



Assessment Information

[CoreTrustSeal Requirements 2020–2026](#)

Repository: Oxford University Research Archive (ORA)
Website: <https://ora.ox.ac.uk/>
Certification period: Feb. 10, 2026 - 09 February 2029
Requirements version: CoreTrustSeal Requirements 2023-2025

This repository is owned by: **Bodleian Libraries, University of Oxford**

CORE TRUSTWORTHY DATA REPOSITORIES REQUIREMENTS

Background Information

Re3data Identifier

Please fill your Re3data identifier from the website: <https://www.re3data.org/>

Response:

<https://www.re3data.org/repository/r3d100011230>

Reviews

Reviewer 1:

Comments:

Reviewer 2:

Comments:

Repository type

Please select your repository type.

Response:

- Generalist repository

Reviews

Reviewer 1:

Comments:

Reviewer 2:

Comments:

Overview

Provide a short overview of key characteristics of the repository, reflecting the repository type selected. This should include information about the scope and size of data collections, data types and formats. Further contextual information may also be added.

Response:

The Oxford University Research Archive (ORA) (<https://ora.ox.ac.uk/>) is the institutional repository (IR) for the University of Oxford (<https://www.ox.ac.uk/>). ORA was established as the IR for the University of Oxford in 2007 in order to collect, preserve and disseminate the research outputs of the University. The University of Oxford has a clear Open Research Position Statement (<https://www.ox.ac.uk/research/support-researchers/open-research>), in which ORA is detailed as one of the core services "... to enable researchers to practice open research, and ensure long-term sustainability and preservation of curated open materials and their continued open accessibility."

ORA aims to provide access to the full text of as much of Oxford's academic research as possible from the University's more than 10,000 academic, research staff and students (<https://www.ox.ac.uk/about/facts-and-figures/full-version-facts-and-figures>). This includes articles, conference papers, theses, research data, working papers, posters and other content types. As of 02/06/2025 there ORA holds ~306k metadata records of content and has downloadable content available for ~135.7k of those records, equating to a total of ~34.2Tb. Datasets account for 30.6Tb of this total.

Making materials open access removes barriers that restrict access to research, allowing for free dissemination of full text content, available to anyone with Internet access. ORA promotes and encourages the sharing of the scholarly output produced by the members of the University of Oxford that have been published under open access conditions, whilst additionally supporting university compliance with research funder policy and assessment exercises, such as the UK's Research Excellence Framework (REF, <https://www.ref.ac.uk/>).

ORA supports both the University of Oxford Open Access Publications Policy (<https://openaccess.web.ox.ac.uk/oapp-fulltext>) "... to ensure the widest possible access to research outputs", and the University of Oxford Research Data Management Policy

Oxford University Research Archive (ORA)

(<https://researchdata.ox.ac.uk/university-oxford-data-management-policy>), which states: "Researchers are expected to deposit data supporting other outputs in an appropriate data repository, and to provide sufficient information to ensure it can be found, understood, and cited. If data is deposited somewhere other than in ORA, the University's institutional repository, a metadata record should also be created in ORA which describes and points to the data".

ORA complements other data archives by providing a local archive for researchers who are not able or do not want to deposit their data elsewhere. It is not intended to replace national, subject, or other established data collections. ORA aims to develop as a 'data catalogue' for University of Oxford research data outputs, regardless of where the content of the data is held, to be able to sign-post to Oxford's outputs.

Research data can be deposited to ORA in any format. There are some size limitations to the online upload, but the repository caters for 'larger' deposits via consultation. ORA can register DOIs for research deposited with the repository, and references DOIs for University of Oxford research publications elsewhere. These are detailed on the 'How to deposit Data' LibGuide (<https://libguides.bodleian.ox.ac.uk/ora-data/how-to-deposit>) FAQs.

ORA is managed and maintained by the teams of the Scholarly Resources Department within the Bodleian Libraries. As part of the Bodleian Libraries, the service governance lies with the Curators of the University Libraries (<https://www.bodleian.ox.ac.uk/about/libraries/management#collapse2705996>).

The service fits into the wider support for Open Access in the university and there are significant collaboration, relationships and policy management that supports, impacts or is influenced by ORA across the university, but namely with the University of Oxford IT Services, Open Scholarship Support, Research Services, Oxford University Press, and the University's academic divisions.

More about ORA can be found at: <https://ora.ox.ac.uk/about>

Reviews

Reviewer 1:

Comments:

Reviewer 2:

Comments:

Designated Community

A clear definition of the Designated Community demonstrates that the applicant understands the scope, knowledge base, and methodologies—including preferred software/formats—of the group(s) of users at whom the curation and preservation measures are primarily targeted. The definition should be specific so that reviewers can assess whether that community is being served in the responses to other requirements.

Response:

ORA is the research repository for the University of Oxford. It collects, preserves and disseminates the research produced by the members of the collegiate University of Oxford. It's designated community therefore consists predominantly of researchers and students.

The University of Oxford has four main academic divisions of Humanities; Mathematical, Physical & Life Sciences; Medical Sciences; and Social Sciences. There are also additional divisions covering other areas such as Continuing Education, and Gardens, Libraries & Museums (a list of departments and groups can be found at: <https://www.ox.ac.uk/about/divisions-and-departments>). The University also has a large number of colleges at which a member of the University may hold a research position that is independent from the academic divisions (a list of colleges can be found at: <https://www.ox.ac.uk/about/colleges>).

Content within the archive therefore covers a broad range of study, but predominantly fall within the main academic disciplines indicated by the divisions named above (e.g. arts and humanities, biological sciences, clinical medicine, social sciences, physical sciences, engineering, and technology).

However, as ORA makes content available for public consumption and can be accessed directly at <https://ora.ox.ac.uk/> by anyone with an Internet connection, the reach of the repository content is therefore global.

In terms of content collection and deposit to ORA, any work deposited to ORA must hold an affiliation to the University. This is detailed within the ORA Submission Policy: "In order to be eligible for inclusion within ORA, material deposited must hold a connection or affiliation with the University of Oxford. This may be that an author or contributor to the intellectual content of the material holds personal affiliation to the University as a student or employee (e.g. staff, academic or administrative), or that the material is owned, managed, and maintained by a unit of the University of Oxford (such as an academic department or similar). The affiliation to the University must be clear in the research content being deposited and/or with the Division or department group making the deposit." (https://ora.ox.ac.uk/submission_policy)

Members of the collegiate University of Oxford can deposit content to ORA in any format via the University's instance of Symplectic Elements (<https://researchsupport.admin.ox.ac.uk/reporting/symplectic>). As detailed at the 'Depositing data in the Oxford Research Archive (ORA): Deposit checklist' (<https://libguides.bodleian.ox.ac.uk/ora-data/ora-data-checklist>), research data deposited should do so with accompanying information on how the data can be accessed / used.

As noted in the section above ORA provides support to University of Oxford academics in meeting compliance with funder bodies and measures in assessment, such as the REF. This includes providing a suitable route for funder policies specific to research data, such as the UKRI councils (<https://www.ukri.org/>).

Oxford University Research Archive (ORA)

Reviews

Reviewer 1:

Comments:

Reviewer 2:

Comments:

Levels of Curation

Please fill you level(s) of curation.

Response:

- A. Content distributed as deposited
- B. Basic curation – e.g. brief checking, addition of basic metadata or documentation
- C. Enhanced curation – e.g. conversion to new formats during ingest, enhancement of documentation and metadata

Reviews

Reviewer 1:

Comments:

Reviewer 2:

Comments:

Levels of Curation - explanation

Please add the description for your Level(s) of Curation.

Response:

Notes against each of the levels of curation:

(1) Content distributed as deposited: initial deposits are retained unchanged. Content deposited does not get edited or changed within the review process. File formats may be converted, but originals are retained. This process generally applies where content is being 'harvested' from an external data source and a metadata only record is being created as an addition to ORA's data catalogue. No 'full text' content is being deposited, only the descriptive metadata. Metadata has a threshold on 'minimal' level and if this passes (e.g. a record has a title, DOI, description, etc) then no manual review is required. This is still an area of active development, but currently about 95% of content created automatically is processed to this level of creation within the need for further basic level or enhanced curation processes. For datasets this currently accounts for only a small proportion of newly created deposits to ORA (~1%), but as automated harvesting expands the range of item types collected, this is expected to increase.

(2) Basic curation – e.g. brief checking, addition of basic metadata or documentation: metadata enhancements are made to deposits where necessary to embellish the information in the original deposit. This could be information about the content deposited, joining related items, or information about the depositor/creators. Checks and confirmation is made of fields relevant for DOI creation before DOI registration is made. This form of curation takes place as standard on 'manually' deposited datasets to the repository, and is ensures that content is sufficiently described for preservation and discoverability purposes. 100% of manual deposits for research data made to the repository go through this level of curation, some may then move on to further levels as support. Annually, on average 84% of dataset deposits pass through this level of curation without the need for further support.

(3) Enhanced curation – e.g. conversion to new formats during ingest, enhancement of documentation and metadata: Digital preservation microservices monitor ORA content to ensure that no unintended 'change' is incurred to content. This includes a checksum as part of larger file deposits to ensure that the file has completed a transfer to the repository. Storage preservation is managed separately and is independent from the repository software. This takes place programmatically for all content that is added to ORA, and to the subsequent digital preservation system. An enhanced part of this process occurs when the content being deposited is over 5GB in size as this requires processing through a large file upload system. In these cases a checksum must be available before file transfer process, and curation of a metadata record complete ahead of file ingest and link by reference to the ORA record. This is currently an area that requires both curatorial and development support. Around 15% of deposits made each year require this level of attention from the repository teams.

Metadata updates and changes are done at the point of first review of the deposit and may additionally be necessary on checkback, such as for the purposes of subsequent publication of a related item or release of content from embargo.

More detail of the 'system' processes and preservation microservices that monitor content is outlined below.

Oxford University Research Archive (ORA)

Items deposited to ORA undergo curation activities as part of a 'review' process before deposited items are made available from the ORA public interface. These activities take place a three key stages:

- Ingest
- Review
- Publication (or subsequent re-publication or gateway)

At ingest a new deposit is checked as a potential duplicate to the system. This action is undertaken automatically by an ingest process, and also manually where a deposit is undergoing 'review' processing.

Digital preservation microservices running over ORA allows for assessment to be made with regards to long-term accessibility and understandability of data of which it stores. Where possible this also assists in the identification for normalising of submitted file formats to a common preservation format. A Case Study of the Digital Preservation Micro Services can be read at

<https://blog.zabbix.com/case-study-digital-preservation-micro-services-zabbix-bodleian-libraries-university-of-oxford/7852/>.

ORA monitors the content it collects and actively adds to The National Archives PRONOM registry

(<https://www.nationalarchives.gov.uk/PRONOM/Default.aspx>) as new formats are found that require description or definition. Monitoring also allows identification of file types that may need further consideration for continued access, such as conversion of format versions.

Monitoring is undertaken by digital preservation microservices that measure for fixity, checksums, zero-byte files, changes in content, virus checking, and more. A separate preservation layer has been implemented for storage using Fedora 6 and Oxford Common File Layout (OCFL)

(<https://wiki.lyrasis.org/display/FEDORA6x/OCFL+Repository>). This is noted within the ORA content policy (https://ora.ox.ac.uk/content_policy) and a one-page report on ORA use of this can be read at <http://dx.doi.org/10.5287/ora-bmm7yx6gk>.

Advice is provided to depositors as part of the initial review of a new deposit to the repository. This covers suitable documentation supporting any files deposited, how these are structured for access (e.g. zip files), and what formats are made available as part of the dissemination – it is a common task as example for the ORA Review team to convert WORD documents to PDF, keeping the WORD file embargoed in ORA and making the PDF available as the accessible copy. See: <https://libguides.bodleian.ox.ac.uk/ora-data>

ORA has a robust data model with regards to what information is collected about each deposit. Much of this is added by 'enhancement' in the review process – filling in the blanks – and some is done automatically by the ORA system itself, such as file format identification and 'size'. The latest published version of the ORA Data Model can be found at: <http://dx.doi.org/10.5287/bodleian:pr22x1bjE>

Reviews

Reviewer 1:

Comments:

Reviewer 2:

Comments:

Cooperation and outsourcing to third parties, partners and host organisations

Please describe any cooperation and outsourcing to third parties, partners and host organisations.

Response:

Infrastructure hardware is managed by the central IT Services (<https://www.it.ox.ac.uk/networks-and-infrastructure>) for the University of Oxford, supported by the Bodleian Libraries own Infrastructure team (<https://www.bodleian.ox.ac.uk/about/libraries/our-work/digital-library>) who handle tape back-ups and feed in troubleshooting issues, security and access, and storage needs.

ORA sits on the University of Oxford SHORE Network for which a service agreement exists between ITS and the Bodleian Libraries, to ensure that this remains updated, secure, and functional. The relationship is managed by ITS and Bodleian Infrastructure colleagues.

Reviews

Reviewer 1:

Comments:

Reviewer 2:

Comments:

Applicants renewing their CoreTrustSeal certification: summary of significant changes since last application.

Oxford University Research Archive (ORA)

Please fill this field when you are renewing your CoreTrustSeal Certification.

This field can be marked with not applicable (N.A.) if you are acquiring a CoreTrustSeal certificate for the first time.

Response:

ORA was previously awarded the Data Seal of Approval (2015) - see:

<https://blogs.bodleian.ox.ac.uk/digital/2015/12/03/ora-data-is-awarded-the-data-seal-of-approval/>

This application is made after significant change in set-up and software.

Reviews

Reviewer 1:

Comments:

Reviewer 2:

Comments:

Organisational Infrastructure

R1 Mission & Scope (R01)

R01. The repository has an explicit mission to provide access to and preserve digital objects.

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Response:

"The mission of the Bodleian Libraries is to provide an excellent service to support the learning, teaching and research objectives of the University of Oxford; and to develop and maintain access to Oxford's unique collections for the benefit of scholarship and society." [Bodleian Libraries About]. ORA exists in part to support this mission.

In a wider context ORA is named as a specific service to support the University of Oxford's 'Open Research Position Statement' that details the expectations and responsibilities of the University and the Researcher at Oxford. ORA fits within this policy as part of the University provision of "support, services and information to enable researchers to practise open research, and ensure long-term sustainability and preservation of curated open materials and their continued open accessibility...". The Open Research Position Statement was approved by Research and Innovation Committee (<https://researchsupport.admin.ox.ac.uk/ric>) on 6 June 2024.

The Open Position Statement has relationships with multiple further policies for the University. Two of note include:

- the 'University of Oxford Research Data Management Policy', which again names ORA in supporting researchers in meeting the requirements of this policy, including "Preserving and providing appropriate access to their research data after the end of their project". Policy approved by the University of Oxford Research and Innovation Committee (<https://researchsupport.admin.ox.ac.uk/ric>), last revised November 2023.
- the Oxford University open access publications policy (<https://openaccess.ox.ac.uk/oapp>), which details ORA as supporting the University of Oxford's responsibility to "Provide a centrally managed and maintained platform to manage the long-term preservation, continued access, and storage of material". Policy approved by the University of Oxford Research and Innovation Committee (<https://researchsupport.admin.ox.ac.uk/ric>), last revised June 2024.

ORA was established in 2007 to serve as a permanent and secure online archive of research materials produced by the members of the University of Oxford – undertaking preservation, back-up and restore actions on the archive content. This is outlined in the 'About' (<https://ora.ox.ac.uk/about>) information of ORA, but also in the 'ORA Content Policy' and linked 'Bodleian Libraries Digital Preservation Policy'.

The 'Bodleian Libraries Digital Preservation Policy' sets the goal that the "Bodleian Libraries preserves its digital collections with the same level of commitment as it has preserved its physical collections over many centuries. Digital preservation is recognized as a core organizational function which is essential to Bodleian Libraries' ability to support current and future research, teaching, and learning activities" and details the principle that the "Bodleian Libraries aims to take a proactive and risk-managed approach to digital preservation. It recognizes that preserving access to digital content requires ongoing planning, active management and organizational commitment from the point of creation or accession. Bodleian Libraries' principles for implementing digital preservation are all underpinned by this approach."

ORA continues to build on the provision it offers for digital preservation of content and undergoes regular assessment, monitoring and development in line with the Bodleian Libraries Digital Preservation Policy.

ORA policies are agreed by the ORA Management Group, with the Bodleian Libraries Digital Preservation Policy approved by Bodleian Libraries Round Table (<https://www.bodleian.ox.ac.uk/about/libraries/management>) in June 2022 (as detailed in the document history of the policy document, section 10).

Links:

Oxford University Research Archive (ORA)

- [Bodleian Libraries About](#)
- [University of Oxford Research Data Management Policy](#)
- [Bodleian Libraries Digital Preservation Policy](#)
- [Open Position Statement](#)
- [ORA Content Policy](#)

Reviews

Reviewer 1:

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Comments:

Reviewer 2:

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Comments:

R2 Rights Management (R02)

R02. The repository maintains all applicable rights and monitors compliance.

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Response:

ORA is a service provided by the Bodleian Libraries of the University of Oxford. The University is a civil corporation established under common law, which was formally incorporated by the Act for Incorporation of Both Universities 1571 under the name of 'The Chancellor Masters and Scholars of the University of Oxford' [University of Oxford Statutes].

Those depositing in ORA are required to be members of the University of Oxford (deposit access is restricted to those with an Oxford University Single-Sign-On), or to have been members of the University of Oxford at the point of creating their research outputs and research data (in which case retrospective deposit can be facilitated). "In order to be eligible for inclusion within ORA, material deposited must hold a connection or affiliation with the University of Oxford. This may be that an author or contributor to the intellectual content of the material holds personal affiliation to the University as a student or employee (e.g. staff, academic or administrative), or that the material is owned, managed, and maintained by a unit of the University of Oxford (such as an academic department or similar). The affiliation to the University must be clear in the research content being deposited and/or with the Division or department group making the deposit." [ORA Submission Policy]

As such, they are required to comply with the legal and ethical criteria contained in the 'University of Oxford Research Data Management Policy', which details that "Researchers will preserve and provide appropriate access to their research data supporting outputs after the end of their project for as long as it has continuing value..." and that "Researchers are expected to deposit their data supporting outputs in an appropriate data repository and provide sufficient information (such as a data availability statement and metadata record) to ensure that it can be found, understood, and cited. Where data is deposited somewhere other than the University's institutional repository (the Oxford Research Archive, or ORA), a metadata record should also be created in ORA which describes and points to the data. External repositories, where used, should support the use of Open Researcher and Contributor IDs (ORCID) and Digital Object Identifiers (DOIs)."

ORA has additional service specific policies and makes available all policies affecting the repository and content (<https://ora.ox.ac.uk/policies>), this includes a submission policy, deposit agreements, terms of use, and notice and take-down.

'ORA Deposit Agreements' are made available to the depositor and agreed at the point of submission to the repository. The agreement outlines 'ownership' rights with regards to the deposit and that these are maintained by the depositor: "You will continue to own any intellectual property rights you may have in any work deposited in ORA and nothing in this deposit licence prevents you from using or licensing others to use such work. Through this licence the University asks for permission to use a work deposited in ORA in order to preserve and make that work available to members of the public"

Permissions to support the long-term storage and where possible access to the content by copy or transform are agreed: "By depositing a work in ORA, you grant to the University a non-exclusive, sub-licensable, worldwide licence to do any of the acts restricted by copyright or other intellectual property rights to the extent necessary to allow the University to store the work and make it accessible to members of the public online on or through ORA (or any electronic retrieval system that may replace ORA)." [ORA Deposit Agreements]

Oxford University Research Archive (ORA)

Conditions of deposit are agreed, which include confirmation of legal rights, intellectual property rights and the inclusion of sensitive or confidential information: "By depositing a work in ORA, you confirm to the University that you have the legal right and authority to deposit the work in accordance with the terms of this deposit licence and the work does not:

- infringe any intellectual property rights (e.g. copyright or database right) of any other person;
- contain any material which is defamatory of any person;
- contain any confidential information; or
- contain any material that invades the privacy or breaches the data protection rights of any other person." [ORA Deposit Agreements]

Guidance for depositors regarding ethical and legal issues is provided by the University's research data website -

<https://researchdata.ox.ac.uk/ethical-and-legal-issues>, which outlines information on 'Ethics review of research', 'Information security', 'GDPR and personal data', 'Intellectual property issues', 'Commercially sensitive data', and 'Other sensitive data'.

'ORA Deposit Agreements' also detail how information will be shared where no explicit reuse terms have been applied within the work: "Any person provided with access to a work in ORA will only be licensed to access and use that work for non-commercial purposes, unless you choose otherwise."

Depositors are able to apply licences the most appropriate to their work. Creative Commons Licences

(<https://creativecommons.org/share-your-work/ccllicenses/>) are the most widely applied, but other licences are supported, such as Open Government Licences (<https://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/>) or GNU General Public Licenses (<https://www.gnu.org/licenses/gpl-3.0.en.html>), as well as 'other'.

Reuse terms are further detailed to those accessing content with ORA default terms via 'ORA Terms of Use', which detail that unless a specific licence detailing reuse has been applied the following ORA terms are given: "Users are required to comply with the permissions notice that applies to each item in ORA. Unless otherwise indicated in the relevant permissions notice on the item record, users may download and/or print one copy of any item in ORA to facilitate their private study or research for non-commercial purposes. Whilst items held in ORA may be subject to multiple intellectual property rights, depositors only licence the copyright through ORA, and no licence under any patents, design rights, trademarks or any other right that may exist in relation to such items is granted or implied."

Alongside the policy documents further information on how content can be accessed programmatically and how this is shared is linked in the deposit agreement, but also detailed with information regarding Application Programming Interface (API) access to ORA (<https://ora.ox.ac.uk/api>), detailing the different standards that ORA exposes its metadata (such as OpenAIRE (<https://www.openaire.eu/>) and RIOXX (<https://riox.net/>)) and under what terms ('ORA Terms of Use', and CC0 (<https://creativecommons.org/public-domain/cc0/>)).

Each record in ORA is structured in line with the ORA Data Model (<http://dx.doi.org/10.5287/bodleian:pr22x1bjE>), and therefore machine actionable in a consistent way from the website, individual record, or via the API.

As part of the review process undertaken by staff with each deposit made to ORA checks are made confirming rights and reuse of content, and depositors are reminded of their responsibilities under the deposit agreement. This varies depending on the type of work being deposited. For data deposits a specific check is made for anonymisation (or the need for it) of the content and for any disclosure of sensitive information.

Where any issue is identified ORA retains the right not to make the work available, or where content has been made available and later identified with an issue and ORA has been made aware, the 'ORA Take-down Policy' exists that outlines the process by which the repository will respond and investigate to requests made.

Links:

- [University of Oxford Statutes](#)
- [ORA Submission Policy](#)
- [University of Oxford Research Data Management Policy](#)
- [ORA Deposit Agreements](#)
- [ORA Terms of Use](#)
- [ORA Take-down Policy](#)

Reviews

Reviewer 1:

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Comments:

Reviewer 2:

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Oxford University Research Archive (ORA)

Comments:

R3 Continuity of Service (R03)

R03. The Repository has a plan to ensure ongoing access to and preservation of its data and metadata.

Compliance level:

In Progress: the repository is in the implementation phase - 0

Response:

ORA is a core service to the University of Oxford. Its main purposes are to collect, store and disseminate the research outputs produced by members of the University. Within the 'ORA Deposit Agreements' the University of Oxford is granted a "non-exclusive, sub-licensable, worldwide licence to do any of the acts restricted by copyright or other intellectual property rights to the extent necessary to allow the University to store the work and make it accessible to members of the public online on or through ORA (or any electronic retrieval system that may replace ORA)."

The University of Oxford is the legal entity for all services, consultancy, and other contracts or services carried out by ORA, and takes on overarching responsibility for the ongoing access and preservation to ORA content should it cease to function. The University commits to providing ORA as a service as part of its responsibilities in supporting the University of Oxford's 'Open Research Position Statement'.

The Bodleian Libraries manage ORA on behalf of the University and is responsible to the Curators of the University Libraries (<https://governance.web.ox.ac.uk/legislation/part-24-curators-of-the-university-libraries>). ORA is subject to the 'Bodleian Libraries' Digital Preservation Policy' which commits to preserve it's digital collections "... with the same level of commitment as it has preserved its physical collections over many centuries"

The 'Bodleian Libraries' Digital Preservation Policy' outlines that the Libraries will "... enact a well-balanced and robust funding model for digital preservation", as ensure that there are "dedicated staff" to support the work.

Additional service notes are made within the ORA Content Policy (https://ora.ox.ac.uk/content_policy) and detailed below: "Every effort is made to retain items deposited to ORA.

Digital items produced as a result of research activity at the University of Oxford and deposited by an eligible depositor will be accepted and retained in ORA unless:

- the item infringes copyright or other rights;
- the item is in a format which cannot be stored or displayed satisfactorily (see file formats);
- the item has a virus or other technical problem;
- in the case of a thesis, the thesis does not meet the requirements for deposit in ORA (i.e. passed, the final accepted version and the student having been granted leave to supplicate).

ORA staff will endeavour to include eligible items [i.e. those that meet the criteria of the content policy] wherever possible. If a depositor leaves the employment of the University of Oxford, their items will be retained in ORA.

ORA will retain multiple versions of the same item (unless the item is affected by the take-down or preservation selection criteria), though only one version – the 'dissemination' version – may display.

ORA maintains the practice of preservation and long-term accessibility of its content in line with the Bodleian Libraries Digital Preservation Policy. Available at: <https://www.bodleian.ox.ac.uk/about/libraries/policies>."

ORA has a number of services and operations to support the digital preservation of content. This is detailed out further in sections R9 and R15, in which the Digital Preservation Microservices and Digital Preservation Solution are detailed.

Links:

- [ORA Deposit Agreements](#)
- [Bodleian Libraries Digital Preservation Policy](#)
- [Open Position Statement](#)

Reviews

Reviewer 1:

Compliance level:

In Progress: the repository is in the implementation phase - 0

Comments:

Reviewer 2:

Oxford University Research Archive (ORA)

Compliance level:

In Progress: the repository is in the implementation phase - 0

Comments:

R4 Legal & Ethical (R04)

R04. The repository ensures to the extent possible that data and metadata are created, curated, preserved, accessed and used in compliance with legal and ethical norms.

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Response:

The University of Oxford has a Research Data Management Policy - <https://researchdata.ox.ac.uk/university-oxford-data-management-policy> (Revised November 2023). The Policy outlines the responsibilities of those undertaking research practices at the University of Oxford in addition to the role and responsibilities of the University. This includes how data should be stored, compliance with legal and ethical requirements, accessibility to others.

Outlining that research data should be: “

- Securely stored, identifiable, retrievable, accurate, complete, and reliable
- Compliant with legal and ethical requirements
- Where possible, able to be made available to others”

To support those undertaking research at the University the policy signposts the teams and services supporting the policy's core principles, including those teams supporting information security, research ethics, data protection, and legal support (see:

<https://researchdata.ox.ac.uk/research-data-management-policy-full-text> - section 6.)

The policy supports the Concordat on Open Research Data

(<https://www.ukri.org/wp-content/uploads/2020/10/UKRI-020920-ConcordatonOpenResearchData.pdf>) and the UKRI Common Principles on Data (<https://www.ukri.org/manage-your-award/publishing-your-research-findings/making-your-research-data-open/>), as well as following the FAIR (Findable, Accessible, Interoperable and Re-usable) principles for data management.

Whilst not explicitly stated, the University also follows the TRUST Principles for digital repositories

(https://en.wikisource.org/wiki/The_TRUST_Principles_for_Digital_Repositories). This is supported through the statements and expectations outlined within the Research Data Management Policy, but also via the Open Research Positions Statement (<https://www.ox.ac.uk/research/support-researchers/open-research>).

ORA is named as a repository to assist with the storage and dissemination of research data at the University, but it is understood that research data may be better stored in a subject or specialist repository that better suit the needs of the data being collected. This may include a large data warehouse (where files are larger than the repository can accept, or a 'dark' store for security purposes). In these cases, a record level item is expected to be created within ORA – building the repository as a data catalogue.

When research is deposited to ORA, as outlined in section R02, the depositor agrees to the terms of deposit (https://ora.ox.ac.uk/deposit_agreements) and has responsibility for the data deposited to ORA, which include confirmation of legal rights, intellectual property rights and the inclusion of sensitive or confidential information: “By depositing a work in ORA, you confirm to the University that you have the legal right and authority to deposit the work in accordance with the terms of this deposit licence and the work does not:

- infringe any intellectual property rights (e.g. copyright or database right) of any other person;
- contain any material which is defamatory of any person;
- contain any confidential information; or
- contain any material that invades the privacy or breaches the data protection rights of any other person.”

Guidance for depositors regarding ethical and legal issues is provided by the University's research data website -

<https://researchdata.ox.ac.uk/ethical-and-legal-issues>, which outlines information on 'Ethics review of research', 'Information security', 'GDPR and personal data', 'Intellectual property issues', 'Commercially sensitive data', and 'Other sensitive data'.

The deposit agreement also details how information will be shared where no explicit reuse terms have been applied within the work: “Any person provided with access to a work in ORA will only be licensed to access and use that work for non-commercial purposes, unless you choose otherwise.”

ORA allows for content to be stored under an embargo, temporarily or permanently “A work may be subject to an embargo period, during which it may not be made freely accessible to members of the public online, and the University will respect that embargo period.” Depositors can make this selection at deposit of the research to ORA, or an embargo may be applied as part of the review workflow undertaken by repository staff.

Depositors may also deposit multiple versions of content, such as an archive version and a dissemination version. Anonymisation or redaction can be made to a dissemination copy of work to reduce the disclosure of any personal details contained in the content deposited.: “If you are unable to secure permission to use third party copyright content in your work, you may submit two versions: one which includes the third-party copyright content and one which does not. The redacted version may be made freely accessible to members of the public online, but the full version will not be made available online until the expiry of the third-party copyright.” Depositors are advised of this as part of the review of a new deposit, and guidance on depositing is

Oxford University Research Archive (ORA)

provided via the ORA Data LibGuide at <https://libguides.bodleian.ox.ac.uk/ora-data>

Each deposit is 'reviewed' before content is made available via the ORA Public website, and where necessary a dialogue is opened with the depositor to cover any queries.

Additionally, ORA reviewers are familiar with the guidance of the UK Information Commissioner's Office (<https://ico.org.uk/media/1061/anonymisation-code.pdf> accessed 25/07/2024) and will check deposited data to ensure anonymisation should the associated metadata suggest that there may be risk of subjects' privacy being compromised. Where necessary, reviewers will contact depositors and refer them to the guidance of the UK Information Commissioner's Office, putting publication of the dataset in ORA-Data 'on hold' until it has been sufficiently anonymised.

Links:

Reviews

Reviewer 1:

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Comments:

Reviewer 2:

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Comments:

R5 Governance & Resources (R05)

R05. The repository has adequate funding and sufficient numbers of staff managed through a clear system of governance to effectively carry out the mission.

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Response:

The University of Oxford is the legal entity for all services, consultancy, and other contracts or services carried out by ORA, and takes on overarching responsibility for the service. As the institutional repository for the University of Oxford, ORA is considered a core service and is supported both organisationally and financially by the University of Oxford within its Infrastructure Charge mechanism (<https://governance.admin.ox.ac.uk/infrastructure-charge>).

The Bodleian Libraries, as a component of the University of Oxford, take responsibility for the management and delivery of ORA as a service and are responsible to the governance of the Curators of the University Libraries (<https://governance.admin.ox.ac.uk/curators-of-the-university-libraries>) within University Council. The Bodleian Libraries receives funding from the University to maintain its buildings, space, and services, but additionally generate their own income and funding.

As described in R01 ORA is included in key policy and requirements with regards to the responsibility of the University and its members surrounding research practice, open access, preservation, and more, see: 'Open Position Statement', and a wide number of groups and committees have a vested interest in the repository and its success.

At a university-level of leadership the Research Practice Group

(<https://www.ox.ac.uk/research/support-researchers/research-practice/research-practice-group>) has been established to "ensure that the highest standards of practice are followed in how research is designed, planned, executed, and reported, to drive innovation and to participate in sector initiatives and debates.", and to ensure that specialisms that support and promote good research practice are represented, such as "... open research, open access, research data management, research integrity and ethics, reproducible and transparent research, responsible research and innovation and research impact."

Within the Bodleian Libraries, operational resources of the ORA service is split between three departments within Scholarly Resources: Bodleian Digital Library Systems and Services (BDLSS), who manage the application software development and support the infrastructure for the repository; Collections Management, where the Open Access Collections team are based who manage the service and are the main administrative users; Open Scholarship

Oxford University Research Archive (ORA)

Support as a team of specialists who support research data management, digital data curation, training, events and guidance surrounding the service and responsibilities of the user with regards to funding, etc.

In terms of staff resources, support for the ORA service is represented by the following roles within the Scholarly Resources departments (though for some roles, e.g. Head of Open Scholarship Support, ORA forms only part of their responsibilities):

- Head of Open Scholarship Support (Open Scholarship Support)
- Head of Collections Management and Service Transition (Collections Management)
- Open Access Services Delivery Lead (Collections Management)
- Head of Research Data Management (Open Scholarship Support)
- Open Access and Repository Supervisor (x4) (Collections Management)
- Open Access and Repository Assistant (x6) (Collections Management)
- Chief of Digital Operations (BDLSS)
- Software Development Team Lead (BDLSS)
- Software Developer (x2) (BDLSS)

Staff are permanently employed within the Bodleian, with the exception of the Open Access & Repository Assistants whose roles are underwritten by the Bodleian Libraries, but currently employed on open-ended contracts, supported by external funding.

External funding comes from a 'block grant' provided to the University by the UK Research & Innovation (UKRI) who provide UK Institutions with annual funding to support the facilitation of Open Access (<https://www.ukri.org/publications/ukri-open-access-block-grant-terms-and-conditions/>). Funding from UKRI is assessed and allocated annually to UK institutions. This has been in-place and available to support open access at Oxford for the last 10 years.

ORA works closely and collaborates with other teams and services in the University in the provision of information, training, guidance and communication most significantly with Research Data Oxford (<https://researchdata.ox.ac.uk/>): "The Research Data Oxford service is intended to provide a single point of contact for advice and support on research data management. The team includes people from a number of departments and groups involved in RDM support, including IT Services, the Bodleian Libraries, Research Services, and DiSc. Expertise from other groups, including InfoSec and Information Compliance, is also drawn in as needed.

This service is open to anyone engaged in or planning research at the University of Oxford (including students doing research projects), and to anyone involved in supporting Oxford researchers."

Depositing to ORA is done through the University of Oxford's installation of Symplectic Elements (<https://www.symplectic.co.uk/theelementsplatform/>) which is managed by the Research Services Department in the University. A strong collaboration is therefore held between these services, providing support for system developments, transfer of content, and deposit guidance and reporting (<https://researchsupport.admin.ox.ac.uk/reporting/symplectic>)

Links:

- [Open Position Statement](#)
- [BDLSS](#)
- [Collections Management](#)
- [Open Scholarship Support](#)

Reviews

Reviewer 1:

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Comments:

Reviewer 2:

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Comments:

R6 Expertise & Guidance (R06)

R06. The repository adopts mechanisms to secure ongoing expertise, guidance and feedback-either in-house, or external.

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Oxford University Research Archive (ORA)

Response:

There are a number of guidance material, tools, training, and services available to staff across the University in support of research data. Much of this can be accessed via the Research Data Oxford website and through the 'ORA LibGuide - Data depositing' pages. This includes links through to other expert services, such as the 'Digital Curation Centre', 'Information Security' teams, 'Research Ethics', internal training programmes with the 'IT Learning Centre', and 'iSkills Workshops', and more.

As noted in R05, Research Data Oxford is supported by a number of staff and experts across the University: "The team includes people from a number of departments and groups involved in RDM support, including IT Services, the Bodleian Libraries, Research Services, and DiSc. Expertise from other groups, including InfoSec and Information Compliance, is also drawn in as needed."

For repository staff comprehensive procedural documentation is maintained and shared internally. This is currently detailed within an internal facing collaboration software (Atlassian Confluence), though is in the process of being moved to an internal SharePoint site. Documentation for staff covers many areas in detail, including: Policies and licences; funder requirement, staff training, technical architecture, data deposit workflows, reviewer workflows, file upload procedure, optimal file formats, metadata fields, DOI assignment workflow, guidelines and other training materials, frequently asked questions.

New staff are brought up to speed with process as part of their on the role training as well as having access to the open courses across the University and the groups working in this space as a community of practice or Teams space.

ORA is a generalist repository (not domain-specific) and therefore relies on experts across the University Divisions and Departments to communicate specific education and support to Oxford researchers, this is coordinated by Bodleian Libraries Subject Librarians who host internal programs and events, including courses as part of the iSkills programme and dedicated subject specific LibGuide information.

The research Data Oxford website and helpdesk provide support and triage to enquiries to ensure that questions specific in nature are answered and supported by the right teams in the given area. This includes leadership on FAIR, which exists in an Oxford E-Research Centre (OeRC) team (lead by an author of the FAIR Principles), which runs FAIRsharing - a curated and informative educational resource giving a space to detailed data and metadata standards, databases and data policies.

There are also a number of internal groups related to research data within the University and a variety of community of practice groups which have corresponding Microsoft Teams groups and channels for questions, discussion, covering topics such as training, events, infrastructure, communications, ethics, security, software, etc. These are communicated and managed by informal and formal structures.

The Bodleian RDM Group is an informal community of majority Bodleian Libraries staff with regular membership from IT Services staff and occasional attendance by staff and researchers working with or supporting the management of research data. The group is Chaired by the Head of Research Data Management in the Bodleian who both facilitates the meeting and drives the agenda. Research Data Management is one strand of the Research Practice priority at the University, and as such the Head of Research Data Management for the Bodleian Libraries is the 'Research Practice Subcommittee (RPSC)' domain lead for post-project research data.

RPSC provides University-level oversight to ensure that the highest standards of practice are enabled in how research is designed, planned, executed, and reported. It is a forum to share information with, and gather input from, members representing academic Divisions and colleagues supporting research. RPSC reports to Research Portfolio Committee.

Links:

- [ORA Libguide - Data depositing](#)
- [Research Data Oxford](#)
- [Digital Curation Centre](#)
- [Information Security](#)
- [Research Ethics](#)
- [IT Learning Centre](#)
- [iSkills Workshops](#)
- [Research Data Delivery Group](#)
- [Oxford E-Research Centre](#)
- [FAIRsharing](#)
- [Research Practice Subcommittee \(RPSC\)](#)

Reviews

Reviewer 1:

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Comments:

Oxford University Research Archive (ORA)

Reviewer 2:

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Comments:

Digital Object Management

R7 Provenance and authenticity (R07)

R07. The repository guarantees the authenticity of the digital objects and provides provenance information.

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Response:

ORA serves as the repository for the University of Oxford. It is therefore only available to deposit research outputs by University of Oxford members – validated by a University of Oxford Single Sign-On (SSO). The deposit mechanism for the majority of research outputs, including research data, is via Oxford's installation of Symplectic Elements. Symplectic Elements provides information regarding the depositor with each deposit, including their SSO, Oxford email address and affiliation, and ORCID if present in the user profile (<https://libguides.bodleian.ox.ac.uk/ora-data/how-to-deposit>).

Information about the depositor is available as part of the review process to the repository team, but email addresses and SSO are not made available to the public website.

ORA supports the curation of research data predominantly at the end of the research lifecycle, i.e. that deposit to ORA is usually made where the research data is considered to be 'cold' and no longer being worked on. As such change and versioning is limited after deposit to the repository. Other services are recommended and referenced to be used whilst data is still 'active' (https://libguides.bodleian.ox.ac.uk/ora-data/about_depositing_data).

However, ORA does provision for versioning, and version control through DOI registration. This is managed through communication with the repository – versions can only be created by repository staff, and only where this has been deemed necessary. When a new version is requested for an existing ORA object a member of the review team can select for this to be created after making any necessary changes to the ORA record. When the record is then processed by the system the new version is given a new DOI relevant to that version. This is done by maintaining the original DOI and adding a version suffix. For example, the original object DOI 10.82XXX/ora-XXXXX1, a second version would then be 10.82XXX/ora-XXXXX1-2, a third version 10.82XXX/ora-XXXXX1-3, etc. with subsequent versions. Each DOI would resolve to the current ORA record page. Previous versions can then be accessed via a request option from the ORA record page.

Information is provided to depositors through the ORA LibGuide for depositing data (<https://libguides.bodleian.ox.ac.uk/ora-data>) within the guidance on 'How to deposit' and 'Deposit checklist'.

Every ORA object has a recorded 'History' as part of the metadata. The history entries act as an audit trail for the deposit, collecting information such as deposit date, any transfer actions between internal systems, when objects were edited and by whom, publication, etc. This history log is saved as part of the record metadata. Each history log includes an: 'action category', 'action date', 'action description', 'action responsibility', 'action duration', 'action comment', 'automatically updated fields'.

Additional history logs are kept for files attached to records, recording edits to descriptions of files, such as file names, file sizes, etc. This information is stored against the individual file metadata within the ORA system.

Each time the record passes a specified gateway, such as 'publication' to the public website a new version of the object is created within ORA's digital preservation system, this allows for a full restoration of an object at a given point in time if required. Checksums are generated for files and are validated at points of transfer. This includes the upload of large files to ORA via SFTP (SSH File Transfer Protocol).

To avoid inadvertent duplication (and therefore multiple versions of the same object) within ORA there are three separate areas of checks in place: 1) at point of deposit, the researcher may search for an item by title or DOI; 2) on ingest into ORA the system checks for duplication based on title, DOI, and item type, and flags this to the ORA review team; 3) the ORA review team check manually before beginning a review on a new deposit.

Links:

Reviews

Reviewer 1:

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Oxford University Research Archive (ORA)

Comments:

Reviewer 2:

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Comments:

R8 Deposit & Appraisal (R08)

R08. The repository accepts data and metadata based on defined criteria to ensure relevance and understandability for users.

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Response:

A deposit to ORA follows the agreement and terms of the ORA policies employed by the repository. This includes policy regarding content [ORA Content Policy] which outlines the types of work that the repository most commonly holds in addition to guidance on digital file formats and metadata standards; submission (eligibility) [ORA Submission Policy]; preservation (a section within the content policy); deposit agreement [ORA Deposit Agreements] and more. All policies can be found (or are referenced) at <https://ora.ox.ac.uk/policies>.

In addition to the policies surrounding the repository, ORA has a robust data model which adds a layer of control and quality assurance to the metadata collected or curated for a deposit. ORA's Data Model is published via the repository and can be found at: <http://dx.doi.org/10.5287/bodleian:pr22x1bjE>

The data model is reflected to the user via the deposit forms, to ORA Review staff in the review interface used for processing content through the repository, and to the ORA Development team within the code base – providing consistency across the ORA's suite of interfaces and systems, ensuring an understandability in communicating about issues, but also in meeting the standards that ORA has chosen to follow in metadata collection and output.

To assist the depositor with completing the metadata required for deposit, the 'ORA LibGuide - Data depositing' detailing a data deposit includes information on how to deposit alongside a deposit checklist. The guide also includes information regarding preparation of the deposit, such as file formats and file size considerations, linking through to advice provided by the UK Data Archive

(<https://ukdataservice.ac.uk/learning-hub/research-data-management/format-your-data/recommended-formats/>), the Digital Curation Centre

(<https://www.dcc.ac.uk/resources/curation-reference-manual/completed-chapters/file-formats>), and Digital Preservation Coalition

(<https://www.dpconline.org/handbook/technical-solutions-and-tools/file-formats-and-standards>).

Additionally, as noted in R0.5, digital preservation microservices monitors ORA's content. This includes understanding the different file types and versions of file types which make up the content. Through this monitoring the teams working to support ORA and the preservation microservices have been able to add to The National Archives PRONOM registry (<https://www.nationalarchives.gov.uk/PRONOM/Default.aspx>) to describe formats that require description or definition missing from the registry. Monitoring also allows identification of file types that may need further consideration for continued access, such as conversion of format versions.

The Digital Preservation Microservices operate as standard on the ORA 'boxes' and all content that is stored or passes through these. The Microservices have a dashboard that presents an overview of the repository and content with regards to any preservation needs (such as identified zero byte files). It is also linked with alerts that raise tickets in the ORA GitLab space for staff to review as appropriate.

Several spaces for guidance and advice are made available to researchers creating research data. These are detailed in the response to R06, which outlines the research data support at Oxford, but most significantly for assurances around data appropriateness and preservation is the information provided by the Research Data Oxford website (<https://researchdata.ox.ac.uk/>), which links the University of Oxford Research Data Management Policy (<https://researchdata.ox.ac.uk/university-oxford-data-management-policy>) and resources available on specific topics, such as data preservation and archiving (<https://researchdata.ox.ac.uk/tools-services-and-training?filter-1411-data%20management%20activity-851246=7641&page-851246=0>)

As noted in R06 a robust set of documentation exists for staff in processing data deposits to ORA. Each data deposit made to the repository is assessed by a member of the staff, checking that that the deposit can be opened or that there is sufficient information provided in opening or running the dataset deposited (as part of the data description or a 'Read Me' file), that the deposit meets the content policy of the repository, that the item type is appropriate to the content and that the depositor has completed sufficient details regarding the deposit. Staff further enhance the metadata of the deposit and liaise with the depositor to collect any information considered necessary for the curation, preservation, and accessibility of the content.

Helpdesk services are available to discuss queries with depositors for the Research Data Oxford team (<https://researchdata.ox.ac.uk/contact-us>) and directly with the ORA team (<https://ora.ox.ac.uk/contact>).

Links:

- [ORA Submission Policy](#)
- [ORA Deposit Agreements](#)
- [ORA Libguide - Data depositing](#)

Oxford University Research Archive (ORA)

- [ORA Content Policy](#)
- [ORA Data Model](#)

Reviews

Reviewer 1:

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Comments:

Reviewer 2:

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Comments:

R9 Preservation plan (R09)

R09. The repository assumes responsibility for long-term preservation and manages this function in a planned and documented way.

Compliance level:

In Progress: the repository is in the implementation phase - 0

Response:

A deposit to ORA follows the agreement and terms of the 'ORA Policies' employed by the repository. This includes policy regarding content, submission (eligibility), preservation, licensing, and more.

The 'ORA Content Policy' relates directly to the 'Bodleian Libraries Digital Preservation Policy', which maintains that "Systems used for managing digital content are chosen and/or developed using appropriate and tested exit strategies for digital files, metadata and persistent identifiers", that "Bodleian Libraries will actively monitor its content for corruption and unauthorized changes", and "Bodleian Libraries may undertake preservation activities, such as conversions from one file format to another, to ensure that digital content can render in current computing environments."

The 'ORA Content Policy' continues to outline the terms of retention within ORA as follows: "ORA maintains the practice of preservation and long-term accessibility of its content in line with the Bodleian Libraries Digital Preservation Policy.

The content within ORA is monitored regularly. This is done through a suite of Microservices that operate over the complete ORA technical stack. The microservices assess the content to check for changes in the state of content, as well as providing reports on the content held and the storage used. This allows for monitoring the health of the repository, taking action on immediate issues, as well as planning for future needs, such as for file format obsolescence, or predicted growth of the system's storage needs.

These services also run on copies of the repository content in addition to back-ups of the content. This allows for testing of the back-up system, as well as for tests of a full-restore of content.

Back-ups are taken of repository content - metadata and binary files - but also of derived components of the repository, such as the ORA Public website. This allows for ORA to be fully restored with minimal outage, should this be required.

A Data Preservation Service (ORA DPS) operates on ORA content for digital preservation purposes. This is an OCFL (Oxford Common File Layout) storage layer managed by Fedora Repository software. This layer of the service is not only independent but is also agnostic of ORA application and business logic. This allows the storage layer to be connected to a new software solution or version without heavy migration or dependency on the existing ORA repository set-up. For details, see our working paper on the ORA DPS [<https://dx.doi.org/10.5287/ora-bmm7yx6gk>].

ORA aims to undertake a market review of repository solutions every 5-7 years. Policies and procedures are set to be revisited in similar time periods. However, changes to policy or updates may occur more frequently due to developments in Open Access, technology, or workflows."

The current 'ORA Deposit Agreements' provide the contract between the depositor and the repository which details the permission and conditions of the deposit including the long-term storage, retention and preservation of content - "ORA supports the long-term preservation of and free access to research documents produced by members of the University of Oxford. By depositing a work in ORA, you grant to the University a non-exclusive, sub-licensable, worldwide licence to do any of the acts restricted by copyright or other intellectual property rights to the extent necessary to allow the University to store the work and make it accessible to members of the public online on or through ORA (or any electronic retrieval system that may replace ORA)."

Section R14 Storage & Integrity, outlines how content moves to and is stored in the ORA DPS and the assurances on document integrity and recovery are detailed. The Digital Preservation Microservices similarly linked and detailed in R14 the regular monitoring of content through the ORA software stack, from ingest to storage and transfer to the ORA DPS. The microservices have the additional benefit of providing ORA with an 'audit' of its content,

Oxford University Research Archive (ORA)

including file types and versions. This opens up the pathway for future file conversation activities as specific file versions become unsupported or obsolete, in addition to activities such as mass OCR.

The Bodleian Libraries have a digital preservation team who administer the micro services and support the development of preservation actions with services. The digital preservation team is made up of two roles; a Digital Preservation Specialist, and a Digital Preservation Technical Architect. In addition to this support, the digital preservation team have performed digital preservation maturity assessments of ORA. The assessment follows the criteria based on the National Digital Stewardship Alliance (NDSA) levels of digital preservation. There are a total of 34 criteria assessed regarding technical capabilities (not policy, funding etc.). In 2021 ORA met 50% of the criteria of the assessment and in 2024 at last review this had increased to 90%, largely a result of the implementation of the microservices and the ORA DPS.

Furthermore, the Bodleian works closely with agencies such as the Digital Preservation Coalition (<http://www.dpconline.org/>) and the Digital Curation Centre (<http://www.dcc.ac.uk/>), and these are promoted as tools and services on the Research data Oxford website (<https://researchdata.ox.ac.uk/tools-services-and-training>).

Promotional activities are varied, and include presentations to University divisions, faculties and departments, meetings with potential depositors (especially as new research data requirements are issued by UK research councils), and dissemination through the University's Research Data Oxford website (<https://researchdata.ox.ac.uk/tools-services-and-training> & <https://researchdata.ox.ac.uk/events>). Through these avenues and the support and expertise outlined in R6, guidance on formatting deposited research data for access and engagement ahead of depositing is provided to researchers with the additional aim of supporting onward digital preservation activities such as access through emulation software or file conversation.

Information in the form of printed leaflets and posters is also widely distributed around the libraries and academic departments of the University. All front-facing Library staff are made aware of ORA both at the induction training offered to new staff, and by frequent presentations at Staff Development events. Staff also conduct an active programme of outreach events within the departments and faculties of the University.

The 'ORA LibGuide - Data Depositing', and more general sections (<https://libguides.bodleian.ox.ac.uk/ora>) support the training and guidance provided and include information surrounding deposit, deposit requirements and information regarding ORA's use of persistent identifiers.

Links:

- [ORA Deposit Agreements](#)
- [Bodleian Libraries Digital Preservation Policy](#)
- [ORA Libguide - Data depositing](#)
- [ORA Content Policy](#)
- [ORA Policies](#)

Reviews

Reviewer 1:

Compliance level:

In Progress: the repository is in the implementation phase - 0

Comments:

Board comment:

Preservation Plan not fully implemented - For recertification in 3 years the board would like to see the Preservation Plan fully implemented. The plan will probably not have a solution for all the challenges but it should have a process on how to tackle future issues.

Reviewer 2:

Compliance level:

In Progress: the repository is in the implementation phase - 0

Comments:

ORA has made a good work in preserving its data.

However, achieving the "Implemented" status requires a more formal and structured approach.

As the extended guidelines denote "Applications that do not link to a documented preservation approach can be only at a maximum Compliance Level of 'In Progress'. There must be a link to a documented plan by the time of renewal."

Having all preservation processes fully described in a formally documented and approved preservation plan could be sufficient to meet the requirements for an Implemented status.

Board comment:

Preservation Plan not fully implemented - For recertification in 3 years the board would like to see the Preservation Plan fully implemented. The plan will

Oxford University Research Archive (ORA)

probably not have a solution for all the challenges but it should have a process on how to tackle future issues.

R10 Quality Assurance (R10)

R10. The repository addresses technical quality and standards compliance, and ensures that sufficient information is available for end users to make quality-related evaluations.

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Response:

The "Levels of Curation - explanation" background section of this document provides a detailed summary of actions taken by repository staff at different curation levels for a deposit to ORA, such as basic checks of metadata and files, supported deposited of files and formatting, and working with the author on documentation, file folder structure, and in some cases mediated deposit.

Below details the process further, showing 'quality assurance' at three stages in the ORA lifecycle: prior to deposit, in review, after 'publication'.

Prior to deposit:

R08 details information regarding the 'ORA Data Model' and the information and guidance provided and collected to ensure metadata is collected to ensure adequate description and preservation information is collected from a depositor. The 'ORA LibGuides' and 'Research Data Oxford' website provide a key source of information to depositors for this.

In addition to this support information, the deposit forms themselves have been designed to support the collection of metadata for object creation. This includes ensuring the minimal collection of metadata via mandatory fields in the deposit form, an ordering of fields to capture metadata and extensive additional fields available for depositors to add extra metadata for their work. Where appropriate fields have input validation or drop-down choices (controlled vocabularies) to assist deposit completion, and each field has help text alongside the input box for direct guidance as the form is completed.

In review:

Each deposit is reviewed by a member of repository staff. The reviewer checks the metadata entered by the depositor against the content being provided or alongside any 'publication' information or website reference available related to the deposit.

Any errors found are corrected as part of the review process either directly by the reviewer or by communicating with the depositor to gain clarity. Record information is enhanced and new metadata is added if found to be missing, such as contributors, affiliations, licence information, funders, related items etc. The review team works within ORA's Hyrax instance. This consists of a 9-step review workflow that focusses on different areas of metadata collection, e.g. bibliographic information, contributors, rights and licensing, related items, files, administration. Like the deposit form, the review forms represent the underlying ORA Data Model. Fields in the review forms have validation and controlled vocabularies to ensure a consistent quality of review per object. This includes look-up validation of Subjects with FAST, ISO standards for fields such as Language, and format validation for fields such as URLs.

Where a DOI is wanting to be registered for a deposit, before publishing and registration of a DOI the mandatory fields required for DataCite DOI registration are confirmed with the depositor and it is communicated that these values should not change beyond DOI registration.

After publication:

When the object is published the system takes further action to validate the input made regarding the description of the metadata, also confirming any embargo restriction to the files or metadata record. Publication sees the record created in Public ORA, where the Data Model is again represented in the SOLR index and creation of the ORA Public record. Publication represents a gateway in which the object enters both ORA's digital preservation system, but also the transfer of metadata for updated information to be available to Elements so that the depositor is able to see the enhanced record against the original deposit.

To further ensure consistency within this review process, supervisory staff additionally undertake 'Review checking' of other staff's work, flagging any discrepancies that need to be resolved or highlighting areas for development (technically and with regards to staff training).

Links:

- [ORA Libguide - Data depositing](#)
- [Research Data Oxford](#)
- [ORA Data Model](#)

Reviews

Reviewer 1:

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Oxford University Research Archive (ORA)

Comments:

Reviewer 2:

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Comments:

R11 Workflows (R11)

R11. Digital object management takes place according to defined workflows from deposit to access.

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Response:

R10 details out the levels of curation given to each deposit made to ORA and some of the actions that are carried out at differing stages of the deposit workflow. However, for the most part, the steps from deposit to access for any given object in ORA remain consistent.

The attached document (Review_process_basic) provides an overview of the processes taken by staff, such as 'claiming a deposit to ensure that an item is not worked on by more than one person at a time, checking for duplicates in the system and related items, updating metadata and enhancing the deposited record to meet ORA's Data Model, checking file access and surrounding documentation, and publishing the object and file (or applying an embargo to be released at a later date).

This workflow is detailed heavily in an internal SharePoint site for staff reference and where necessary the basic workflow is adjusted within the processes, and documentation exists for differing scenarios linked in SharePoint.

Examples include where it is necessary for an object or part of an object to be placed under a temporary embargo. In this circumstance additional review workflows come into play which may involve following up with the depositor directly after a period of time has passed, checking for the publication of a related item (such as a journal article), or returning to review the object and release files after a stipulated embargo period.

Another example could be where the content to be deposited is too large in size to be processed through the normal deposit interface. In these circumstances it may be necessary for staff to obtain the content on a physical hard drive or memory stick, which then working with the ORA Development team is processed directly into the repository. The collection of metadata describing the object is then done in direct liaison with the depositor either in correspondence or by using a templated spreadsheet to collect field values. Information to the depositor outlining some of the common scenarios are detailed at <https://libguides.bodleian.ox.ac.uk/ora-data/how-to-deposit> as part of the frequently asked questions.

Additionally, during the review of each deposit made to ORA if any 'challenges' are found with the content, such as un-anonymised data or the inclusion of uncleared copyright materials, this is discussed with the depositor. It may be necessary that the deposit is 'rejected' and the content deposit made elsewhere. What ORA 'is' or 'is not' for (with regards to research data) is detailed in the 'ORA Libguide - Data depositing'. This is managed in line with documented guidance and ORA Policies regarding content collection [ORA Content Policy]. The 'ORA Take-Down policy' applies to all content made available to the ORA Public website and has detailed workflows documenting the process should an enquiry or notice be received.

Links:

- [ORA Take-down Policy](#)
- [ORA Libguide - Data depositing](#)
- [ORA Content Policy](#)

Reviews

Reviewer 1:

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Comments:

Reviewer 2:

Compliance level:

Oxford University Research Archive (ORA)

Implemented: the requirement has been fully implemented by the repository - 1

Comments:

R12 Discovery and Identification (R12)

R12. The repository enables users to discover the digital objects and refer to them in a persistent way through proper citation.

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Response:

ORA is a public website (<https://ora.ox.ac.uk/>). Content made available through ORA is available to anyone with an Internet connection. The ORA public website is provided on Blacklight software (<https://github.com/projectblacklight/blacklight>) using a SOLR indexing schema (<https://solr.apache.org/guide/solr/latest/>). The public website has a direct search interface with sort and filter options and facets (https://ora.ox.ac.uk/?utf8=%E2%9C%93&q=&search_field=all_fields). Guidance to users on searching ORA is available on the ORA LibGuides (<https://libguides.bodleian.ox.ac.uk/ora/searching-ORA>).

As noted in R10, metadata of content made available via the repository follows the ORA Data Model (<http://dx.doi.org/10.5287/bodleian:pr22x1bjE>), and these metadata fields are searchable within the SOLR index. Each object available in ORA is assigned a UUID. This unique identifier can be used to identify a given object and is persistent within the repository structure throughout the different interfaces and storage layers, e.g. in the public interface, in the review interface, and in the preservation storage. How ORA uses persistent identifiers is detailed in the ORA LibGuide (https://libguides.bodleian.ox.ac.uk/ora/persistent_identifiers).

A DOI can be registered for data deposited to ORA. ORA registers DataCite DOIs and this is managed by the agreement with Datacite and the University of Oxford's Policy on the registration of Datacite DOIs (<https://scholarshipsupport.web.ox.ac.uk/sitefiles/doi-policy-revised-1.1.pdf>). R07 notes the process of versioning within ORA and DOIs.

Content made available via ORA is also made available programmatically in a number of ways. The ORA About (<https://ora.ox.ac.uk/about>) information details the different standards, formats and registries that ORA targets the sharing of metadata relating to content, such as in RIOXX (<https://riox.net/about/>) or OpenAIRE (<https://openaire-guidelines-for-literature-repository-managers.readthedocs.io/en/v4.0.0/introduction.html>), and registries, such as OpenDOAR (<https://v2.sherpa.ac.uk/id/repository/1064>), BASE (<https://www.base-search.net/about/en/index.php>) and re3Data (<https://www.re3data.org/repository/r3d100011230>).

Accessing ORA content in a programmatic way is detailed further within the information regarding the API (<https://ora.ox.ac.uk/api>) - "ORA supports and participates in the Open Archives Initiative (OAI). ORA is a registered OAI-PMH data-provider and provides metadata for all public records which is updated as soon as each record is published or updated." The webpage lists the various endpoints available via ORA's OAI-PMH output.

Information is also made available to search engines such as Google using site map indexes. How content made available by ORA can be used is detailed in the 'ORA Terms of Use', and specific 'rules' to an object are available on each individual record page.

Each record page in ORA, as a minimum, includes information to create a citation for the work. An option to 'Cite' the work is presented to the user within the record interface, which when selected presents copy-able choices of populated citation formats for the research (such as APA or MLA).

Links:

- [ORA Terms of Use](#)

Reviews

Reviewer 1:

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Comments:

Reviewer 2:

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Comments:

Oxford University Research Archive (ORA)

R13 Reuse (R13)

R13. The repository enables reuse of the digital objects over time, ensuring that appropriate information is available to support understanding and use.

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Response:

Within the curation and review processes (see R10) involved in receiving a deposit to ORA, it has been detailed that content in ORA is subject to the ORA Data Model. The ORA Data Model has been designed to allow content to be consistently described throughout the ORA system, as well as to the end user, whether through the public website or through programmatic sharing of content. This is managed by general metadata fields that are consistent across all ORA item types, but also through item types specific fields (such as Data Steward), and mandatory fields that are important to the long-term storage and understandability of content.

As noted in R12 ORA exposes metadata of the content it holds via an API. API documentation is available alongside information about the API and the different endpoints available (<https://ora.ox.ac.uk/api>). ORA supports and participates in the Open Archives Initiative (OAI) and is a registered OAI-PMH data-provider - providing metadata for all public records which are updated as soon as each record is published or updated.

Alongside the base endpoint or ORA OAI-PMH output in standard Dublin Core (DC) (<https://www.dublincore.org/about/>), ORA has specifically targeted certain standards and formats to meet the needs for internal sharing of content, such as a customised DC format for sharing with SOLO the University Libraries catalogue (<https://www.bodleian.ox.ac.uk/collections-and-resources/solo>), and extended DC format made available to EThOS (<https://ethos.bl.uk/About>) for the purposes of registering theses with the British Library theses service.

Other targets such as DataCite (<https://schema.datacite.org/>), DART (<https://www.dart-europe.org/>) and BASE (<https://www.base-search.net/about/en/index.php>) have been customised to allow for the efficient indexing and sharing of content within those database and aggregator services to which ORA shares content to assist with the dissemination of Oxford's research output. OpenAIRE and RIOXX formats have been implemented to ensure that ORA meets the metadata-sharing requirements of funding bodies and initiatives, such as UKRI, the Wellcome Trust and Plan S – including providing a CC0 (<https://creativecommons.org/publicdomain/zero/1.0/>) metadata output. Each supporting the University and its members with meeting compliance requirements of the funding bodies supporting their research.

Endpoints are kept up to date with the changing needs of services that ORA connects and the advancement of the standards, such as changes between versions. This helps to ensure that information regarding ORA remains up to date in registries such as OpenDOAR, re3data.org and FAIRsharing.org (<https://doi.org/10.25504/FAIRsharing.rkwr6y>).

The connection between ORA and Elements (<https://researchsupport.admin.ox.ac.uk/reporting/symplectic>) is also based on OAI-PMH and SWORD protocols (<https://sword.cottagelabs.com/swordv3/>) and is vital in support of the ORA Data Model and the transfer of information between the two services – information that is made publicly available in ORA, but is also used in the generation of researcher profiles to Oxford department websites, and more.

The ORA Data Model is key in ensuring that values exposed in the metadata remain clear and relevant in the detailing of the content that ORA holds. As described in R10 this includes the use of vocabularies and ontologies within controlled input fields. ISO standards (<https://www.iso.org/standards.html>) have been mentioned alongside FAST Subject headings (<https://fast.oclc.org/>), but this also includes the use of identifiers, such as ROR IDs for institutions and funders, RIOXX terms for file versions, the use of creative commons and open government licences (and others), copyright statements, and ISO date formats, to ensure that the metadata remains understandable and reusable throughout the ORA system.

Many of the standards referenced have the purpose of supporting content, or the description of content, to be accessible and understandable, and ORA strives to meet FAIR and CARE Principles for its content. Following these principles (by their very intent) helps to ensure that content can be understood by users accessing the content. There are currently plans to undertake a FAIR assessment of ORA content, which will allow specific recommended actions to be taken to improve record metadata.

Users coming to ORA are presented with a search function, the results of which can be filtered by multiple facets including the item type 'Dataset'. Clicking on a dataset record from the search results takes users to the full record featuring the metadata described above.

ORA also presents items including Datasets in a number of Collections, showcasing the research content being collected by the repository in focussed areas of research or specific types of content, such as the ORA Climate research Collection or ORA Oxford Thesis Collection. 'ORA Collections' with a specific research focus have been created in consultation with subject experts on the research theme, using their expertise to bring focus to the featured content and the research being undertaken around the University. As with the main interface, collections can be filtered by facets including 'Dataset'.

Feedback from internal and external users is encouraged and facilitated by use of a feedback form on the ORA site (<https://ora.ox.ac.uk/contact>), and the option to email the team directly, or to contact them by phone or physical mail.

Feedback received regarding the ORA interface, using the interface, or discovering ORA content is taken by the team and actioned as appropriate. This could be a simple change to the metadata of the ORA record, or be put forward as development as a feature request.

Links:

- [ORA Data Model](#)
- [ORA Contact Details](#)

Oxford University Research Archive (ORA)

- [ORA Collections](#)
- [ORA Collections: developing themed research portals within the institutional repository](#)

Reviews

Reviewer 1:

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Comments:

Reviewer 2:

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Comments:

Information Technology & Security

R14 Storage & Integrity (R14)

R14. The repository applies documented processes to ensure data and metadata storage and integrity.

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Response:

R0.5 notes the differing services supporting ORA metadata and content integrity and storage. This is supported by the policy and documentation noted in R09.

Information detailing the storage and structure of the repository systems is recorded and updated within the ORA GitLab repository (<https://gitlab.bodleian.ox.ac.uk/ORA4>), though this is internally available only. Storage locations for content is managed as follows: 1) internal to the ORA set-up, 2) with digital preservation system, 3) on shared infrastructure, 4) on physical disc. There is also a local cache for access to small binary files available for the delivery of files to the public interface. This is briefly noted within the ORA Content Policy - https://ora.ox.ac.uk/content_policy. Storage locations and back-ups are multi-site within the University, at locations in Oxford and Slough.

The main ingest route to ORA is via Elements (<https://researchsupport.admin.ox.ac.uk/reporting/symplectic>). As the University's research information system, Elements records the research outputs for the University alongside other information of the University researchers. Elements has a database for metadata surrounding research outputs that is independent to ORA and backed-up by IT Services infrastructure. Access to deposit via Elements is based on SSO. Differing permission levels exist within Elements for the system administration and access to reports. Files are not stored within Elements. On upload of a file to Elements the object and binary file(s) are transferred to ORA.

ORA is set up to hold and store the canonical version of the repository content in its review interface. Once an object has been deposited to ORA and transferred into ORA Review no further edits or changes can be influenced to the deposit outside of the review instance, with the exception of the addition of a file. Deposit is the first gateway into the digital preservation system.

Once curation has occurred and the deposit is processed from ORA Review to ORA Public a second gateway is passed. ORA Review can only be accessed by staff working on the repository. This is managed by a log-in process and by the availability of the service based on VPN access. Expected changes occur to objects in the process of review and these are tracked within an object's history. This is detailed in section R07. At each gateway a version of the deposited object is created within the data preservation system (DPS). Which sits independently from ORA itself. Access to the DPS is restricted to ORA development staff.

ORA's infrastructure is managed by central IT Services based on their Scality Network within the Cloud Services team. However, back-ups of the repository are taken locally on disc. Back-ups are run nightly over the repository systems, and disc copies are taken on a weekly rota.

The DPS provides an independent store of repository content that is monitored - maintained on a separate architecture to the Scality network. Checksums and fixity processes take place on ingested objects and new versions, as well as anti-virus monitoring.

ORA Review and the DPS are both linked into the DPS Microservices mentioned in R0.5. The microservices provide a series of actions regularly to the content and newly ingested content as the repository is added to. This again checks for virus, checksums, fixity, etc. The microservices suite alerts the repository team to any unintended changes or issues found with regards to the content, including zero-byte files, security issues (such as the accessibility of content), viruses detected, etc. The service also provides valuable assessment of content, such as providing a list of file types and versions of content

Oxford University Research Archive (ORA)

(e.g. PDF, PDF-A, Word, Word Perfect, etc.) which allows the repository staff to monitor and manage deteriorating or unsupported file formats for the purposes of file conversion.

Growth of the repository is also monitored and projected allowing for preparation of future storage needs or space maintenance.

Further reading on the Digital Preservation Micro Services can be found at: <https://ora.ox.ac.uk/objects/uuid:f04aea54-59e2-486e-a8e1-90456d38145f> and <https://ora.ox.ac.uk/objects/uuid:754def16-a5ab-4123-b119-d4d8d56e60c6>. A paper on the data preservation system can also be read at <http://dx.doi.org/10.5287/ora-bmm7yx6gk>

ORA's 'Take-down Policy' applies to all content held by ORA. Where a request to remove an item from the repository is made this is applied to the latest version of the stored content.

Links:

- [ORA Take-down Policy](#)

Reviews

Reviewer 1:

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Comments:

Reviewer 2:

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Comments:

R15 Technical Infrastructure (R15)

R15. The repository is managed on well-supported operating systems and other core infrastructural software and hardware appropriate to the services it provides to its Designated Community.

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Response:

ORA is built predominantly on Open-Source software.

- The ORA Public interface utilises the Ruby on Rails BlackLight interface which relies on Apache SOLR indexing (<https://github.com/projectblacklight/blacklight>)

- ORA's administrative space (ORA4 Review) is an extension of the Samvera community's Hyrax platform (<https://hyrax.samvera.org/>)

- Lyrasis Fedora (<https://fedora.lyrasis.org/>) provides the repository system

The software is supported in-house by the digital team within the Bodleian Libraries, and the software is updated regularly in-line with new releases and developments to the code bases. Major version updates are staggered outside of key reporting periods, such as end of REF (Research Excellence Framework) periods. The ORA development team are active in the open-source community, contributing to the community knowledge base, alongside regular attendance at events and meetings. Membership is also held on the Fedora Governance Group from within the team.

As noted in other sections ORA also connects to an independent digital preservation system that utilises Fedora 6 software which in turn utilises the OCFL (Oxford Common File Layout) (<https://ocfl.io/>) framework. Members of the Bodleian Libraries team have been (and still are) involved in the creation and maintenance of the OCFL framework. The Bodleian Libraries has it's own Digital Preservation Services team who assist and advise with regards to ORA.

Deposit to ORA can be made via three main routes: 1) direct deposit to the repository via a designed user interface on the Hyrax platform (ORA Deposit - <https://ora.ox.ac.uk/deposit>), this is the main route for theses deposit at Oxford; 2) deposit via Oxford's implementation of Digital Science's Symplectic Elements (<https://researchsupport.admin.ox.ac.uk/reporting/symplectic>), as the research information system at Oxford; 3) via bulk upload, managed within the ORA Review instance by Review staff, using csv files and zip folders.

Documentation of the repository set-up, how to work in each space, etc. Is maintained within GitLab (<https://gitlab.bodleian.ox.ac.uk/ORA4>). Additional user documentation regarding workflows or staff processes are documented within a dedicated SharePoint space.

Oxford University Research Archive (ORA)

Hardware is managed by the central IT Services (<https://www.it.ox.ac.uk/networks-and-infrastructure>) for the University of Oxford, and ORA is a core service set within this network. IT Services have a long-standing working relationship with the Libraries and a service level agreement for providing the infrastructure to the Libraries and the whole University. ORA's infrastructure is also supported by the Bodleian Libraries own Infrastructure team (<https://www.bodleian.ox.ac.uk/about/libraries/our-work/digital-library>) who handle tape back-ups and feed in troubleshooting issues, security and access, and storage needs.

Links:

Reviews

Reviewer 1:

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Comments:

Reviewer 2:

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Comments:

R16 Security (R16)

R16. The repository protects the facility and its data, metadata, products, services, and users.

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Response:

As a University Service ORA is subject to the scrutiny and benefits of central IT Services including Identity and Access Management (IAM) (<https://services.it.ox.ac.uk/Service/security-and-access/identity-and-access-management>), and Information Security (InfoSec) (<https://services.it.ox.ac.uk/Service/security-and-access/information-security>).

ORA implements access to its services (deposit servers) via Single Sign-On (SSO) and multi-factor authentication (MFA) as supported by the IAMs team (<https://help.it.ox.ac.uk/accounts-and-passwords>).

In addition to these access conditions, in order to gain access to ORA's review interface (where metadata or files can be edited), specific VPN access is required – outside of the University's central VPN and controlled by Bodleian Infrastructure staff

(<https://www.bodleian.ox.ac.uk/about/libraries/our-work/digital-library>). The review application then requires further user sign-in controlled by registered accounts and roles within the teams supporting the ORA service. A list of users is maintained by the ORA Development team.

Access to ORA's underlying storage and digital preservation layers also require specific access via VPN, in addition to be further limited to just the Bodleian Infrastructure team and ORA Developers.

ORA's public interface is accessible to anyone with an Internet connection. Such measures have been put into place to limit certain actions that may cause damage or disrupt the public services, such as a robust Robots.txt file, IP block list, and limiters on download or export actions.

In some instances, such as 'Contact us' (<https://ora.ox.ac.uk/contact>) Captcha has been used to further authenticate human action.

ORA follows the guidelines of the InfoSec team and engages with the central service during periods of major project development. A set of principles and guidelines can be found at <https://www.infosec.ox.ac.uk/it-security> which details a level of assessment that services run at the University should put in practice and achieve. As a University policy notes "Appropriate information security controls are implemented to protect all IT facilities, technologies and services you use to access, process and store University information."

(https://infosec.ox.ac.uk/sites/default/files/infosec/documents/media/information_security_policy.pdf)

In recent project activities ORA and central ITS teams engaged an external consultant company Falanx Cyber Defence (part of the WaveNet Group) (<https://www.wavenet.co.uk/falanx>) to undertake penetrative testing of ORA and generate a report of any insecurities to be rectified. This is available as a commissioned regular activity.

Alongside preventative measures deployed across the ORA application stack, ORA has a robust back up process - multi-site back-ups are stored both digitally and physically on disc – ensuring perseverance of the service in the event of the need for disaster recovery.

Oxford University Research Archive (ORA)

In addition to system controls, all staff are required to undertake Information Security training as they join the Bodleian Libraries, and as a regular refresher (annually).

Links:

Reviews

Reviewer 1:

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Comments:

Reviewer 2:

Compliance level:

Implemented: the requirement has been fully implemented by the repository - 1

Comments:

Applicant feedback

R17 Applicant Feedback

We welcome feedback on the CoreTrustSeal Requirements and the Certification procedure.

Compliance level:

In Progress: the repository is in the implementation phase - 0

Response:

The application criteria is very thorough, but at times broken down too granular - the narrative / flow of information may be better with some sections combined. It would be helpful to have a "notes to reviewers" option on each section or provide a space for some internal narrative or conversation to allow for a better address of review comments and edit suggestions. Do reviewers see what parts of the text have been changed, added, or updated?

A note on criteria:

R03 has been updated to indicate that this is In Progress. We are exploring how and where this agreement should be made at the University, whilst also exploring discussions with other peer institutions on providing a shared reassurance of services.

Links:

Reviews

Reviewer 1:

Compliance level:

In Progress: the repository is in the implementation phase - 0

Comments:

I think the repository is ready to receive the certification. There are two requirements still "In Progress": R03 (Continuity of Service) and (R09 Preservation Plan).

Even though a formal preservation plan has not yet been fully drafted, there is solid work already done to preserve ORA data. Preparing a comprehensive, approved preservation plan that clearly describes all preservation activities may be sufficient to meet this requirement.

Secretariat comment:

* Thank you for the feedback, please note that your evidence should provide a focussed narrative describing the supporting evidence as completed applications will be made public for others to learn from and are not only read by the reviewers.

* FYI: we update the requirements every 3 year and ask for community feedback before that time, your comments are more than welcome there.

Oxford University Research Archive (ORA)

* Reviewers do see what is changed via the dif tool, see manual (at the top of the tool) for more information.

Reviewer 2:

Compliance level:

In Progress: the repository is in the implementation phase - 0

Comments: