What are related identifiers used for?

**ANSWER:** Related identifiers are a means of establishing or capturing a connection or relationship between an object described by DOI and another item, which can be either a digital object, or a physical object. The related object must also have a unique identifier of some kind, so that it can be unambiguously identified.

In the DataCite schema, related identifiers have a grammar of Subject-Verb-Object: (Identifier A) -(has a relationType to) - (Identifier B).

Some examples of relationships between an object of a DOI and a related object that also has an identifier:

- A DOI for a data or software release may be related to a DOI assigned to a previous version of the released data or code. The related identifier pair connects and informs versioning history. (B isNewVersionOf A | A isPreviousVersionOf B)
- A DOI for a data or software release appears in the body or works cited section of a published paper, as source material used by the researcher. (B Cites A | A isCitedBy B)
- A DOI for a new version of a data release that was a result of a major error discovered in a previous version of that release, which had to be redacted. The DOI for the earlier release is withdrawn, but can point to the newer DOI of the corrected release. (B Obsoletes A | A isObsoletedBy B)
- A DOI for a software release can be connected to a DOI or a URL for the documentation, manual, or readme file. (A isDocumentedBy B | B Documents A)

General advice about using related identifiers:

- The identifier for the related object might be a DOI, but it also could be another kind of identifier, persistent (e.g., IGSN, LSID, PMID, ISBN) or not persistent (e.g., a URL or an ARK). Keep in mind, when citing a related identifier, that non-persistent identifiers can be fragile. Related identifiers should persist, so be careful in using a related identifier that is a non-DOI URL, as the relationship link will break down if that URL changes, moves, or is deleted.
- Note that if you are establishing a related identifier relationship between two DOIs that are both in the USGS DOI Tool, you must open and edit both DOIs to make the relationship reciprocal. The process is manual. Creating a relationship in DOI A to relate DOI A to DOI B will **not** automatically update DOI B to relate DOI B to DOI A.
- Currently, when you create a DOI for a data or software release, you are asked the following question:

If you are releasing a peer-reviewed publication in conjunction with your data release - either as a USGS publication, or through an external journal - and you have the CrossRef DOI (assigned by SPN or your journal), you are encouraged to enter it here in the DOI Tool. Entering your publication's DOI is creating a Cited-isCitedBy relationship 'behind the scenes' in your DOI record, so you do not need to add this specific related identifier pair on the Supplemental Information tab. It's advantageous for you to provide your publication's linkage to your data release DOI here, as that relationship is marked in a particular way in the DOI database, and is shared with the USGS Publications Warehouse and soon, with the USGS Science Data Catalog. Capturing this relationship pair will ensure that users of the Pubs Warehouse can discover your data release from your publication's entry, and will ensure that future users of the Science Data Catalog can be linked to your primary publication that used your data.
I'm seeing related identifiers that have been added to my DOI record in the DOI, but I didn't add them. Where are they coming from?

The Science Analytics and Synthesis Program is mining the full text of published scientific literature to seek out instances of citations of our USGS DataCite DOIs (which all contain the USGS prefix '10.5066.' We capture those occurrences through scripts, and bring back the citation information, verify that the mined information constitutes a true linkage to a USGS DOI, and then push those mined linkages into our DOI records. As a result, you may see relationship pairs in your DOI record to indicate a CrossRef DOI to a publication that has cited your data. PLEASE DO NOT DELETE THESE RELATED IDENTIFIER LINKAGES FROM YOUR DOI RECORD! These citation references not only demonstrate use of your data or software release, but will also be used to support linked discovery of publications and their related data from the Publications Warehouse and the Science Data Catalog.