



(Brief) Introduction to IGSN IDs

Rorie Edmunds (Samples Community Manager)

23 April 2024

IGSN ID Registration: Moving from Interest to Implementation



[@datacite](https://twitter.com/datacite)



@datacite@openbiblio.social

‘The IGSN ID is a globally unique and persistent identifier for material samples.’

‘The IGSN ID is domain-agnostic. Samples can be any material from anywhere in the universe, not only from Earth.’



All Disciplines, All Sample Types

Physical Sciences (Earth, Space, and Environmental Sciences; Chemistry)

- Rocks/minerals/metals
- Radioactive elements
- Soil/sediment (core & individual)
- Mud
- Dust
- Petroleum/oil
- Condensate/water/Ice cores
- Air/atmospheric/gas
- Environmental DNA
- Astromaterials
- Other chemical samples (experimental samples?)



All Disciplines, All Sample Types

Life Sciences (Biochemistry, Microbiology, Botany, Zoology, Ecology)

- Biofluids
- Tissues
- Cells
- Genomic
- Animal specimens
- Insect specimens
- Plant specimens
- Fungi/spores
- Microorganisms/biofilms
- Vegetation
- Botanical/herbarium samples

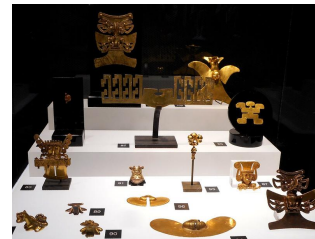
Live specimens



All Disciplines, All Sample Types

Social Sciences (Sociology, Anthropology, Archaeology, Economics, Human Geography,...)

- Human/animal/insect/plant remains
- Fossils
- Artefacts (tools, weapons, utensils, machines, ornaments, art, buildings, monuments, written records, religious images, clothing,...)



Applied Sciences (Agriculture, Material Science & Engineering, Medicine)

- Seed accessions
- Crop & livestock samples
- Soil testing
- Synthetic materials
- Prototypes



All Disciplines, All Sample Types

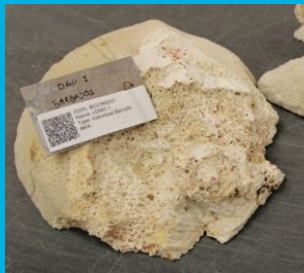
The Arts

- Architecture/Ceramics/Sculptures
- Drawings/paintings/photographs
- Literary and musical samples
- Musical instruments
- Fashion/Costumes/theatre sets

...



What Can be Assigned an IGSN ID?



Individual
material samples



Aggregations
of material
samples



Features-of-
interest or
collection sites



Destroyed,
discarded, or
ephemeral
samples

IGSN IDs cannot be registered for an image of a sample or data about a sample

IGSN ID Use Cases: Digital Presence for Physical Objects

Link a sample to the Web via metadata and a landing page

- A landing page displays a description of the material sample identified by the IGSN ID, and should include elements that improve discoverability, including domain-specific metadata

The screenshot displays the IGSN landing page for sample 5054_1_A. The page is organized into several sections:

- General Identifiers:** Program: ICDP, Expedition: ICDP 5054, Type: Hole, Name: 5054_1_A, IGSN: ICDP5054EHW1001, Comment: valid alias: ICDP5054EHW1001, Parent IGSN: N/A, Release Date: 2017-3-1.
- Sampling Location:** Latitude: 63.40163, Longitude: 13.202917, Coordinate System: WGS84, Elevation: 522.51, Final Depth: -1980.29, Location Type: N/A, Location Name: Åre, Jämtlands län, Sweden, Location Description: COSC-1 is located in the vicinity of the abandoned Fröå mine, Country: Sweden, Province: Jämtlands län, County: N/A, City: Åre.
- 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.
- Methods:** Downhole Logging: Acoustic televiwer LU, DDP OSG, DLL OSG, ELOG LU, FAC40 OSG, Focussed electric LU, Full-waveform sonic LU, Full-waveform sonic OSG, Magnetic susceptibility OSG, Mudparameter OSG, NN, Sidewall density LU, Temperature/Conductivity LU, Temperature/Conductivity OSG, Temperature/Conductivity LU, Three-arm caliper LU.
- Drilling:** (Section header).
- Sample Family:** A tree view showing the hierarchy of samples: 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.
- Location Map:** A map of Sweden with a red dot indicating the location of the sample in Jämtlands län.
- Publications & Datasets:** A list of publications and datasets related to the sample, including Lorenz, H., Rosberg, J.-E., Juhlin, C., Bjelm, L., Almqvist, B., S. G., Berthet, T., ... Tsang, C.-F. (2015). COSC-1 – drilling of ...

IGSN ID Use Cases: Support Sample Workflows

Sample Collection Management

- Link a material sample with its digital representation through labelling → Encode IGSN IDs as QR codes/barcodes for machine-readable identification

Sample Process Management

- Apply IGSN IDs early to track samples throughout their lifecycle and as they move to other laboratories/repositories

Established Sample Workflows

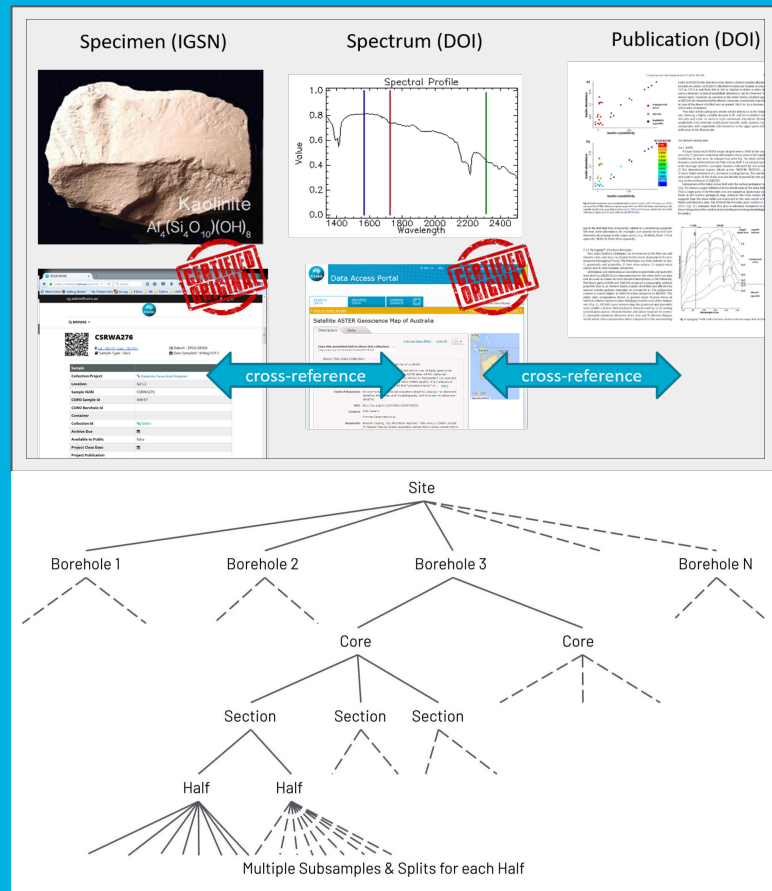
- Transform locally unique identifiers to globally unique ones → No changes to established working procedures, naming conventions, or data systems



IGSN ID Use Cases: Cross-linking & Citation

IGSN ID metadata can be used to

- Describe relationships between a material sample and related datasets, publications, people, software,...for the purposes of discovery and credit
- Connect IGSN IDs to mirror hierarchical relationships among collection sites, samples, and subsamples



IGSN ID Registration in DataCite Services



- Through a partnership with the IGSN Organization, DataCite services to register IGSN IDs for material samples are open to DataCite Members and Consortium Organizations
- Support documentation is available:

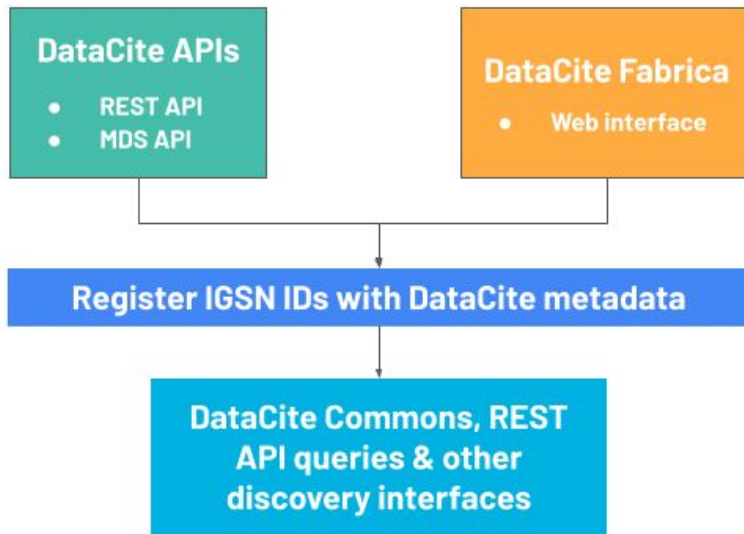
<https://support.datacite.org/>

IGSN IDs are registered through DataCite Services. Visit [datacite.org](https://support.datacite.org/) or contact info@datacite.org for more information about membership and IGSN ID registration.

The screenshot shows a blog post on the DataCite website. The title is "Start registering IGSN IDs with DataCite now!". The post date is September 21, 2022, and the authors are Rorie Edmunds and Cody Ross. The URL is <https://doi.org/10.5438/5dvj-g855>. The post content discusses the launch of IGSN ID registration using DataCite services, the partnership agreement, and the availability of the service to DataCite Members and Consortium Organizations. It also mentions the use of Fabrica, DataCite APIs, and the IGSN e/V. The post includes a section for "Recent Posts" with links to "DataCite Member Meeting 2022 Recap", "The pitfalls of traditional workflows", "Bryceson joins DataCite as Application Developer", "Start registering IGSN IDs with DataCite now!", and "Nelson Memo: relevance for research data". There is also a "Tags" section with links to "Anniversary", "Citation", "community", "Conference", "Content negotiation", "Crossref", "CSV", "Data-level metrics", "Data citation", "Discovery", "Docker", "DOI", "DataCite", "Fabrica", "FAIR", "FORCE", "FREYA", "GitHub", "Google", "GraphOL", "IGSN", "Inventory", "Infrastructure", "MDC", "Members", "Metadata", "Open hours", "ORCID", "PIDapalooza", "PID graph", "RDA", "Re3data", "ROR", "Schema.org", "Search", "Services", "Software", "Software citation", "Staff", "Strategy", and "THOR". At the bottom, there is an "Archives" section with links to "September 2022" and "August 2022".

IGSN IDs are Functionally DOIs

- They can be registered through
 1. Fabrica web interface
 2. DataCite APIs
 3. Integrations from DataCite Service Providers
- IGSN ID metadata is encoded in the DataCite Metadata Schema
- IGSN IDs have a prefix and a suffix and resolve to landing pages
- Findable IGSN IDs appear in DataCite Commons, API queries, and other discovery services



How Do IGSN IDs Differ From DOIs?

- IGSN IDs must be registered in an **IGSN ID Catalog Repository**
 - IGSN ID Catalog Repositories must be used exclusively to register IGSN IDs

Add Repository

Click the circle icon for a new random ID, or the cross icon to delete the random ID and enter a value manually.

Repository ID

ADMIN.EWWRRY



The Repository ID is the unique identifier for each repository in DataCite and can't be changed. The Repository ID must start with the Member ID, followed by a dot. It can then contain only upper case letters, numbers, and at most one hyphen.

Type

Repository



Salesforce ID

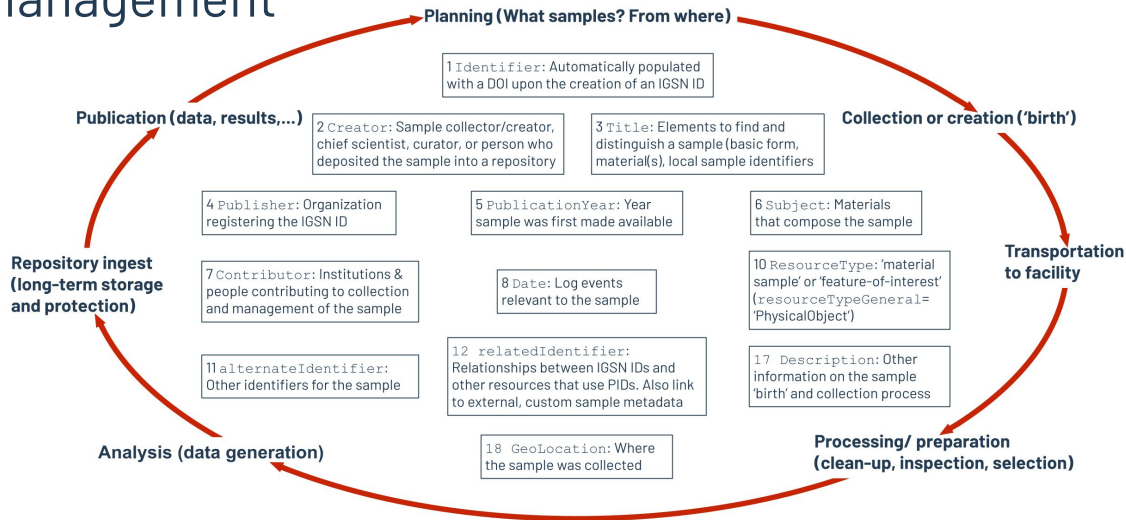
Type to search...

Repository

Periodical

IGSN ID Catalog

- All IGSN IDs are registered with the resourceTypeGeneral Metadata Schema property set to `PhysicalObject`
- Specific metadata guidance has been developed by the IGSN–DataCite Crosswalk and Metadata Management Working Group
- There are also some best practices for enriching IGSN ID metadata



IGSN ID Registration Workflow

Considerations

- Can the current system handle multiple Repository account credentials and prefixes?
- Who should manage the IGSN ID Catalog Repository(ies)?
- What metadata sources are available to assist discovery and distinction of samples?
- What element are needed on landing pages, and are these common across departments/disciplines/organizational units?
- Who creates and hosts the landing pages?

Important Resources

DataCite General

- Fee Model: <https://datacite.org/fee-model/>
- Support Site: <https://support.datacite.org>
- Getting Started: <https://support.datacite.org/docs/getting-started>
- Fabrica Guide: <https://support.datacite.org/docs/doi-fabrica>
- Testing Guide: <https://support.datacite.org/docs/testing-guide>
- REST API Guide: <https://support.datacite.org/docs/api>
- Metadata Schema: <https://schema.datacite.org/>

IGSN ID Specific

- Support Pages:
<https://support.datacite.org/docs/about-igsn-ids-for-material-samples>
- IGSN e.V. Website: <https://www.igsn.org/>



CONNECTING RESEARCH,
ADVANCING KNOWLEDGE



info@datacite.org



pidforum.org



datacite.org
datacite.org/blog



support.datacite.org
support@datacite.org



@datacite



@datacite



@datacite



DataCite