GOSC Data Interoperability WG

Case Study template

Case Study:	ICSM ANZ Metadata Working Group (MDWG) https://www.icsm.gov.au/what-we-do/metadata-working-group
Participant name, affiliation	Irina Bastrakova (ICSM / ANZ), Lesley Wyborn (ANU), Melanie Barlow (ARDC), Rowan Brownlee (ARDC)
Participant email address	Irina.Bastrakova@ga.gov.au Lesley.Wyborn@anu.edu.au Melanie.Barlow@ardc.edu.au Rowan.Brownlee@ardc.edu.au
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Background

The GOSC Data Interoperability Working Group is seeking to produce a range of case studies in data / metadata interoperability, covering use cases, standards, exchange and other useful information such as challenges and solutions. Thank you for participating in this initiative which we hope will be used to improve the interoperability landscape globally.

If you have any questions about this work, please email dataio-gosc@codata.org or [Individual e-mail]

Participant: I confirm I have read and understood the participant consent form: [Y__]

Drivers for Interoperability and Combining Data

In your work, what is the purpose of combining data/metadata and services from different sources? I.e. what does it allow you to do?

Increasing the discoverability, integration reuse of data from multiple sources across the government, research and industry sectors

Challenges

What are the main barriers / challenges you face when using or integrating data/metadata and services from different sources?

1) Differences between the approaches to metadata and vocabularies both within and between: government, research and industry organisations and agencies
2) Lack of agreement on the mandatory metadata elements required and vocabularies used.
3) Lack of understanding and tools
4) Lack of support and endorsement by management that following standards is an organisational necessity
5) Lack of domain profiles
6) Access to metadata experts
7) Ability to integrate - lack of crosswalks between different metadata standards
8) Lack of guidance documentation - particularly that which is coordinated.
9) Lack of funding, particular in support of data management

Solutions

How do you tackle these interoperability challenges?

Established and promoted ICSM ANZ MDWG. Created a sub technical working group.

Align the metadata and vocabulary work with the Government policies, initiatives and priorities

Identified use cases and worked directly with domains as they applied recommendations.

Constructed best practice guide, communication material and tools for ISO19115-1.

Linked metadata work to major programs (ANZLIC Roadmap 2020-2024, Australian Climate Services, Digital Atlas of Australia)

Regular meetings of all members to share knowledge, solutions, and to identify challenges, etc.

Regular meetings of the sub technical working group members - to progress the activities identified in the roadmap.

Identify challenges by creating surveys for members to respond to.

Interoperability successes

What do you think is working well for your community when using or integrating data/metadata and services from different sources ?

The survey to identify challenges/priorities indicated that many of the initial challenges were addressed. Current focus is on developing domain specific profiles and building tools

Developed common set of communication materials, guidelines and tools https://www.icsm.gov.au/what-we-do/metadata/metadata-working-group-documents

Worked on use cases and implementations with domain experts (emergency manages (https://www.emsina.org/metadata-standards-webservice), geodesy (https://www.icsm.gov.au/sites/default/files/Preparing%20metadata%20for%20the%20Australian%20Geospatial%20Reference%20System_v2.pdf

Crossworks across most used metadata standards (e.g. ISO 19115-1, DCAT, Rif-CS)

Uptake of the ISO 19115-1 and developed tools is increasing, noticeable interest in access via APIs as opposed to WMS.

Increased interest in structured metadata at data dictionary level describing datasets in details.

Increased consistency and quality of metadata statements.

Community

Do you have any policies or procedures in place to guide and encourage your community to work together and exchange information, particularly in relation to applying the FAIR principles?

ISO19115-1 Metadata Best Practice Guide has been evaluated by an independent expert against the FAIR Principles as PASSED.

Strongly recommended metadata elements include; the use of Globally unique persistent resolvable identifiers for metadata and described resources, defining security, legal and other constraints, recording provenance, defining vocabularies and promoting open formats.

Regular ICSM MDWG meetings to exchange information and identify common activities, presenting at other forums (CoPs, conferences), participation in other communities work (Nationally, internationally) - aligning with global community (e.g. UN GGIM, OGC)

The Intergovernmental Agreement on data sharing (https://federation.gov.au/sites/default/files/about/agreements/iga-on-data-sharing.pdf)

The Australian Data Strategy (https://ausdatastrategy.pmc.gov.au/)

Data Availability and Transparency Bill 2022

Metadata

What are the most significant metadata standards/specifications used by your community?

ISO 19115-1 Geographic information - Metadata

ISO 19115-3 Geographic information - Metadata

ISO 19157 Data Quality

DCAT2

GDA2020 https://www.icsm.gov.au/datum/gda2020-fact-sheets

Which mechanisms do you use for exchanging metadata? [For example, a, b, or c.]

Crosswalks for mapping between metadata schemas.

Web Services - OGC CSW; OAI-PMH; OGC API.

National Metadata Repositories to aggregate and provide access to resources from multiple providers - Research Data Australia; data.gov.au; Australian Ocean Data Network (AODN); Trove NLA; Knowledge Network (CSIRO).

Data

Respondents decided to focus on metadata as data, for the purposes of this use case.

What are the metadata formats or encoding used by your community?

Metadata is usually provided in XML and GeoJSON formats

What are the metadata structures used by your community?

Metadata structure is in accordance with the standards listed above

What are the mechanisms that you use for exchanging metadata?

Web Services - OGC CSW; OAI-PMH; OGC API.

Vocabularies

What are the most significant vocabularies (including terminologies, taxonomies and ontologies) used by your community?

ISO19115-1, 18157, etc. codelists - https://standards.iso.org/iso/

ANZSRC Field Of Research Code 2020

How are these vocabularies managed and accessed by your community? In your judgement do they comply with the 10 Simple Rules for Making a Vocabulary FAIR?

Text/xml ISO codelists are managed by: ISO/TC211, accessed in https://standards.iso.org/iso/ or as PDF documents - these vocabularies do not comply with the FAIR Principles yet.

ANZSRC Field Of Research Code 2020 https://vocabs.ardc.edu.au/viewById/316 hosted at Research Data Australia, largely conforms to the 10 simple rules recommendations.

Identifiers

Which are the most significant identifiers (e.g. DOI, ORCID, InChI) being used by your community?

DOI, ORCID, IGSN,

Variable Description

What is the method for describing or referencing variables of interest?

Not applicable for metadata

Units of Measurement

What is the method for describing or referencing units of measurement?

Extremely varied - depends on the data type. Not applicable for metadata.

Additional comments

Is there anything else you would like to discuss related to these issues?.

Thank you!