FAIR & Open Material Samples: The IGSN

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What about the (management of) material samples / specimens / physical objects ?

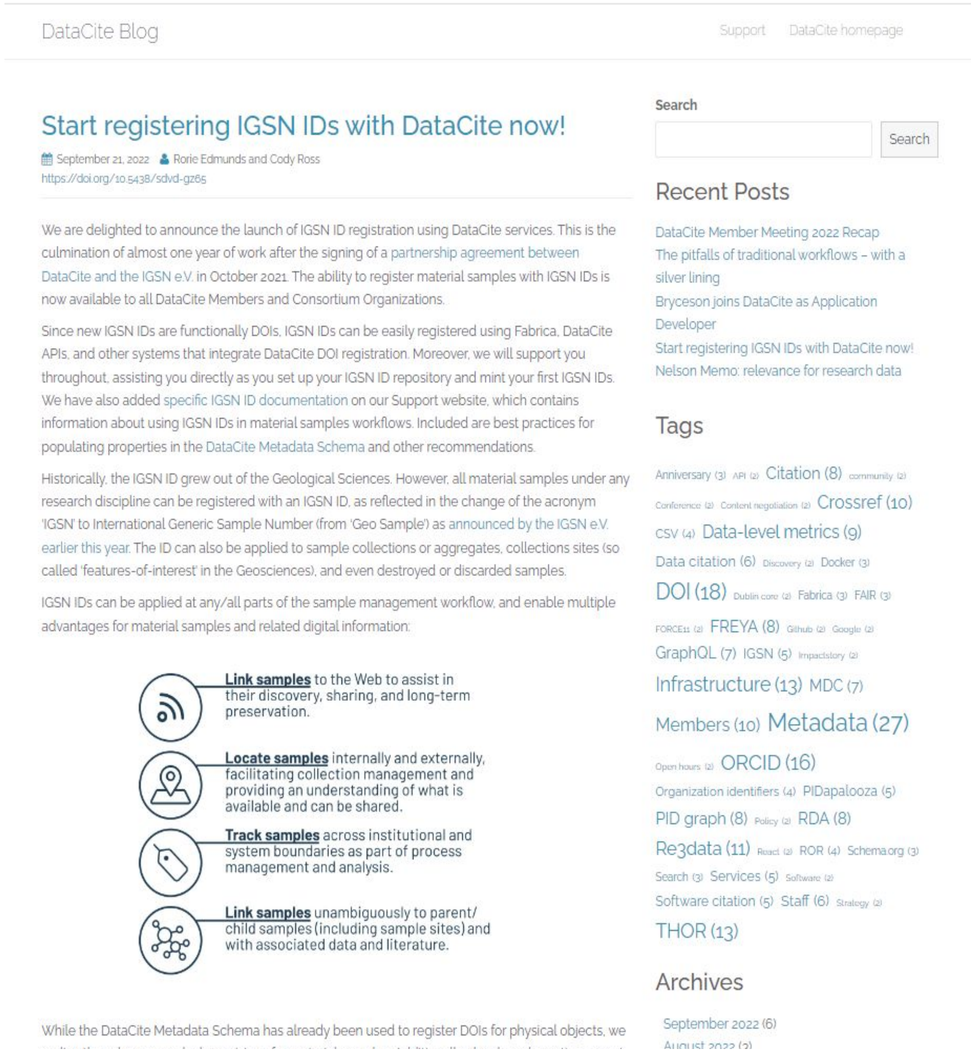
International Generic Sample Number

- Globally unique and persistent identifier for material samples
- Can be used in **all disciplines** & for **all material sample types**
- Including
  - Collections/aggregates
  - Features-of-interest (sample collection sites)
  - Destroyed/discarded samples

IGSN IDs cannot be used for an image of a sample or digital data

IGSN ID Registration in DataCite Services

- DataCite services to register IGSN IDs for material samples is now open to DataCite Members and Consortium Organizations
- Support documentation is available: https://support.datacite.org/
- **IGSN IDs are functionally DOIs**
  - Fabrica and DataCite APIs used to create and modify IGSN IDs
  - New, separate 'IGSN ID Catalog' Repository account and prefix exclusively for registering IGSN IDs



DataCite Blog

Support DataCite homepage

Start registering IGSN IDs with DataCite now!

September 21, 2022 Rorie Edmunds and Cody Ross
https://doi.org/10.5438/sdvd-gz65

We are delighted to announce the launch of IGSN ID registration using DataCite services. This is the culmination of almost one year of work after the signing of a partnership agreement between DataCite and the IGSN e.V. in October 2021. The ability to register material samples with IGSN IDs is now available to all DataCite Members and Consortium Organizations.

Since new IGSN IDs are functionally DOIs, IGSN IDs can be easily registered using Fabrica, DataCite APIs, and other systems that integrate DataCite DOI registration. Moreover, we will support you throughout, assisting you directly as you set up your IGSN ID repository and mint your first IGSN IDs. We have also added specific IGSN ID documentation on our Support website, which contains information about using IGSN IDs in material samples workflows. Included are best practices for populating properties in the DataCite Metadata Schema and other recommendations.

Historically, the IGSN ID grew out of the Geological Sciences. However, all material samples under any research discipline can be registered with an IGSN ID, as reflected in the change of the acronym 'IGSN' to International Generic Sample Number (from 'Geo Sample') as announced by the IGSN e.V. earlier this year. The ID can also be applied to sample collections or aggregates, collections sites (so called 'features-of-interest' in the Geosciences), and even destroyed or discarded samples.

IGSN IDs can be applied at any/all parts of the sample management workflow, and enable multiple advantages for material samples and related digital information:

Link samples to the Web to assist in their discovery, sharing, and long-term preservation.

Locate samples internally and externally, facilitating collection management and providing an understanding of what is available and can be shared.

Track samples across institutional and system boundaries as part of process management and analysis.

Link samples unambiguously to parent/child samples (including sample sites) and with associated data and literature.

While the DataCite Metadata Schema has already been used to register DOIs for physical objects, we

Search

Search

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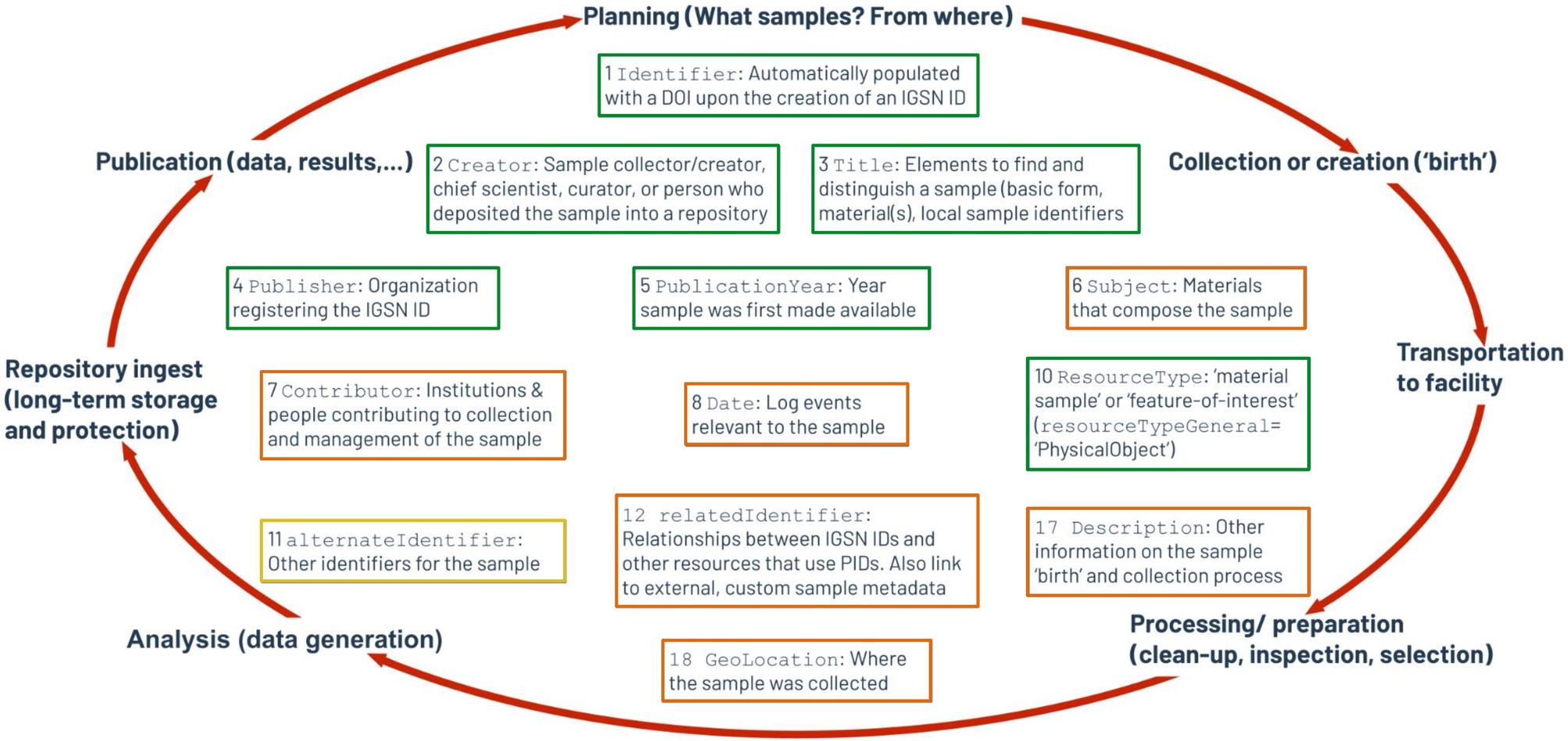
Archives

September 2022 (6)
August 2022 (2)

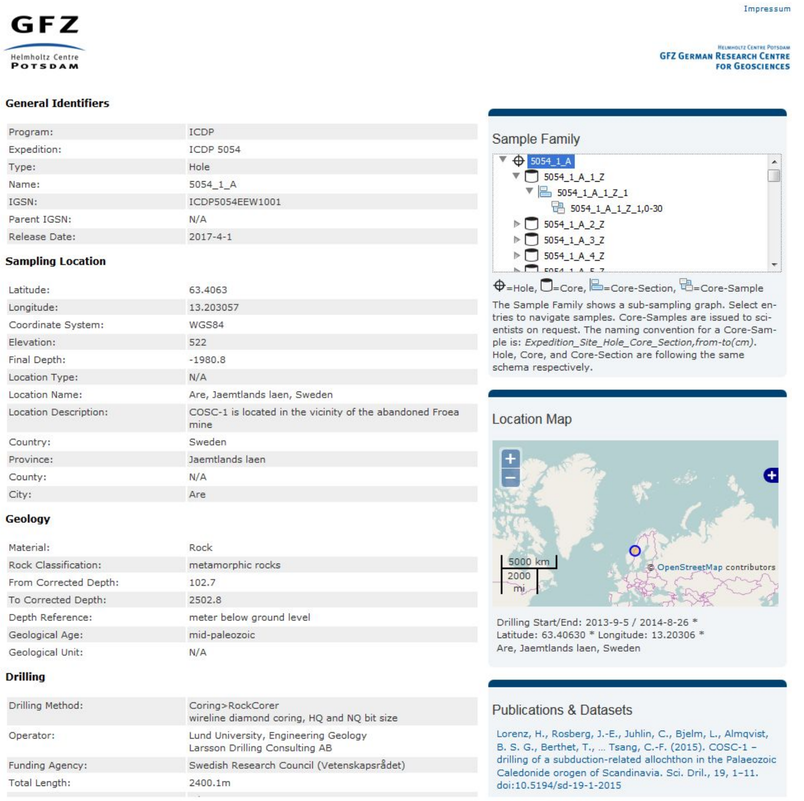
IGSN ID Metadata in DataCite Services

‘IGSN–DataCite Crosswalk Recommendation’ for encoding Mandatory and Recommended Properties of IGSN IDs in the DataCite Metadata Schema



How IGSN IDs Increase Findability

- Populate of as many properties as possible using local sample metadata to improve discoverability
- Landing pages display a description of the sample identified by the IGSN ID
- Landing pages should include elements that improve discoverability
- Can include Schema.org on landing pages
- Locate samples—link a material sample with its digital representation through labelling
- Track samples throughout their lifecycle and as they move to other laboratories or repositories



GFZ Helmholtz Centre Potsdam

Impressum

Helmholtz Centre Potsdam GFZ German Research Centre for Geosciences

General Identifiers

Program:	ICDP
Expedition:	ICDP 5054
Type:	Hole
Name:	5054_1_A
IGSN:	ICDP5054EEW1001
Parent IGSN:	N/A
Release Date:	2017-4-1

Sampling Location

Latitude:	63.4063
Longitude:	13.203057
Coordinate System:	WGS84
Elevation:	522
Final Depth:	-1980.8
Location Type:	N/A
Location Name:	Are, Jaemtlands laen, Sweden
Location Description:	COSC-1 is located in the vicinity of the abandoned Froea mine
Country:	Sweden
Province:	Jaemtlands laen
County:	N/A
City:	Are

Geology

Material:	Rock
Rock Classification:	metamorphic rocks
From Corrected Depth:	102.7
To Corrected Depth:	2502.8
Depth Reference:	meter below ground level
Geological Age:	mid-paleozoic
Geological Unit:	N/A

Drilling

Drilling Method:	Coring>RockCorer wireline diamond coring, HQ and NQ bit size
Operator:	Lund University, Engineering Geology Larsson Drilling Consulting AB
Funding Agency:	Swedish Research Council (Vetenskapsrådet)
Total Length:	2400.1m

Sample Family

5054_1_A
5054_1_A_1_Z
5054_1_A_1_Z_1
5054_1_A_1_Z_1,0-30
5054_1_A_2_Z
5054_1_A_3_Z
5054_1_A_4_Z

=Hole, =Core, =Core-Section, =Core-Sample

The Sample Family shows a sub-sampling graph. Select entries to navigate samples. Core-Samples are issued to scientists on request. The naming convention for a Core-Sample is: *Expedition_Site_Hole_Core_Section,from-to(cm)*. Hole, Core, and Core-Section are following the same schema respectively.

Location Map

5000 km
2000 mi
© OpenStreetMap contributors

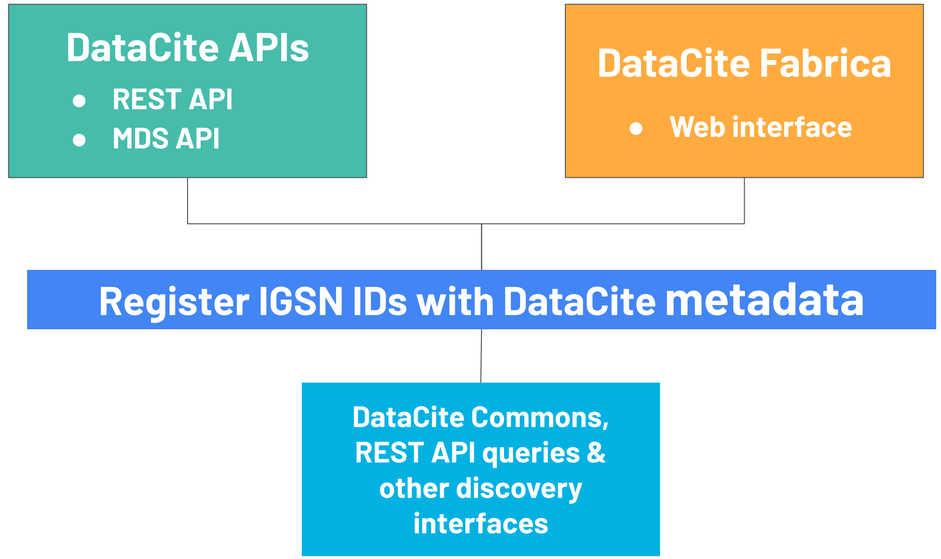
Drilling Start/End: 2013-9-5 / 2014-8-26 *
Latitude: 63.40630 * Longitude: 13.20306 *
Are, Jaemtlands laen, Sweden

Publications & Datasets

Lorenz, H., Rosberg, J.-E., Juhlin, C., Bjelm, L., Almqvist, B. S. G., Berthet, T., ... Tsang, C.-F. (2015). COSC-1 – drilling of a subduction-related allochthon in the Palaeozoic Caledonide orogen of Scandinavia. Sci. Dril., 19, 1–11. doi:10.5194/sd-19-1-2015

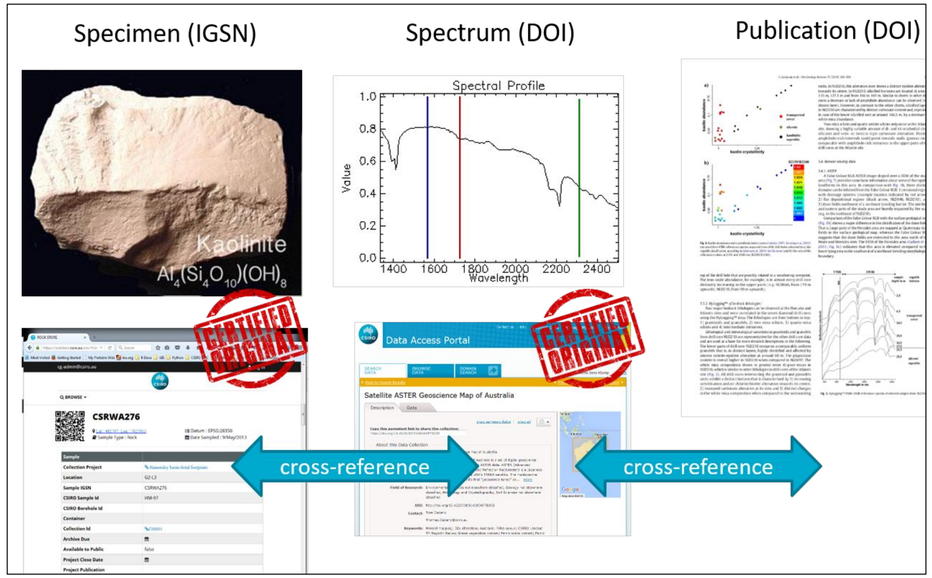
How IGSN IDs Increase Accessibility

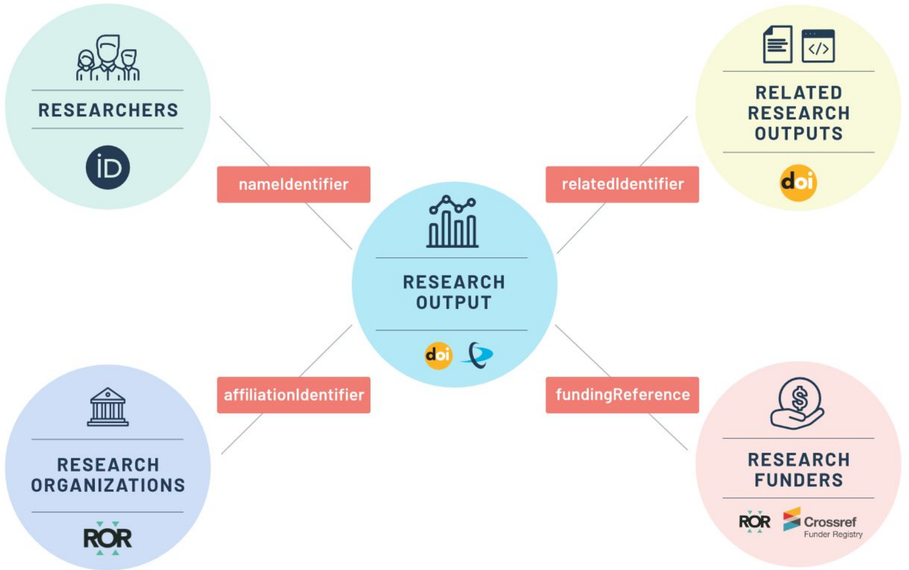
- Accessible through DataCite Commons, REST API queries, and other discovery interfaces
- Commons surfaces sample information—such as title, resource type, description, and alternate identifier—from DataCite metadata
- More importantly, IGSN IDs are accessed through the URIs of the landing pages (the DOI links), which supply richer information about the samples
- Adding Schema.org to landing pages assists accessibility



How IGSN IDs Increase Interoperability

- 30 resourceTypes encoded in the DataCite Metadata Schema—well-known and crosswalked by the community
- Metadata can be explored and exported in different formats
- Use domain/community vocabularies & classifications in metadata properties
- Link material samples with datasets or publications, and with collection sites and subsamples—displayed in DataCite Commons and the PID Graph





How IGSN IDs Increase Reusability

- Shows sample exists/existed and information is available
- All DataCite metadata is CC0
- Give rights/reuse information about the sample on the landing page. Does it exist? Where is it located? Who to contact?
- Provenance—sample 'birth certificate' & log events relevant to the sample
- Specific metadata recommendations for material samples
- Link to domain and institution-specific metadata and include in landing pages
- Creating domain-specific Communities of Practice to gain consensus on metadata profiles and vocabularies to enhance the DataCite Metadata Schema and better support material samples

What You Can Do

- Register IGSN IDs for your material samples
  - If you are not sure if you are connected to a DataCite Member or Consortium Organization, please contact me
  - If you are connected to a DataCite Member or Consortium Organization, please contact me

- If you have an interesting use case, please contact me
- If you would like to join/create a Community of Practice for your (sub)domain, please contact me
- If you would like more information or have any questions, please contact me

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