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FIDELIS – TTRAMatrix Introduction to the Transpar<mark>ent Trustworthy</mark> Repository Attributes Matrix: <mark>Webinar</mark>

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Introduction: Overview

The Transparent Trustworthy Repository Attributes Matrix (TTRAM) provides a structure and reference for the FIDELIS and EDEN projects and for the emerging FIDELIS network.

- Activities & functions (A|F) that are relatively constant across all repositories
- Integrates how these are influenced by repository **variables**:
 - **Repository Type** and **Level of Retention**, **Curation and Preservation**
- Identifies what information should be made **transparent**

Understand the practices undertaken by the repository, and the interactions between A|F and variables.

In some **contexts** these factors will influence **trust** and trustworthiness in the research infrastructure landscape.



The matrix is a tool to support the project, network and wider EOSC stakeholders in:

- **Collecting** information in a logical, reusable way
- **Understanding** the wide variety of types and practices across repositories
- Sharing structured information for consultation and use
- **Designing** and **implementing** a functional network of mutual support and aligned practice

Populating the Matrix

To populate the Matrix spreadsheet:

- 1. choose an **A**|**F** relevant to your repository
- 2. add the **transparent information** you share about it (policies, procedures, metadata etc).
- 3. consider if and how the information/characteristics are **influenced by the variables**:
 - Levels of Retention, Curation and Preservation (LoRCAP)
 - **Repository Type** in terms of depositors, users & objects

FIDELIS TTRAMatrix 🗸 🛱				Metadata, Policies, Procedures, Standards, References, Legislation etc	Procedures, Variables	
MX ID 🗸	Group 🗸	Activity/ Function ~ (A F)	Description ~	Transparent Your Your Your Your Your Your Your Your	Levels of Retention, Curation & Preservation ~ (LoRCAP)	Repository Type: Depositors, Users and Objects (Included & Excluded)
MX04	Digital Object Manageme nt	Deposit & Appraisal	Accepting custody of digital objects from depositors, transferring responsibility to the repository. It may also include appraising offered or requested deposits to ensure they meet established criteria for acceptance.	criteria applied at the point of deposits, whether automated or manually applied and the degree to which they are required or optional. Collections Development and Appraisal Policy Deposit Compliance Criteria Deposit Procedures Acceptable/Preferred File Formats List ReAppraisal Plan, Data Management Plan Deposit licence (See also: Rights).	LoRCAP: maps to Deposit Criteria. Depending on the LoRCAP deposit of an object may be permitted or restricted based on suitability for initial curation or active preservation.	Institutional repositories may limit depositors to one or more specific organisations. National repositories may require that research or a researcher is based in a specific country or that the digital object is relevant to users in a specific nation. Specialist repositories may permit or restrict objects based on their disciplinary relevance, supporting metadata, content types or funders.

Scope & Guidance

The TTRAM is not a:

- Test
- Assessment
- Network Application Form

Spreadsheet with examples & a supporting guide.

- The goal is not to 'complete' it
- There are no 'wrong answers'.

Feedback to August 15th

fidelis.matrixfeedback-request@postit.csc.fi or as comments to Guide

Version 1.0 published in September and report in December.

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Feedback

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MX05	Digital Object Manageme nt	Curation, Quality & Compliance	Ensuring digital objects reach a defined level of quality and standards compliance before they are made available for reuse.	Documentation of any initial curation steps taken after deposit to meet defined criteria for access and reuse and potentially to enable preservation, including any curation steps like conversions to file formats and any additions to metadata. Quality and Standards statements Standard operating procedures	LoRCAP: maps to Initial Curation Not relevant to retention-only or deposit compliance repositories that don't undertake curation. Depending on the LoRCAP, initial curation may also include preparation for Active Preservation.	Specialist repositories need specific skills around data formats, metadata and ontologies related to disciplines or content types.
MX06	Digital Object Manageme nt	Discovery & Identification	Applying persistent identifiers and descriptive metadata to digital objects to support resource discovery. Providing discovery systems and making metadata available for harvesting.	Persistent identifiers used (ideally chosen from a controlled vocabulary) for objects, organisations, researchers, software etc, and information about whether	N/A	Specialist repositories use specific metadata and ontologies related to disciplines or content types for resource discovery.

+ = TTRAMatrix Template with examples and guidance -

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"Types of Trustworthy Digital Repositories (TDR) preserving digital objects*."

*But... all the words in that sentence are ambiguous, disputed or subject to debate.



- The D in TDR is sometimes presented as 'data'
- Sometimes data is used in a narrow and specific sense
- sometimes 'data' is used in a broad sense to be inclusive of anything 'digital'.

Various raw and processed 'data' of relevance to researchers and/or created/collected during research will be significant within FIDELIS.

FIDELIS is clear that **digital objects** also include, but are not limited to software, code, ontologies, semantic artefacts, standards, schemas and workflows.



The report and recommendations from the EOSC Long Term Data Preservation Task Force (LTDP-TF) make it clear that 'preservation' is interpreted as being anything...

From:

Providing basic storage integrity and access services

To:

Long term actions to update disciplinary specific data and metadata to ensure digital objects remain technically usable and semantically understandable (FAIR etc) by their expert user community.





The Levels of Retention, Curation and Preservation

Z. Level Zero. Retention-only

Content distributed as deposited. Unattended deposit-storage-access. Data content and supporting metadata are stored for a given time period,

D. Deposit Compliance

Data content and supporting metadata deposited are checked for compliance with defined criteria

C. Initial Curation

The digital objects are curated by the repository to meet defined criteria

A. Active preservation

Long-term responsibility for ensuring that the data and metadata can be understood and rendered as required by the designated community for reuse

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Clarification: Repository

- Some definitions differentiate **repositories** from **archives**.
- The EOSC Handbook differentiates repositories from 'databases', though the described features seem closely aligned.
- The term 'repository' can appear to exclude 'registries', because the latter hold metadata rather than data records.

All these (plus EOSC Nodes etc) can be considered *'venues'* for digital objects (cf: <u>SKG-IF</u>)

- **Organisations** responsible for
- Catalogues listing
- Digital Objects



Clarification: Trust and Trust Contexts

- The **EC Annotated Grant Agreement** sets expectations for deliverables and outputs of funded projects.
- The EOSC Handbook provides requirements for engagement with EOSC Nodes
- The trust certification standards like **CoreTrustSeal** currently only apply to 'active preservation' repositories.

These three examples have widely different requirements and expectations of what information should be made transparent to demonstrate trustworthiness.

CESSDA ERIC Social Science Archives or ELIXIR Core Data Resources may need to follow additional, more specialist expectations.

This demonstrates that **trustworthiness is not a single, binary outcome of a standard assessment**. The Matrix must be flexible enough to adopt new variables and address different trust contexts.



Activities & Functions



Activities & Functions

Activities & Functions (A | F). Context+

- digital object management
- organisational infrastructure
- technology
- security



'Superset' drawn from a range of existing criteria, guidelines, requirements and standards.

The matrix supports cooperation and alignment.

It will compliment and engage with those working to develop more specific and granular criteria. It is not intended to dilute or replace them.

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Activities & Functions

Group	Activity/ Function (A F)	Description
Digital Object Management	Deposit & Appraisal	Accepting custody of digital objects from depositors, transferring responsibility to the repository. It may also include appraising offered or requested deposits to ensure they meet established criteria for acceptance.



Activities & Functions: Source Criteria

- •COAR Community Framework for Good Practices in Repositories
- •CoreTrustSeal Trustworthy Digital Repositories Requirements 2023-2025 Extended Guidance
- •CoreTrustSeal+FAIRenabling: Alignment between the FAIR Principles and CoreTrustSeal 2023-25
- •Desirable characteristics of Data Repositories for Federally Funded Research
- Digital Library Federation (DLF) Levels of Born Digital Access
- •DLF Born Digital Access Working Group 2020-02-05

•DPC RAM

- •FAIRsFAIR Service Assessment Framework
- •Identifying ELIXIR Core Data Resources
- •National Digital Stewardship Alliance (NDSA) Levels of Preservation
- •Supplemental Information to the NIH Policy for Data Management and Sharing: Selecting a Repository for Data Resulting from NIH-Supported Research
- •The FAIR Guiding Principles for scientific data management and stewardship
- •The TRUST Principles for digital repositories

Transparency

Transparent Information

Documentation of compliance criteria applied at the point of deposits, whether automated or

manually applied and the degree to which they are required or optional.[]

Collections Development and Appraisal Policy

Deposit Compliance Criteria

Deposit Procedures

Deposit Licence

Acceptable/Preferred File Formats List



Transparent Information can be general or specific including:

Information Artefacts: internal (policies, procedures) and external (guidance, criteria, legislation) information.

Repository Characteristics: standardised repository information e.g. items from the Data Repository Attributes Working Group, metadata in the re3data repository registry, the levels of retention, curation and preservation offered.

Object Characteristics information about a specific digital object that results from a repository activity/function. e.g. 'Rights' this could be the deposit and reuse licences for an object. In the case of 'Storage & Integrity' this could be a checksum.

Transparency

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The first variables we have selected are:

- The Levels of Retention, Curation and Preservation (LoRCAP) being offered
- The commonly used **'types' of repository** (disciplinary, generic, national, institutional etc) that influence the scope of the collections and the organisations that care for them.

The Levels of Retention, Curation and Preservation



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Types of Repository: Depositors, Users and Objects

Commonly referred to repository types include:

- Institutional
- Regional, National, International
- Generalist
- Disciplinary/Domain/Specialist

Variable focusses on objects, depositors or users' characteristics that could lead them to be included or excluded.

- Depositors accepted/rejected e.g. based on institutional affiliation.
- Users accepted/rejected e.g. based on geographic location.
- Digital objects types and content accepted/rejected for deposit, curation, preservation and access.

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Variables influence repository activities and functions and the related transparent information.

Initial variables selected as a foundation:

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- LoRCAP influence technical monitoring (of formats and software) and community needs. Identifying triggers for preservation actions.
- Repository-type restrictions on depositors, collections and users influence whether a researcher should or could select them for their research outputs.

Variables influence A|F and transparent information.

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Understanding these key variables, and how they interact, will provide the foundation for a common vision and for the exploration of additional, relevant variables including (but not limited to) the FAIR, CARE and TRUST Principles.

Trust & Trustworthiness

Trust is not a binary and static outcome of a single, one-size-fits-all assessment.

Defining trustworthiness in (meaningful) **contexts depends on understanding objects, actors, roles, and expected levels of service.** These in turn make it clear that an assessment of trustworthiness needs to be **based on reliable, transparent information**.



The design statement prepared for the matrix takes account of a range of influences including the past and current EOSC Task Forces and the EC, Horizon Europe Annotated Model Grant Agreement which provides a perspective on essential criteria for 'trust'.



The Matrix will support and/or seek to align with:

- Network Governance and Value Add (FIDELIS Pillar 2)
- FIDELIS Training and Support (Pillar 4) and Strategic Alliance
- Cascading Grants, Communication and Dissemination (Pillar 5)

EDEN

- EDEN Expert and Community Engagement (WP4)
- Data and Process Framework for Long-Term Digital Preservation (WP1)
- Discipline-specific Requirements, Validation and Future Use (WP3).
- Long-term Access and Preservation Services & Tools (WP2)
 - Plus RDA work on 'technical repository service providers'.



Dependencies & Interdependencies

- EDEN outputs on preservation reappraisal and quality criteria can be integrated into the matrix where relevant, specifically around active long term preservation repositories and disciplinary repositories and technical services.
- The matrix will also support ongoing alignment with existing standards, guidelines, criteria and metadata.





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TTRAMatrix

- This is not an assessment or a test
- There are no wrong answers or judgements
- The goal is not to 'complete' it
- You don't have to fill in the whole thing
- A gap is just a gap. If no information is available that's fine.
- Most activities and functions will be broadly applicable. Some may not apply to you
- Any information a repository shares is useful to validate the Matrix, understand repositories and guide future network activities



Feedback

Feedback to August 15th

fidelis.matrixfeedback-request@postit.csc.fi or as comments to Guide

Version 1.0 published in September and report in December.

- **Gaps and clarifications** in the activities and functions (A|F) and their descriptions.
- **Good examples** of documents or metadata related to A|F that your organisation provides or uses.
- Gaps and clarification on the Levels of Retention, Curation and Preservation (LoRCAP).
 - This will support a FIDELIS project response to the CoreTrustSeal revision process.



Feedback

Feedback to August 15th

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Version 1.0 published in September and report in December.

- Any **additional** object, depositor or user **characteristics** that would help us understand repository types.
- Alignments between the Matrix and existing standards and criteria, and suggestions for future alignment.
- Any related areas of focus the FIDELIS Network should take forward
 - e.g. events, activities or user groups.



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Thank you



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