

DOI Creation Guidelines for Seismic Network Operators using GEOFON

25 February 2015 (Revision 0.6)

Data from seismic networks needs better recognition, and its use by the seismological community needs to be easier to acknowledge. To support this, GFZ's GEOFON data centre, in conjunction with the Geophysical Instrument Pool Potsdam (GIPP), is helping network operators introduce Digital Object Identifiers (DOI) for their data sets. Many data sets in other research communities are also gaining DOI. This is in line with the recent FDSN Recommendation* on this subject.

GEOFON can mint a DOI for you. National libraries, data centres and other organisations may also be able to do this for you. (The actual DOI name is not chosen by you, but by the DOI publisher, or "minter"; if we do this, it will be of the form 10.14470/xxx98765.) If you choose to use another agency to mint your DOI, we recommend you stay close to the suggestions below, which are based on the adopted FDSN recommendations. FDSN is introducing a mapping service to help authors discover DOIs assigned to seismic networks.

The DOI and its metadata

On the surface, a DOI is just a label for an object, identified by a URL. But behind this is associated metadata describing the object, such as its creators, descriptions and other relevant information, and related objects. This may include other publications, such as a data report. (This "bibliographic" metadata should not be confused with the "seismic" metadata related to waveforms, such as the information in dataless SEED headers or Station XML, i.e. "inventory".) It also includes a URL of a "landing page" on the Internet, which helps users learn more about the object. To prepare for DOI minting, you may need to gather some information to better

* A. Clark, P. L. Evans, A. Strollo, "FDSN recommendations for seismic network DOIs and related FDSN services", <http://www.fdsn.org/wgIII/V1.0-21Jul2014-DOIFDSN.pdf> doi:10.7914/D11596

describe your seismic network.

This metadata is collected in an XML record defined by DataCite**. The GEOFON data centre will use this with our existing inventory information to augment the network page describing your network.

Metadata fields we will need from you before we are able to create a DOI:

- AUTHOR - the person or persons (or organisations) which should be seen as primary creators of the data of the seismic network. There may be more than one of these. For temporary networks we recommend the principal investigators, while for permanent networks an organisation may be most suitable
- YEAR - The year in which data were first collected.
- TITLE - A short name (5-10 words) of the network, experiment, or deployment.
- DESCRIPTION - A short "abstract", no more than 200-300 words long. Include the number, location, and types of sensors, and the type of data collected. Suggested components: description, aim and scope - geodynamic setting - geographical coverage - instrument types and number - data policy (fully open/restricted/embargoed) - any other peculiarities of the network.

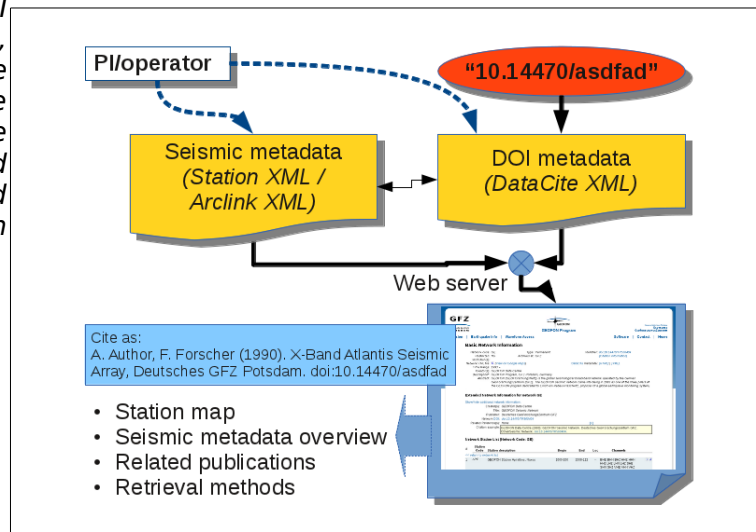
If you have related publications, or a data report, which the network's DOI metadata should refer to, let us know their unique identifiers (DOI, Handle, ISBN, URL etc.). There is much room in the metadata model for additional information, and we welcome innovative suggestions about ways to use this.

Recognising Contributors

Many people other than the stated "authors" are involved in making data sets available. There is considerable room within the DataCite model for additional contributors, with identified roles such as DataCollector, Funder, Researcher, Distributor, which we

** Metadata Working Group, "DataCite Metadata Schema for the Publication and Citation of Research Data", Version 3.1 October 2014, doi:10.5438/0010

Figure 1: Information flow in the DOI world. Given a DOI name, "10.14470/asdfad" the landing page URL can be found. This landing page presents information about the seismic network which is compiled from two sources of metadata, and displays a recommended citation string.



encourage DOI producers to make use of so that all parties involved in making data available on line can be adequately acknowledged. For example, GIPP will appear as a Sponsor for pool deployments.

Conclusion

A DOI will add visibility to your seismic network, and help you track citations of it e.g. at DataCite. Good quality metadata including a meaningful description will help others discover the data you have provided.

Finally, don't forget to encourage users of your data to complete the citation loop, by citing it using the DOI you have created!

For further information

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Some questions

Q: What is a DOI anyway?

A: See <http://www.doi.org>

Q: What if I already have a DOI?

A: Great, we will display it. To best promote your seismic network, you should use a single DOI for all citations of your data. Otherwise citations of your data might be split between two or more different DOI.

Q: What else can go in DataCite metadata?

A: Lots of stuff. See the GEOFON network pages for 5E and GE [doi:10.14470/TR560404], and the "DataCite Metadata Schema for the Publication and Citation of Research Data", Version 3.1.
<http://www.datacite.org/resources>. doi:10.5438/0010

Q: Does GEOFON own my data? What about restricted/embargoed data?

A: No, the existence of a DOI says nothing about ownership or usage. Embargoed data can have a DOI.

Q: Where is my GEOFON network page today?

A: If your network code is "XX", its page is
<http://geofon.gfz-potsdam.de/waveform/network.php?code=XX>

If you operate a temporary network with a reused network code, include the first year of operation:
<http://geofon.gfz-potsdam.de/waveform/network.php?code=XX&year=2002>