation of 14 July 2015 (in German): <http://www.nds-voris.de/jportal/?quelle=jlink&query=TIBStiftG+ND&psml=bsvorisprod.psml&max=true&aiz=true>

(2) TIB's profile: <https://www.tib.eu/en/tib/profile/>

(3) TIB Strategy 2018-2022, p. 3: https://www.tib.eu/fileadmin/Daten/presse/dokumente/tib_strategy_2018-2022.pdf

(4) TIB Preservation Policy: <https://www.tib.eu/en/service/tib-preservation-policy/>

(5) TIB Digital Preservation at TIB: <https://www.tib.eu/en/publishing-archiving/digital-preservation/>

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:

On the basis of the tasks involved in digital preservation, TIB must make sure that right holders grant the library the following simple temporally unlimited access rights in order to digitally preserve objects:

- The right to duplicate (for copies in storage)
- The right to edit (for format modifications)
- The right to make objects accessible to the public (so that they can be made available on the TIB Portal)

Besides conventional published literature, TIB's collections also focus on grey literature, audiovisual media and German research reports, the legal frameworks of which differs from those of conventional objects.

Delivery procedures

The responsible acquisition team collects objects from producers, or objects are delivered to the responsible acquisition team by producers.

The responsible acquisition team clarifies the legal conditions with the producer, integrates objects into TIB's collections, and either deposits objects in a structure defined by the Digital Preservation team or specifies an interface via which objects are submitted to the digital preservation system.

The Digital Preservation team has no direct contact with producers. Internal submission policies were developed with the responsible acquisition teams, governing the submission of collections to the digital archive:

- Responsibilities
- Definition of the data structure (1)
- Transfer of objects to specific workflows, dependent on the type of object, licence and access rights
- Handling of password-protected files
- Type of submission (manual or automatic)
- Time of submission

The responsible acquisition team submits digital objects to the digital preservation system using a standardised procedure (see "R12 Workflows").

List of agreements with producers as negotiated between responsible acquisition team and data producer

The legal conditions under which the acquisition teams acquired the digital objects and deposited them into the repository are captured in legal metadata. Below is a list of different license types which exist within the repository, grouped together by acquisition team responsible for the deposit.

Grey literature:

CC licence - CC license as documented in the digital object

Freely accessible without a CC licence - Direct enquiry to the producer

Not Open Access - Direct enquiry to the producer

German research reports:

BMBF submission provision - Auxiliary terms and conditions (BNBest-BMBF 98)(2)

CC licence - CC license as documented in the digital object

Freely accessible without a CC licence - Direct enquiry to the producer

PhD theses produced at Leibniz-Universität Hannover:

Freely accessible without a CC licence - PhD thesis guidelines(3)

AV-Portal:

Declaration of consent - https://www.tib.eu/fileadmin/extern/knm/regular_agreement.pdf

Open Access Licence - <https://www.tib.eu/fileadmin/extern/knm/OpenAccess-License-NTM.pdf>

LUH Repository:

Licence - Legal and contractual basis

CC licence - CC license as documented in the digital object

Deposit Licence - Publishing Agreement(4)

If a publicly available work does not have a CC licence or is not covered by the BMBF submission guidelines, the responsible acquisition team concludes an individual agreement with the right holder. This includes permission:

- to store the work,
- to catalogue the work in a cataloguing system;
- to make the work publicly accessible on its own server or, alternatively, to create a printout or CD version for use,
- to preserve the work long term by means of digital preservation.

If producers do not give their permission, their works are not submitted to TIB's collections.

Terms of Use

Consequences of detected noncompliance are regulated in the TIB Terms of Use (5). For non open access objects, TIB Terms of Use regulates the usage in Section 7 Copyright, Article 1 & 2. In case of noncompliance, the user can be excluded from further use of library services, as mentioned in TIB Terms of Use, Section 26 Suspension from borrowing, Exclusion from use, Prohibition to enter premises, Article 2. (<https://www.tib.eu/en/service/terms-of-use/>)

For open access objects with or without CC-license, which are freely accessible via TIB portal, TIB cannot check if users conform to the applicable license.

Links:

(1) TIB DP Wiki, SIP specifications: <https://wiki.tib.eu/confluence/pages/viewpage.action?pageId=93608987>

(2) Besondere Nebenbestimmungen für Zuwendungen des Bundesministeriums für Bildung und Forschung zur Projektförderung auf Ausgabenbasis (Special Auxiliary Terms and Conditions for Funds Provided by the BMBF for the

Promotion of Projects on Expenditure Basis) (BNBest-BMBF 98) (in German):

http://foerderportal.bund.de/easy/module/easy_formulare/download.php?datei=184

(3) Allgemeine Richtlinien über die Ablieferung von Dissertationen an die Universitätsbibliothek (General guidelines on the delivery of PhD theses to the University Library) (in German):

https://www.tib.eu/fileadmin/Daten/dokumente/publizieren-archivieren/hochschulschriften/richtlinien_diss.pdf

(4) Leibniz Universität Hannover Institutional Repository, Publishing Agreement:

<https://www.repo.uni-hannover.de/page/depositlicense?locale-attribute=en>

(5) TIB Terms of Use: <https://www.tib.eu/en/service/terms-of-use/>

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:

Level of responsibility

The objective is to ensure the complete, cross-media preservation and long-term usability of the library's collections. In the process, TIB understands digital preservation as a preservation strategy that is continuously adapted in the light of the

latest conditions, rather than as a task to be undertaken for a predefined period of time. TIB is aware of the consequences of this, and provides appropriate financial and staff resources (see “R5 Organizational Infrastructure”, “R6 Expert Guidance”) and technical resources (see “R9 Documented storage procedures”, “R15 Technical infrastructure” and “R16 Security”) to fulfil this task.

Within the means at its disposal, TIB preserves its collections for an indefinite period.

In order to ensure long-term access to its collections, TIB operates a digital preservation system. The core tasks identified are documented as principles of digital preservation in the TIB Preservation Policy (1) (see also “R12 Workflows”).

TIB has established processes that ensure the preservation of information objects, even in the event of a crisis. Crisis situations and subsequent measures have been defined (see below). An exit plan is in place.

Exit scenario

Each AIP consists of objects as well as descriptive, technical, structural, legal, administrative and digital preservation-related metadata. Lifecycle information, such as events performed on the object, is captured PREMIS-compliant. Not only the complete capture, but also the documentation of the standardised, logical folder structure of AIPs enables the seamless reconstruction of packages, even without higher-level archiving software(2).

Besides the possibility to reconstruct objects without the use of software, the digital preservation system has a software-based export function that enables objects to be exported from the system.(3)(4)

Processes relating to the digital archive have been documented and are publicly available(5).

Continuity of access

TIB is an incorporated public-law foundation of the Federal State of Lower Saxony. The state's foundation act "Gesetz über die Stiftung Technische Informationsbibliothek (TIB)" (TIBstiftG ND) passed on July 14th 2015 (6), describes TIB's responsibility for "supra-regional literature and information provision for the subject areas for science and technology, in particular architecture, chemistry, computer science, mathematics and physics" (see §1 Art.1 TIBstiftG ND - in German language only). As described in TIB's strategy document (7), digital preservation is a pillar action to fulfill this legal mandate. The foundation act regulates that in case of permanent incapacity of TIB, TIB's assets fall to the state of Lower Saxony, which will immediately and exclusively use them for scientific purpose (TIBstiftG ND §4 Art. 3) (6).

Definition of crisis situations:

A crisis is an event that results in the temporary or permanent incapacity of the digital archive.

1. Temporary incapacity due to insufficient financial resources

Temporary incapacity due to insufficient financial resources affects the complete operation of the digital archive.

Notification by the library management establishes the occurrence of a crisis situation.

2. Temporary incapacity due to the political situation

Temporary incapacity due to the political situation affects the complete operation of the digital archive. Notification by the library management establishes the occurrence of a crisis situation.

3. Permanent incapacity

Permanent incapacity occurs where TIB is dissolved as an institution. Notification by the library management establishes the occurrence of a crisis situation.

Measures:

1. Temporary incapacity due to insufficient financial resources

As described in R5 TIB's programme budget is written as a 5-year plan. TIB's baseline funding, which digital preservation is a part of, is currently distributed as 30% federal and 70% state funding (8). The TIB financial report (9) for 2018 shows that said baseline funding makes up 94.8% of available funds (p. 38, "Wirtschaftliche Lage"), additional funds are acquired via provided services such as document delivery and project funding. The yearly financial report includes a section on risk expectation and mitigation (see e.g., p. 29 "3. Chancen und Risiken der zukünftigen Entwicklung" and "4. Prognosebericht") and is audited by an accredited company - currently by KPMG (p. 31 "Bestätigungsvermerk des Abschlussprüfers"). Due to these measures, temporary incapacity due to insufficient financial resources is highly unlikely. However, in the unlikely event insufficient financial resources, objects and tasks must be transferred temporarily to third parties. In the event of a crisis, collaborations will be forged with appropriate partners; in the process, the exit strategy governs data export. TIB maintains a number of strategic national and international partnerships which are listed on p.30 of the TIB Annual Report 2018 (10).

2. Temporary incapacity due to the political situation

TIB is a member of the Leibniz Association (WGL). Ongoing funding of the Leibniz Association members is regulated by the Joint Science Conference of the Federal Government and the Heads of Government of the Länder (GWK) in the agreement of federal and state joint funding for WGL member institutions "Ausführungsvereinbarung zum GWK-Abkommen über die gemeinsame Förderung der Mitgliedseinrichtungen der Wissenschaftsgemeinschaft Gottfried Wilhelm Leibniz e.V." (AV-WGL) (11). Ongoing funding of WGL institutions is decided upon as a result of regular evaluations which are to take place at least every 7 years (Sect 1, Art 4 AV-WGL) (12). Due to the rigorous evaluation process of the WGL, temporary incapacity due to the political situation is highly unlikely. However, in the unlikely event of incapacity due to the political situation, objects and tasks must be transferred temporarily to third parties. In the event of a crisis, collaborations will be forged with appropriate partners; in the process, the exit strategy governs data export. TIB maintains a number of strategic national and international partnerships which are listed on p.30 of the TIB Annual Report 2018.

3. Permanent incapacity

As described in the previous point, TIB undergoes regular evaluations which are to take place at least every 7 years. In case of a negative evaluation Sec. 6, Art. 4 of the AV-WGL (reference) regulates that "the joint funding of the institution continues for a period of up to three years as a financing resolution of the contract (Abwicklungsfinanzierung)". The institution may use this time to secure alternative funding, as indicated in Sec. 6 Art. 6, or to find new content holders, also for the digital content archived by TIB(13). TIB's archived objects will be made available for export in another digital

archive. In the event of TIB's permanent incapacity or the termination of the cooperative agreement, the partners' archived objects will be made available to them; in this case, the exit strategy governs data export(14)." TIB maintains a number of strategic national and international partnerships which are listed on p.30 of the TIB Annual Report 2018.

The aforementioned foundation act regulates that in case of permanent incapacity of TIB, TIB's assets fall to the state of Lower Saxony, which will immediately and exclusively use them for scientific purpose (TIBstiftG ND §4 Art. 3) (6).

Links:

(1) TIB Preservation Policy: <https://www.tib.eu/en/service/tib-preservation-policy/>

(2) TIB DP Wiki, AIP specifications: <https://wiki.tib.eu/confluence/pages/viewpage.action?pageId=93608990>

(3) How to export Sets of IEs:

https://knowledge.exlibrisgroup.com/Rosetta/Knowledge_Articles/How_to_Export_Sets_of_IEs%3F

(4) TIB DP Wiki, Export: <https://wiki.tib.eu/confluence/display/lza/Export+and+exit+scenario>

(5) TIB DP Wiki: <https://wiki.tib.eu/confluence/display/lza/>

(6) TIB foundation act:

<http://www.nds-voris.de/jportal/?quelle=jlink&query=TIBStiftG+ND&psml=bsvorisprod.psml&max=true&aiz=true>

(7) TIB Strategy 2018-2022, p. 3 : https://www.tib.eu/fileadmin/Daten/presse/dokumente/tib_strategy_2018-2022.pdf

(8) Appendix "Anlage zur Ausführungsvereinbarung WGL" (in German):

https://www.gwk-bonn.de/fileadmin/Redaktion/Dokumente/Papers/Liste_AV-WGL.pdf

(9) TIB financial report 2018: <https://www.tib.eu/fileadmin/Daten/dokumente/die-tib/TIB-Jahresabschluss-2018.pdf>

(10) TIB Annual Report 2018: <https://www.tib.eu/fileadmin/Daten/presse/dokumente/tib-jahresbericht-2018.pdf>

(11) Agreement of federal and state joint funding for WGL member institutions "Ausführungsvereinbarung zum GWK-Abkommen über die gemeinsame Förderung der Mitgliedseinrichtungen der Wissenschaftsgemeinschaft Gottfried Wilhelm Leibniz e.V." : <https://www.gwk-bonn.de/fileadmin/Redaktion/Dokumente/Papers/AV-WGL.pdf>

(12) Leibniz Association evaluation, <https://www.leibniz-gemeinschaft.de/en/about-us/evaluation/>

(13) Such an example already exists within the Leibniz Association. IWF Wissen und Medien was wound up between 2008 and 2010. TIB took over its collections and incorporated them into its AV media:

<https://www.tib.eu/en/search-discover/special-collections/iwf-media-collections/>

(14) Preservation Policy of the three German National Subject Libraries:

<https://www.tib.eu/en/service/preservation-policy-of-the-three-german-national-subject-libraries/>

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:

Data protection

The data protection rules set out in Lower Saxony Data Protection Act (NDSG)(1) and in the General Data Protection Regulation (GDPR)(2) apply to TIB. TIB has appointed a Data Protection Officer who monitors compliance with data protection rules(3).

The tasks of the Data Protection Officer (for internal and external matters) include:

- Creation and maintenance of TIB's record of data processing activities
- Provision of support to departments in preparing descriptions of data processing activities
- Provision of support in conducting a privacy impact assessment in the event of new data processing activities
- Provision of advice to TIB
- Clarification of customer and staff personal data enquiries (procedures for safeguarding the rights of the data subject)
- Notification of personal data breaches
- Monitoring of compliance with the requirements of data protection legislation

The Data Protection Officer is informed and involved early on in the introduction of new software and procedures.

The retention of personal data is regulated by Section 5 of the Terms of Use(4).

TIB's digital archive contains published objects relating to technical and scientific topics that do not include personal or confidential data within the meaning of German data protection legislation.

Staff personal data are recorded in the internal-system user administration within the digital preservation system: name, work telephone number, email address. These work-related data may only be viewed by users in the role of "user

manager”; employees are given a username which they use when operating the system.

In the case of metadata imported from other institutions, the client is the controller within the meaning of data protection legislation. It is incumbent upon the client to assess whether, and how, personal data may be archived at TIB. TIB complies with the client’s specifications set out in agreements and instructions.

Therefore, no examination is undertaken in the digital archive to determine whether objects contain personal data. If such a case becomes known, appropriate measures are taken, such as the erasure of personal data or the restriction of access. The same applies to checking whether individual objects breach data protection and other legal provisions. When processing data on behalf of other institutions, relevant measures are taken in accordance with the controller’s specifications.

Copyright

Works protected by copyright are only made accessible and archived by TIB if the right holder has granted such rights, either by means of an agreement with the producer or a licence (such as Creative Commons). If the corresponding rights to an object have not been granted, digital preservation is carried out on the basis of statutory provisions.

TIB uses different licence agreements, depending on the type of publication acquired (see “R2 Licenses”)

Access to TIB collections is governed by the TIB Terms of Use and by German copyright law. Licence agreements may result in further restrictions on access. Such restrictions are technically implemented. According to German law, end user licence agreements (EULA) are not necessary.

Access to TIB collections is governed by its Terms of Use(5). If a user does not agree to the Terms of Use upon registration, services requiring registration cannot be used. Upon registration, the user agrees to accept the Terms of Use and to comply with current German copyright law.

Freely accessible digital objects are publicly available to all users. The catalogue record either contains information about the Creative Commons licence terms or about current German copyright law. Since objects are freely accessible to all, TIB has no influence over whether users comply with the legal conditions.

Objects that may not be made freely accessible can be accessed as follows, depending on the rights granted:

- within the TIB IP range
- in the form of a printout created by TIB
- in the form of a CD created by TIB

The responsible acquisition team clarifies with right holders the rights required for digital preservation actions. The licence agreements documented in “R2 Licenses” are deposited in text form in Rosetta as a boilerplate(6) and are given a standardised name code.

The standardised name of the applicable licence agreement for each IE is recorded in a dcterms:license element. The access rights arising from licence agreements are recorded for each IE as “access rights” and written to the DNX metadata(7).

Confidentiality

TIB’s digital archive does not contain any confidential objects; confidential documents are only submitted to the digital preservation system after the expiry of the embargo period. Irrespective of this, public service secrecy obligations are

applicable to all members of staff; in the case of employees, on the basis of Section 3(2) of the Public Sector Collective Agreement of the Federal States (TV-L)(8).

A role assignment scheme(9) governs staff access to objects (see “R12 Workflows”). Every role stipulates different levels of authorisation: view, edit and delete rights. The requirement is that users only receive the roles and rights immediately required for their work.

The three German national specialist libraries operate the digital archive collectively. The system is client compatible, enabling each institution to have and edit its own area, for which it is responsible. Irrespective of their role and authorisation, employees may only search and access their own institution’s objects in the digital preservation system. TIB is responsible for the administration of the overall system, and is authorised to do so. Principles relating to overarching tasks and the demarcation of responsibilities are stipulated in a Consortium Agreement.

Links:

(1) Lower Saxony Data Protection Act (NDSG) (in German):

https://www.lfd.niedersachsen.de/download/32372/Niedersaechsisches_Datenschutzgesetz_Stand_12.12.2012_.pdf

(2) General Data Protection Regulation (GDPR):

<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32016R0679&from=EN>

(3) TIB contact partners, Data Protection Officer:

<https://www.tib.eu/en/service/contact-information-and-contact-persons/contact-persons/#c5278>

(4) TIB Terms of Use: <https://www.tib.eu/en/service/terms-of-use/>

(5) In particular, Section 7 Copyright of the Terms of Use <https://www.tib.eu/en/service/terms-of-use/>

(6) Rosetta Staff User’s Guide v6.0, Part II: Deposit Managers, Chapter 8: Configuring Material Flow Infrastructure, Configuring Copyright Boilerplate Statements, p. 114:

https://knowledge.exlibrisgroup.com/@api/deki/files/70154/Rosetta_Staff_User's_Guide.pdf?revision=1

(7) TIB DP Wiki, Legal metadata: <https://wiki.tib.eu/confluence/display/lza/Metadata#Metadata-AR>

(8) Public Sector Collective Agreement of the Federal States (TV-L) (as of: 2 March 2019) (in German): https://www.tdl-online.de/fileadmin/downloads/rechte_Navigation/A._TV-L__2011_/01_Tarifvertrag/TV-L__i.d.F._des_%C3%84TV_Nr._11_VT_2020.pdf

(9) Rosetta Configuration Guide v. 6.0, p. 140-143:

https://knowledge.exlibrisgroup.com/@api/deki/files/70149/Rosetta_Configuration_Guide.pdf?revision=2

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:

Organisational structure

The Technische Informationsbibliothek (TIB) – German National Library of Science and Technology in Hannover serves as the German national library of science and technology. In this capacity, TIB is an infrastructure facility for the provision of scientific information in Germany whose national tasks lend it importance for the country as a whole. TIB is a member of the Leibniz Association(1).

The digital archive is firmly embedded in TIB's organisational structure. The Digital Preservation team belongs to Programme Area A "Collection Development and Metadata"(2) , where it is assigned to the "Preservation and Digital Preservation" section.

Funding

The funding of TIB is documented in Section 5 of the TIB Act.(3) TIB is a member of the Leibniz Association; due to its importance for the country as a whole, the library receives its primary funding from the Federal and Länder Governments.(4) In addition, the library acquires external funding.

Financial planning in the Leibniz Association is undertaken via programme budgets.(5)

The TIB programme budget includes medium-term, five-year financial planning for the entire library. The budget contains information about individual aspects of programme areas, including digital preservation. As such, account is also taken of all costs associated with digital preservation:

- Labour costs for staff engaged in digital preservation
- Costs for all IT staff explicitly involved in digital preservation
- Procurement, operating and maintenance costs for the hardware and software used
- Membership fees for networks and
- General operating costs (including travel expenses, professional development and training costs, workplace costs, and transfer payments for central services)

The funding requirements and the funding concept for the next budgets are based on the current statement of costs, the objectives pursued by the institution, and financial planning.

The total budget of TIB, stated in the annual report, was €47 million in 2016, including external funding.(6)

Thanks to synergies created, digital preservation within the alliance reduces costs for all partners, for example, by jointly operating the digital preservation system, by sharing a storage system, and by negotiating software licences as an alliance.

Staff

Staff members allocated to the Digital Preservation team are involved in digital preservation, as well as staff from other areas who perform work for digital preservation on a pro-rata basis. The various tasks(7) are supervised by digital preservation specialists, librarians and computer scientists. Workflows are described in more detail in “R12 Workflows”.

- Number of staff involved: 9
 - o Digital Preservation staff: 6
 - Of which are permanent: 4
 - o Acquisition staff: 1
 - o IT staff: 2

Professional development for staff is one of TIB’s strategic goals.

Line managers hold annual staff appraisals. These appraisals involve checking that job descriptions are up-to-date and identifying individual professional development needs. The Personnel Development staff unit is the point of contact for line managers and staff on all issues relating to personnel development.

In addition, members of the Digital Preservation team gain further training by attending symposia and workshops and by engaging in specialist networks and working groups (see “R6 Expert Guidance”).

Links:

(1) Leibniz Association, Information infrastructures: <https://www.leibniz-gemeinschaft.de/en/infrastructures/research-infrastructures-in-the-leibniz-association/information-infrastructures.html>

(2) TIB organisational chart (in German): <https://www.tib.eu/fileadmin/Daten/dokumente/die-tib/tib-organigramm.pdf>

(3) Act establishing the “German National Library of Science and Technology (TIB)” Foundation of 14 July 2015, Section 5 Funding (in German): <http://www.nds-voris.de/jportal/;jsessionid=7E246444610B93D99D2022A5CF41462A.jp10?quelle=link&query=TIBStiftG+ND&psml=bsvorisprod.psml&max=true&aiz=true#jlr-TIBStiftGNDV2P5>

(4) TIB Foundation, Member of the Leibniz Association: <https://www.tib.eu/en/tib/profile/foundation/#c4832>

(5) Minimum requirements governing programme budgets, in: Resolutions for the implementation of the Leibniz Association execution agreement (Leibniz Association resolutions). Resolution of the Joint Science Conference (GWK) committee of 28 April 2009, last amended on 8 March 2016 (in German):

<http://www.gwk-bonn.de/fileadmin/Papers/WGL-Beschluesse.pdf>

(6) TIB Annual Report 2016, p. 6 (in German):

<https://www.tib.eu/fileadmin/Daten/presse/dokumente/tib-jahresbericht-2016.pdf>

(7) TIB DP Wiki, Staff resources, Digital preservation tasks:

<https://wiki.tib.eu/confluence/display/lza/The+digital+archive#Thedigitalarchive-Digitalpreservationtasks.1>

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 guidance and feedback is gathered for several areas of TIB. The following sections describe expert guidance at the overall library strategy and operations level as well as expert guidance and feedback pertaining directly to the digital preservation processes, such as certification procedures.

In-house expert guidance and external advisory committee

Various external bodies examine, assess and supervise the direction and development of TIB.

Evaluation:

Being a Leibniz institution, TIB is regularly evaluated by independent, external experts who do not belong to a Leibniz institution.(1)

Bodies:

The following bodies with decision-making powers and/or with consultation expertise are prescribed by the Act establishing the “German National Library of Science and Technology (TIB)” Foundation(2) and the TIB Foundation Statutes(3):

- TIB Foundation Council (Stiftungsrat der TIB)(4) : The Foundation Council decides on matters of fundamental importance, in particular on the adoption and amendment of the Foundation’s Statutes and Regulations, on research and science policy issues, and on financial issues with significant repercussions. It also oversees the Director’s activities
- TIB Scientific Advisory Council (Wissenschaftlicher Beirat der TIB)(5) : The Foundation Council has established a Scientific Advisory Council for the purpose of advising the Foundation Council and the Director on programmatic issues.
- TIB Users’ Council (Nutzerbeirat der TIB)(6) : The Users’ Council, comprising members of Leibniz Universität Hannover, advises the Foundation’s bodies in all matters concerning the provision of literature and information for Leibniz University Hannover. In particular, it makes recommendations on the distribution of the literature budget to acquisition quotas in the individual subjects and on the library’s opening hours.

The TIB organisational chart shows the roles played by the different bodies(7). The bodies convene at regular intervals(8).

Certification:

TIB’s digital archive has already successfully undergone two relevant certification procedures, which were based on self-assessment processes reviewed by external experts; regular re-certification is planned:

- Data Seal of Approval (2015)
- Nestor Seal (2017)

Networks and cooperative activities:

In addition, members of the Digital Preservation team regularly attend symposia, engage in specialist networks and working groups (WG), and share information with the digital preservation community at the international level.

- Nestor(9)
 - o AV-Media WG
 - o Format Recognition WG
 - o Certification WG

- o Personal Digital Archiving WG
- o SIP Specification WG
- Open Preservation Foundation (OPF)(10)
- o Board of Directors
- o OPF Product Board
- DRAG (German Rosetta User Group)
- RUG (Rosetta User Group)
- o Rosetta User Group Steering Committee
- o Rosetta User Group Digital Preservation Working Group (lead)
- o Rosetta User Group System Operations Working Group
- o Rosetta User Group Delivery & Integrations Working Group
- o Format Library Working Group
- Digital Curation Center
- Peer Review Group der National Library of New Zealand
- Alliance of German National Specialist Libraries Digital Preservation Working Group(11)

The Format Library Working Group supports and develops the Format Library function of Rosetta. Format Library is a user-operated global knowledge base for Rosetta users(12). It is based on the PRONOM database, and contains information on the individual formats.

Community watch

Various processes are established at TIB to monitor the designated communities' requirements, and to adapt them where needed.

The regular valid measurement of the customer perspective enables fields of action to be identified; measures for further developing products/services are derived from these fields of action.

This is achieved by continuous evaluation of user behaviour and needs, such as equipping portals with feedback options(13) , offering local feedback options, customer service (14), the number of complaints, webinars(15), sales activities(16), committee work and conference attendance(17). In addition, web analytics was established on the TIB Portal and the TIB AV-Portal for the purpose of usage analysis(18)(19).

TIB conducts user studies, also in collaboration with partner libraries(20). The studies are presented and discussed as part of the TIB Users' Council semi-annual meetings.

In addition, TIB offers personal consultation to users regarding digital preservation question as part of its TIBgefragt service (21) which also includes other topics. This allows for direct one-to-one access to both, users and potential producers

Producers' legal and organisational requirements are taken into account. TIB issues submission guidelines for individual collection groups (22), and offers various transfer options.

Links:

(1) Leibniz Association, Evaluation Procedure:

<https://www.leibniz-gemeinschaft.de/en/about-us/evaluation/the-evaluation-procedure.html>

(2) Act establishing the “German National Library of Science and Technology (TIB)” Foundation (in German): <http://www.nds-voris.de/jportal/?quelle=jlink&query=TIBstiftG+ND&psml=bsvorisprod.psml&max=true&aiz=true#jlr-TIBstiftGNDV1P9>

(3) TIB Foundation Statutes: <https://www.tib.eu/fileadmin/Daten/dokumente/die-tib/tib-satzung.pdf> (in German)

(4) TIB Foundation Council: <https://www.tib.eu/en/tib/profile/foundation/#c4823>

(5) TIB Scientific Advisory Council: <https://www.tib.eu/en/tib/profile/foundation/#c4826>

(6) TIB Users’ Council: <https://www.tib.eu/en/tib/profile/foundation/#c4829>

(7) TIB organisational chart: <https://www.tib.eu/fileadmin/Daten/dokumente/die-tib/tib-organigramm.pdf> (in German only)

(8) TIB Foundation Statutes: <https://www.tib.eu/fileadmin/Daten/dokumente/die-tib/tib-satzung.pdf> (in German only)

(9) nestor: https://www.langzeitarchivierung.de/Webs/nestor/EN/Arbeitsgruppen/arbeitsgruppen_node.html

(10) Open Preservation Foundation: <http://openpreservation.org/about/members/>

(11) Digital Preservation Network of the German National Subject Libraries:

<https://www.tib.eu/en/service/preservation-policy-of-the-three-german-national-subject-libraries/>

(12) Rosetta Preservation Guide v6.0, Chapter 2: Format Library, p. 19:

https://knowledge.exlibrisgroup.com/@api/deki/files/70151/Rosetta_Preservation_Guide.pdf?revision=1

(13) TIB Portal feedback form: <https://www.tib.eu/en/service/contact-information-and-contact-persons/contact-form/>

(14) Contact information and contact persons: <https://www.tib.eu/en/service/contact-information-and-contact-persons/>

(15) TIB range of courses: <https://www.tib.eu/en/learning-working/courses-offered/>

(16) For example, as an exhibitor at the VDI (Association of German Engineers) conference:

<https://www.vdi-wissensforum.de/weiterbildung-automobil/ee-im-pkw/>

(17) TIB Annual Report 2017, p. 64-76: <https://www.tib.eu/fileadmin/Daten/presse/dokumente/tib-jahresbericht-2017.pdf>

(18) TIB AV-Portal: <https://av.tib.eu/>

(19) TIB Portal: <https://www.tib.eu/en/service/data-protection/>

(20) Examples of a user study “Information procurement and publishing behaviour in science and technology”:

<https://www.tib.eu/de/service/aktuelles/detail/tib-umfrage-gestartet-ihre-expertenmeinung-ist-gefragt/> and “TIB survey:

Information procurement and publishing behaviour in science and technology”: <https://www.tib.eu/de/service/aktuelles/detail/tib-umfrage-informationsbeschaffungs-und-publikationsverhalten-in-technik-und-naturwissenschaften/>

(21) TIBgefragt service: <https://www.tib.eu/en/learning-working/tibgefragt/digital-preservation/>

(22) Guidelines on Leibniz Universität Hannover Institutional Repository:

<https://www.repo.uni-hannover.de/page/guidelines> and Guidelines for PhDs:

https://www.tib.eu/fileadmin/Daten/dokumente/publizieren-archivieren/hochschulschriften/richtlinien_diss.pdf

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:

Standards

TIB operates an OAIS-compliant digital archive and uses common standards.

Metadata:

Descriptive metadata are recorded in the digital preservation system with the aim of being able to uniquely describe and identify objects in bibliographic terms(1) . The bibliographical metadata delivered by the relevant TIB specialist teams are intended to ensure the long-term content-based classification of objects. The descriptive metadata in the DC section of the ie.xml must be available as Dublin Core metadata. These metadata are indexed. Various metadata standards (MARC, Dublin Core, MODS, EAD, NISO, MIX) can be integrated in the source MD section of the ie.xml.

Technical metadata(2) , administrative metadata(3) and defined events(4) are captured in Rosetta as DNX metadata. DNX was specified by the software manufacturer Ex Libris and is based on PREMIS, but extends the standard by further elements. DNX documentation is publicly available(5). Updating of DNX is managed and monitored by the Rosetta user community.

Structural metadata(6) are stored in the ie.xml as DNX and METS elements.

Preservation planning:

The concepts of migration and emulation are used as preservation actions for currently archived objects so as to preserve their interpretability. In the process, TIB is guided by the high-level requirements of preservation planning, as described in

the Planets project using Plato(7).

Preservation of data integrity

A general overview provides a cross-process description of the preservation of data integrity(8).

For a detailed description of the workflows, see “R12 Workflows”.

Pre-ingest:

Checking for completeness is part of the pre-ingest analysis (see “R12 Workflows”)(9).

Before data are automatically ingested, the Digital Preservation team conducts a preliminary analysis, which involves the following steps:

- Checking for completeness of submitted data
- Checking the structural and legal metadata recorded by the responsible acquisition team
- Preliminary analysis of submitted data: identification and validation of objects, documentation of results

The Rosetta-compliant SIP structure is subsequently created using the submission application. The StructMap(10) of the METS file created in the process contains a list that exactly represents all files belonging to the object.

A second analysis is conducted after ingest; the results of the two analyses are matched.

Ingest:

Various processes are performed in the validation stack during ingest:

- Format identification using DROID
- Format validation using JHOVE
- Crosscheck of three checksums
- Virus check
- Extraction of technical metadata using JHOVE, mediainfo or the NLNZ Metadata Extraction Tool
- Validation of the METS file (including matching of the received files with the StructMap)

If metadata are available for the objects in the Common Library Network (GBV), SIPs are enriched with metadata (CMS enrichment) via an SRU interface. The system displays an error message if metadata enrichment fails.

As soon as the ingest process for a SIP is initiated, all modifications to the SIP/AIP and its metadata are recorded by the system as DNX elements in the event metadata(11). For a more detailed description of DNX, see “R13 Data discovery and identification”. For a more detailed description of ingest, see “R12 Workflows”.

Preservation planning:

Every time an AIP is updated, a copy of an IE is moved from permanent storage to operating storage. Every time a transfer occurs, checksums are recreated and matched with those in storage; a completeness check is also carried out using the StructMap. Integrity checks can also be initiated as a process within Rosetta, irrespective of any transfer.

For a more detailed description of preservation planning, see “R12 Workflows”.

Versioning:

If an AIP is modified, e.g. by a preservation action or a correction of metadata, a copy of the AIP is transferred to edit

storage; the original AIP remains unchanged. An authorised user in the role of “Preservation Manager” checks the results (see “R10 Preservation plan”). The user must confirm the modifications.

After confirmation, the migrated copy is moved from edit storage to archival storage, a new METS file is created, and the AIP is versioned accordingly.

Modifications to AIPs are recorded at the IE level as DNX metadata.

Several examples of defined events(12) are described in the TIB DP Wiki. The complete list of defined events is documented in the Rosetta Configuration Guide, Version 6.0(13).

The system automatically records the defined event metadata. Event metadata are written to the ie.xml for every defined event.

Event metadata are written to the ie.xml, making them part of the AIP. As long as the ie.xml (a UTF-8 encoded METS file) is available and readable, the system can assess the event metadata.

In the case of export, the event metadata are also exported.

Access:

TIB currently operates a dark archive; users do not access the objects archived in Rosetta; they use various access platforms to access them (see “R12 Workflows”)(14). Three checksums are stored in Rosetta for each file; during export, the checksums are recreated and matched. All files belonging to the representation are recorded in the ie.xml. This ensures that data integrity is safeguarded during export and that the files are complete.

If an error occurs during export, the process is terminated, and the system displays a relevant error message.

Since TIB operates a dark archive, the integrity check of archived information is not performed by users. The files contained in the representation are submitted to the person responsible for the access platform together with the METS file. S/he can then view all of the metadata contained in the METS file. Once the exported representation has been submitted to the person responsible for the access platform, the DIP leaves the digital archive’s area of responsibility. For a more detailed description of access, see “R12 Workflows”.

Preservation of authenticity

The acquisition process:

During the acquisition process, librarians are in contact with the producer; producers do not transfer their objects to the digital archive directly. This is why no separate identity check is performed.

No normalisation of the MASTER takes place during submission to the TIB digital archive.

Pre-ingest:

TIB retains the original file(s) provided by the producer as the MASTER, even if the format of the original file is unsuitable for digital preservation, or if the original file is tamper-protected or corrupt.

For the case where modifications are made to objects before being ingested to the digital archive, the Digital Preservation team has drawn up action guidelines with the responsible acquisition teams; these guidelines are documented in the submission policies.

Modifications made before ingestion to the digital archive, such as the sorting and numbering of individual files, are only performed on a copy of the original files; this copy is saved as the PRE-INGEST MODIFIED MASTER representation. Any

access copies created are recorded as the DERIVATIVE COPY representation(15).

Relationships are recorded in the digital archive if the digital archive is aware of them and the responsible body considers them to be important:

1. Whilst cataloguing, librarians record any relationship or structure in the descriptive metadata, e.g. as `dcterms:isPartOf(16)`. The unique ID of the catalogue record is stored in every AIP. In addition, metadata are mapped to Dublin Core and stored with the object.
2. Specified Dublin Core metadata contain the description of the relationship or structure
3. Different manifestations of an object are recorded as representations in the IE (see above)

Preservation planning:

TIB retains the original file, even if the format is unsuitable for the preservation of long-term availability, or if the file is invalid, tamper-protected or corrupt. For this purpose, TIB has defined different preservation levels(17).

Data are collected in their previously published form, i.e. the library cannot specify any requirements concerning formats to be delivered. Where there is a direct contact to the producer and the creation process has not yet been completed, TIB advises on which file formats are suitable for digital preservation.

TIB collects and archives objects, irrespective of the file format and validation status.

Significant properties:

Significant properties are defined in Format Library on the basis of extracted technical metadata, depending on the metadata extractor(18). Format Library is a module of the Rosetta digital preservation software; the module is being refined by the Format Library Working Group, comprising employees of institutions that use Rosetta.

At present, TIB writes all extractable technical metadata as significant properties. All significant properties are indexed, and can be used as search parameters in data management.

Significant properties are part of the Rosetta data model, and are written to the METS file as DNX metadata(19).

Institution-specific configurable mapping determines which extracted technical metadata is written to which DNX element(20).

The extraction of technical metadata is an automatic part of the ingest and re-ingest process (see "R12 Workflows").

A wide range of significant properties is predefined in the standard installation of Format Library. An employee from the institution defines institution-specific extracted technical metadata as significant properties. Once this definition has been established, the technical metadata is automatically declared a significant property.

Significant properties are evaluation criteria for preservation plans (see "R10 Preservation plan"). Organisational significant properties can be defined as alternative evaluation criteria. The preservation planning workflow requires that significant properties defined as relevant in the preservation plan are checked following the file format migration of a test record. Technical significant properties can be mapped automatically if metadata extractors are implemented for the source format and target format.

If properties declared as significant cannot be preserved, such as on grounds of cost, because the target format does not support the relevant property or because no suitable conversion tools exist to port the property, this is documented.

For a detailed description of preservation planning, see "R12 Workflows".

Links:

(1) TIB DP Wiki, Data management, Metadata, Descriptive metadata:

<https://wiki.tib.eu/confluence/display/lza/Metadata#Metadata-Descriptivemetadadata>

(2) TIB DP Wiki, Data management, Metadata, Technical metadata:

<https://wiki.tib.eu/confluence/display/lza/Metadata#Metadata-TMDTechnicalmetadadata>

(3) TIB DP Wiki, Data management, Administrative metadata:

<https://wiki.tib.eu/confluence/display/lza/Metadata#Metadata-Administrativemetadadata>

(4) TIB DP Wiki, Data management, Metadata, Logging of preservation actions:

<https://wiki.tib.eu/confluence/display/lza/Metadata#Metadata-EventLoggingofpreservationactions>

(5) Rosetta AIP Data Model v6.0:

https://knowledge.exlibrisgroup.com/@api/deki/files/70155/Rosetta_AIP_Data_Model.pdf?revision=3 and Rosetta METS

Profile: <http://www.loc.gov/standards/mets/profiles/00000042.xml>

(6) TIB DP Wiki, Data management, Structural Metadata:

<https://wiki.tib.eu/confluence/display/lza/Metadata#Metadata-SMDStructuralmetadadata>

(7) Planets Preservation Planning Tool: Plato 3.0 User Manual V1.0 , p. 12, Figure 1 Overview of PLANETS Preservation

Planning workflow: http://www.ifs.tuwien.ac.at/dp/plato/docs/Plato_3_UserManual.pdf

(8) TIB DP Wiki, 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>

(9) TIB DP Wiki, Pre-ingest: <https://wiki.tib.eu/confluence/display/lza/Pre-Ingest>

(10) Rosetta METS Profile: <http://www.loc.gov/standards/mets/profiles/00000042.xml>

(11) TIB DP Wiki, Logging of preservation metadata:

<https://wiki.tib.eu/confluence/display/lza/Metadata#Metadata-EventLoggingofpreservationactions>

(12) TIB DP Wiki, Data management, Metadata, Logging of preservation actions:

<https://wiki.tib.eu/confluence/display/lza/Metadata#Metadata-EventLoggingofpreservationactions>

(13) Rosetta Configuration Guide v 6.0, Appendix C, Events, Table 30. Events:

https://knowledge.exlibrisgroup.com/@api/deki/files/70149/Rosetta_Configuration_Guide.pdf?revision=2

(14) TIB DP Wiki, Access: <https://wiki.tib.eu/confluence/display/lza/Access>

(15) TIB DP Wiki, Transfer information packages: <https://wiki.tib.eu/confluence/pages/viewpage.action?pageId=93608988>

#Specificationsforsubmissioninformationpackages(SIP)-EPS_EN

(16) TIB DP Wiki, Descriptive metadata, Mapping table from PICA+ to Dublin Core:

<https://wiki.tib.eu/confluence/display/lza/Metadata#Metadata-Descriptivemetadadata>

(17) TIB Preservation Policy, 3.4 Preservation levels: <https://www.tib.eu/en/service/tib-preservation-policy/>

(18) Rosetta Preservation Guide v6.0, Chapter 4: Significant Properties, p. 69-74:

https://knowledge.exlibrisgroup.com/@api/deki/files/70151/Rosetta_Preservation_Guide.pdf?revision=1

(19) Rosetta AIP Data Model v6.0, Significant Properties of Files Within DNX, p. 49:

https://knowledge.exlibrisgroup.com/@api/deki/files/70155/Rosetta_AIP_Data_Model.pdf?revision=3

(20) Ex Libris Knowledge Base Article: Can extracted technical metadata from images be indexed?: https://knowledge.exlibrisgroup.com/Rosetta/Knowledge_Articles/Can_extracted_technical_metadata_from_images_be_indexed%3F

Reviewer Entry

Reviewer 1

Comments:

Accept

Reviewer 2

Comments:

Accept

VIII. Appraisal

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

Compliance Level:

4 – The guideline has been fully implemented in the repository

Reviewer Entry

Reviewer 1

Comments:

4 – The guideline has been fully implemented in the repository

Reviewer 2

Comments:

4 – The guideline has been fully implemented in the repository

Response:

Collection development policy

Collection profile:

TIB serves as the German national library of science and technology, as well as architecture, chemistry, computer science, mathematics and physics. For this reason, the library collects and archives objects, irrespective of their manifestation, on the basis of the following criteria:

- The object corresponds thematically to TIB's collection areas.(1)
- The object is indexed in the TIB catalogue, or other descriptive metadata are available.
- The object is physically owned by TIB.
- The object is a German research report(2) produced by the Federal Ministry of Education and Research (BMBF), the Federal Ministry for Economic Affairs and Energy (BMWi) or another research-promoting institution that has adopted the BMBF Auxiliary Terms and Conditions for certain funding areas.
- The object is a research report produced by the German Research Foundation (DFG) within the Excellence Initiative.

TIB also acts as the University Library of Leibniz Universität Hannover. For this reason, TIB collects and archives the following:

- All university publications⁽³⁾ produced at Leibniz Universität Hannover
- All Open Access publications available in Leibniz Universität Hannover Institutional Repository⁽⁴⁾

In addition, TIB archives:

- Audiovisual collections from the former Institute of Scientific Film
- Data in the context of the services it offers

Choice of representations:

Criteria for the choice of representations are as follows⁽⁵⁾ :

- If possible, the original file delivered by the producer is recorded as the MASTER representation.
- If there is an access copy on an access platform, the access copy is recorded as the DERIVATIVE COPY representation.
- If there is a modified copy of the MASTER, which is of use for preserving objects – for example, because the order of individual files is shown – this is recorded as the MODIFIED MASTER.

Criteria for prioritising digital preservation:

The criteria for prioritising the digital preservation of objects are⁽⁶⁾ :

- The importance of the collection
- TIB has exclusive possession of the object in Germany/Europe/globally
- The age and condition of data carriers

TIB prioritises the acquisition of digital content,⁽⁷⁾ and pursues the goal of being a holding library for its collections.

Quality assurance

The acquisition process:

Librarians acquire an object, clarifying rights with the producer, and prepare the object for the digital archive; the Digital Preservation team is not in direct contact with the producer. During the acquisition process, the librarian performs a manual completeness check following the delivery of the digital object. Before retrieving the object, the employee conducts a virus check.

The responsible acquisition team clarifies the legal conditions with the producer, integrates objects into TIB's collection, and either deposits objects in a structure defined by the Digital Preservation team or specifies an interface via which objects are submitted to the digital preservation system.

The Digital Preservation team has no direct contact with producers. Internal submission policies were developed with the responsible acquisition teams, governing the submission of collections to the digital archive:

- Responsibilities
- Definition of the data structure
- Transfer of objects to specific workflows, dependent on the type of object, licence and access rights
- Handling of password-protected files

- Type of submission (manual or automatic)
- Time of submission

The responsible acquisition team submits digital objects to the digital preservation system using a standardised procedure.

Pre-ingest:

Before submitting new collection groups, the Digital Preservation team performs a collection and process analysis. Collection groups, publications types, licence texts and access rights are documented based on this analysis. The identified data constitute the basis for workflow configurations in the digital preservation system, and are documented in a team-specific submission policy.

TIB uses various ingest methods. In the case of objects that are not German research reports or that are not submitted to the system via an OAI interface, librarians consistently structure and name the objects; record several representations; and designate them in a defined data structure for metadata enrichment.(8)

Before data are automatically ingested, the Digital Preservation team conducts a preliminary analysis, which involves the following steps:

- Checking for completeness of submitted data
- Checking the structural and legal metadata recorded by the responsible acquisition team
- Preliminary analysis of submitted data: identification and validation of objects, documentation of results

If packages or data storage do not comply with the agreed structure, the object is reported to the responsible acquisition team for correction.

A second analysis is conducted after ingest; the results of the two analyses are matched.

For a detailed description of pre-ingest, see “R12 Workflows”.

Ingest:

Ingest workflows are configured individually for each library team. Workflows vary according to their transfer information package and some metadata that are added during the ingest process:

- Number of representations
- Data structure
- Licence texts deposited
- Access rights granted
- Identification of the collection type (IE entity type)
- Identifier for the collection and production path (User Defined Field A)

After ingest, a member of the Digital Preservation team runs a database query for the most appropriate collection. A check is carried out to determine whether all of the submitted metadata meet the expectations. A suitably authorised user corrects any errors, and the system automatically versions the modifications.

For a detailed description of ingest, see “R12 Workflows”.

Metadata

Descriptive metadata are created exclusively by qualified librarians according to the RDA standard(9) , and mapped using a mapping process(10) based on Dublin Core. The indexing skills lie with the librarians; the Digital Preservation team does not check catalogue records for conformity with the cataloguing standard.

If the metadata delivered by the SRU interface cannot be processed by mapping because they do not comply with specifications, the enrichment workflow in Rosetta displays an error message. The catalogue metadata of each individual object are deposited in a dedicated UTF-8 encoded XML file, which is linked to the IE via metadata identifiers (mId).(11) Mandatory fields are defined for the metadata delivered by the OAI interface. Errors are reported to Leibniz Universität Hannover Institutional Repository staff for correction.

All metadata are stored as Dublin Core elements or DNX elements, and are written UTF-8 encoded in a METS XML. The prevalence of the character encoding, the metadata standards used, and the XML format ensure the interpretability of the metadata at this point in time. The use of metadata standards and character encoding standards ensures that metadata can be transferred to another format, where needed.

Formats

TIB collects and archives objects, irrespective of the file format and validation status.

Data are collected in their previously published form, i.e. the library cannot usually specify any requirements concerning formats to be delivered. Where there is a direct contact to the producer and the creation process has not yet been completed, TIB advises on which file formats are suitable for digital preservation.

University publications produced at Leibniz Universität Hannover are an exception; preferred formats for submission are specified in the submission guidelines for PhD theses produced at Leibniz Universität Hannover.(12)

The check for formal and technical correctness performed by the receiving office for university publications includes validation of submitted university publications. Invalid objects are not accepted by the University Publications team. With this in mind, the Digital Preservation team has drawn up guidelines for creating valid PDF files; these guidelines are issued to producers, as needed.

Links:

(1) Focus of TIB's collections: <https://www.tib.eu/en/search-discover/focus-of-collections/>

(2) Publishing research reports: <https://www.tib.eu/en/publishing-archiving/research-reports/>

(3) Publishing PhD theses and habilitations: <https://www.tib.eu/en/publishing-archiving/phd-theses-and-habilitations/>

(4) Guidelines on Leibniz Universität Hannover Institutional Repository:

<https://www.repo.uni-hannover.de/page/guidelines?locale-attribute=en>

(5) TIB Preservation Policy: <https://www.tib.eu/en/service/tib-preservation-policy/>

(6) TIB Preservation Policy: <https://www.tib.eu/en/service/tib-preservation-policy/>

(7) TIB Strategy 2018-2022, p. 3 (in German):

https://www.tib.eu/fileadmin/Daten/presse/dokumente/TIB-Strategie_2018-2022_deutsch_01.pdf

(8) TIB DP Wiki, Transfer information packages:

<https://wiki.tib.eu/confluence/display/lza/Data+Management#DataManagement-PKS>

(9) Resource Description and Access (RDA):

https://www.dnb.de/EN/Professionell/Standardisierung/Standards/standards_node.html

(10) TIB DP Wiki, Descriptive Metadata, Mapping table from PICA+ to Dublin Core:

<https://wiki.tib.eu/confluence/display/lza/Metadata#Metadata-Descriptivemetadate>

(11) Rosetta AIP Data Model v6.0, mID, p. 77:

https://knowledge.exlibrisgroup.com/@api/deki/files/70155/Rosetta_AIP_Data_Model.pdf?revision=3

(12) Publishing PhD theses and habilitations: <https://www.tib.eu/en/publishing-archiving/phd-theses-and-habilitations/>

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:

TIB operates archival storage in a dedicated data centre, which is administered by its internal IT department. TIB makes storage available to its partner libraries.

The division of storage into storage sections and areas is described in “R15 Technical infrastructure”.

The general principles for preserving data integrity are formulated in the TIB Preservation Policy(1). A detailed description

of archival storage processes is publicly accessible in the TIB DP Wiki(2). This involves:

- Concept of storage areas
- Actions for preserving the completeness and intactness of archive packages
 - o The storage media used
 - o Redundancy
 - o Monitoring and refreshing
 - o Media migration
- Measures for ensuring integrity
- Restoration measures

Actions for ensuring data integrity in the entire preservation process that go beyond archival storage processes are documented in the TIB DP Wiki(3).

Links:

(1) TIB Preservation Policy, 3.5 Preservation of data integrity: <https://www.tib.eu/en/service/tib-preservation-policy/>

(2) TIB DP Wiki, Archival storage: <https://wiki.tib.eu/confluence/display/lza/Archival+Storage>

(3) TIB DP Wiki, 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>

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:

Responsibility for preservation

TIB uses various licence forms for different collection groups (see “R2 Licenses”), and asks producers for all of the relevant rights required for digital preservation and for making the objects accessible:

- The right to duplicate (for copies in storage)
- The right to edit (for format modifications)
- The right to make objects accessible to the public (so that they can be made available in the TIB Portal)

The producer can see from the licence texts and the TIB Preservation Policy(1) that TIB has assumed responsibility for preservation, and that the necessary rights have been granted (see “R2 Licenses”).

Preservation plan

Preservation planning:

The TIB Preservation Policy contains general principles on digital preservation based on which the integrity, authenticity, interpretability and completeness of archived objects shall be ensured(2). TIB uses bitstream and content preservation concepts to preserve objects. In addition, content preservation is subdivided into the possible strategies of migration and emulation.

TIB retains the original file, even if the format is unsuitable for the preservation of long-term availability, or if the file is invalid, tamper-protected or corrupt. For this purpose, TIB has defined different preservation levels.

Data are collected in their previously published form, i.e. the library cannot specify any requirements concerning formats to be delivered. Where there is a direct contact to the producer and the creation process has not yet been completed, TIB advises on which file formats are suitable for digital preservation.

TIB collects and archives objects, irrespective of the file format and validation status.

For the purpose of quality assurance, TIB has established extensive pre-ingest and post-ingest control processes (see “R8 Appraisal”). Should format migration become necessary, the library will opt for common, open source and standardised target formats. No format migration has been necessary to date. For emulating objects, TIB will use the EaaS emulation framework(3); the use of this emulation framework was tested in a pilot project in 2014(4).

TIB monitors technological developments/changes and the organisational requirements of the relevant specialist communities using Preservation and Technology Watch.

The Rosetta digital preservation system has a preservation planning module(5). With this module, users can create preservation plans, verify such plans using test sets, and undertake preservation actions based on test results. The module includes Format Library, mechanisms for risk analysis and evaluation and for carrying out preservation actions.

Conversion tools can be integrated as plug-ins. The type and deployment of conversion tools are specifically selected by TIB for each preservation plan, enabling the process to be adapted individually to its objectives, tasks and designated communities(6).

Risk management:

In Format Library, 1-n risk factors can be defined for each file format specifically for each institution. Risks may be properties (technical, administrative or process metadata) or the results of analysis undertaken using tools. Risk analysis is performed as a regular automated task, or is initiated manually. Based on the risk analysis, the institution decides whether preservation action is required. Preservation action may also be taken without a systems-based risk analysis having been conducted beforehand.

Preservation action

All preservation actions build on the original file, where preservation action is possible. Preservation actions are performed on a copy of the original file, and the modified files are saved as new representations. The AIP is versioned accordingly (see “R7 “Data integrity and authenticity”). All modifications to an AIP are logged in the database and in the AIP metadata in the METS file by the digital preservation system.

In addition to ensuring the interpretability of the bitstream (see “R9 Documented storage procedures”) and the preservation actions, TIB enriches archived objects with metadata(7).

Interpretability of metadata is ensured by using standards. Metadata are stored as Dublin Core elements or DNX elements, and are written UTF-8 encoded in a METS XML. The DNX schema was specified by the software manufacturer Ex Libris and is based on PREMIS, but extends the standard by further elements. DNX documentation is publicly available(8). The further development of DNX, including the adaptation of the DNX profile within PREMIS version changes, the submission of new semantic units, and checking PREMIS conformity, is specified by the Rosetta user group and reviewed by the service provider after implementation.

The prevalence of the character encoding, the metadata standards used, and the XML format ensure the interpretability of the metadata at this point in time. The use of metadata standards and character encoding standards ensures that metadata can be transferred to another format, where needed.

By taking this action, TIB ensures that at least one representation of an object is always interpretable.

Preservation of significant properties:

TIB has defined various significant properties(9).

Before a defined data set is fully migrated, tests are performed using various conversion tools, integrated as plug-ins. In the process, significant properties are defined as evaluation criteria. The converted test set is checked using the evaluation criteria. If the output is unsatisfactory, the test is repeated using a different conversion tool. If properties declared as significant cannot be preserved, such as on grounds of cost, because the target format does not support the relevant property or because no suitable conversion tools exist to port the property, this is documented.

Preservation level

So far, TIB has defined two different preservation levels(10). The preservation levels are written to the METS file as PREMIS-compliant DNX metadata "PreservationLevel". Files without technical protective measures are either migrated (for example, individual PDF files), or emulated (for example, CD images), depending on the type of object. Migration cannot be offered for objects with password protection, digital rights management, signatures and other protective measures that prevent preservation action from being taken. Only bitstream preservation can be offered at present for objects in proprietary formats for which no suitable target formats or playback software are available.

Documentation of preservation action

TIB operates an OAIS-compliant digital preservation system. All modifications to an AIP are logged in the metadata(11). In the event of modifications, the AIP is versioned accordingly(12). Previous versions are also archived.

Links:

- (1) TIB Preservation Policy: <https://www.tib.eu/en/service/tib-preservation-policy/>
- (2) TIB Preservation Policy: <https://www.tib.eu/en/service/tib-preservation-policy/>
- (3) Emulation as a Service: eaas.uni-freiburg.de/
- (4) Bähr, Thomas, Lindlar, Michelle, Rechert, Klaus, Liebetraut, Thomas (2014): "Functional Access to Electronic Media Collections using Emulation-as-a-Service", paper presented to iPRES 2014, Melbourne, 6-10 October 2014, p. 333-335: www.ipres-conference.org/ipres14/sites/default/files/upload/iPres-Proceedings-final.pdf
- (5) Rosetta Preservation Guide v6.0:
https://knowledge.exlibrisgroup.com/@api/deki/files/70151/Rosetta_Preservation_Guide.pdf?revision=1
- (6) Rosetta Training Videos, Preservation Overview:
https://knowledge.exlibrisgroup.com/Rosetta/Training/Rosetta_Essentials/A_-_Overview/1.2_Preservation_Overview
- (7) TIB DP Wiki, Metadata: <https://wiki.tib.eu/confluence/display/lza/Metadata>
- (8) Rosetta AIP Data Model v6.0:
https://knowledge.exlibrisgroup.com/@api/deki/files/70155/Rosetta_AIP_Data_Model.pdf?revision=3 and Rosetta METS Profile: <http://www.loc.gov/standards/mets/profiles/00000042.xml>
- (9) TIB DP Wiki, Significant Properties:
<https://wiki.tib.eu/confluence/display/lza/Significant+Properties>
- (10) TIB Template for submission policies, 5. Preservation level:
<https://wiki.tib.eu/confluence/display/lza/Template+for+submission+policies>
- (11) TIB DP Wiki, Logging of preservation actions:
<https://wiki.tib.eu/confluence/display/lza/Metadata#Metadata-EventLoggingofpreservationactions>
- (12) TIB DP Wiki, Preservation management: <https://wiki.tib.eu/confluence/display/lza/Preservation+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:

Data and metadata quality

Descriptive metadata are recorded in the digital preservation system with the aim of being able to uniquely describe and identify objects in bibliographic terms(1) . The bibliographical metadata delivered by the relevant TIB specialist teams are intended to ensure the long-term content-based classification of objects; producers do not deliver descriptive metadata. The descriptive metadata in the DC section of the ie.xml(2) must be available as Dublin Core metadata. These metadata are indexed. Various metadata standards (MARC, Dublin Core, MODS, EAD, NISO, MIX) can be integrated in the source MD section of the ie.xml.

Automated assessment of metadata adherence to relevant schema

When submitting data to the digital archive, catalogue metadata are mapped(3) and indexed to Dublin Core.(4) Catalogue metadata are checked regarding mapping specifications; errors are reported (see “R8 Appraisal”).

TIB’s SIP specifications ensure that structured data packages are available at all times. There are specifications available

for SIPs for various phases in the object's lifecycle:

1. Transfer information packages are created by librarians so that objects can be submitted to the digital archive(5)
2. Pre-ingest SIPs(6) are created by submission application on the basis of the transfer information packages. Submission application creates Rosetta-compliant SIPs that are transferred to Rosetta for ingest.
3. Post-ingest SIPs(7) are pre-ingest SIPs that have been enriched with technical, administrative, descriptive and event metadata during the ingest process. In a subsequent process, the post-ingest SIPs are transformed into an AIP.(8) Rosetta requires a specific data structure during ingest. If the data is not properly structured, the SIP is not processed, and an error message is issued.

Designated community's feedback

TIB currently operates what is known as a "dark archive", and by doing so pursues the concept of separating the archive from the search function:

- Users have no direct access to the objects in the digital preservation system. TIB's collections are available on the TIB Portal(9) as well as on other access platforms.
- Users never search directly within the digital archive; searches always take place via a presentation platform.

Users can give feedback via a variety of mechanisms (see R12 "Workflows"). This is achieved by continuous evaluation of user behaviour and needs, such as equipping portals with feedback options(10), offering local feedback options, customer service(11), the number of complaints, webinars(12), sales activities(13), committee work and conference attendance(14). In addition, web analytics was established on the TIB Portal and the TIB AV-Portal for the purpose of usage analysis(15). TIB conducts user studies, also in collaboration with partner libraries(16).

User feedback is established as an organisational process within the institution.

For a description of significant properties, depending on the designated community, see "R7 Data integrity and authenticity".

Links:

(1) TIB DP Wiki Digital preservation: Data management, Metadata, Descriptive metadata:

<https://wiki.tib.eu/confluence/display/lza/Metadata#Metadata-Descriptivemetadadata>

(2) TIB DP Wiki, Specifications for Archival Information Packages (AIP):

<https://wiki.tib.eu/confluence/pages/viewpage.action?pageId=93608990>

(3) TIB DP Wiki, Descriptive metadata, Mapping table from PICA+ to Dublin Core:

<https://wiki.tib.eu/confluence/display/lza/Metadata#Metadata-Descriptivemetadadata>

(4) Dublin Core: <http://dublincore.org/usage/terms/>

(5) TIB DP Wiki, Transfer information packages: [https://wiki.tib.eu/confluence/pages/viewpage.action?pageId=93608987#Specificationsforsubmissioninformationpackages\(SIP\)-EPS_EN](https://wiki.tib.eu/confluence/pages/viewpage.action?pageId=93608987#Specificationsforsubmissioninformationpackages(SIP)-EPS_EN)

(6) TIB DP Wiki, Pre-ingest SIPs: [https://wiki.tib.eu/confluence/pages/viewpage.action?pageId=93608987#Specificationsforsubmissioninformationpackages\(SIP\)-PreSIP_EN](https://wiki.tib.eu/confluence/pages/viewpage.action?pageId=93608987#Specificationsforsubmissioninformationpackages(SIP)-PreSIP_EN)

(7) TIB DP Wiki, Post-ingest SIPs: <https://wiki.tib.eu/confluence/pages/viewpage.action?pageId=93608987#Specifications>

forsubmissioninformationpackages(SIP)-PostSIP_EN

(8) TIB DP Wiki, Transformation of SIPs to AIPs: [https://wiki.tib.eu/confluence/pages/viewpage.action?pageId=93608990#](https://wiki.tib.eu/confluence/pages/viewpage.action?pageId=93608990#Specificationsforarchivalinformationpackages(AIPs)-TransTransformingtransferinformationpackagestoSIPsandAIPs)

Specificationsforarchivalinformationpackages(AIPs)-TransTransformingtransferinformationpackagestoSIPsandAIPs

(9) TIB Portal: <https://www.tib.eu/en/>

(10) TIB Portal feedback form: <https://www.tib.eu/en/service/contact-information-and-contact-persons/contact-form/>

(11) TIB Document Delivery – Full Service: <https://www.tib.eu/en/borrowing-ordering/tib-document-delivery/full-service/>

(12) TIB range of courses: <https://www.tib.eu/en/learning-working/courses-offered/>

(13) For example, as an exhibitor at the VDI (Association of German Engineers) conference (in German):

<https://www.vdi-wissensforum.de/weiterbildung-automobil/ee-im-pkw/>

(14) TIB Annual Report 2017, chapters on “Mitarbeit in Gremien” (Work on committees) and “Publikationen” (Publications)

(in German): <https://www.tib.eu/fileadmin/Daten/presse/dokumente/tib-jahresbericht-2017.pdf>

(15) TIB Portal, Data security (in German): <https://www.tib.eu/de/service/datenschutz/>

(16) Examples of user studies include “Information procurement and publishing behaviour in science and technology”:

<https://www.tib.eu/en/service/news/details/tib-survey-launched-your-expert-opinion-required/> and “TIB survey: Information

procurement and publishing behaviour in science and technology”: <https://www.tib.eu/en/service/news/details/tib-publishe>

s-results-of-survey-information-procurement-and-publishing-behaviour-in-science-and-tec/

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:

Workflow documentation

Processes and workflows are publicly documented in the TIB DP Wiki in the form of descriptions, graphics and process diagrams. An overview of the overall process is also publicly available.(1)

Pre-ingest:

Acquisition, including the clarification of rights with producers, takes place via the responsible acquisition teams in accordance with TIB's acquisition profile (see "R1: Mission/Scope"). Objects outside of TIB's collection profile are added to the digital archive in exceptional cases when the library management decides it is appropriate.

The TIB Preservation Policy(2) and the TIB DP Wiki(3) publicly document how objects are handled for producers and stakeholders.

Pre-ingest, described in detail in "R8 Appraisal", involves extensive quality assurance measures.

In cooperation with the Digital Preservation team, acquisition teams prepare objects during pre-ingest for digital preservation according to specified requirements.(4) Descriptive metadata and a reference to the valid licence agreement must be available for every object.

Ingest:

TIB employs various generic workflows(5) and package structures(6) to ingest objects. Ingest workflows are configured individually for each library team. Workflows vary according to their transfer information package and some metadata that are added during the ingest process:

- Number of representations
- Data structure
- Licence texts deposited
- Access rights granted
- Identification of the collection type (IE entity type)
- Identifier for the collection and production path (User Defined Field A)

The processing steps in Rosetta are identical at the process level. At the technical level, objects are handled according to their format requirements using appropriate plug-ins. Identifying, structural and descriptive metadata are recorded in the METS file during ingest. The transformation of SIPs to AIPs is publicly documented.(7) After every automatic ingest of a collection, the Digital Preservation team conducts matching with the results of the preliminary analysis, which involves the following steps:

- Matching the results of the preliminary analysis with the results of identification and validation in Rosetta
- Checking objects in Rosetta for completeness and the correct assignment of descriptive, administrative, legal, technical and structural metadata.

Archival storage:

TIB operates archival storage(8) in a designated data centre, following best practices. Archival storage is described in

further detail in “R9 Documented storage procedures.”

Preservation planning:

The digital preservation system has a preservation planning module that can be used to write and analyse preservation plans and to carry out preservation actions (see “R10 Preservation plan”).(9) The description in “R10 Preservation Plan” also includes the evaluation of preservation plans before preservation actions are taken, and actions to preserve significant properties.

Data management:

Rosetta uses an Oracle database as well as a SolR Index. Database queries and updating take place throughout the workflow. For various activities in the digital preservation system, it is necessary to use database queries to form sets. A set is the result set of a database query.(10) Sets are necessary for aspects such as preservation planning, updating of metadata, accessing of individual AIPs by members of the Digital Preservation team, and creating reports and statistics. The data model is publicly described in the TIB DP Wiki(11) and Rosetta product documentation.(12)

Administration:

The administrative level comprises:

- Strategic decisions at the team level, section level, department level and library management level
- Issuing of policies
- Agreement of submission policies with library teams
- Drawing up of specifications
- System configuration administration
- Quality control
- The availability and use of human, financial and technical resources
- Reporting functions such as reports and statistics.

Access:

TIB currently operates a dark archive. Access scenarios vary by user access on the access platforms and access to the digital archive by authorised staff.(13) After a trigger event, the digital archive transfers access copies to an access platform as a replacement. Users have no direct access to archived objects.

Level of security

The data protection rules set out in Lower Saxony Data Protection Act (NDSG)(14) and in the General Data Protection Regulation (GDPR)(15) , German copyright regulations and public service secrecy obligations, in the case of employees, on the basis of Section 3(2) of the Public Sector Collective Agreement of the Federal States (TV-L)(16), apply to TIB (see “R4 Confidentiality and Ethics”).

Decision handling within workflows

Workflows and processes are documented in Policies and the TIB DP Wiki; decision-making scenarios are especially displayed in the process diagrams.

Decisions in exceptional cases are taken by the responsible person in each case, and documented accordingly.

Change management of workflows

Workflows and processes are documented in Policies and the TIB DP Wiki(17), and are checked regularly to ensure they are up to date. If adjustments are required, the documentation is updated accordingly.

Changes are only made in consultation with the head of the Digital Preservation team; they are first tested in the development system and test system before being implemented into the production system.

Links:

(1) TIB DP Wiki, Process organisation of digital preservation:

<https://wiki.tib.eu/confluence/display/lza/The+digital+archive#Thedigitalarchive-Processorganisationofdigitalpreservation>

(2) TIB Preservation Policy: <https://www.tib.eu/en/service/tib-preservation-policy/>

(3) TIB DP Wiki: <https://wiki.tib.eu/confluence/display/lza/>

(4) TIB DP Wiki, Pre-ingest: <https://wiki.tib.eu/confluence/display/lza/Pre-Ingest>

(5) TIB DP Wiki, Ingest: <https://wiki.tib.eu/confluence/display/lza/Ingest>

(6) TIB DP Wiki, Specifications of transfer packages: [https://wiki.tib.eu/confluence/pages/viewpage.action?pageId=93608987#Specificationsforsubmissioninformationpackages\(SIP\)-EPS_EN](https://wiki.tib.eu/confluence/pages/viewpage.action?pageId=93608987#Specificationsforsubmissioninformationpackages(SIP)-EPS_EN)

(7) TIB DP Wiki, Transforming transfer information packages to SIPs and AIPs: [https://wiki.tib.eu/confluence/pages/viewpage.action?pageId=93608990#Specificationsforarchivalinformationpackages\(AIPs\)-TransTransformingtransferinformationpackagestoSIPsandAIPs](https://wiki.tib.eu/confluence/pages/viewpage.action?pageId=93608990#Specificationsforarchivalinformationpackages(AIPs)-TransTransformingtransferinformationpackagestoSIPsandAIPs)

(8) TIB DP Wiki, Archival storage: <https://wiki.tib.eu/confluence/display/lza/Archival+Storage>

(9) TIB DP Wiki, Preservation management: <https://wiki.tib.eu/confluence/display/lza/Preservation+Management>

(10) ExLibris "Searching the Permanent Repository" (Training Video): https://knowledge.exlibrisgroup.com/Rosetta/Training/Rosetta_Essentials/Data_Management/Searching_the_Rosetta_Permanent_Repository

(11) TIB DP Wiki, Data management: <https://wiki.tib.eu/confluence/display/lza/Data+Management>

(12) Rosetta AIP Data Model v6.0, p. 8:

https://knowledge.exlibrisgroup.com/@api/deki/files/70155/Rosetta_AIP_Data_Model.pdf?revision=3

(13) TIB DP Wiki, Access: <https://wiki.tib.eu/confluence/display/lza/Access>

(14) Lower Saxony Data Protection Act (NDSG) (in German):

www.lfd.niedersachsen.de/download/32372/Niedersaechsisches_Datenschutzgesetz_Stand_12.12.2012_.pdf

(15) General Data Protection Regulation (GDPR):

<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32016R0679&from=EN>

(16) Public Sector Collective Agreement of the Federal States (TV-L) (as of: 2 March 2019) (in German): https://www.tdl-online.de/fileadmin/downloads/rechte_Navigation/A_TV-L_2011_01_Tarifvertrag/TV-L_i.d.F._des_%C3%84TV_Nr._11

_VT_2020.pdf

(17) TIB DP Wiki: <https://wiki.tib.eu/confluence/display/lza>

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:

Search

A differentiation is made between searches for TIB users and access for digital archive staff.

Access scenarios are documented on the digital archive website.(1)

For users:

Users can search for objects via the TIB Portal, but not within the digital preservation system. The TIB Portal integrates several data sources(2), including the following:

- The TIB Catalogue
- The AV-Portal(3)

- Leibniz Universität Hannover Institutional Repository
- Specialist databases
- Electronic full texts from various sources

Searches in the TIB Portal can cover all data sources, or can be limited to specific data sources. A search bar is prominently integrated into the TIB Portal; alternatively, users can utilise the advanced search function. Filters can be used in both methods to refine the search.

For staff:

Authorised employees may search and access objects in the digital preservation system. Indexed Dublin Core and DNX metadata can be defined and selected as search parameters at three different levels (IE, representation and file).(4)

Persistent identifiers

TIB offers a DOI Service.(5) Research data, non-text materials such as videos, images and 3D models, grey literature, and articles in Open Access journals in TIB's collections are allocated DOIs.

Rosetta creates and allocates various internal-system identifiers.

- Identifiers for objects(6) : Rosetta-created internal-system identifiers for identifying IEs, representations, files and packages during deposit and SIP processing.
- Identifiers for events(7): a permanent Rosetta-assigned ID for processes, such as for an event or a process.
- Identifiers for rights(8): the ID of a policy, such as governing configured access rights, a retention period (retention policy) or a transfer licence.
- Identifiers for agents(9): the ID of an agent along the lines of PREMIS, such as a producer, a plug-in, a connected system or a user.

The internal-system identifiers are unique and permanent within the system. If new policies or processes are defined by a user, the system assigns a new unique ID.

Additional identifiers are recorded in the metadata.

Machine harvesting

Freely available metadata from the TIB Portal are available as Open Data via an OAI-PMH interface in OAI Dublin Core, MARC XML and RDF XML formats.(10) Freely available metadata from TIB's AV-Portal are available as Open Data in the form of an RDF export.(11)

Recommended citations

TIB provides DOIs as citation links for records.

Terms of use

Access to TIB collections is governed by the Terms of Use.(12) Upon registration, the user agrees to the Terms of Use. If a user does not agree to the Terms of Use upon registration, services requiring registration cannot be used.

Links:

- (1) TIB DP Wiki, Access: <https://wiki.tib.eu/confluence/display/lza/Access>
- (2) TIB Portal, Data Sources: <https://www.tib.eu/en/borrowing-ordering/tib-document-delivery/direct-access/>
- (3) TIB AV-Portal: <https://av.tib.eu/>
- (4) Searching the Rosetta Permanent Repository: https://knowledge.exlibrisgroup.com/Rosetta/Training/Rosetta_Essentials/Data_Management/Searching_the_Rosetta_Permanent_Repository
- (5) TIB DOI Service: <https://www.tib.eu/en/publishing-archiving/doi-service/>
- (6) Rosetta AIP Data Model v6.0, Internal Identifier, p. 57 and p. 77:
https://knowledge.exlibrisgroup.com/@api/deki/files/70155/Rosetta_AIP_Data_Model.pdf?revision=3
- (7) Rosetta AIP Data Model v6.0, Event, p. 93:
https://knowledge.exlibrisgroup.com/@api/deki/files/70155/Rosetta_AIP_Data_Model.pdf?revision=3
- (8) Rosetta AIP Data Model v6.0, Access Rights Policy, policyID, p. 95-96:
https://knowledge.exlibrisgroup.com/@api/deki/files/70155/Rosetta_AIP_Data_Model.pdf?revision=3
- (9) Example: Rosetta AIP Data Model v6.0, Producer Agent, p. 92:
https://knowledge.exlibrisgroup.com/@api/deki/files/70155/Rosetta_AIP_Data_Model.pdf?revision=3
- (10) TIB Open Data Services: <https://www.tib.eu/en/tib/open-data/>
- (11) TIB AV-Portal RDF export of TIB AV-Portal metadata: <https://av.tib.eu/opendata>
- (12) TIB Terms of Use: <https://www.tib.eu/en/service/terms-of-use/>

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:

TIB currently operates what is known as a “dark archive”, and by doing so pursues the concept of separating the archive from the search function:

- Users have no direct access to the objects in the digital preservation system. TIB’s collections are available on the TIB Portal(1) as well as on other access platforms.
- Users never search directly within the digital archive; searches always take place via a presentation platform.

Provided metadata

Digital archive:

Descriptive, administrative, technical, structural, legal and event metadata are recorded in an AIP at three levels: intellectual entity (IE), representation and file.

- IE: structural, administrative, descriptive, legal and event metadata
- Representation: structural, administrative, legal and event metadata
- Files: structural, administrative, legal, technical and event metadata

The metadata recorded in the digital archive are documented in detail in the TIB DP Wiki.(2) Concerning the metadata standards used, see also “R7 Data integrity and authenticity”.

The descriptive metadata recorded ensure the reusability and intellectual interpretability of archived objects.

Existing access rights are stored in the legal metadata as access rights.

Presentation platform:

Metadata are available to users on access platforms on the basis of indexing by library specialists.(3)(4) The currently valid access rights are displayed on access platforms for each publicly accessible object. Objects that may not be made accessible online are made available for access in a form agreed with the producer.

In the case of a trigger event (see R12 “Workflows”), the files contained in the “DERIVATIVE_COPY” representation with the METS file are transferred to the person responsible for the access platform. S/he can then view all of the metadata and data contained in the METS file, and can make a selection for the representation platform. Once the exported representation has been submitted to the person responsible for the access platform, the DIP leaves the digital archive’s

area of responsibility.

Provided formats

Digital archive:

As described in “R7 Data Integrity and Authenticity”, the original file is kept in the digital archive. No normalisation takes place before or during ingest. If an access copy is available at the time of submitting the original file to the archive on the access platform, this access copy will be added to the AIP as a DERIVATIVE_COPY representation.

Presentation platform:

TIB uses common, easily reusable file formats for presentation.

Purely textual collections on the TIB Portal are generally presented as PDF files. Publications that consist of more than one file or that contain non-textual attachments are presented as ZIP files. Videos on the AV-Portal are available in MP4 files for streaming or download.

During the ingest of objects, the digital archive imports existing access copies from access platforms as DERIVATIVE COPIES in the digital archive, and transfers them back to the access platform in the case of a trigger event (see “R12 Workflows”).

Possible evolution of formats

Digital archive:

Technology watch is a key element of preservation management at TIB. For a detailed description, see “R12 Workflows”.

Presentation platform:

The persons responsible for the access platforms decide on which access formats to present. If the access copies on the access platform are threatened by file format obsolescence or other risks, new access copies will be created in an appropriate file format in the digital preservation system via migration in consultation with the person responsible for the access platform. The AIP is versioned accordingly (see “R7 Data integrity and authenticity”). Transfer to the access platform or to the relevant TIB department then occurs by exporting(5) data packages from the archive.

Links:

- (1) TIB Portal: <https://www.tib.eu/en/>
- (2) TIB DP Wiki, Metadata: <https://wiki.tib.eu/confluence/display/lza/Metadata>
- (3) Example of a record in the TIB Portal: <https://doi.org/10.2314/GBV:1028477015>
- (4) Example of a record in the TIB AV-Portal: <https://doi.org/10.5446/37200>
- (5) TIB DP Wiki, Export and exit scenario: <https://wiki.tib.eu/confluence/display/lza/Export+and+exit+scenario>

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:

In cooperation with its partner institutions ZB MED – Information Centre for Life Sciences and ZBW – Leibniz Information Centre for Economics, the Technische Informationsbibliothek (TIB) – German National Library of Science and Technology operates a digital archive.

The Rosetta digital preservation software by the manufacturer Ex Libris is used for this purpose. TIB hosts and administers the DP system in a dedicated data centre which is under TIB's full control, and provides its partners with access to the system.

The digital preservation system is operated in three instances: development system, test system and production system.

Standards and implementation

Reference model:

The digital preservation processes are based on the Reference Model for an Open Archival Information System (OAIS).(1) Implementation at TIB is documented in the process documentation.(2)

The requirements defined by the OAIS model are supported by the technical infrastructure(3) and implemented by organisational or technical processes.

The Rosetta digital preservation software enables the authenticity and integrity of objects to be safeguarded, from ingestion to the output of data via an access interface. The data model enables various representations to be ingested in any desired file formats, and maps the different package structures in the lifecycle of a digital object. The object can be enriched with identifying, descriptive, technical, structural, administrative and event metadata; such enrichment is publicly described. Preservation action is undertaken using the integrated preservation planning module.

TIB operates dedicated archival storage, and implements the requirements applying to preservation of the bitstream and ensuring integrity (see "R9 Documented storage procedures"). Archival storage is divided into different storage sections for the various statuses in the object's lifecycle. The storage sections contain separate storage areas for each institution in the alliance of three German national specialist libraries; objects and their associated metadata are deposited in these storage areas. Storage rules configured in Rosetta define which objects are stored in which storage area.(4) Each institution is only able to view its own objects via the Rosetta application.(5) The storage rules can be adapted and documented in a consortial configuration description, which is adopted by the partner libraries on an annual basis.

Data model:

The general structure and the components of AIPs are publicly described in the Rosetta AIP Data Model v6.0.(6)

The data model is based on PREMIS; an AIP in Rosetta is identical to an intellectual entity (IE) described by an METS file (ie.xml).(7)

Metadata:

Technical, administrative and event metadata are written to the relevant amd sections of the METS file (amd-digiprov, amd-rights, amd-tech, amd-source) in the form of DNX metadata elements.(8) The DNX schema was specified by the software manufacturer Ex Libris and is based on PREMIS, but extends the standard by further elements. DNX documentation is publicly available.(9) Updating of DNX is managed and monitored by the Rosetta user community. Additional metadata standards (MARC, Dublin Core, MODS, EAD, NISO, MIX) can be embedded in the METS file as so-called source metadata.(10)

Preservation management:

The concepts of migration and emulation are used as preservation actions for currently archived objects so as to preserve their interpretability. In the process, TIB is guided by the high-level requirements of preservation planning, as described in the Planets project using Plato.(11)

Preservation management is described in detail in "R10 Preservation plan".

IT security:

TIB is developing an IT security concept based on BSI-Standard 100-2: IT-Grundschutz Methodology(12) (see "R16

Security”).

Access:

TIB’s access platforms can be accessed 24/7. Users are notified of downtimes, e.g. due to maintenance work. Internet access is via DFN; sufficient capacity is available.

Infrastructure development

TIB’s IT department and the Digital Preservation team are responsible for the further development of TIB’s IT infrastructure.

In cooperation with the Digital Preservation team, the IT department further develops the IT systems, and updates the systems and applications.

Rosetta is further developed by the software manufacturer Ex Libris in consultation with Rosetta clients. The roadmap is presented to Rosetta clients by Ex Libris.(13)

The relevant software manufacturers further develop the third-party tools embedded in Rosetta; for example, JHOVE is further developed by the Open Preservation Foundation.

Software inventory

Ex Libris provides a list of the third-party software used.(14) TIB’s IT security concept contains a list of the software and hardware used in the context of digital preservation (see “R16 Security”). TIB uses Open Source tools such as JHOVE, DROID and mediainfo, which are integrated into Rosetta as plug-ins.

Links:

(1) Reference Model for an Open Archival Information System (OAIS). Recommended Practice (2011),

<https://public.ccsds.org/Publications/Archive/650x0m2.pdf/default.aspx>

(2) TIB DP Wiki: <https://wiki.tib.eu/confluence/display/lza/>

(3) TIB DP Wiki, Technical infrastructure: <https://wiki.tib.eu/confluence/display/lza/Technical+infrastructure>

(4) Rosetta System Administration Guide v5-5, Configuring Storage Rules, p. 49-55:

https://knowledge.exlibrisgroup.com/@api/deki/files/70153/Rosetta_System_Administration_Guide.pdf?revision=2

(5) TIB DP Wiki, Archival storage: <https://wiki.tib.eu/confluence/display/lza/Archival+Storage>

(6) Rosetta AIP Data Model v6.0:

https://knowledge.exlibrisgroup.com/@api/deki/files/70155/Rosetta_AIP_Data_Model.pdf?revision=3

(7) Rosetta METS Profile: <http://www.loc.gov/standards/mets/profiles/00000042.xml>

(8) Rosetta METS Profile: <http://www.loc.gov/standards/mets/profiles/00000042.xml> and Rosetta AIP Data Model v6.0:

https://knowledge.exlibrisgroup.com/@api/deki/files/70155/Rosetta_AIP_Data_Model.pdf?revision=3

(9) Rosetta AIP Data Model v6.0:

https://knowledge.exlibrisgroup.com/@api/deki/files/70155/Rosetta_AIP_Data_Model.pdf?revision=3

(10) Ex Libris Tech Blog: Working with Source Metadata in Rosetta:

<https://developers.exlibrisgroup.com/blog/Working-with-Source-Metadata-in-Rosetta>

(11) Planets Preservation Planning Tool: Plato 3.0 User Manual V1.0, p. 12, Figure 1 Overview of PLANETS Preservation Planning workflow: http://www.ifs.tuwien.ac.at/dp/plato/docs/Plato_3_UserManual.pdf

(12) BSI-Standard 100-2: IT-Grundschutz Methodology:

https://www.bsi.bund.de/EN/Publications/BSIStandards/BSIStandards_node.html

(13) Greenberg, Daniel, Weisman, Josh (2018): "Rosetta Product Update", paper presented to IGELU 2018, Prague, 20-23 August 2018: https://knowledge.exlibrisgroup.com/@api/deki/files/67845/IGeLU_2018_-_Rosetta_Product_Update_-_Daniel_Greenberg_Josh_Weisman.pdf?revision=1

(14) Ex Libris Certified Third-Party Software and Security Patch Release Notes: https://knowledge.exlibrisgroup.com/Cross_Product/Knowledge_Articles/Ex_Libris_Certified_Third-Party_Software_and_Security_Patch_Release_Notes

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:

TIB operates the technical infrastructure for digital preservation itself. TIB's IT department and the Digital Preservation team are responsible for this.

IT security plan

TIB has developed an IT security concept based on BSI-Standard 100-2: IT-Grundschatz Methodology.(1) Due to security reasons, this document cannot be made publicly available.

The security concept includes a description of the hardware and software used for digital preservation, a security requirements analysis, and the elements used from the IT-Grundschatz Catalogue. Each element includes the risks associated with it, and measures implemented in the IT security concept.

TIB has appointed a Chief Information Security Officer.(2)

Processes for ensuring IT security

TIB operates its digital archive as a dark archive. It is accessed separately from the digital archive, via separate access platforms. In the case of scheduled and unplanned digital archive downtimes, user access via the presentation platforms remains unaffected, and vice versa.

Downtimes due to technical malfunctions, intent, negligence or a natural disaster affect TIB's and its partners' access to objects, metadata, the digital preservation system and archival storage. Reporting systems established in the IT department determine the occurrence of a crisis situation, and take initial damage control measures.

Processes relating to archival storage are described in detail in "R9 Documented storage procedures".

The concept of roles and rights(3) in Rosetta governs access to archived objects. Only authorised staff members have access.

AIPs can also be accessed without higher-level software.(4)

Links:

(1) BSI-Standard 100-2: IT-Grundschatz Methodology:

https://www.bsi.bund.de/EN/Publications/BSIStandards/BSIStandards_node.html

(2) TIB Contact persons, Chief Information Security Officer :

<https://www.tib.eu/en/service/contact-information-and-contact-persons/contact-persons/>

(3) Rosetta Configuration Guide v6.0, p. 142, Table 22 Rosetta User Roles:

https://knowledge.exlibrisgroup.com/@api/deki/files/70149/Rosetta_Configuration_Guide.pdf?revision=2

(4) TIB DP Wiki, Export and exit scenario: <https://wiki.tib.eu/confluence/display/lza/Export+and+exit+scenario>

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: