**Recommendation 4.2 **

Sample Curators

Recommendation to Sample curators to train staff in handling IGSN

Description

Status:

Motivation for this Recommendation:

Sample curators are well-positioned to take a leading role in promoting the use of IGSNs, as they possess the expertise and oversight necessary to ensure high-quality sample documentation. By actively encouraging and training researchers, technicians, and other staff to register IGSNs and record sample relationships, curators help establish consistent practices across projects and departments. This not only reduces the risk of metadata loss or inconsistency but also strengthens the traceability and reproducibility of research. Empowering a broader group of staff to apply IGSNs correctly supports long-term stewardship of sample records and ensures that sample-based data can be reliably reused, cited, and linked to other research outputs.

Recommendation

It is recommended, that sample curators:

1. Enable, train and encourage staff, including researchers, technicians, and other people who take samples, split samples or create subsamples to register IGSN to be able to identify these samples where appropriate.
2. Enable, train and encourage staff, including researchers, technicians, and other people who split samples or create other types of subsamples to record any parent IGSNs with these subsamples.

To answer - Who exactly are sample curators? Where to do this?

Binding Convention:

	mandatory	conditional	optional
Helmholtz FAIR Principle			

Precondition for Implementation:

Related Recommendations

Parent: M4.0 Recommendation to use IGSN as the standard reference in technical infrastructures to samples where appropriate

Dependent: none

Other: none

Contributors

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* Please keep the lead author informed about any possible changes in this wiki.

Content

1. Explanation of the Background and Benefits of the Recommendation

The IGSN (International Generic Sample Number) was developed to address long-standing challenges in the consistent identification and citation of physical samples in research. Earlier practices often relied on local naming conventions or internal codes, which lacked global uniqueness and hindered long-term traceability—especially when samples were reused, transferred, or cited in publications. Initial IGSN implementations focused primarily on geosciences, particularly in large-scale programs like IODP (International Ocean Discovery Program) and SESAR (System for Earth Sample Registration) [1], demonstrating the value of persistent identifiers in managing complex sample workflows. Today, IGSN use is expanding across disciplines, including environmental and life sciences, supported by allocating agencies and tools that enable automated registration and metadata integration. In this context, sample curators are key to ensuring that the benefits of IGSN—such as reproducibility, provenance tracking, and interoperability—are realized in practice by embedding them into sampling routines and training processes.

Motivation

Sample curators are well-positioned to take a leading role in promoting the use of IGSNs, as they possess the expertise and oversight necessary to ensure high-quality sample documentation. By actively encouraging and training researchers, technicians, and other staff to register IGSNs and record sample relationships, curators help establish consistent practices across projects and departments. This not only reduces the risk of metadata loss or inconsistency but also strengthens the traceability and reproducibility of research. Empowering a broader group of staff to apply IGSNs correctly supports long-term stewardship of sample records and ensures that sample-based data can be reliably reused, cited, and linked to other research outputs.

2. Possible alternative solutions

For the registration process, these solutions can be envisioned:

1. Embed IGSN Workflows into Digital Tools

One effective way to promote the use of IGSNs without relying solely on individual training is to integrate IGSN registration into existing digital workflows. Sample submission portals, electronic lab notebooks, or field data collection tools can be configured to automatically prompt for IGSN assignment or even register identifiers in the background. Systems can also enforce structured input for parent-child relationships, reducing the need for manual entry and minimizing user error. By embedding IGSN support directly into day-to-day tools, infrastructures make good practices the default behavior.

2. Provide Pre-Assigned IGSN Blocks or Templates

Instead of requiring every staff member to register IGSNs individually, curators can pre-assign or reserve blocks of identifiers for specific projects, instruments, or sampling campaigns. Researchers and technicians can then draw from this pool when documenting their samples. Templates or pre-filled forms can further simplify the process. This approach maintains standardized identifier usage while reducing the administrative burden on those involved in sampling, especially in field or lab environments.

3. Define Sample Management Policies

Making IGSN use a formal component of institutional policies or project-level data management plans helps establish clear expectations. For example, the requirement to register IGSNs and link parent-child samples can be written into standard operating procedures or quality assurance protocols. Including these requirements in onboarding documents or data submission checklists ensures that staff are aware of their responsibilities from the start and reinforces consistent documentation practices across projects.

4. Delegate IGSN Handling to a Specialized Unit

In settings where sampling personnel lack time or technical capacity to handle identifier registration, IGSN responsibilities can be centralized. A dedicated data stewardship or curation unit can receive sample metadata from researchers and handle the registration, quality checks, and maintenance of IGSNs. This ensures that identifiers are applied correctly and consistently, while freeing up scientists and technicians to focus on their core tasks. It also creates a point of contact for resolving issues or coordinating updates.

5. Use Feedback and Recognition Mechanisms

Providing feedback on the impact of IGSN usage can motivate researchers and staff to adopt best practices voluntarily. Dashboards or reporting tools that show sample reuse, citation in publications, or integration into other datasets can highlight the value of good sample documentation. Additionally, institutions can recognize individuals or teams who demonstrate exemplary data practices—such as complete IGSN metadata or consistent parent-child linkage—through awards, internal reporting metrics, or success stories.

3. Consideration of the advantages and disadvantages of implementing the recommendation

See the general discussion of advantages and challenges implementing IGSNs in the recommended way.

4. The Recommendation

It is recommended, that sample curators:

1. Enable, train and encourage staff, including researchers, technicians, and other people who take samples, split samples or create subsamples to register IGSN to be able to identify these samples where appropriate.

2. Enable, train and encourage staff, including researchers, technicians, and other people who split samples or create other types of subsamples to record any parent IGSNs with these subsamples.

5. Naming of communities that have already implemented the recommendation

6. Documentation of the test to validate correct implementation

7. Examples of Instances

8. Further Information

References

[1] SESAR (System for Earth Sample Registration), https://www.geosamples.org/

Relevant Community Recommendations

9. History of this document

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