Digital Object Identifier (DOI) in EXFOR

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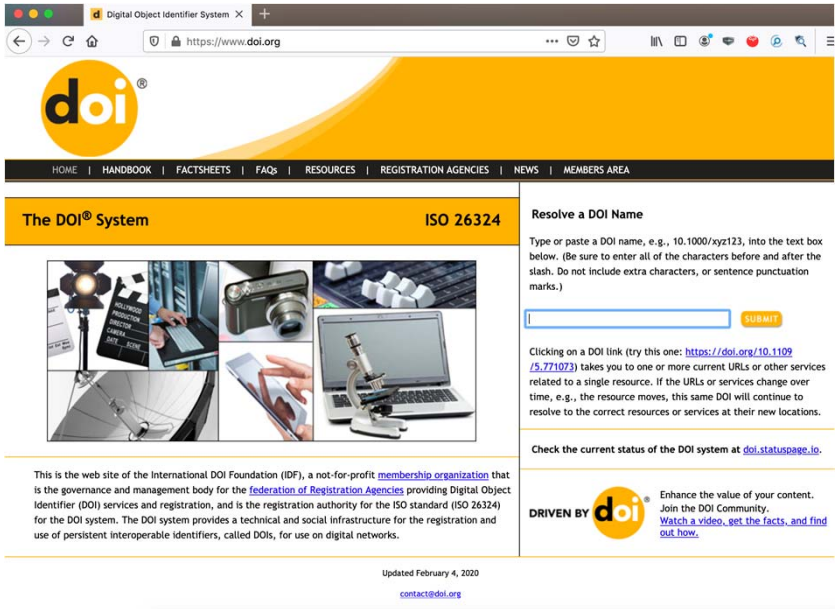
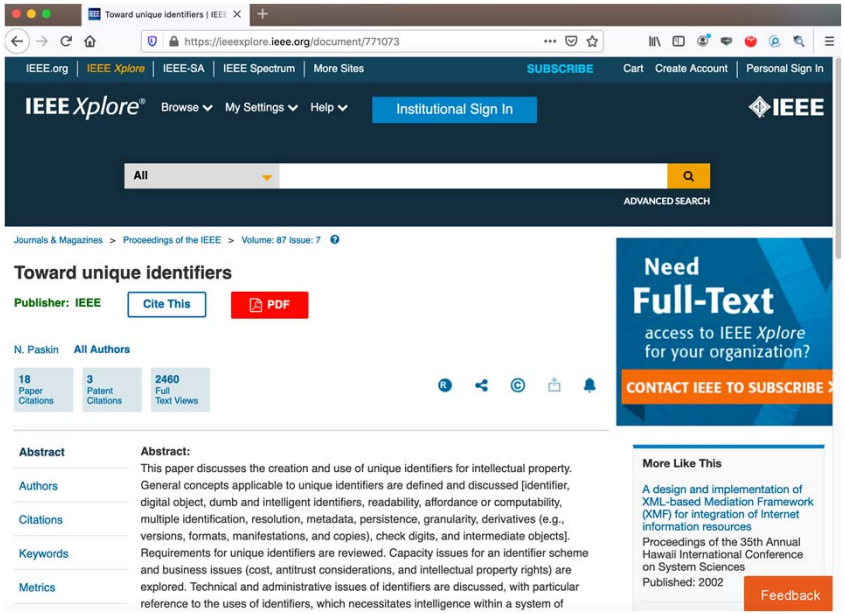
DOI – Digital Object Identifier

- A **digital object identifier** (**DOI**) is a persistent identifier or handle used to identify objects uniquely, standardized by the International Organization for Standardization (ISO).
- A DOI aims to be "resolvable", usually to some form of access to the information object to which the DOI refers.
- **Information object**: article, data set, …
- The DOI for a document remains fixed over the lifetime of the document, whereas its location and other **metadata** may change.

Digital Object Identifier System

- Clicking on a DOI link (try this one: https://doi.org/10.1109/5.771073) takes you to one or more current URLs or other services related to a single resource.





Benefits of DOIs

- DOIs identify content **permanently**. And as they are coupled with metadata, they can be modified over time to keep track of the locations and characteristics of the objects they identify, both for you and your users.
- You benefit from **efficient management** and **accurate tracking**, as well as gaining the ability to more easily automate processes and collaborate with partners in your community.
- And that means **adding value** to your content:
  - Searchability
  - Citability (Any data with a DOI can be cited directly)
  - Direct data downloads

If you use the internet to manage content or information about assets, you can benefit from being

How to Obtain DOI in the DOE

- OSTI: U.S. Department of Energy (DOE) Office of Scientific and Technical Information.
- OSTI “DOE Data ID Services” provides DOIs for DOE data & publications (https://www.osti.gov/data-services).
- Can obtain DOIs by automation (without a human applying “manually” for each one).
- OSTI registers DOIs as a member of **DataCite** provider.

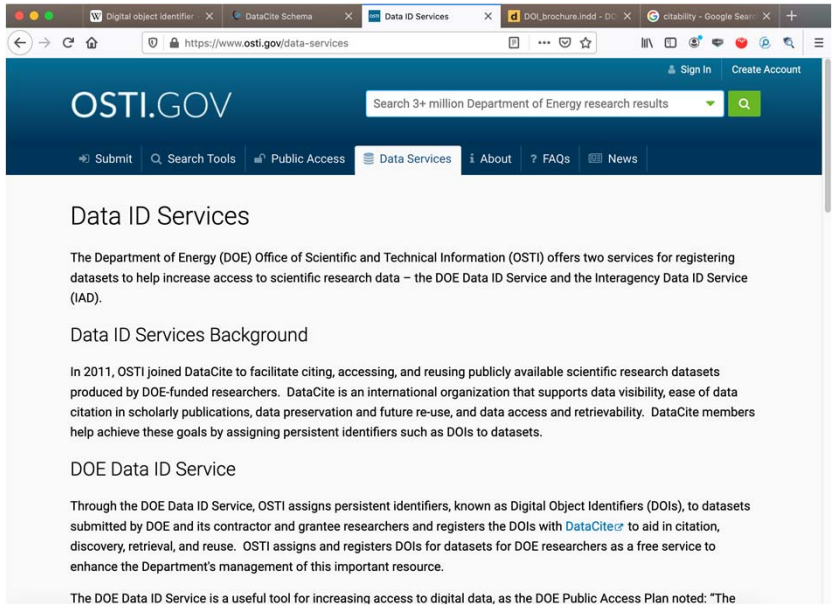
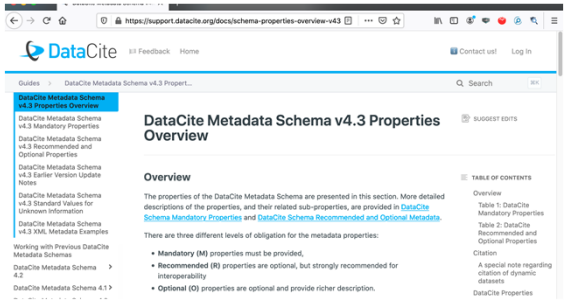


Table 1: DataCite Mandatory Properties

ID	Property	Obligation
1	Identifier (with mandatory type sub-property)	M
2	Creator (with optional name identifier and affiliation sub-properties)	M
3	Title (with optional type sub-properties)	M
4	Publisher	M
5	PublicationYear	M
10	ResourceType (with mandatory general type description sub-property)	M
6	Subject (with scheme sub-property)	R
7	Contributor (with type, name identifier, and affiliation sub-properties)	R
8	Date (with type sub-property)	R
9	Language	O
11	AlternateIdentifier (with type sub-property)	O
12	RelatedIdentifier (with type and relation type sub-properties)	R
13	Size	O
14	Format	O
15	Version	O

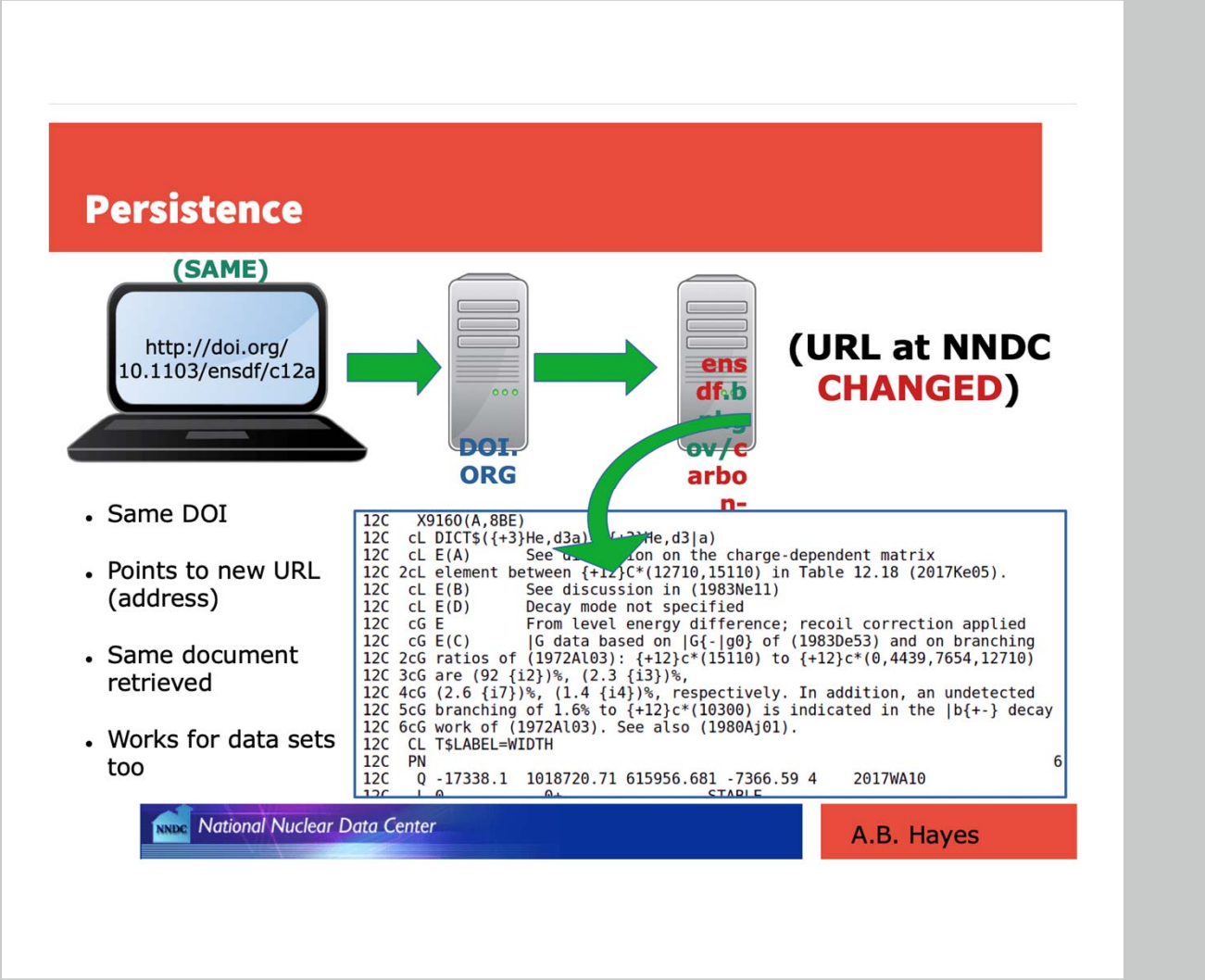


DataCite

- DataCite (https://datacite.org/index.html) is a leading global non-profit organisation that provides persistent identifiers (DOIs) for research data and other research outputs.
- Locate, identify, and cite research data with the leading global provider of DOIs for research data.
- DataCite **Metadata Schema** v4.3 Properties:
  - DataCite Mandatory Properties
  - DataCite Recommended and Optional Properties

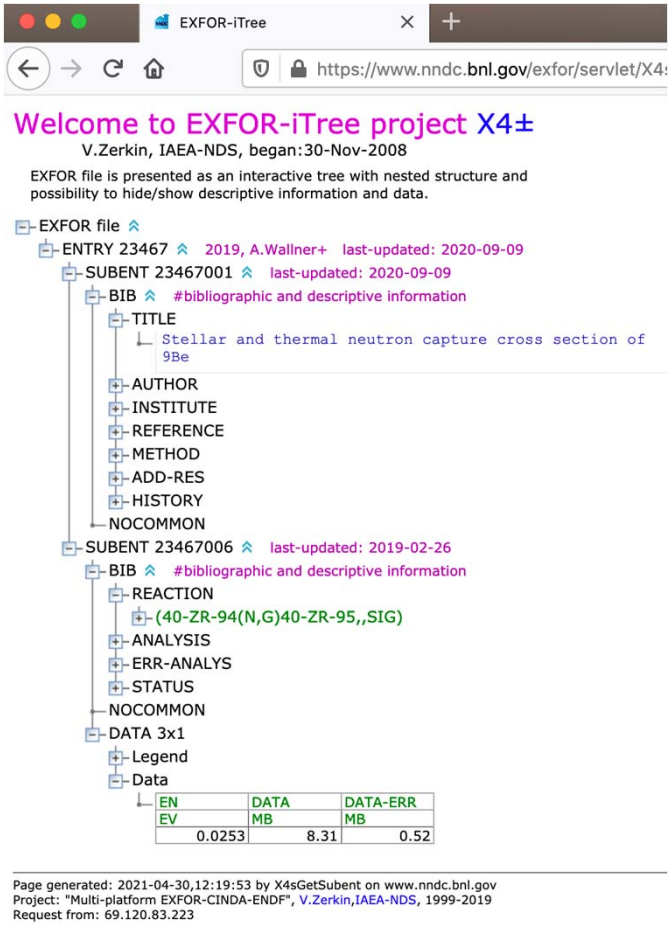
DOI for ENDF & ENSDF Databases

- DOE suggested to develop DOI for nuclear data sets.
- ENSDF Workshop, April 27, 2021.
- DOI proposal by A. Hayes, case of ^{12}C adopted data.
- Potential problem: lack of metadata in ENSDF, NSR and PDFs are needed.



EXFOR Database

- Is it needed for EXFOR
  - Would it increase the EXFOR value?
  - Is it possible to accomplish?
- EXFOR-iTree project X4± by V. Zerkin (IAEA) already couples metadata and a data set.
- We propose a proof of concept study for EXFOR DOIs using the X4± results.
- Results will be presented at the next NRDC Heads Meeting in 2022.



The International Atomic Energy Agency: (https://www.iaea.org/about/mission)

- is an independent intergovernmental, science and technology-based organization, in the United Nations family, that serves as the global focal point for nuclear cooperation;
- assists its Member States, in the context of social and economic goals, in planning for and using nuclear science and technology for various peaceful purposes, including the generation of electricity, and facilitates the transfer of such technology and knowledge in a sustainable manner to developing Member States;
- develops nuclear safety standards and, based on these standards, promotes the achievement and maintenance of high levels of safety in applications of nuclear energy, as well as the protection of human health and the environment against ionizing radiation;
- verifies through its inspection system that States comply with their commitments, under the Non-Proliferation Treaty and other non-proliferation agreements, to use nuclear material and facilities only for peaceful purposes.