



Digital Object Identifier (DOI) Management Guide

Version 1.0

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1. Purpose

This document provides an overview, management guidelines and procedures for minting Digital Object Identifiers (DOIs) at Swinburne University of Technology.

This policy comes into effect on 20/03/15. This document will be revised and updated as needed in consultation with Swinburne Research, Swinburne Library and Information Resources, and Australian Policy Online.

This policy can be found at: [Swinburne University: Managing Research Data](#)

2. Definitions

Australian National Data Service (ANDS): An organisation committed to enabling greater use of Australia's research outputs.

Cite My Data: The ANDS Cite My Data service enables research organisations to assign Digital Object Identifiers to research datasets or collections. See the [ANDS Cite My Data service overview page](#) for more information.

DataCite: A not-for-profit organisation formed in London in 2009, with the aim of establishing easier access to research data on the Internet.

Digital Object Identifier (DOI): A persistent identifier, based on the Handle System.

Handle System: Provides a resolution system for identifiers, for more information see the [DOI and Handle System](#) factsheet.

Minting: the name given to the production of Digital Object Identifiers.

URI/URL: Web naming/addressing technology using short strings to identify resources on the Web.

3. DOI overview

3.1 What is a DOI?

A DOI comprises alphanumeric characters and is unique. It has a prefix and a suffix, separated with a forward slash. The prefix for a DOI is '10', distinguishing it from other Handle System identifiers. Following the prefix is a code for the publisher/organisation that is registering the DOI. The suffix then identifies the unique resource, and is known as the 'item id'.

3.2 ANDS Cite My Data and DataCite

The Australian National Data Service (ANDS) is a member of DataCite, an international organisation aiming to establish easy access to research data, increase the perception of research data as a legitimate contribution to the scholarly record, and support the archiving of data so that it may be accessible and usable in the future.

DataCite in turn is part of the International DOI foundation (IDF), a not-for-profit membership organisation that governs and manages the federation of Registration Agencies and provides DOI services. The IDF is the registration authority for the DOI standard, ISO 26324.

4. Rules for implementing DOIs

A DataCite DOI should be minted via the ANDS Cite My Data service where the data collection meets the following criteria:

- Access to the resources/data will be open (both the metadata record and the data are publicly available), or mediated (public, openly available through a repository and RDA, but is only available under certain conditions)
- Closed data/resources (where both the metadata record and the data are private, due to ethical or legal constraints) should not have a DOI assigned to them, as this data will not be part of the scholarly record and citable
- The material is a citable contribution to the scholarly record, analogous to a journal article
- The data/resources have the mandatory metadata elements required for compliance with the DataCite Metadata Schema
- There is support for the long-term management of the collection, including access and storage
- The data/resources do not already have a DOI
- The material is held in databases or systems managed by Swinburne University of Technology and not by a third party
- The data will be persistently available
- The data will have the metadata required by DataCite
- Grey literature, such as discussion papers and theses, may be issued with a DataCite DOI, as outlined in their policy documents

4.1 Implementation guidelines: Research data

The following guidelines from ANDS can also be observed when determining resources/data to be given a DOI:

The Queensland University of Technology [Management of research data](#) policy states: Research data means data in the form of facts, observations, images, computer program results, recordings, measurements or experiences on which an argument, theory, test or hypothesis, or another research output is based. Data may be numerical, descriptive, visual or tactile. It may be raw, cleaned or processed, and may be held in any format or media (Australian National Data Service 2014).

4.2 Citations of DOIs

Citations should be automatically generated after a DOI is minted, using the same required metadata elements used to mint the DOI.

DataCite recommends the following citation style:

Creator (PublicationYear): Title. Publisher. Identifier.

An example of this citation style is:

Lawrence, A (2014): Publishing online: the Tap Dance guide. Swinburne Institute for Social Research, Swinburne Institute of Technology.
<http://dx.doi.org/10.5731/05/4DD05E7F15B>

5. Level of granularity

It has been established that DOIs can be assigned to any level of granularity. Each research institute within Swinburne University of Technology should provide discipline-specific guidelines, detailing the level of granularity for each collection.

6. Versioning

Many resources/data will change in version, scope and content over their life cycle, so it is important to have a strategy for dealing with change. 'As a general rule, if the change is substantial and/or it is necessary to identify both the original and the changed material, assign a new DOI name' (International DOI Foundation 2014).

6.1 Data maintenance overview

Data maintenance for Swinburne University of Technology DOI resources will include:

- A link to a replacement version, where available
- If necessary, an updated version may be deposited
- The item's persistent URL will always link to the latest version

6.2 Version control: levels of change

6.2.1 High-level changes

Examples of high-level changes include:

- Data/resources are deleted
- A key mandatory metadata element is altered/deleted
- Any major changes to the data/resource itself

If a DOI minted and assigned to a resource has a high-level change, a new DOI should be minted for the latest version of the resource. In this instance both versions of the resource must be maintained with separate DOIs. In addition, it is preferable for each version of the resource to cross-reference any/all other versions. For example, the latest version of the resource should also provide a link to the previous version, and vice versa.

6.2.2 Low-level changes

Examples of low-level changes include:

- Spelling errors
- Clarifications/minor errors

If a DOI minted and assigned to a resource has a low-level change, a new DOI is not required. For minor changes (clarifications/spelling errors etc.) a set of changes will be issued to the original resource and linked to the original DOI. If the resource is moved, the URI must be updated using the [DOI Query Tool](#) in the ANDS Registry. A new DOI is not required.

6.2.3 Discipline-specific guidelines

The above version control information is a guide. Each research institute within Swinburne University of Technology should provide discipline-specific guidelines for DOI version control.

In addition, this Digital Object Identifier (DOI) Management Guide will be accompanied by discipline-specific guidelines for each research faculty within Swinburne University of Technology proceeding to mint DOIs. The discipline-specific guidelines will be made available on the Web, accompanied by this Management Guide.

Each research faculty/group must ensure that they have procedures in place to continually manage DOIs, and also ensure that persistent access to DOI-assigned resources is maintained.

7. Technical summary

7.1 DataCite metadata requirements

The mandatory set of metadata required to mint a DOI:

- **URL**
- **Title**
- **Creator**
- **Publisher**
- **Publication year**

See below **Table 1**: DataCite Metadata Schema Version 3.1 compulsory metadata elements below for expanded definitions of the mandatory metadata elements required.

Schema element	Description [Source: DataCite Metadata Schema]
Identifier	The identifier is a unique string that identifies the resource. Allowed value: DOI registered by a DataCite member.
identifierType	The type of identifier. Allowed values: DOI.
Creator	The main researchers involved in producing the data, or the authors of the publication, in priority order. May be a corporate/institutional or personal name. The personal name format should be: family, given.
creatorName	The name of the creator.
affiliation (optional)	The organisational or institutional affiliation of the creator: free text allowed.
Title	A name or title by which a resource is known: free text allowed.
Publisher	The name of the entity that holds, archives, publishes, prints, distributes, releases issues, or produces the resource
Publication year	The year when the data was or will be made publicly available. Use the format: YYYY. If an embargo period has been in effect, use the date when the embargo period ends.

Table 1: DataCite Metadata Schema Version 3.1 compulsory metadata elements

7.2 Gaining access to the Cite My Data M2M service

The following criteria for applying DOIs will be observed:

- Mandatory metadata required by DataCite
- ANDS technical requirements (M2M)

7.2.1 Cite My Data Participant Agreement

Senior endorsement is required for the Cite My Data Participant Agreement, which must be signed before any production DOI minting can begin. The Deputy Vice Chancellor (Research & Development) will sign the Participant Agreement for Swinburne University of Technology. This will allow for institution-wide DOI minting, dependent upon relevant policies and guidelines being developed for each collection.

7.2.2 Prior to setting up a new DOI minting service

Prior to setting up a new DOI minting service, specific research groups/faculties/collection managers will consult with Swinburne Research and Swinburne Library and Information Resources to ensure the principles contained in the Participant Agreement are understood, and will also develop their own discipline-specific guidelines to accompany this Management Guide before minting DOIs.

7.2.3 Registration details required, supplied to ANDS

For registration to the Cite My Data service, an email will be sent to services@ands.org.au with the following account creation information (see also **Figure 1** below for an example):

- **DOI account name:** A name for the Cite My Data account
- **IP address or range:** An IP address or a range of IP addresses that will be registered for minting DOIs
- **Account contact full name:** A contact for ANDS to communicate with for any DOI-related issues
- **Account contact email:** Email address for the primary contact
- **Top level domains:** Comma-separated list of top level domains that DOI URLs will be resolved under

Example

DOI Account Name: ANDS Canberra

IP Address: 101.101.101.101

Datacentre Contact Full Name: Joe Smith

Datacentre Contact Email Address: DataCentreDOIperson@ands.org.au

Top Level Domains: <http://ands.org.au> , <http://services.ands.org.au>

Figure 1: ANDS example of account creation information*7.2.4 Elements in the DOI minting process*

After the account creation, the following points detail the elements involved in the DOI minting process:

- ANDS delivers institutional id
- Prepare m-2-m script
- Execute script – Cite My Data
- Cite My Data returns DOIs
- Store DOIs in own system
- Create citation element
- Make citation element available in RIF-CS feed for ANDS harvester

More information can be found in the [Cite My Data M2M Service Technical Description](#).

8. References

Australian National Data Service 2014, accessed 30 October 2014. Website at <http://ands.org.au/guides/what-is-research-data.html>

International DOI Foundation 2014, accessed 30 October 2014. Website at <http://www.doi.org/faq.html>