**DEUTSCHE INITIATIVE
FÜR NETZWERKINFORMATION E.V.**

DINI Certificate
for Open Access Repositories
and Publication Services
2016

Working Group „Electronic Publishing"

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Content

About DINI

The development of modern information and communication technologies causes a change in the information infrastructures of higher education institutions and other research institutions. This change is a major topic within higher education in Germany, and more than ever requires agreements, cooperation, recommendations, and standards. The German Initiative for Network Information (DINI, Deutsche Initiative für Netzwerkinformation) supports this development.

DINI was founded to advance the improvement of the information and communication services and the necessary development of the information infrastructures at the universities as well as on regional and national levels. Agreements and the distribution of tasks among the infrastructure institutions and facilities can significantly extend the range of information technology and services. This requires the joint development of standards and recommendations.

DINI is an initiative of three organizations:

- AMH (Arbeitsgemeinschaft der Medienzentren der deutschen Hochschulen; Consortium of German University Media Centers),
- dbv (Deutscher Bibliotheksverband Sektion 4: Wissenschaftliche Universalbibliotheken; German Library Association, Section 4: Academic Universal Libraries),
- ZKI (Zentren für Kommunikation und Informationsverarbeitung in Lehre und Forschung e. V.; Association of German University Computing Centers).

DINI has the following goals:

- Publicize and recommend best practices;
- Encourage and support the formulation, application and further development of standards as well as distribute recommendations regarding their application;
- Register and advertise Competence Centers using modern web-based technologies;
- Improve inter-disciplinary exchange through congresses, workshops, expert conferences etc.;
- Advertise new funding programs and encourage new programs.

1   Aims and Content of the DINI Certificate

1.1   Background

Publishing is an important pillar of the advancement of scientific knowledge and of science as a whole. Among its characteristics are

a) the organization of an effective communication between scientists/scholars (between → *authors* and all potential recipients, i.e. securing an adequate dissemination),

b) a high degree of trustworthiness (e.g. with regard to priority, copyrights, authenticity, and quality of content) that is communicated to the → *users* of publications (i.e. the scientists/scholars), and

c) sustainability and verifiability (persistent citations, long-term availability, traceability of the steps on the way to publication).

The present catalog of criteria translates these general expectations of scientific publishing into concrete minimum requirements of **Open Access Repositories and Publication Services**. As platforms for the publication and presentation of scientific and scholarly works these represent important hubs in the scientific communication process. As Open Access services they facilitate the dissemination and democratization of knowledge.

The term Open Access Repositories and Publication Services comprises the following services (see also Definitions in Appendix B):

- Institutional Open Access repositories
- Disciplinary Open Access repositories
- Open Access journals

1.2   Aims and Objectives of the DINI Certificate

The DINI Certificate essentially serves two superior goals:

1. **Improving the publication infrastructure** for electronic publishing;

2. **Strengthen Open Access based forms of publishing**.

The DINI Certificate with its underlying catalog of criteria facilitates reaching these goals in the following manner:

1. The DINI Certificate communicates **benchmarks, guidelines, and best practices;** it contributes to a general understanding of the principles of electronic scientific publishing. Its requirements support the realization of this form of publishing. Through its detailed catalog of requirements and the permanent practical evaluation the DINI Certificate

offers orientation for further discussions and the regular adaptation and editing of requirements.

2. The DINI Certificate **yields effects for → *operators*.** Minimum requirements and recommendations form a catalog of aspects (and consequently a series of steps) that must be considered when creating a → *service* for electronic publishing. As such, it serves to qualify personnel that is responsible for the implementation and operation of a publication service.

3. The DINI Certificate **yields effects for funding bodies** (supporters of information infrastructure, operating institutions). It shows what effort it takes and what measure of professionalism it requires to operate an Open Access Repository and Publication Service, and what it costs; but it also shows what additional benefits a solid, standardized and sustainable service generates. On the other hand funding bodies can use the DINI Certificate as benchmark for the definition of organizational and technical bases for the (Open Access) publication of works.

4. The DINI Certificate **yields effects for scientists/scholars** who use Open Access Repositories and Publication Services as → *authors* and/or publishers. In this sense, the DINI Certificate is an easy to recognize quality seal for customers. It designates publication services as trustworthy partners within their institution or discipline.

5. Naturally, the DINI Certificate causes an actual **improvement of a publication service's quality,** regarding—among others—organizational and technical sustainability, interoperability and transparency. This effect is best seen in services that are already certified. But it can also be observed in the use of the certificate as guideline for the creation of new services, even if no official certification process follows.

6. The DINI Certificate's seal works as a **mark of quality** and encourages use of the services.

1.3   Content of the Certificate

The DINI Certificate's catalog of criteria and the certification process based on it aim at → *Open Access Repositories and Publishing Services* and their inherent core components and processes. Operators and providers of the Open Access Repositories and Publication Services looked at in this document are primarily scientific institutions (universities, universities of applied sciences, research institutions etc.) and organizations (professional associations), but also non-commercial and commercial publishing entities that publish Open Access. Open Access Repositories and Publication Services in this sense must be addressed and de-

scribed with the kinds of publications they are intended for in mind (institutional, disciplinary, and formal aspects). They are characterized by the following core processes:

- Services for authors and publishers/editors;
- Intake, treatment and long-term storage of the documents and metadata of a publication;
- Public availability of the publications, ensuring findability for human and machine-based access (necessary for comprehensive add-on services) as well as the transfer of metadata and where applicable the publication.

The following core components realize or support the abovementioned core processes.

- An underlying **organizational structure** (not element of the certificate)
- The **technical basic system;**
- **User interfaces** (esp. web frontend, → *deposit license*);
- **Technical interfaces** (esp. OAI interface).

Technical and organizational implementations of Open Access Repositories and Publication Services can vary greatly with regard to the allocation of responsibilities and equally with regard to the integration in a larger, comprehensive infrastructure (stand-alone services with an individual installation of a repository or journal-processing software; use of hosting services of an internal or external service provider; integration into other elements of an institutional information infrastructure, e.g. research information systems, campus management, institutional bibliographies). However, basis for a service's evaluation and certification are the relevant processes and components to provide the service. Even if a repository or publication service is technically and organizationally integrated into a comprehensive infrastructure, the certificate can "disassociate" itself from the actual implementation and rely on its catalog of criteria.

1.4 DINI-ready: Modularizing the Certification Process

The DINI Certificate is in principle awarded to individual → *services*. Applicants are in general the operators of an Open Access repository or persons responsible for an Open Access journal.

For a great number of repositories and journals, → *hosting services* provide the technical components; they often do this for more than one service at a time. Consequently, responsibilities and competencies necessary for the creation and operation of an Open Access Repository and Publication Service are located at different institutions. This specialization and centralization will increase in the area of Open Access Repositories and Publication Services.

To better mirror this situation in the future, and to simplify the certification process for both the applicant and the evaluator, the DINI Certificate 2013 introduced an additional tool that is retained in this version of the certificate: **DINI-ready**. Hosting services can have it certified that certain minimum requirements of the DINI Certificate are met for all services operated by this hosting service. This is recorded in a written agreement between DINI and the hosting service. When a publication service that is hosted by a DINI-evaluated service applies for the DINI Certificate, the relevant criteria will be marked as DINI-ready. The Open Access Repositories and Publication Services applying for certification do not have to answer the corresponding questions nor does the evaluator have to evaluate them, if the service is provided by a DINI-ready hosting service.

2 Criteria

The DINI Certificate comprises eight criteria that are described in detail in this section. The criteria are:

Criterion 1 – *Visibility of the Service* (section 2.1)

Criterion 2 – *Policy* (section 2.2)

Criterion 3 – *Support of Authors and Publishers* (section 2.3)

Criterion 4 – *Legal Aspects* (section 2.4)

Criterion 5 – *Information Security* (section 2.5)

Criterion 6 – *Indexing and Interfaces* (section 2.6)

Criterion 7 – *Access Statistics* (section 2.7)

Criterion 8 – *Long-Term Availability* (section 2.8)

The *OAI Interface Guidelines* provided in Appendix A of this document are also part of the DINI Certificate.

Each individual criterion (including those in Appendix A) is split into two sections. In the first section minimum requirements (marked with an **M**) are specified, which must be met to qualify for certification. In addition to these, recommendations (marked with an **R**) are formulated. They serve as an orientation in the sense of best-practice solutions and hint at future tendencies in the development of Open Access Repositories and Publication Services. To qualify for certification with the current DINI Certificate it is not required to fulfill these recommendations. However, as DINI plans to continuously update the certificate it is likely that in later editions of the DINI Certificate some of these recommendations will be minimum requirements.

Each criterion is introduced by a short paragraph that explains the criterion and the reason(s) for its being a requirement. The requirements in the respective criteria are formulated like a check list to allow answering simply with yes or no. A grey backdrop signifies explanations of termini, interpretations or definitions, rationales or examples.

2.1 Visibility of the Service

Greater visibility and a potentially higher recognition are characteristic advantages of electronic publications, especially when published → *Open Access*. To make the most of this potential the entire range of an underlying service's offers must be widely advertised. It has to be visible not only to the immediate and individual user–regardless of whether one wants to read a specific publication or use it in another way, or if one wants to publish a document–but also to external services such as search engines or other referencing services. Besides the necessary technical interfaces (as described in criterion 6 – *Indexing and Interfaces* in section 2.6) the registration of a local service with the pertinent agencies is crucial. These agencies serve as facilitator between different, distributed Open Access repositories and external add-on services.

Minimum Requirements

M.1-1	The entire range of services must be available via a website.
	⇨ This refers to a service's main page from which both publication workflow and access to already published documents are possible.
M.1-2	The service's homepage must be referenced in a central location on the institution's homepage.
	⇨ Potential users must be guided as intuitively as possible from an institution's, a research facility's or a library's central website to the service.
M.1-3	The service is registered and listed on the DINI website as well as in the Bielefeld Academic Search Engine (BASE) with a permanently available base URL.
	⇨ The base URL is the internet address where the service's OAI interface can be reached (see also M.6-6 in section 2.6 – *Indexing and Interfaces*, as well as Appendix A – *OAI Interface Guidelines*).
	⇨ DINI list: http://www.dini.de/wiss-publizieren/repository/
	⇨ BASE: http://www.base-search.net/about/de/suggest.php
M.1-4	Open Access publications are clearly marked on the website.
	⇨ Limiting a search to Open Access publications is possible. Additionally, Open Access publications are clearly designated in result lists e.g. with a logo.
	⇨ The goal is to increase visibility of Open Access publications in publication services such as research information systems and publication databases.

⇨ Should a publication service offer Open Access publications only, this basic characteristic should be made clear on the website. The designation of the individual publication is not required.

Recommendations

R.1-1 The service and where applicable its OAI interface are listed with current data in at least one additional registry.

⇨ Among these are ROAR (http://roar.eprints.org/),
List of registered OAI Data Providers
(http://www.openarchives.org/Register/BrowseSites),
OpenAIRE (https://www.openaire.eu/),
OpenDOAR (http://www.opendoar.org),
DOAJ (http://www.doaj.org/).

R.1-2 All documents published with the service are available via links.

⇨ This facilitates finding a document by search robots (spiders). Documents that can only be found through a search request and are not available via a hyperlink will not be found by search engines.

R.1-3 Links to social media are offered on the landing page of each individual publication.

⇨ Links from social-media services to documents increase their visibility. Services should be considered, which lead to an improved visibility (e.g. Twitter, Mendeley, Facebook, Google+).

R.1-4 The service supports optimization for search engines.

⇨ To increase visibility to search engines the service supports the search engines' and initiatives' means to improve the documents' findability, e.g. support of vocabularies (Schema.org) or guidelines (e.g. *Google Scholar Inclusion Guidelines for Webmasters*).

2.2 Policy

Reliability and transparency play a major role when providing Open Access Repositories and Publication Services. It is crucial for the respective service provider to describe the offered services clearly and make statements on content related criteria and on the technical operations (e.g. on document types, intended users, sustainability of the service) in a publicly available policy. Such a policy represents the service provider's self-commitment towards both potential and actual users of the services.

Minimum Requirements

M.2-1   The provider publicly provides a policy that describes the services.

⇨   The policy – formulated as self-commitment – is to be linked to directly from the service's main page and must be a document in itself.

⇨   The provider in the DINI Certificate's understanding is the provider of the service who holds responsibility for the entire service. For repositories this is the responsible institution, for Open Access journals usually the journal's editor(s).

The policy comprises statements on the following:

M.2-2   A definition of the service provider's rights and obligations.

⇨   This includes a description of the service and statements on for whom and under what conditions it is provided.

M.2-3   A definition of the authors' and publishers' rights and obligations when using the service to publish their documents.

⇨   This includes e.g. a statement on what → *copyrights* the user transfers to the service's provider.

M.2-4   A description of the document types published via the service, and requirements with regard to the documents' content and technical quality.

⇨   This corresponds to a collection mandate. Additional quality criteria referring to content quality (e.g. → *peer review*, author guidelines with Open Access journals) and technical aspects (e.g. file formats) serve primarily as orientation for potential users.

M.2-5   A specification of the minimum timespan that documents published with the service will be available, plus the respective guarantee.

⇨   The specified timespans do not have to be identical for all documents but can depend on document or publication type, or on a document's technical or content quality. However, the chosen value must not fall below five years. (See also Criterion 8 – *Long-Term Availability*, section 2.8)

M.2-6   A statement on long-term archiving of the documents.

⇨   This includes a description of how the long-term archiving of the publications is either planned or ensured, e.g. through the cooperation with another institution.

M.2-7   A statement on the technical operation of the service.

	⇨ This includes information on who is operating the document server technically, and the server's basic performance parameters (especially availability).
M.2-8	A statement on Open Access.
	⇨ This statement must clarify the position of the Document and Publication Service's provider with regard to Open Access as well as point out those parts of the publications that might not be freely available in the sense of Open Access.
	⇨ The majority of the publications provided by the Document and Publication Service must be available in the sense of Open Access.
	⇨ Should the institution providing the service (e.g. a university) have published an → *Open Access Declaration*, the Document and Publication Service's policy is to refer to it.

Recommendations

Additionally, the policy contains statements on the following:

R.2-1	Guidelines and recommendations for authors with regard to *Open Access*.
	⇨ This is especially useful in a policy, if the providing institution recommends or intends a certain practice, e.g. the self-archiving of publications (the "green road"), as published in an institutional Open Access Declaration. Guidelines may vary according to document or publication type.
R.2-2	Naming and description of the tools used to provide the service.
	⇨ This can include e.g. the repository software, upload interfaces, versioning and authentication procedures as well as automated license definitions (for → *primary publications*).

2.3 Support of Authors and Publishers

The aim is to support the entire publication process within service. For those making use of the service to publish (i.e. authors and where applicable publishers), visible and well-structured information that answers the most relevant questions on electronic publishing, are important. The relevant pages must at least be accessible via the service's website and may additionally be available in other formats (e.g. flyers, brochures). The information may include external resources.

Minimum Requirements

M.3-1   A contact and an advisory service are accessible via the website.

⇨   The contacts may be email addresses, phone numbers etc. or contact forms on the web pages. It is not required that all the above listed options are available, but at least one is mandatory.

⇨   → *Open Access journals* must differentiate between contact to the editorial team and to technical support. The latter does not answer questions on the publication process, but questions on the system's availability or other technical issues.

M.3-2   Authors have the option to upload their documents intended for publication directly onto the repository (e.g. via a web form) or use other ways to enter the documents into the repository.

⇨   For Open Access journals this includes the option to submit articles for publication. A support text that explains the necessary steps in the process exists in a central location.

⇨   This requirement is obsolete, where the entire upload process of documents is carried out by the service's provider.

M.3-3   Information on the relevant technical questions on electronic publishing are provided or linked to.

⇨   This includes especially advice on and practical help for the use of applicable file formats and how to enter electronic documents in the publication server.

⇨   Open Access journals provide publication guidelines for the authors.

M.3-4   Relevant information resources with regard to copyright questions (e.g. about a → *secondary publication* as Open Access) are referenced.

⇨   Among these resources is the SHERPA/RoMEO list (http://www.sherpa.ac.uk/romeo).

⇨   For primary publications the deposit license is available for download at a central location before the upload or the submission of publications. If possible, crucial aspects (e.g. licensing and liability) are highlighted.

Recommendations

R.3-1   The SHERPA/RoMEO list API is integrated in the upload interface.

⇨   This allows authors to research the usage and copyrights they still hold after a previous (primary) publication of their docu-

		ments with a publishing house directly during the upload process. For further information see http://www.sherpa.ac.uk/romeo/ api.html.
	⇨	This integration is obsolete for services pertaining to primary publications only.
R.3-2		The embedding of freely available bibliographical sources supports the upload of secondary publications.
	⇨	Among these sources are CrossRef, PubMed, PubMedCentral, arXiv and SPIRES.
R.3-3		To facilitate author identification the entry of an ORCID iD is offered during upload
	⇨	Using the ORCID API allows the reliable correlation of an author and a publication
R.3-4		As an alternative to the independent upload by the authors/publishers a central institution offers an upload service to authors/publishers.
	⇨	This service can be offered by the service's provider (e.g. library, publishing house, editorial board of a journal). It can vary depending on the publication type.
R.3-5		To support publishers of extensive publication projects a workflow system is offered.
	⇨	This encompasses primarily systems facilitating a peer review for electronic journals or scientific conferences.
R.3-6		Support is given with regard to adequate usage and citation of electronic documents.
	⇨	This should include e.g. an explanation that electronic publications should best be cited by using a → *Persistent Identifier*, or how to reference to selected parts of a publication that do not have page numbers. For Open Access journals this should be part of the publication guidelines.
R.3-7		The provider offers information about the Open Researcher and Contributor iD (ORCID) and about other author identification standards.
	⇨	The information can be provided via the website or printed materials (flyer).

⇨   This is advised especially when addressing authors and/or publishers whose native language is not German.

2.4   Legal Aspects

The provider of an Open Access Repository and Publication Service requires author(s) or publisher(s) to grant certain usage rights to offer documents to the public and to facilitate their long-term archiving. This is done in a formal agreement, the so-called → *deposit licence*.

Legal requirements can differ greatly between primary and secondary publications on repositories.

Other than with → *primary publications*, it must be assumed that with → *secondary publications* the copyright holder (German: Urheber) does no longer hold all usage rights. Additionally, many secondary publications are added to repositories without prior direct contact to the rights holder. Generally, the legal basis in these cases is a direct contractual agreement with the publishers or publishing houses as rights holders.

Due to the above, the following requirements differentiate in part between primary and secondary publications. Should a service offer only one of the two types of publication, the respective other's requirements do not have to be met. In principle the following applies: For primary publications the service has to offer a deposit license or a free license has to be available that grants the necessary rights to the provider. For secondary publications the provider can offer a deposit license or refer to another legal basis (e.g. Consortium or National Licenses or the unalienable secondary-publication right (Germany only). The provider is free to regulate additional aspects in the deposit license.

These and other legal aspects that must be observed when operating an Open Access Repository and Publication Service are the subjects of this section / criterion. No statement or remark in this section / criterion is to be understood as legal advice or legally binding information. Bear in mind that they are based on German legislation and regulations only. All service providers are advised to cooperate with their institution's legal department and to seek additional professional advice where legal aspects are concerned.

Minimum Requirements

Minimum Requirements for Primary Publications

The legal relationship between author(s) and publisher(s) (rights holders) and the service provider is regulated in a formal agreement (granting of rights).

M.4-1	The granting of rights and is formalized in a deposit license. The rights holder grants non-exclusive usage rights to the provider.
⇨	A deposit license is not necessary if the publication is under a free license that grants the necessary rights to the provider. These are mostly Open Definition[1]-conforming licenses such as CC BY.
M.4-2	The service provider publishes the deposit license in the country's official language(s) where the service is based.
⇨	The version in the country's official language is the legally binding one. Other language versions are optional.

By agreeing to the deposit license the rights holder grants the following usage rights on a document and its metadata (incl. the abstract(s)) to the service provider for a primary publication.

M.4-3	The right to store the publication electronically and to make the publication available to the public. Where print-on-demand services are offered, the reproduction and dissemination rights must be granted as well.
M.4-4	The right to notify and transfer the document to third parties, e.g. within the framework of national collection mandates, especially for the purpose of long-term archiving.
⇨	In Germany, law mandates that online publications be delivered to the German National Library[2] and /or Regional Libraries.
M.4-5	The right to copy and to convert the document for archiving purposes into additional, different electronic or physical formats while retaining the content's integrity.
⇨	A conversion may e.g. become necessary should the used data/file formats become obsolete and current presentation/viewing software be unable to present the document correctly.

The deposit license also regulates questions concerning liability and third-party rights. In detail these are:

M.4-6	The provider allows the rights holder the selection of a free license. When registering a document the author has the option of select-

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[1] See http://opendefinition.org/licenses/.

[2] See *Gesetz über die Deutsche Nationalbibliothek (DNBG)*, cf. http://www.dnb.de/DE/Erwerbung/Pflichtablieferung/pflichtablieferung_node.html.

ing a license that defines the rights of end users. A preselection takes standardized license models into account; licenses conforming to the Open Definition[3] are encouraged.

⇨ An Open Definition-conforming license is CC BY.

Minimum Requirements for Secondary Publications

M.4-7   The rights holder expresses in a documentable and verifiable manner his intention to disseminate an article as a secondary publication using this service. As an alternative, the providers offers a different permission to secondary publish.

⇨ The mandate or the agreement to a secondary publication should be in a form that others can comprehend and whose integrity the service provider can verify with reasonable effort (e.g. through a deposit license, authentication in the repository, and agreement to grant rights, documented email exchange).

⇨ Permission can also be granted through National or Consortium Licenses, through sublicensing agreements with the publisher, or through a public license that allow a secondary publication.

⇨ Additionally since 2014, § 28 Abs 4 UrhG allows the secondary publication if abiding by the legal provisions.

Minimum Requirements for both Primary and Secondary Publications

M.4-8   The rights holder assures the service provider that no third party's rights will be violated by publishing the document or parts thereof. In case that after a publication, third-party rights are claimed, the author underwrites to immediately inform the provider.

⇨ Third-party claims may refer to used content (e.g. photographs) or involved persons (e.g. co-authors, co-publishers, publishing houses, funding agencies).

M.4-9   An imprint is published on the website that complies with the applicable laws.

⇨ In Germany these are among others regulations in the Telemediengesetz (TMG) and in state laws.

M.4-10   The service provider documents the legal attributes of the published documents in their resp. metadata to make them accessible for machine-reading.

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[3] See http://opendefinition.org/licenses/.

	⇨ Information on the conditions under which a document may be used by third parties is stored with each published document.
	⇨ Machine-readable information is in particular provided via the OAI interface. Additionally, machine-readable information on the rights situation is provided via the web frontend, e.g. as meta-tags in the HTML header or RDFa elements in the HTML body.
	⇨ Standardized URLs are used to mark the legal provisions. For documents under a free license the resp. license's URL is listed in the OAI metadata. For other documents URLs of the *Rights Statements[4]* vocabulary are used.
M.4-11	The legal attributes of the documents are available in machine-readable form on the web frontend to make them accessible for end users.
	⇨ A description of the conditions under which third parties may use a document is given for every document.
	⇨ Should a document be under a free license, a link to the license text is offered.

Recommendations

Recommendations for secondary publications

R.4-1	The service provider documents the results of the clarification of copyright issues.
	⇨ This refers to e.g. a publishing house's permission, a clause in the author-publisher contract, or another legal basis which makes it clear that a parallel publication is allowed. In case of a conflict this allows to verify the legal validity of the secondary publication.
R.4-2	The author grants the service provider the right to copy and to convert the document for archiving purposes into additional different electronic or physical formats while retaining the content's integrity.
	⇨ A conversion may e.g. become necessary should the used data/file formats become obsolete and current presentation software be unable to present the files correctly.

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[4] See http://rightsstatements.org/vocab/1.0/.

Additional recommendations for both primary and secondary publications

> **R.4-3** If a deposit license is used to grant rights, it should be available in English.
>
>> ⇨ If English is not the official language, the English version serves as orientation; the version in the official language is the legally binding document.

> **R.4-4** The service provider is allowed to transfer rights granted in the deposit license in part or in total to third parties and to transfer non-exclusive copyrights to other repositories without the specific consent of authors.
>
>> ⇨ This is necessary e.g. in case the provider ceases the provision of (parts of) the service or changes its legal status, while still assuring open public access to the documents through a third party, e.g. an institution specializing in long-term archiving.

> **R.4-5** The service provider licenses the service's metadata under CC0[5].
>
>> ⇨ This free license allows the exchange of metadata between different services and service providers. This is a pre-condition for the development of add-on services that will enhance the attractiveness and visibility of the services.

2.5 Information Security

To guarantee a reliable → *service* that satisfies the general requirements of scientific publishing the underlying technical system and the organizational structure must fulfill basic criteria with regard to information security. These are specified in the *Common Criteria* as published in the international standard ISO/IEC 15408. Main contents are fail safety, operational safety, and trustworthiness of the technical infrastructure, as well as availability, integrity and authenticity of the published documents. The service must be secure against attacks, misuse, operating errors, and technical malfunctions and failures. To guarantee this, organizational and technical measures must be taken.

Minimum Requirements

Technical Basis

> **M.5-1** A security concept exists for the technical system that is the basis for the service.

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[5] See http://creativecommons.org/publicdomain/zero/1.0/deed.de.

	⇨ This concept identifies and qualifies possible risks and describes technical, organizational and personnel-related provisions to adequately counter these risks. A central hotline and all contacts with their respective responsibilities for the system's security are named.
M.5-2	An operational concept exists that includes regulations on the systems maintenance.
	⇨ The operational concept contains descriptions of all tasks, actions and processes necessary to operate the system, as well as the corresponding roles and interfaces.
M.5-3	A written documentation exists on the technical system and all of its components that are necessary for the operation of the system.
	⇨ This documentation does not have to be published (at least not in its entirety). Security-relevant elements are for internal use only.
M.5-4	All data and documents are regularly saved in a back-up procedure.
	⇨ At what interval back-ups are run depends to a great extent on how often changes are made in the data, i.e. how often new publications are uploaded. It is advised to run a daily and a parallel weekly back-up procedure.
M.5-5	Autonomous software regularly monitors the availability of the servers that are necessary for the service's operation.
	⇨ If operation depends on other additional services (e.g. authentication via LDAP) these services should be monitored as well.

Persistent Identifiers and Versioning

M.5-6	Documents uploaded into the publication service will not be altered.
	⇨ Changes on the content of published documents will be considered additional editions that do not overwrite or render inaccessible earlier editions.
M.5-7	Every document (and every edition/version) uploaded into and published by the publication service is assigned a → *Persistent Identifier* (PI).
	⇨ Available PI systems are e.g. URN and DOI.
M.5-8	Persistent Identifiers are indicated on the service's web pages and in the exported metadata as primary identifiers in the form of an operable URL.

	⇨	This requires a resolving service's URL to be added to the Persistent Identifier. As for the metadata export see also criterion 6 – *Indexing and Interfaces*, section 2.6, minimum requirement M.6-6.
	⇨	The persistent identifier is made available in man and machine-readable form on the website and in machine-readable form via OAI (Dublin Core element *identifier*).

M.5-9	Deletion of documents is done only as an exception and is publicly documented under the persistent URL of the original document.
	⇨ This could be the case should the publication be a criminal offense.
	⇨ In all cases, withdrawal or locking of the document is to be preferred over deletion.
	⇨ It is advised not to delete duplicates but to redirect one document's URL to the other's.

Encryption

M.5-10	Data exchange between webserver and user during login and the publication process is through the use of current TSL technologies, e.g. SSL.
	⇨ This requirement is obsolete, should the service not offer the option to upload documents (see criterion 3 – *Support of Authors and Publishers*, section 2.3, minimum requirement M.3-2)

Recommendations

R.5-1	The individual document's integrity is regularly verified through internal processes using a hash value.

R.5-2	Upon publication of a new version of a document, the older version is marked as not current and it links to the new version.
	⇨ This information is made available in man and machine-readable form on the website and in machine-readable form via OAI (Dublin Core element *relation*).

2.6 Indexing and Interfaces

To find a document that is published electronically outside the local system it is crucial that it is indexed with descriptive metadata and that these metadata are available for machine-based processing. At the core of this are reference and other additional services that third parties provide by applying the data and doc-

uments provided by the service. Additionally, local search options and services are integral parts of Open Access Repositories and Publication Services.

Minimum Requirements

M.6-1	A written policy containing the indexing regulations for documents exists and is available online to users (authors, publishers and readers).	
	⇨ It is e.g. of relevance who does the indexing—library personnel or the authors—or if it is done automatically.	
	⇨ These regulations may vary depending on the publication type.	
M.6-2	Every document is represented in an indexed form that employs the means and methods of the Dublin Core element set.	
	⇨ It is not mandatory that these metadata are also stored internally in this format.	
M.6-3	All documents are classified using the → *Dewey Decimal Classification* (DDC) at least in accordance with the → *German National Bibliography's subject headings*.	
	⇨ See http://www.ddc-deutsch.de and section A.2.2.	
M.6-4	All documents are assigned document or publication type descriptions following DINI's recommendations in Common Vocabulary for Publication and Document Types (Gemeinsames Vokabular für Publikations- und Dokumenttypen).	
	⇨ See http://nbn-resolving.de/urn:nbn:de:kobv:11-100109998 and section A.2.3.	
M.6-5	A web interface exists allowing users to access all published documents and their respective metadata.	
	⇨ This interface allows access to the entire holdings of a service.	
M.6-6	An OAI interface is integrated that complies with the requirements of OAI PMH 2.0 and of the DINI OAI Guidelines.	
	⇨ For the DINI OAI Guidelines see Appendix A of this document.	
M.6-7	A direct export of individual metadata records resp. of search results in at least one suitable data format is available on the website.	
	⇨ Among others, these are BibTex[6], EndNote[7] or micro formats such as COinS[8], This function serves the seamless data transfer	

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[6] See http://www.bibtex.org/.

into reference-management programs such as Citavi[9] or Zotero[10].

Recommendations

R.6-1	In addition to the German National Bibliography's subject headings a verbal (uncontrolled keywords) or an (inter or intra-displinary) classificatory subject indexing is done.	
	⇨ Examples are GND[11] (especially subject-specific keywords), LoC Subject Headings[12], CCS[13], MSC[14] und PACS[15]. ⇨ Authors may assign keywords themselves.	
R.6-2	In addition, English keywords are assigned.	
	⇨ Authors may assign keywords themselves.	
R.6-3	Additional short summaries or abstracts in English and German are provided.	
	⇨ These may be requested from the authors or extracted from the full texts.	
R.6-4	The metadata (e.g. of parts of the holdings) are provided in additional metadata formats and are available via the OAI interface.	
	⇨ These may be subject or publication-type specific metadata formats for relevant technical or archiving information that facilitate additional services by third parties: One of these is the XMetaDissPlus[16] for the delivery of metadata to the German National Library.	
R.6-5	Metadata are made publicly available via additional interfaces.	

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[7] See http://www.endnote.com/.

[8] See http://en.wikipedia.org/wiki/COinS.

[9] See http://www.citavi.com/.

[10] See http://www.zotero.org/.

[11] See http://www.dnb.de/DE/Standardisierung/GND/gnd_node.html.

[12] See http://de.wikipedia.org/wiki/Library_of_Congress_Subject_Headings.

[13] See http://de.wikipedia.org/wiki/CR_Classification.

[14] See http://de.wikipedia.org/wiki/Mathematics_Subject_Classification.

[15] See http://publish.aps.org/PACS.

[16] See http://www.dnb.de/DE/Standardisierung/Metadaten/xMetadissPlus.html.

	⇨	E.g. SRU/SRW[17] or specified APIs.
R.6-6		Authors' names are linked to norm data..
	⇨	Links should be offered to e.g. the Gemeinsame Normdatei (GND)[18] and ORCID[19] to facilitate author identification.
R.6-7		For the (semi-)automated import of data into the publication service a SWORD API is used.
	⇨	SWORD[20] is mostly used to transfer publication data from publishers to repositories for secondary publications.

2.7 Access Statistics

Server-based access statistics can be the qualitative, quantitative or technological basis for the evaluation of a service. On the level of individual objects (e.g. a document) usage information on electronic documents can reflect a document's impact—be it as an original usage impact that may be taken as complimentary to other impact concepts (e.g. a citation) or as a predictor for citations. In addition to this, object-related usage information may in the future help detect usage cycles of scientific information—even broken down to different disciplines—and enrich scientometric analyses.

Minimum Requirements

M.7-1		The service keeps a consistent access log in accordance with the legal regulations.
	⇨	This is usually a web-server log.
M.7-2		Web-server logs are anonymized or pseudonymized for long-term storage.
	⇨	This is mandated in the legal regulations in §15;3 in combination with §13;1 (German) Telemedia law.
M.7-3		Automatic access is not taken into account for the usage statistics on the individual documents or data.
	⇨	This can be done e.g. by evaluating the web-server log's user-agent field, by comparing accesses to the robots.txt, by using lists of known robots, or by employing heuristic methods.

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[17] See http://de.wikipedia.org/wiki/Search/Retrieve_via_URL.

[18] See http://www.dnb.de/gnd.

[19] See http://orcid.org/.

[20] See https://en.wikipedia.org/wiki/SWORD_%28protocol%29.

	$\Rightarrow$	This is only a requirement, if the statistics are published.
M.7-4		A publicly available documentation exists describing the criteria and standards applied to create the statistics.
	$\Rightarrow$	Among these standards are COUNTER[21] and LogEC[22]. If access values are published that were not determined by any of these standards, the documentation must contain a paragraph stating that these values are not comparable to those of other services. This is especially the case, if access values per document are listed.
	$\Rightarrow$	This is only a requirement, if the statistics are published.

Recommendations

R.7-1		Access statistics are listed with every document as dynamic metadata and are publicly available.
	$\Rightarrow$	Access values (e.g. per month) could be linked to from a document's start page.
R.7-2		Access to documents is counted according to one of the standards recommended by DINI.
	$\Rightarrow$	Among these standards are COUNTER and LogEC. See also the German Science Foundation (DFG) project Open Access Statistics (OA-S) and DINI ePub publication *Standaridzed Usage Statistics for Open Access Repositories and Publication Services* (http://nbn-resolving.de/urn:nbn:de:kobv:11-100212755).
R.7-3		Data transfer to a service provider as developed in the OA-S project are supported.
	$\Rightarrow$	Usage data from the web server log are edited and made available to external service providers via an OAI interface to calculate the access statistics using a standardized method. See http://www.dini.de/projekte/oa-statistik/.
R.7-4		Alternative metrics (aka altmetrics) on the documents are provided.
	$\Rightarrow$	Third-party interfaces (e.g. http://altmetric.org, http://plumanalytics.com – some services not free of charge) can show alternative metrics on documents.

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[21] COUNTER = Counting Online Usage of Electronic Resources, see http://www.projectcounter.org/.

[22] See http://logec.repec.org/.

2.8   Long-Term Availability

This certificate focuses on Open Access Repositories and Publication Services and not on digital long-term archives as dealt with in the DIN 31644 "Information and Documentation Criteria for Trustworthy Digital Long-Term Archives". However, certain questions on long-term archiving are also valid for services considered in this document, especially since the published documents are often transferred to a long term archiving institution, which requires adequate pre-conditions be met.

Minimum Requirements

M.8-1	A minimum time span of no less than five years is defined for the availability of documents and their resp. metadata published through the service.
	⇨ This definition must be element of the Document and Publication Service's policy (see criterion 2 – *Policy*, section 2.2, minimum requirement M.2-5). The predefined availability minima may vary for different publication types.
M.8-2	The original files and possible additional archival copies are free of any technical protection.
	⇨ This includes especially mechanisms of a Digital Rights Management (DRM)[23], password protection, or limitations regarding the use of the document (copy and paste, printing). Protective measures are barred, as they might interfere with long-term archiving strategies (e.g. migration, emulation).
M.8-3	Regulations exist for the deletion of documents.
	⇨ This regulation includes the conditions and the procedures for the deletion of documents, and on the data that might have to be stored beyond a date of deletion. This definition must be element of the service's policy (see criterion 2 – *Policy*, section 2.2).

Recommendations

R.8-1	Long-term availability of the documents is ensured.
	⇨ To ensure this, the service provider cooperates with a DIN 31664-certified archiving institution or is itself certified according to this norm.

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[23] See http://de.wikipedia.org/wiki/Digitale_Rechteverwaltung.

R.8-2	For the documents' storage, open file formats are used that facilitate long-term availability.
	⇨ This includes PDF/A, ODF, TXT.

Appendix A OAI Interface Guidelines

Appendix A contains the requirements for the OAI interface with regard to the DINI Certificate 2016. Just as the eight main criteria the minimum requirements comprised in this section have to be fulfilled by an Open Access Repository and Publication Service to be certified (see also criterion 6 – *Indexing and Interfaces*, minimum requirement M.6-6).

Since its publication in 2001, the so-called OAI protocol has become the standard for machine-based and asynchronous exchange of bibliographical metadata between repositories and providers of comprehensive services. In this context, the OAI interface is identified as a functional software component that acts as a → *data provider* in the sense of the protocol, i.e. deliver metadata to → *service providers*' requests that are according to protocol. Such an OAI interface is part of the basic components of many repository software solutions[24] and many other systems that administrate metadata[25].

With regard to the requirements that have to be met the OAI protocol offers interoperability at a low level. This has led to a wide dissemination and general acceptance of the protocol in a relatively short time. On the other hand it reduces the service providers' possibilities as the protocol specifications say little about structure and quality of the metadata.

The individual metadata sets must only be made available in the standard format Dublin Core Simple whose specification allows that each of the fifteen metadata elements is optional and may be omitted, but may also be used any number of times. For the elements' inner structures[26] some recommendations exist, but these are not binding. And while the OAI protocol includes a mechanism for the logical separation or structuring of a data provider's data (the so-called *sets*), that permits the selective harvesting, the concrete definition and naming of these sets is up to the data providers' operators.

To build a high-quality service that is based on utilizing data that were harvested using the OAI protocol[27] additional specifications are called for that will fill the gaps (intentionally) left open by the OAI protocol's specifications. The specifications (see below) refer mostly to a definition of the set structure and the individ-

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[24] Examples are DSpace (http://www.dspace.org/), ePrints (http://www.eprints.org/), MyCoRe (http://www.mycore.de/) and OPUS (http://www.kobv.de/opus4/).

[25] Among these are library software, or systems for the realization of electronic journals such as e.g. the Open Journal Systems (OJS, http://pkp.sfu.ca/ojs/).

[26] E.g. the formatting of dates or the coding of languages.

[27] E.g. comprehensive indexing services with search and browsing functions.

ual metadata element's content in Dublin Core format. Additionally, some requirements are listed that are taken from the protocol's specifications.

Similar to the DINI Certificate's main criteria, the OAI Guidelines list minimum requirements and additional recommendations that the data provider of a service is not required fulfilling to be DINI-certified. However, these recommendations (marked in each section) mirror current best-practice solutions. They are recommended for application in the OAI interface to optimize the metadata's quality and re-use.

These OAI Guidelines follow and are compatible to the guidelines developed in the EU projects DRIVER and Open AIRE[28]. The guidelines[29] like the entire DINI Certificate focus on text-oriented documents and only consider the metadata format Dublin Core Simple (oai_dc).

A.1 Protocol Conformity

Prerequisite for a functioning data exchange via OAI is a protocol-conform interface, i.e. it complies with the specifications of the OAI Protocol for Metadata Harvesting (OAI PMH) in its current version 2.0[30]. Different ways exist to automatically check existing OAI interfaces' protocol conformity[31]. This verification is done especially if an OAI interface is officially registered as a data provider with the OAI.

The list below emphasizes a few requirements that apply to every OAI interface that meets the protocol specifications, and that require special attention as problems can occur in their implementation.

Minimum Requirements

> M.A.1-1 The OAI interface conforms to the protocol specification version 2.0.
>
> > ⇨ All other minimum requirements in this section follow from this.

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[28] See https://www.openaire.eu/.

[29] For the current version 3.0 see https://guidelines.openaire.eu/en/latest/.

[30] For the entire specification see http://www.openarchives.org/OAI/openarchivesprotocol.html.

[31] These are among others the Repository Explorer (http://re.cs.uct.ac.za/) or the DINI Validator (http://oanet.cms.hu-berlin.de/validator/pages/validation_dini.xhtml). The latter checks not only the conformity with the OAI Specification but also with the OAI Guidelines of the DINI Certificate.

M.A.1-2 The OAI interface is persistently available under the registered base URL and offers adequate performance.

⇨ This is a prerequisite for a reliable use of the interface by the service providers, and it ensures the minimization of communication problems, specifically aborted harvesting processes.

M.A.1-3 All replies by the OAI interface are well formed in the XML sense and valid with regard to the XML schema defined in the OAI specification and other XML schemata used for metadata formats.

⇨ Difficulties arise regularly with the character encoding and special characters within the metadata elements as well as with error messages in the XML stream sent by the database or the application.

M.A.1-4 The OAI interface supports incremental harvesting correctly.

⇨ Pre-condition for this is that in every record the date of creation or alteration of the metadata is entered in the timestamp element and not e.g. the date of publication of the described document.

⇨ This allows service providers regular updates of their data without having to harvest all metadata records. For this the data provider must support the parameters *from* and *until*'' for the OAI requests *ListRecords* and *ListIdentifiers* and deliver the correct subsets of the data with a granularity of at least the day (YYYY-MM-DD).

M.A.1-5 The OAI interface uses set information in a consistent form.

⇨ This includes especially that all sets that have records assigned to them are delivered upon the *ListSets* request, and that all records that reply to *ListRecords* and *ListIdentifiers* requests qualified by the *set* parameter belong to the respective data set according to their header information.

Recommendations

R.A.1-1 The operator checks the OAI interface in regular intervals with manual tests and validates it with automatic tools.

⇨ This ensures early identification of internal problems of the OAI interface.

⇨ See footnote 31.

R.A.1-2 When making considerable changes to the OAI interface information is given to the registries where the OAI interface or the service is registered.

⇨ This allows service providers to react adequately to changes. Relevant alterations in the sense of this recommendation are version changes, change of the base URL, or migrations to new software for the service.

⇨ For the relevant registries see criterion 1 –

⇨ *Visibility of the* Service, section 0.

R.A.1-3 The reply to the request *Identify* offers extensive information on the Document and Publication Service.

⇨ This includes especially an administrator's valid email address in the element *adminEmail* and a short description of the service in the element *description*.

R.A.1-4 The element *provenance* is used in the *About* container for the individual metadata records that are delivered upon the *ListRecords* or the *GetRecord* requests.

⇨ Additional information on the metadata's sources can be provided in this container. For more information see http://www.openarchives.org/OAI/2.0/guidelines-provenance.htm.

R.A.1-5 The descriptive information in the OAI responses is in English.

⇨ This includes e.g. the elements in the response to the *Identify* request and the set descriptions with the element *setName* in the response to the *ListSets* request.

A.2 OAI PMH: Extended Requirements

The additional requirements described in this section refer mostly to the set structure that the delivered metadata are placed in (sections A.2.1 to A.2.4). The structure serves to provide additional standardized information on the documents and to allow selective search queries. This facilitates a better interoperability between services and the providers of comprehensive services that are based on them. Further sections contain recommendations on how to deal with deleted documents and records (A.2.5), and on flow control (A.2.6).

A.2.1 Open Access Document Set

Services not only publish Open Access documents but also documents that are only available e.g. to a user group within an institution. For providers of addi-

tional services it is important to discern and select between Open Access and non-OA documents. To facilitate this the respective status should be identified in the metadata.

Minimum Requirement

M.A.2-1   A *setSpec* set exists that states 'open_access' and contains all metadata records of Open Access documents, i.e. the full text is freely available via a hyperlink.

⇨   Services that offer only Open Access publications must also meet this requirement. In this case the set contains all metadata records.

A.2.2   Sets for DDC Groups

To enable a rough disciplinary grouping of metadata sets and the respective documents, in Germany the German National Bibliography's subject groups as used by the German National Library have become the norm. They are based on the Dewey Decimal Classification (DDC) and in principle use its first two items[32]. To allow an external service provider that uses the OAI protocol a pre-selection by subject it is necessary that the subject groups that the service assigned to the documents are also assigned to the OAI interface's set structure.

Minimum Requirement

M.A.2-2   A structure exists in accordance with Table 1, and all metadata records—like the documents—are assigned a *setSpec* according to the table used.

⇨   It is possible to assign each record to more than one DDC class.

Table 1: Name and description of the sets for the subject structure

setSpec	setName	German Description
ddc:000	Generalities, science	Allgemeines, Wissenschaft
ddc:004	Data processing, computer science	Informatik
ddc:010	Bibliography	Bibliografien
ddc:020	Library & information sciences	Bibliotheks- und Informationswissenschaft
ddc:030	General encyclopedic works	Enzyklopädien
ddc:050	General serials & their indexes	Zeitschriften, fortlaufende Sammelwerke
ddc:060	General organization & museology	Organisationen, Museumswissenschaft

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[32] See http://www.ddc-deutsch.de/Subsites/ddcdeutsch/DE/Anwendung/ Nationalbibliografie/nationalbibliografie_node.html.

setSpec	setName	German Description
ddc:070	News media, journalism, publishing	Nachrichtenmedien, Journalismus, Verlagswesen
ddc:080	General collections	Allgemeine Sammelwerke
ddc:090	Manuscripts & rare books	Handschriften, seltene Bücher
ddc:100	Philosophy	Philosophie
ddc:130	Paranormal phenomena	Parapsychologie, Okkultismus
ddc:150	Psychology	Psychologie
ddc:200	Religion	Religion, Religionsphilosophie
ddc:220	Bible	Bibel
ddc:230	Christian theology	Theologie, Christentum
ddc:290	Other & comparative religions	Andere Religionen
ddc:300	Social sciences	Sozialwissenschaften, Soziologie, Anthropologie
ddc:310	General statistics	Allgemeine Statistiken
ddc:320	Political science	Politik
ddc:330	Economics	Wirtschaft
ddc:333.7	Natural resources, energy and environment	Natürliche Ressourcen, Energie und Umwelt
ddc:340	Law	Recht
ddc:350	Public administration	Öffentliche Verwaltung
ddc:355	Military science	Militär
ddc:360	Social services, association	Soziale Probleme, Sozialdienste, Versicherungen
ddc:370	Education	Erziehung, Schul- und Bildungswesen
ddc:380	Commerce, communications, transport	Handel, Kommunikation, Verkehr
ddc:390	Customs, etiquette, folklore	Bräuche, Etikette, Folklore
ddc:400	Language, linguistics	Sprache, Linguistik
ddc:420	English	Englisch
ddc:430	Germanic	Deutsch
ddc:439	Other Germanic languages	Andere germanische Sprachen
ddc:440	Romance languages French	Französisch, romanische Sprachen allgemein
ddc:450	Italian, Romanian, Rhaeto-Romantic	Italienisch, Rumänisch, Rätoromanisch
ddc:460	Spanish & Portuguese languages	Spanisch, Portugiesisch
ddc:470	Italic Latin	Latein
ddc:480	Hellenic languages Classical Greek	Griechisch
ddc:490	Other languages	Andere Sprachen
ddc:491.8	Slavic languages	Slawische Sprachen
ddc:500	Natural sciences & mathematics	Naturwissenschaften
ddc:510	Mathematics	Mathematik

setSpec	setName	German Description
ddc:520	Astronomy & allied sciences	Astronomie, Kartografie
ddc:530	Physics	Physik
ddc:540	Chemistry & allied sciences	Chemie
ddc:550	Earth sciences	Geowissenschaften
ddc:560	Paleontology, paleozoology	Paläontologie
ddc:570	Life sciences	Biowissenschaften, Biologie
ddc:580	Botanical sciences	Pflanzen (Botanik)
ddc:590	Zoological sciences	Tiere (Zoologie)
ddc:600	Technology (Applied sciences)	Technik
ddc:610	Medical sciences, medicine	Medizin, Gesundheit
ddc:620	Engineering & allied operations	Ingenieurwissenschaften und Maschinenbau
ddc:621.3	Electric engineering	Elektrotechnik, Elektronik
ddc:624	Civil engineering	Ingenieurbau und Umwelttechnik
ddc:630	Agriculture	Landwirtschaft, Veterinärmedizin
ddc:640	Home economics & family living	Hauswirtschaft und Familienleben
ddc:650	Management & auxiliary services	Management
ddc:660	Chemical engineering	Technische Chemie
ddc:670	Manufacturing	Industrielle und handwerkliche Fertigung
ddc:690	Buildings	Hausbau, Bauhandwerk
ddc:700	The arts	Künste, Bildende Kunst allgemein
ddc:710	Civic & landscape art	Landschaftsgestaltung, Raumplanung
ddc:720	Architecture	Architektur
ddc:730	Plastic arts, sculpture	Plastik, Numismatik, Keramik, Metallkunst
ddc:740	Drawing & decorative arts	Grafik, angewandte Kunst
ddc:741.5	Comics, cartoons	Comics, Cartoons, Karikaturen
ddc:750	Painting & paintings	Malerei
ddc:760	Graphic arts, printmaking & prints	Druckgrafik, Drucke
ddc:770	Photography & photographs	Fotografie, Video, Computerkunst
ddc:780	Music	Musik
ddc:790	Recreational & performing arts	Freizeitgestaltung, Darstellende Kunst
ddc:791	Public performances	Öffentliche Darbietungen, Film, Rundfunk
ddc:792	Stage presentations	Theater, Tanz
ddc:796	Indoor games & amusements	Spiel
ddc:796	Athletic & outdoor sports & games	Sport
ddc:800	Literature & rhetoric	Literatur, Rhetorik, Literaturwissenschaft
ddc:810	American literature in English	Englische Literatur Amerikas

setSpec	setName	German Description
ddc:820	English & Old English literatures	Englische Literatur
ddc:830	Literatures of Germanic languages	Deutsche Literatur
ddc:839	Other Germanic literatures	Literatur in anderen germanische Sprachen
ddc:840	Literatures of Romance languages	Französische Literatur
ddc:850	Italian, Romanian, Rhaeto-Romanic literatures	Italienische, rumänische, rätoromanische Literatur
ddc:860	Spanish & Portuguese literatures	Spanische und portugiesische Literatur
ddc:870	Italic literatures Latin	Lateinische Literatur
ddc:880	Hellenic literatures Classical Greek	Griechische Literatur
ddc:890	Literatures of other languages	Literatur in anderen Sprachen
ddc:891.8	Slavic literatures	Slawische Literatur
ddc:900	Geography & history	Geschichte
ddc:910	Geography & travel	Geografie, Reisen
ddc:914.3	Geography & travel Germany	Geografie, Reisen (Deutschland)
ddc:920	Biography, genealogy, insignia	Biografie, Genealogie, Heraldik
ddc:930	History of the ancient world	Alte Geschichte, Archäologie
ddc:940	General history of Europe	Geschichte Europas
ddc:943	General history of Europe Central Europe Germany	Geschichte Deutschlands
ddc:950	General history of Asia Far East	Geschichte Asiens
ddc:960	General history of Africa	Geschichte Afrikas
ddc:970	General history of North America	Geschichte Nordamerikas
ddc:980	General history of South America	Geschichte Südamerikas
ddc:990	General history of other areas	Geschichte der übrigen Welt

A.2.3   Document and Publication Type Set

Document type and publication type are a document's important metadata. For a service provider to request certain document types (e.g. dissertations) data providers must provide for a corresponding set structure. Basis of this set structure is the common vocabulary developed for the metadata format XMetaDissPlus and for the DINI Certificate. It is published in the DINI Recommendation *Gemeinsames Vokabular für Publikations- und Dokumenttypen*[33].

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[33] See http://nbn-resolving.de/urn:nbn:de:kobv:11-100109998. The heterogeneous use of capital and normal letters in the set names (setSpec) results from the different sources of the vocabulary (among others the *Dublin Core Type Vocabulary* and *Publication Type Vocabulary* of the DRIVER Guidelines) and was retained for compatibility reasons.

Minimum Requirement

> **M.A.2-3** A structure exists in accordance with Table 2, and all metadata records are assigned a *setSpec* according to the document and publication types.
>
> ⇨ As stated in the DINI Recommendation *Gemeinsames Vokabular für Publikations- und Dokumenttypen* assigning a document to more than one document or publication type is recommended (see below Example 1).

Table 2: Name and description of the sets for the formal structure

setSpec	setName	German Description
doc-type:preprint	Preprint	Preprint
doc-type:workingPaper	WorkingPaper	Arbeitspapier
doc-type:article	Article	Wissenschaftlicher Artikel
doc-type: contributionToPeriodical	ContributionTo Periodical	Beitrag zu einem Periodikum
doc-type:PeriodicalPart	PeriodicalPart	Teil eines Periodikums
doc-type:Periodical	Periodical	Periodikum
doc-type:book	Book	Buch, Monografie
doc-type:bookPart	BookPart	Teil eines Buches oder einer Monografie
doc-type:Manuscript	Manuscript	Handschrift oder Manuskript
doc-type:StudyThesis	StudyThesis	Studienarbeit
doc-type:bachelorThesis	BachelorThesis	Abschlussarbeit (Bachelor)
doc-type:masterThesis	MasterThesis	Abschlussarbeit (Master)
doc-type:doctoralThesis	DoctoralThesis	Dissertation oder Habilitation
doc-type: conferenceObject	ConferenceObject	Konferenzveröffentlichung
doc-type:lecture	Lecture	Vorlesung
doc-type:review	Review	Rezension
doc-type:annotation	Annotation	Entscheidungs- oder Urteilsanmerkung
doc-type:patent	Patent	Patent, Norm, Standard
doc-type:report	Report	Verschiedenartige Texte
doc-type:MusicalNotation	MusicalNotation	Noten (Musik)
doc-type:Sound	Sound	Ton
doc-type:Image	Image	Bild
doc-type:MovingImage	MovingImage	Bewegte Bilder
doc-type:StillImage	StillImage	Einzelbild
doc-type:CourseMaterial	CourseMaterial	Lehrmaterial
doc-type:Website	Website	Website
doc-type:Software	Software	Software, Programme
doc-type: CarthographicMaterial	Carthographic Material	Kartographisches Material

setSpec	setName	German Description
doc-type:ResearchData	ResearchData	Forschungsdaten
doc-type:Other	Other	Verschiedenartige Ressourcen, nicht textgeprägt
doc-type:Text	Text	Text

A.2.4 Publication Status Set

Open Access Repositories and Publication Services may contain documents at various different stages of a publication process. A correlation may exist between this status and a document's quality. Consequently, a rough identification of a document's status or version is desirable. As in different fields of science different methods of quality evaluation and quality-assurance processes exist, only a very rough structure of evaluation statuses is laid down that includes peer review and other reviewing methods such as the editorial review. The set structure follows the *Version Vocabulary[34]* in the DRIVER Guidelines.

Recommendation

R.A.2-1 A set structure exists in accordance with Table 3, and all metadata records are assigned a *setSpec* according to the documents' statuses in the publication process.

Table 3: Name and description of the sets for the evaluation status

setSpace	setName	German Description
status-type: draft	draft version	Eine frühere Version, die als in Arbeit befindlich in Umlauf gesetzt wurde.
status-type: submittedVersion	submitted version	Die Version, die bei einer Zeitschrift eingereicht wurde, um durch Fachleute begutachtet zu werden.
status-type: acceptedVersion	accepted version	Die Version, die vom Autor/von der Autorin erstellt wurde, in die die Anmerkungen der Gutachter(innen) eingeflossen sind und die zur Veröffentlichung angenommen wurde.
status-type: publishedVersion	published version	Die Version, die veröffentlicht wurde.
status-type: updatedVersion	updated version	Eine Version, die seit der Veröffentlichung aktualisiert wurde.

Example 1 shows a possible header of a record provided through the OAI PMH that meets the above listed requirements. The record belonging to this header describes a published Open Access scientific article in mathematics.

```
<identifier>oai:MyRepository.de:423569</identifier>
<datestamp>2013-10-01T12:45:01Z</datestamp>
<setSpec>open_access</setSpec>
<setSpec>doc-type:article</setSpec>
<setSpec>doc-type:Text</setSpec>
<setSpec>ddc:510</setSpec>
<setSpec>status-type:publishedVersion</setSpec>
```

Example 1: Possible set information in the header as given in response to ListRecords, GetRecords or ListIdentifiers requests.

A.2.5   Deleted Documents

In principle, documents that are published by a service are not to be deleted. However, reasons may exist that permit a document's deletion in certain cases (see Criterion 5 – *Information Security* in section 2.5). The incremental harvesting by service providers may not reveal the information about deleted documents– and deleted metadata records–to OAI based service providers. The OAI protocol's specifications do not lay down which information a data provider has to provide for deleted documents, but offer a number of options that every data provider can define as *Deleting Strategy* and must transmit with the replies to OAI *Identify* requests.

Minimum Requirement

M.A.2-4   One of the values 'persistent' or 'transient' is selected as Deleting Strategy for the data provider.

⇨ The OAI PMH permits the options 'no', 'persistent' and 'transient'. If 'no' is selected, no information on deleted documents is transmitted, which can lead to inconsistent data on the service provider's side.

⇨ If the option 'transient' is used for deleted documents the corresponding metadata records have to be available for at least one month after deletion indicating that the document has been deleted.

A.2.6   Data-Flow Control

To avoid having to deliver large data amounts as replies to OAI requests the OAI protocol offers a data flow control. The data provider can define a so-called *Harvest Batch Size*, i.e. the maximum number of metadata records to be delivered in one batch to *ListRecords* or *ListIdentifiers* requests. If the number of hits is greater than the number defined, a *Resumption Token* is transmitted with the reply, which permits the continuation of the delivery. The protocol specifications leave it to the data provider what size of packages to deliver, for how long to continue a delivery, or whether to use this option at all.

Recommendations

R.A.2-2　The *harvest batch size* (i.e. the maximum number of data sets in reply to a *ListRecords* OAI request) is no less than 100 and no more than 500.

⇨　Smaller data packages lead to unnecessary numbers of OAI requests and increase communication duration and the risk of errors. Larger packages carry the risk of transmission errors.

R.A.2-3　The *resumption token*'s life span is at least 24 hours.

⇨　The attribute *lifeSpan* describes the time in which the data provider guarantees the continuation of incomplete replies. If this time span is too short it can cause the cancellation of the entire harvesting process as it expires before the previous reply has been delivered completely.

⇨　As problems with the handling of resumption tokens may occur (unanswered follow-up requests) proper functioning should be tested explicitly.

R.A.2-4　The attribute *completeListSize* is used.

⇨　This describes the entire result list's size which can be important information for the steering and controlling of the entire harvesting process. According to the OAI protocol however, it is optional.

A.3 Metadata Requirements (Dublin Core Simple)

The OAI protocol defines the minimum standard that the metadata be in the Dublin Core Simple format. However, no specifications are given for the precise usage of the individual elements and their inner structures. The following requirements and recommendations on the use of Dublin Core for the OAI interface serve to secure a minimum of interoperability on metadata level.

Minimum Requirements

M.A.3-1　The Dublin Core formatted metadata sets (oai_dc) contain at least the elements *creator*, *title*, *date*, *type* and *identifier* including their respective contents.

⇨　The elements are necessary for a minimal description of electronic academic documents.

M.A.3-2　In every used DC element exactly one value is referenced.

⇨　Every DC element can be used multiple times within one metadata set.

⇨ Every author's name should be listed in a single *creator* element, every keyword in one single *subject* element, every URL in a single *identifier* element, etc.

⇨ This allows a clear separation of the individual elements and the correct indexing.

M.A.3-3 Every record contains at least one *identifier* element with an operable URL based on a → *Persistent Identifier*.

⇨ This operable URL may lead to an → *Landing Page* or directly to the full text.

⇨ To transform a Persistent Identifier (e.g. URN or DOI) into a working URL the resolving service's base URL must precede it (see criterion 5 – *Information Security*, minimum requirements M.5-7 and M.5-8).

⇨ Additional *identifier* elements may contain differing URLs to a document's landing page or to alternative versions (e.g. in a different file format) or they may contain different identifiers (e.g. ISBN, DOI[35], ISSN, INSPIRE ID[36], arXiv Identifier[37] et al.). Identifiers of alternative versions may be added in the *relation* element.

M.A.3-4 The creator element has the inner structure: last name, first name.

⇨ The same is true for the *contributor* element when it contains a personal name.

M.A.3-5 Document or publication types according to the DINI Recommendations Common Vocabulary for Publication and Document Types (*Gemeinsames Vokabular für Publikations- und Dokumenttypen*) are assigned to all documents using the *type* element.[38]

⇨ The DINI Recommendation supports the listing of a value from the Dublin Core Type Vocabulary in a *type* element of its own.

⇨ For the vocabulary see the first column in table 2, section A.2.3 (above).

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[35] See http://de.wikipedia.org/wiki/Digital_Object_Identifier.

[36] See http://www.slac.stanford.edu/spires/hepnames/authors_id.shtml.

[37] See http://arxiv.org/help/arxiv_identifier.

[38] See http://nbn-resolving.de/urn:nbn:de:kobv:11-100109998.

M.A.3-6 Every record contains at least one DNB subject group in a *subject* element, and the document is listed in that group.

⇨ For the vocabulary see the first column in table 1, section A.2.2 (above).

M.A.3-7 The *language* element's content is listed according to ISO 639-2 or ISO 639-3.

⇨ For German the code is "ger" (ISO 639-2) or "deu" (ISO 639-3), for English it is "eng" in both cases.

M.A.3-8 The *date* element's content is listed according to ISO 8601.

⇨ The corresponding format is YYYY-MM-DD.

Recommendations

R.A.3-1 The *identifier* elements' order in a metadata record mirrors their importance. The preferred value is given first.

⇨ Many service providers read the position as a marker for the priority given to a URL. From the Open Access Repository and Publication Service provider's perspective the link to the jump-off page is usually the preferred one.

⇨ Formally, the elements' order is of no importance in Dublin Core, but adhering to the rule above has proven to be practicable to "recommend" the preferred URL to the service provider.

R.A.3-2 The *contributor* element is used and contains the name of one person or institution that was involved in the creation of the document described.

⇨ This may be the referee of a dissertation or the editor of a collection.

R.A.3-3 The *source* element follows the Guidelines for Encoding Bibliographic Citation Information in Dublin Core metadata[39].

⇨ The element is used to name a source of the electronic version.

R.A.3-4 The *relation* element is used to name objects that are related to the document described.

⇨ Relations may be hierarchical structures (*isPartOf*) or updates (*isVersionOf*).

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[39] See http://dublincore.org/documents/dc-citation-guidelines/.

R.A.3-5	The *subject* element is used for descriptions of a document's content.
	⇨ In general, the content is described using keywords, or notations from classification schemas.
R.A.3-6	The *date* element is used only once in a metadata record.
	⇨ The publication date is to be preferred over other dates (e.g. upload date or date of creation), as it has the greatest priority for the reader.
R.A.3-7	If an → *aggregating service* makes multiple services' metadata available, the aggregating service has to offer the option to harvest each service individually. This can be done by grouping of sets or separate base URLs.
	⇨ The aggregator's interface should allow listing and correlating of the included independent services and their resp. institutions.
	⇨ Special emphasis is to be put on the aggregated data's normalization, up-to-dateness and control of doubles.
R.A.3-8	A direct link to the full text is listed in an *identifier* element.
	⇨ Use of a persistent identifier (incl. preceding resolver) is to be preferred (see M.5-8).
	⇨ Other than a link to the landing page this additional direct link to the full text allows its use for external add-on services (e.g. comprehensive full-text searches, text mining).
R.A.3-9	In addition to the document or publication type, an appropriate pair of values from the hierarchically structured COAR Resource Type Vocabulary is given in a *type* element.
	⇨ THE COAR Resource Type Vocabulary facilitates international harmonization of document and publication types; see https://www.coar-repositories.org/activities/repository-interoperability/coar-vocabularies/deliverables/.
	⇨ The type is defined through referencing of Concept URL and label in accordance with http://vocabularies.coar-repositories.org/documentation/resource_types.

Appendix B Glossary

In this section the most important terms used in this document are named and defined for their use in this document. The first part covers especially the different services that the certificate does or does not cover. This is followed by additional definitions.

B.1 Definitions of different services

Cross-Institutional Repository

A Cross-Institutional Repository collects data of various different institutions or faculties. It can hold every kind of scientific publication or qualification thesis.

Current Research Information System (CRIS)

Current Research Information Systems comprise integrated documentation and reporting systems that represent a research institution's infrastructure and accomplishments. These systems aid in creating reports for and in the steering of research institutions. Additionally, transparency of the research system and communication between researchers and the public can be improved.[40]

Digital Collection

The term *Digital Collection* often describes repository systems that present collections of digital objects in a higher education and academic environment. This comprises especially materials such as digitized books and journals, maps, photographs, paintings, music, autographs (manuscripts, letters, postcards) etc., materials that are often objects of the cultural heritage and historic sources. Accordingly, these services are especially provided in the humanities and by scientific libraries, museums and archives; they complement publication repositories. Usually, the contents are available → *Open Access*.

Disciplinary Open Access Repository

A disciplinary Open Access repository contains mostly Open Access documents of a certain scientific/scholarly discipline. This includes every kind of scientific publication (qualification theses, reports, secondary publications etc.). Disciplinary Open Access repositories make publications by authors from various different institutions available.

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[40] See http://www.dini.de/ag/fis/.

Hosting Service

A Hosting Service is a service for the sciences. Hosting—in the sense of the DINI Certificate—is carried out by → *Technical Operators* of → *Open Access Repositories and Publication Services* and includes at the least the technical provision, administration and maintenance of the → *service* that is hosted. Additionally, hosting may include further support, creating visibility, consulting services. The character of and the responsibility for a service is defined by the operator that hires the Hosting Service.

Institutional Open Access Repository

An institutional repository holds mostly Open Access full texts of an institution. This includes every kind of scientific/scholarly publication (theses, reports, secondary publications etc.) Additionally, the repository may contain other results of scientific/scholarly work in digital form.

Open Access Journal

An Open Access journal is a scientific journal containing mostly Open Access articles that fit the journal's profile. At least the majority of articles has undergone a peer-review process. The journal may also contain supportive materials and/or research data. The journal is published by at least one scientist/scholar or a scientific/scholarly institution, or one closely attached to science.

Open Access Repository and Publication Service/ Service / Publication Service

Open Access Repositories and Publication Services are the DINI Certificate's objective. They are comprehensive services for the publication and online provision of scientific and scholarly publications. The service or publication service caters to producers (authors) as well as to recipients (readers) and contains both the technical infrastructure (i.e. hard and software with certain specificities) and the organizational and legal frame.

In the document on hand Open Access Repositories and Publication Services are usually termed "service".

At the certification's focus are the following services:

- Institutional Open Access repositories
- University publication server / dissertation server
- Disciplinary Open Access repositories
- Open Access journals

The following services are not the primary objectives of the certification based on the current 2016 version of the DINI Certificate.

- Virtual Subject-Libraries
- Digital Collections
- University Bibliographies
- Research-Data Repositories
- Research Information Systems (CRIS)

So-called → *Hosting Services* play a special role.

Research-Data Repository

A Research-Data Repository allows scientists to archive and present their research data. These data can have different formats (depending on discipline) and can be either the basis for or the result of a research process.

University Bibliography

A University Bibliography aims at displaying an institution's entire publication output (Open Access full texts as well as metadata only). Occasionally, institutional repositories are used for these purposes, but to date the amount of available full texts in these is small.

University Publication Server / Dissertation Server

A University Publication Server / Dissertation Server holds mostly qualification theses (habilitations, dissertations, and bachelor or master theses) as Open Access publications.[41]

Hosting Services—assuming the role of → *technical operators* of services—cannot be directly certified. However, it can be acknowledged beforehand that certain minimum criteria of the DINI Certificate are fulfilled for all services that they host. These criteria are marked as *DINI-ready*. This makes certification much easier for the individual operator/provider.

Virtual Subject-Library

A Virtual Subject.-Library is a special kind of virtual library. As scientific information and documents of one subject area are usually spread around the globe, Virtual Subject-Libraries offer an integrative web-portal to research and provide this information. They may be available as various types of publications.[42]

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[41] See http://de.wikipedia.org/wiki/Hochschulschrift.

[42] See http://de.wikipedia.org/wiki/Virtuelle_Fachbibliothek.

B.2 Additional Definitions

Aggregator

An aggregator is a service that collects (harvests) data from independent data providers, enhances and bases comprehensive services on them. Data can be regrouped according to regional, disciplinary or any other aspect (e.g. type of publication).

Popular services are the retrieval but also the OAI-PMH-based forwarding of aggregated data. Crucial for the quality of the service are: branding of the originating repository, normalization effects, updating, and control of doubles.

Known aggregators in Germany are Bielefeld Academic Search Engine (BASE)[43] and the Open-Access-Netzwerk[44]. National aggregators exist in Sweden (SWEPUB[45]), Norway (NORA[46]), Ireland (RIAN[47]), the Netherlands (NARCIS[48]), and other European countries.

Author/Publisher

In most cases these are the creators of the content offered by a → *service*. For publications with more than one creator, where the usage rights have been transferred to only one, this one person holds the right to publish the content.

Creator

A creator is who created a work. In the understanding of this Certificate this is/are the → *author/s* who created a → *document*. The creator is the → *rights holder* of a → *primary publication*. Is a work published by a publishing house, the creator often transfers all → *usage rights* to the publishing house that becomes the → *rights holder*. Under certain circumstances, creators retain the secondary publication right for the → *document*.

Data Provider

Data providers, in the OAI protocol's understanding, deliver data, i.e. offer → *documents' → metadata* via the OAI interface.

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[43] See http://www.base-search.net/.

[44] See http://oansuche.open-access.net/oansearch/.

[45] See http://swepub.kb.se/.

[46] See http://www.ub.uio.no/nora/search.html.

[47] See http://rian.ie/.

[48] See http://www.narcis.nl/.

Deposit License

Formal agreement in which the rights holder (i.e. the → *author* or the publisher) grants certain usage rights to the provider of an Open Access Repository and Publication Service in order to allow the provider to make the respective → *documents* publicly available and to archive them. Moreover, in this agreement the rights holder excludes that any third party's rights may be violated. Used synonyms are formal agreement and granting of rights.

Dewey Decimal Classification (DDC)

DDC is a globally used universal classification system to index content. The German National Bibliography's subject headings are based on the DDC[49].

Document

Smallest logical entity that is published by an Open Access Repository and Publication Service, usually a scientific or scholarly work with clearly named creators. Synonyms used in this text: electronic document, publication, work. The term is to be used comprehensively, and can be replaced by the term object especially in services that focus on data, images, and other digital artefacts.

Document Server

Document and Publication Service's technical infrastructure, characterized by basic infrastructure components (e.g. network, server, operating system, databases, communication systems) and the document server software (e.g. DSpace, ePrints, MyCore, OJS, OPUS). Synonyms used in this text: publication server, repository.

Landing Page

Web page containing metadata of and links to a document's full-text files plus additional functions and information (e.g. social network links, export of bibliographical data in machine-readable formats, print on demand services, document-related statistics). Usually the landing page is generated dynamically, its content coming from a database. Synonyms: jump-off page, splash page, front page, front door.

Metadata

Data for the characterization of an object (in this text mostly → *documents*). Typically, these are divided into descriptive, technical and administrative metadata. Descriptive metadata contain information for the formal and subject classification. Metadata can be coded in different formats and are interchangeable. It is

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[49] See http://www.ddc-deutsch.de/.

possible that internally stored metadata are not completely made available to the public (example: administrative metadata). Relevant standards for electronic publications are Dublin Core[50], MARC[51], MODS[52] as well as especially for the data exchange with the German National Library XMetaDissPlus[53].

Open Access

Worldwide free access to scientific information, especially to scientific and scholarly publications in electronic form and online, as defined e.g. in the 2003 Berlin Declaration[54]. A worldwide movement with numerous national and international initiatives is dedicated to the dissemination and to the achievement of the goals of the Berlin Declaration.

Typically, two forms of Open Access are differentiated: The green and the golden roads. The first describes the additional publication of documents already published elsewhere (usually by a publishing house) or slotted for publication as a parallel, → *secondary publication* in a freely available version—usually in a repository. The golden way is the → *primary publication* with Open Access, e.g. in an Open Access journal.

Open Access Declaration

These are scientific/scholarly institutions' guidelines on how to deal with Open Access. They state e.g. that Open Access is a desirable publication paradigm for the respective institution, and they encourage authors to publish their documents Open Access.

Operator

Institution that is responsible for the provision of an Open Access Repository and Publication Service. It offers the service to various user groups and answers to the users even if responsibilities are divided internally or even sourced out. Used synonyms in this document are provider and service provider.

Persistent Identifier

Worldwide unambiguous and unchangeable (persistent) name of a digital information object, (for this text) usually an electronic → *document*. Persistent identifiers (PI) are especially useful for the citation of electronic publications, as they

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[50] See http://dublincore.org/documents/dces/.

[51] See http://www.loc.gov/marc/.

[52] See http://www.loc.gov/standards/mods/.

[53] See http://www.dnb.de/DE/Standardisierung/Metadaten/xMetadissPlus.html.

[54] See https://openaccess.mpg.de/67605/berlin_declaration_engl.pdf.

are—unlike a URL—permanent. Different PI systems exist, e.g. URN and DOI and Handle. A PI's syntactical structure is defined in a formal description of the structure. PIs and related URLs must be registered at a (usual) central point to facilitate the resolving service that reroutes request for a URN to the actual physical addresses.

Primary Publication

This is the (chronologically) first publication of a document. A primary publication can e.g. be a dissertation that is published on a repository or a scientific article that is published in an Open Access journal. See also → *secondary publication*.

Rights Holder

Rights Holder is the owner of → usage rights / copyrights of a work. Rights Holders can be natural persons (usually the → creator) or a legal person (e.g. a publishing house). A → document should only be published on a → publication service with the consent of the rights holder.

Secondary Publication

Parallel or chronologically removed publication of an already published document on a repository. These are often articles already published in journals or collections, which—depending on the publishing contract—can be made publicly available on repositories as Open Access secondary publications. (Pre-prints are a special case, as these make content available on repositories before they are published.) See also → *primary publication*.

Service Provider

A service provider in the DINI Certificate's context offers comprehensive services using distributed data that are aggregated via the OAI protocol (e.g. harvester).

Subject Headings of the German National Bibliography

Rough classification of documents into ca. 100 different classes[55]. They are based on the → *Dewey Decimal Classification* and represent a simplified use of this comprehensive system.

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[55] See http://www.dnb.de/SharedDocs/Downloads/DE/DNB/service/ddcSachgruppen DNBAb2013.pdf?__blob=publicationFile.

Technical Operator

Institution tasked by the → *operator* of a → *service* to provide and operate technical infrastructure (hardware and software). Technical operators are often → *hosting services*. Technical operator and → *operator* can be identical or under the responsibility of the same legal body.

User

In the DINI Certificate's context a natural person who uses services offered by an Open Access Repository and Publication Service, especially as producer (authors, publishers) or recipient (reader, researcher) of → *documents*.

Usage Rights / Copyright

In the DINI Certificate's context, these are rights that are granted to users of documents or their metadata that are published by Open Access Repository and Publication Service. Originally, usage rights are held by the creators and consequently must be transferred with appropriate processes.

Appendix C Awarding and Evaluation

The German Initiative for Network Information (DINI) or a working group authorized by DINI is responsible for the awarding of the DINI Certificate for Open Access Repositories and Publication Services. The certificate's seal shows the year of its version. The certificate acknowledges that the certificated repository meets the minimum requirements for a DINI-certified Document and Publication Services.

A fee is charged after application for the DINI Certificate:

1. Non-profit organizations

    – DINI members 50.00 €
    – others 100.00 €

2. Profit organizations

    – DINI members 150.00 €
    – others 250.00 €

The operator/provider of the Open Access Repository and Publication Services applies at DINI for certification by completing an online form on the DINI website. This form has the structure of a checklist and contains the minimum requirements as well as the recommendations laid down in section 2 of this document. By completing the form the provider states that and to what extent the Open Access Repository and Publication Service fulfills the criteria of the DINI Certificate. Further explanations and clarifications can be added in designated fields in the form, as well as URLs or other options on how or where to receive additional information.

Since the publication of the DINI Certificate 2013, hosting services for Open Access Repository and Publication Services can for the first time apply for the acknowledgment that they are "DINI-ready", i.e. that certain minimum requirements are fulfilled for all services they host. DINI enters into an agreement with the respective host organizations, which specifies both sides' privileges and obligations. Operators employing a DINI-ready hosting service state this in the application form, and do not have to answer the questions relating to these already-met requirements.

After the online form has been completed and submitted the application and the contained data will be verified; generally two reviewers will be appointed for this. Access to the services to be certified must be permitted to these two. The provider of the Document and Publication Service must be prepared to answer questions from reviewers. Communication between applicant and reviewer will be considered confidential unless specified otherwise. An on-site visit will be the

exception. Additional costs that may emerge during the certification process must be covered by the provider of the Document and Publication Service. DINI will inform the provider about possible additional costs beforehand.

The certification process should generally be completed within three months. The duration of the certification process depends in part on how quickly the provider answers questions the reviewers might have. The process can take longer should one or more criteria not be fulfilled.

The DINI Certificate does not expire for the individual Open Access Repository and Publication Service. As the certificate shows the year of the version, it will always be clear under what standards an Open Access Repository and Publication Service is certificated, even if a newer certificate version exists. In cases of failing minimum requirements after a certification, DINI is entitled to revoke the certificate.

The provider of the certified Document and Publication Service is entitled to call the service 'DINI-certified Open Access Repository and Publication Service', and to display the DINI Certificate's seal on a web page or in other applicable forms. Any misuse of the seal or certificate will be prosecuted in accordance with applicable laws.

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