Recommendation 4.4

Data Infrastructures

Recommendation to data infrastructures to allow to assign IGSNs to data records

Description

Status: 23.5.2025

Motivation for this Recommendation:

Integrating IGSNs into data infrastructures enhances the quality, consistency, and interoperability of sample metadata. When systems support the capture and exposure of IGSNs—along with parent-child sample relationships—sample-based data becomes more discoverable, reusable, and reliably linked to other research outputs. Making IGSNs part of harvestable metadata allows for better integration across repositories and platforms, while treating them as authoritative identifiers helps maintain accurate and up-to-date records. This contributes to a more robust, transparent, and FAIR-aligned data ecosystem.

Recommendation

It is recommended, that data infrastructures:

1. allow to record an IGSN to identify samples and parent samples within their data systems, and make this data part of the metadata available for harvesting.
2. treat IGSN metadata as the primary source of truth within their data systems, and update the internal metadata accordingly as necessary.

Binding Convention:

	mandatory	**conditional**	**optional**
Helmholtz FAIR Principle			

Precondition for Implementation:

IGSNs need to be registered with samples. Staff needs to be aware of IGSN procedures.

Related Recommendations

Parent: 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

Today, IGSNs are supported by a growing international infrastructure, including allocating agents and resolving services, and are already in use by major repositories and infrastructures such as SESAR2, PANGAEA, and GFZ Data Services. Operational procedures and tools now exist to automate IGSN registration and integrate it into data workflows (see [1] Baldewein et al. (2023). FAIR WISH D7 - Standard Operating Procedure for automatic IGSN registration. Zenodo. https://doi.org/10.5281/zenodo.10401380).

For data infrastructures, enabling the recording and harvesting of IGSNs strengthens metadata quality and ensures the persistent identification of samples and their relationships. Treating IGSN metadata as the authoritative source improves consistency, facilitates interoperability across systems, and enhances discoverability of sample-based data. This contributes to a more connected and sustainable research data ecosystem.

2. Possible alternative solutions

See a brief discussion of alternative identifiers which could be used instead of IGSNs.

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 data infrastructures:

1. allow to record an IGSN to identify samples and parent samples within their data systems, and make this data part of the metadata available for harvesting.
2. treat IGSN metadata as the primary source of truth within their data systems, and update the internal metadata accordingly as necessary.

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] Baldewein et al. (2023). FAIR WISH D7 -Standard Operating Procedure for automatic IGSN registration. Zenodo. https://doi.org/10.5281/zenodo.10401380

Relevant Community Recommendations

9. History of this document

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