

Persistent identifiers: DOI

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Problem: link rot

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Problem: link rot

One remedy: persistent identifier

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Problem: link rot

One remedy: persistent identifier
most well-known: DOI

URI

URI: Uniform Resource Identifier

- String of characters identifying a resource
- 2 functions:
 - name
 - localize
- Most common form: URL
- Less often used: URN

URI syntax

<scheme>:<hierarchical part>[?query][#<fragment>]

- URI scheme
 - Protocols like http, ftp, mailto...
 - File
 - RDF ressources, XML name space...
 - Specifies a concrete syntax
- Hierarchical part
 - “//”
 - Authority: hostname
 - path

URL: Uniform Resource Locator

“web address”

- Identifies a resource
- allows to obtain a representation of it
 - Specifies network location
 - Specifies access mechanism

URN: Uniform Resource Name

- Provides a mechanism for identifying a resource in a particular namespace
 - E.g. `urn:isbn:<isbn>`
- Does not specify location or access method

Digital Object Identifier



Digital identifier of an object

~~Identifier of a digital object~~

- Persistent identifier for all research artefacts
- Established in 2000
- Managed by International DOI Foundation (IDF)
- Federation of registry agencies worldwide
- Actionable, interoperable



DOI syntax

Character string: <prefix>/<suffix>

- Prefix:
 - identifies registrant of the DOI
 - Usually 10.NNNN (at least 4 numbers)
- Suffix:
 - chosen by registrant
 - Most legal Unicode characters allowed
- Resolved e.g. by <https://dx.doi.org/<doi>> or <https://doi.org/<doi>>.

DOI benefits

- Persistent identification of an object
 - Does not depend on location
- No disambiguity
- Associated metadata
 - May be updated any time

CrossRef

Crossref enables DOI assignment for the following content items:

- Journals/working papers: journal title, volume, issue and article
- Books: book series, title, chapter/section/entry
- Conference proceedings: multi-volume title, title, paper
- Components: sub-items of journal articles, book chapters/entries and conference papers including figures, tables, graphs and supplemental data
- Databases
- Dissertations
- Standards
- Data Sets and Data Elements

Datacite



- Persistent identifiers (DOIs) for research data
- Global non-profit organization
- DOIs allocated by Datacite members
 - Currently 55 registration agencies
- Membership fee 8.500 Euro p.a.
- Members charge own fee for DOIs
- > 14.6 million DOIs allocated
- Data centers register with a registration agency

Growth of DOIs

overview



<http://dashboard.project-thor.eu/dashboard/>

- ~175 million DOIs assigned (Sep 2018)
- +30% in 2 years

[DOI fact sheet](#)