

# Simplifying Access to Geodetic Datasets using Digital Object Identifiers (DOI)

Helmut Titz, Vienna, Austria  
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Surveying

# Overview

1. DOI characteristics and benefits (users view)
2. DOI infrastructure and components (data providers view)
3. GGOS working group on DOI

# DOI basics

**DOI** = digital identifier for objects (digital, analogue, abstract)

**Object** = content or data (≠ location, URL)

DOI implements an **additional abstraction layer** between content (data) and location (URL)

Resolving the DOI leads to the URL of a **landing page** with additional information about the dataset and how to get it

# Resolving a DOI – example (1)

## ICGEM – International Centre for Global Earth Models

Mayer-Gürr, Torsten; Behzadpur, Saniya; Ellmer, Matthias; Kvas, Andreas; Klinger, Beate; Strasser, Sebastian; Zehentner, Norbert (2018): ITSG-Grace2018 - Monthly, Daily and Static Gravity Field Solutions from GRACE. GFZ Data Services.

<http://doi.org/10.5880/ICGEM.2018.003>

# Resolving a DOI – example (2)

The screenshot shows a web browser window displaying the ICGEM dataset page for ITSG-Grace2018. The browser address bar shows the URL: [dataservices.gfz-potsdam.de/icgem/showshort.php?id=escidoc:3600910](http://dataservices.gfz-potsdam.de/icgem/showshort.php?id=escidoc:3600910). The page features the ICGEM logo and the GFZ Helmholtz Centre Potsdam logo. The dataset title is "ITSG-Grace2018 - Monthly, Daily and Static Gravity Field Solutions from GRACE". The citation information is: "Mayer-Gürr, Torsten; Behzadpur, Saniya; Ellmer, Matthias; Kvas, Andreas; Klinger, Beate; Strasser, Sebastian; Zehentner, Norbert (2018): ITSG-Grace2018 - Monthly, Daily and Static Gravity Field Solutions from GRACE. GFZ Data Services. <http://doi.org/10.5880/ICGEM.2018.003>". The abstract states: "The ITSG-Grace2018 gravity field model is the latest GRACE-only gravity field model computed at Graz University of Technology, providing unconstrained monthly and regularized daily solutions as well as a long-term static field. For each month of the observation period, sets of spherical harmonic coefficients for different maximum degrees (60, 96, 120) were estimated without applying any regularization." The methods section describes the data processing and regularization techniques. The related work section lists the previous version of the dataset.

Landing Page

Title

Citation + DOI

Abstract

Creator

Contributors

Keywords

Data files

License info

Dataset documentation

Version Info

References

<http://doi.org/10.5880/ICGEM.2018.003>

# DOI characteristics and benefits

- Globally unique
- Persistent
- Actionable (= resolvable and executable)
  
- **Citable** (in journal articles or on websites)
- **Discoverable** (search engines)
- Enable **Re-use of scientific data**
- **Long term availability** (archiving)
  
- Different levels of granularity (data series, collections of data)
- Versioning
- Licenses

# DOI system

Is a rather complex, distributed infrastructure for

- **Assigning** DOIs to objects
- **Resolving** DOI names to webpages (landing pages) or metadata of an object
- **Searching** for datasets

## **International DOI Foundation (IDF)**

- Registration Authority
- ISO 26324 Digital Object Identification System
- DOI resolver service

## **Registration Agencies (RA)**

- Provide domain specific identifiers
- DataCite (scientific datasets)
- Maintain metadata database

## **Data Provider (Registrant)**

- Submit information to RA

# Data provider responsibilities

- Registration Agency (e.g. DataCite)
  - Register
  - Receive a registrant code
- Define **DOI names**
  - According to his own schema for **creating unique identifiers**
  - Granularity (series of datasets, collections of data)
  - Versioning
- Provide **metadata for data discovery** in standardised metadata formats (XML, DataCite, ISO19115, ...)
  - Mandatory (creator, title, abstract, publication year, keywords)
  - Additional required data fields
- Implement and maintain the **landing pages**
- Guarantee of **long term availability** and **archiving** of data



# New DOI Working Group - proposed aims

- Analyses of **existing DOI solutions** of IAG Services
- Identification of **products and datasets** for which DOIs should be assigned
  - Granularity
- Discussion of **infrastructure requirements**
  - Possibility to share resources or to establish common services
- Discussion of **metadata formats** for data discovery and required data fields
- Definition of **landing page** recommendations
- Showing of **use cases**
- Definition of **best practices** for implementing DOI for products and data, e.g. of the IAG Services
- Development of **guidelines** for DOI strategies

# New GGOS Working Group on DOI

- Setup of the WG is in progress
- Members will be IAG services data center representatives, DOI experts and other interested colleagues
- WG chair will be elected by the WG members

Interested in joining the WG?

[ggos-co@bev.gv.at](mailto:ggos-co@bev.gv.at)