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# **DOIs and Handles in repositories: comparing two options**

**Dr Katie Fraser  
Senior Librarian**

**University of Nottingham Libraries**



## What's the ask for PIDs in repositories?

- UKRI open access policy<sup>1</sup>
- “PIDs for research outputs must be implemented according to international recognised standards, examples of international standards include DOI, URN or Handle”
- Plan S<sup>2</sup>
- “Use of PIDs for the deposited versions of the publications (with versioning, for example in case of revisions), such as DOI (preferable), URN, or Handle.”





# The paralysis of choice

- UKRI have provide flexibility and a number of options
- However, this leaves the community unsure which system to implement:
  - For institutions which control development of their repository / CRIS there is a risk of adopting one system while another emerges as best practice
  - For institutions which work with a supplier for their repository / CRIS there is not a clear ask
  - For suppliers of systems there is a risk of adopting one system while another emerges as best practice
- Meanwhile there are pros and cons to the different systems that require understanding of a complex ecosystem of technical, policy and community requirements

- URN namespaces are a mix of approaches defined in different ways<sup>4</sup>
- IANA (the internet assigned numbers authority) manage URN namespaces which are formally registered<sup>5</sup>
- AFAIK no key contender for URN namespace to use. UKRI offered URN so as not to constrain, but perhaps without a particular solution in mind?
- No clear route forward for our community



- The Handle System provides a persistent name service but *“the persistence of handles depends more on administrative policies than the technology itself”*.
- The DOI system uses the Handle system infrastructure to resolve DOIs to the correct location but adds critical elements
  - Persistence – through a federation of Registration Agencies
  - Expressing relationships – with DataCite and CrossRef sharing a version infrastructure
- CrossRef and DataCite share relationship metadata which allows expression of versions



# Meaningfulness to research community

- DOIs are encountered when publishing and reporting; are recognised as a standard by the research community
- A researcher has never asked me for or about a URN or Handle
- In University of Nottingham Libraries researchers ask about minting DOIs on a regular (monthly?) basis





## Concerns about repository versions and DOIs

- Some research articles deposited are the “version of record”
  - An identical and identically formatted version is held on a publisher’s website
  - The publisher version of the article is highly likely to have a DOI
  - There is no point in assigning another DOI... but is there any in assigning a Handle or URN?
- Some research articles deposited are the “author’s accepted manuscript”, pre-print or similar
  - The version is different from any held on a publisher’s website and unlikely to have a DOI
  - An identical version... or a similar version may be held in a repository which has assigned a DOI
  - However, many pre-print repositories already assign DOIs in this scenario



- PIDs sound straightforward, but data is messier than it seems
- If the version of a research article received:
  - already has a DOI, record it in the institutional repository (as now)
  - does not yet have a DOI, issue one via the institutional repository
- Pick the identifier that is meaningful to the research community
- The metadata created while minting DOIs can specify relationships between versions *which is critical*
  - even “is identical to” (in CrossRef / DataCite metadata) which could be used if aware the same author’s accepted manuscript is held in different repositories
- Versioning of DOIs can be reviewed, improved and upgraded





1. UKRI Open Access Policy <https://www.ukri.org/publications/ukri-open-access-policy/>
2. Plan S Technical Requirements [https://www.coalition-s.org/technical-guidance\\_and\\_requirements/](https://www.coalition-s.org/technical-guidance_and_requirements/)
3. "Persistent Identifiers". DCC Briefing Papers: Introduction to Curation. <https://www.dcc.ac.uk/guidance/briefing-papers/introduction-curation/persistent-identifiers>
4. IETF RFC on Uniform Resource Names (URNs) <https://www.rfc-editor.org/rfc/rfc8141.html>
5. IANA Uniform Resource Names (URN) Namespaces <https://www.iana.org/assignments/urn-namespaces/urn-namespaces.xhtml>
6. Factsheet: DOI System and the Handle System <https://www.doi.org/factsheets/DOIHandle.html>
7. IETF RFC Handle System Overview <https://www.rfc-editor.org/rfc/rfc3650.html>