Connected PIDs enable **FAIR** data:

- **Findable**
- **Accessible**
- **Interoperable**
- **Reusable**

1. Only assign DOIs to content that your organization has responsibility for (hosted/managed/created at your organization).

2. Only assign DOIs to unique content - do not assign DOIs to content already published somewhere else with a DOI.

3. Please check copyright before assigning a DOI.

4. DOIs must resolve to a publicly available landing page. The underlying content does not need to be publicly available but the metadata must be open.

5. Update DOI metadata if it changes over time.
### Resource Types

DataCite DOIs can be created for (Metadata Schema v4.3):
- Audiovisual materials
- Collections
- Data Papers
- Datasets
- Events
- Images
- Interactive Resources
- Models
- Physical Objects
- Services
- Software
- Sounds
- Texts
- Workflows
- Other

[https://support.datacite.org/docs/doi-registration-policy](https://support.datacite.org/docs/doi-registration-policy)
New Resource Types

NEW! Metadata Schema v4.4:

- Book
- BookChapter
- ComputationalNotebook
- ConferencePaper
- ConferenceProceeding
- Dissertation
- Journal
- JournalArticle
- OutputsManagementPlan
- PeerReview
- Preprint
- Report
- Standard

https://schema.datacite.org/meta/kernel-4.4/
DOI Basics

- 1 Prefix per repository
- Prefix and Suffix should be opaque (no semantic meaning)
  - Prefix will already be assigned
  - Recommended: Use the auto-assigned Suffix
- Use the full URL to display DOIs

https://support.datacite.org/docs/doi-basics
DOI Display Guidelines

- Use the full URL to display DOIs
- Display DOI on:
  - item landing page
  - abstracts
  - tables of contents
  - full-text HTML and PDF articles, and other scholarly documents
  - citation downloads to reference management systems
  - metadata feeds to third parties
  - “How to Cite This” instructions
  - social media links

https://doi.org/10.7939/r3qz22k64
DOI Landing Pages

- Resolve to a landing page (not directly to the content)
- Include full bibliographic citation (or metadata elements)
- Display DOI on landing page (DC.identifier or citation_doi tag)
- Provide a way to access the item from the landing page

https://support.datacite.org/docs/landing-pages
DOI Tombstone Pages

- Same information as landing pages +
- Statement of unavailability

https://support.datacite.org/docs/tombstone-pages
The more metadata, the merrier!

- **Mandatory**: can’t create a DOI without these properties
- **Recommended**: optional, but strongly recommended for interoperability
- **Optional**: optional but provide a richer description of the object

**WHY?**

- Other services harvest DataCite metadata:
  - Examples: Clarivate’s Data Citation Index, Mendeley Data, Dimensions, Ex Libris Primo, Proquest Summon, and Scholix
Mandatory Metadata

**Mandatory**: can’t create a DOI without these properties

- Identifier (DOI)
- Creator(s)
- Title
- Publisher
- Publication Year
- Resource Type

Metadata definitions:


https://support.datacite.org/docs/metadata-quality
Recommended Metadata

**Recommended**: optional, but strongly recommended for interoperability

- Subject
- Contributor(s)
- Date
- Related Identifier(s)
- Description
- GeoLocation

Metadata definitions:

https://support.datacite.org/docs/metadata-quality
Optional Metadata

**Optional**: optional but provide a richer description of the object

- Language
- Alternate Identifier(s)
- Size
- Format
- Version
- Rights
- Funding Reference

Metadata definitions:

https://support.datacite.org/docs/metadata-quality
Include Related Identifiers

- Use the relatedIdentifier property to indicate related entities
- Mandatory sub-properties:
  - relatedIdentifierType
    - ARK, arXiv, bibcode, DOI, EAN13, EISSN, Handle, IGSN, ISBN, ISSN, ISTC, LISSN, LSID, PMID, PURL, UPC, URL and URN
  - relationType
    - IsCitedBy
    - Cites
    - IsSupplementTo
    - IsSupplementedBy
    - IsContinuedBy
    - Continues
    - HasMetadata
    - IsMetadataFor
    - IsNewVersionOf
    - IsPreviousVersionOf
    - IsPartOf
    - HasPart
    - IsPublishedIn
    - IsReviewedBy
    - References
    - IsDocumentedBy
    - Documents
    - IsCompiledBy
    - Compiles
    - IsVariantFormOf
    - IsOriginalFormOf
    - IsIdenticalTo
    - IsReviewedBy
    - Reviews
    - IsDerivedFrom
    - IsSourceOf

https://support.datacite.org/docs/connecting-research-outputs
**relationType**
Description of the relationship of the resource being registered (A) and the related resource (B).

**Table 9: Description of relationType**

<table>
<thead>
<tr>
<th>Option</th>
<th>Definition</th>
<th>Example and Usage Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>IsCitedBy</td>
<td>indicates that B includes A in a citation</td>
<td>Recommended for discovery.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;relatedIdentifier relationType=&quot;DOl&quot; relationType=&quot;IsCitedBy&quot;&gt;10.4232/10.ASEAS-5.2-1&lt;/relatedIdentifier&gt;</td>
</tr>
<tr>
<td>Cites</td>
<td>indicates that A includes B in a citation</td>
<td>Recommended for discovery.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;relatedIdentifier relationType=&quot;IShN&quot; relationType=&quot;Cites&quot;&gt;0761964312&lt;/relatedIdentifier&gt;</td>
</tr>
<tr>
<td>IsSupplementTo</td>
<td>indicates that A is a supplement to B</td>
<td>Recommended for discovery.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;relatedIdentifier relationType=&quot;URN&quot; relationType=&quot;IsSupplementTo&quot;&gt;urn:nbn:de:0168-ssoar-13172&lt;/relatedIdentifier&gt;</td>
</tr>
</tbody>
</table>

Include ORCID iDs for people when possible

*Creators*
The main researchers or organizations involved in producing the resource, in priority order.

Name Identifier

https://orcid.org/0000-0002-1196-6279

Uniquely identifies an individual or legal entity, according to various schemas, e.g. ORCID, ROR or ISNI. Use name identifier expressed as URL. The Given Name, Family Name and Name will automatically be filled out for ORCID and ROR identifiers.

Add another name identifier

*Person OR Organization OR Unknown*

Given Name

Sheila

The personal or first name of the creator.

Family Name

Rabun

The surname or last name of the creator.

https://support.datacite.org/docs/connecting-research-outputs
Include Related Identifiers

- Include ORCID iDs for people when possible
- Enables ORCID auto-updates via DataCite Search & Link Wizard

https://support.orcid.org/hc/en-us/articles/360006973653-Add-works-by-direct-import-from-other-systems

https://support.orcid.org/hc/en-us/articles/360006894594-Auto-updates-in-third-party-systems-DataCite

https://support.datacite.org/docs/connecting-research-outputs
Include Related Identifiers

- Include Funding information and related identifiers when relevant

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>FundingReference</td>
<td>0-n</td>
<td>Information about financial support (funding) for the resource being registered.</td>
</tr>
<tr>
<td>19.1</td>
<td>funderName</td>
<td>1</td>
<td>Name of the funding provider.</td>
</tr>
<tr>
<td>19.2</td>
<td>funderIdentifier</td>
<td>0-1</td>
<td>Uniquely identifies a funding entity, according to various types.</td>
</tr>
<tr>
<td>19.2.a</td>
<td>funderIdentifierType</td>
<td>0-1</td>
<td>The type of the funderIdentifier.</td>
</tr>
<tr>
<td>19.2.b</td>
<td>SchemeURI</td>
<td>0-1</td>
<td>The URI of the funder identifier schema.</td>
</tr>
<tr>
<td>19.3</td>
<td>awardNumber</td>
<td>0-1</td>
<td>The code assigned by the funder to a sponsored award (grant).</td>
</tr>
</tbody>
</table>

https://support.datacite.org/docs/connecting-research-outputs
Include Related Identifiers

- Include Funding information and related identifiers when relevant

Funding References

Information about financial support (funding) for the resource being registered.

Funder Name

LYRASIS

Funder names and identifiers are provided by the Crossref Funder Registry.

Funder Identifier

https://doi.org/10.13039/100017086

Uniquely identifies a funding entity.

Funder Identifier Type

Crossref Funder ID

The type of funder identifier, one of Crossref Funder ID, GRID, ISNI, or ROR.

Award Number

The code assigned by the funder to a sponsored award (grant).

https://support.datacite.org/docs/connecting-research-outputs
DOI Versioning

• For minor changes to an item
  • update existing version property (property 15) in existing metadata

• For major changes to an item
  • create a new DOI for the new version
  • HasVersion

```xml
<relatedIdentifier
  relatedIdentifierType="DOI"
  relationType="HasVersion">10.5281/ZENODO.832053</relatedIdentifier>
```

• IsVersionOf

```xml
<relatedIdentifier
  relatedIdentifierType="DOI"
  relationType="IsVersionOf">10.5281/ZENODO.832054</relatedIdentifier>
```
To-Do:

• Have a (digital) preservation strategy for the objects that you assign DOIs to
• Recommended: 3 copies on different media formats, stored in different geographical areas, with regular bit-checks

Solutions:

• DuraCloud https://duracloud.org/
• Archivematica https://www.archivematica.org
• LOCKSS http://www.lockss.org/
• Many other options http://www.digipres.org/tools/ubergrid/
Resources:

• NDSA Levels of Digital Preservation: https://ndsa.org/publications/levels-of-digital-preservation/

• Digital Preservation Coalition’s Digital Preservation Handbook: https://www.dpconline.org/handbook

• Theory & Craft of Digital Preservation (Pre-Print) by Trevor Owens: https://doi.org/10.31229/osf.io/5cpjt