



Australian Government

Geoscience Australia

ICSM Metadata Working Group workshop 1

13th July 2018

Canberra

**GEOSCIENCE AUSTRALIA IS THE AUTHORITY ON PROVIDING
FUNDAMENTAL GEOGRAPHIC INFORMATION FOR THE NATION**

Welcome

Dr Stuart Minchin

Chief of Environmental Science Division: Geoscience Australia

ANZLIC Member

Introduction

Dr David Lescinsky

High Performance Computing Lead Geoscience Australia

Workshop Facilitator

Agenda

1. **Metadata Yesterday, Today and Tomorrow** – Andrew Whiting, Nicholas Car
2. **Problem Statement: Support and Advice to other Sectors** – Kane Orr
3. **External Factor: ANZLIC, ICSM, ISO, OGC, W3C, LDWG** – Simon Costello, Byron Cochrane, Armin Haller
4. **Morning Tea** – c. 10.55am
5. **Workshop 1: Metadata Issues, Challenges and Barriers** – David Lescinsky
6. **Lunch** – c. 12.15pm
7. **Using and Managing Spatial Metadata** – Adrian Burton, Irina Bastrakova
8. **GeoNetwork Demonstration** – Andrew Marshall
9. **Workshop 2: Requirements for moving forward** – David Lescinsky
10. **Afternoon Tea** – c. 3.10pm
11. **MDWG moving forward** – David Lescinsky

Workshop 1: Metadata issues, challenges and barriers

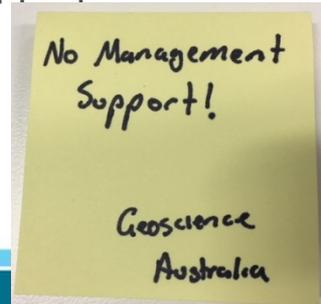
1. Round Table discussion

- What **issues / challenges** does **my agency** face in managing a metadata system (policy, infrastructure, standards implementation, other)

2. Record of Discussion

- Take individual sheets of paper, give each a heading related to (policy, infrastructure, standards implementation, other)
- **Individually** write on separate Post-It notes what **issues / challenges** does **my agency** face in managing a metadata system (policy, infrastructure, standards implementation, other)
- Based on your group discussion, classify each Post-It note and stick to the appropriate sheet of paper

3. Report, the three most common issues your table has identified from all agencies



Workshop 2: Requirements to improve metadata consistency

1. Round Table discussion

- What is required in **your agency** to move to the latest standard (policy, infrastructure, standards implementation, other)
- What level of granularity does metadata need to address (considering GDA2020, Linked Data etc)

2. Record of Discussion

- Take individual sheets of paper, give each a heading related to (policy, infrastructure, standards implementation, other)
- **Individually** write on separate Post-It notes what is required in your agency to move to the latest standard (policy, infrastructure, standards implementation, other)
- Based on your group discussion, classify each Post-It note and stick to the appropriate sheet of paper

3. Present to all the three most common requirements your table has identified

Moving forward - MDWG

- Review the findings from workshop 1 and workshop 2
- Working group TORS and how should the working group operate
- What are the groups core activities and commitments
 - Revised 19115-1 profile
 - Endorsed profile
 - Re-developed best practice resources
- Roles and responsibilities

Draft Terms of Reference

- Actively **monitor and assess** the impact of future changes to metadata standards, in order to advise ANZLIC on policy impacts and stakeholders on the scale and impact of technical changes, through the managed knowledge of current national capabilities in metadata.
- **Create and maintain** a roadmap documenting what we would like to do/where the group wants to go (strategic directions, tools, etc.)
- **Develop, and manage** a series of **best practice** resources (profiles, applications, websites (ANZLIC and ICSM), FAQs, models) to assist both general and technical audiences in understanding, implementing and managing the latest versions of metadata standards.
- **Engage...** industry (SIBA, ESRI, ect), community, Data.gov
- **Provide advice** to spatial communities on the value, implementation and management of metadata and associated systems
- Manage and coordinate development work funded through external sources
- **Provide a forum** for metadata custodians to share and exchange knowledge related to implementing, maintaining and updating metadata frameworks.
- **Provide a forum** for inward and outward communication between international (ISO and OGC peak bodies), other interest groups (Australian Government Linked Data Working Group, GeoNetwork community of practice etc.) to inform and seek feedback from core foundation spatial data custodians.
- **Govern** associated metadata tools, models, vocabularies, and resources, which are published on by ICSM and or ANZLIC.
- Report to ICSM and ANZLIC on key activities, and metadata developments



Australian Government

Geoscience Australia

Journey of Spatial Metadata in Australia

Andrew Whiting

13th July 2018

Canberra

GEOSCIENCE AUSTRALIA IS THE AUTHORITY ON PROVIDING
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Background

Metadata feedback from custodians:

- Standards are confusing. *Very few can understand*
- Applying metadata is challenging and expensive.
- To update my system, it's a significant impost. *Low Priority*
 - *Challenge to find someone who can*

Even between us experts, there is a lot of questions and perceived confusion

catalogues?

- I have to change my base metadata quality to meet the harvesters needs.
- What is my neighbour doing?
- Have I got the latest version of the standard?
- Are there resources to help me implement?



Workshops
discussion
spatial data

Metadata is a
common
discussion

FSDF Roadmaps

November 2017 – Two roadmaps endorsed by ANZLIC and ICSM

Consumeability Roadmap

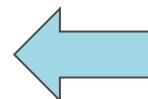
Identify datasets of focus (roads)	PMO - GA						
Establish dedicated PCTI taskforce	ICSM						
FSDF Taskforce established - Chair GA		TF					
Recommendation document focusing on dataset:		TF					
~ Symbology		TF					
~ Attribution convention - or common ontology		TF					
~ Common naming conventions (to improve discoverability)		TF					
~ Datum - projection - 2d v 3d		TF					
~ Vocabularies		TF					
~ Output: Recommendations document for publishing dataset service		TF					
Alignment of recommendations with other initiatives			PMO - GA				
Review, endorse & publish dataset recommendations							
Published recommendations document for publishing webservice				ICSM			
Individual projects scoped to address custodial change <small>see table Sheet 10</small>					PMO - GA		
Collaborative projects to implement change with custodians						PMO - GA	PMO - GA
to implement recommendations and ensure every dataset is published as a wms as a minimum						Custodian	Custodian

Discoverability Roadmap

Re-Establish the National metadata working group containing representation from all governments metadata custodians.	PMO - GA						
	ICSM						
	ANZLIC						
	MDWG						
Develop best practice guide for implementing and managing MD		MDWG					
ICSM review MD best practice guide, table for ANZLIC endorsement			ICSM				
ANZLIC endorse MD best practice guide and publish				ANZLIC			
~ ANZLIC best practice guide for managing metadata published				ANZLIC			
Metadata maturity framework developed	PMO - GA						
Current state of metadata documented and maturity assessed		PMO - GA					
Recommendations on how to transform issues in current state of national capabilities			MDWG				
Ensure recommendations are consistent with other initiatives i.e. EMSINA				PMO - GA			
Individual projects scoped to address custodial metadata issues					PMO - GA		
Document metadata elements bespoke to specific dataset, for consideration within metadata statement					TF		
Collaborative projects activated with custodians to ensure FSDF metadata is consistently implemented, accessible via CSW's						PMO - GA	PMO - GA
						Custodian	Custodian

Roadmap Legend

PMO - GA	FSDF Program Management Office – Geoscience Australia
ICSM	Intergovernmental Committee on Surveying and Mapping
ANZLIC	Australian & New Zealand Land Information Council
TF	FSDF Dataset Taskforce
MDWG	Metadata Working Group
Custodian	FSDF Dataset Custodian (input, aggregation or output)



Current focus

Metadata

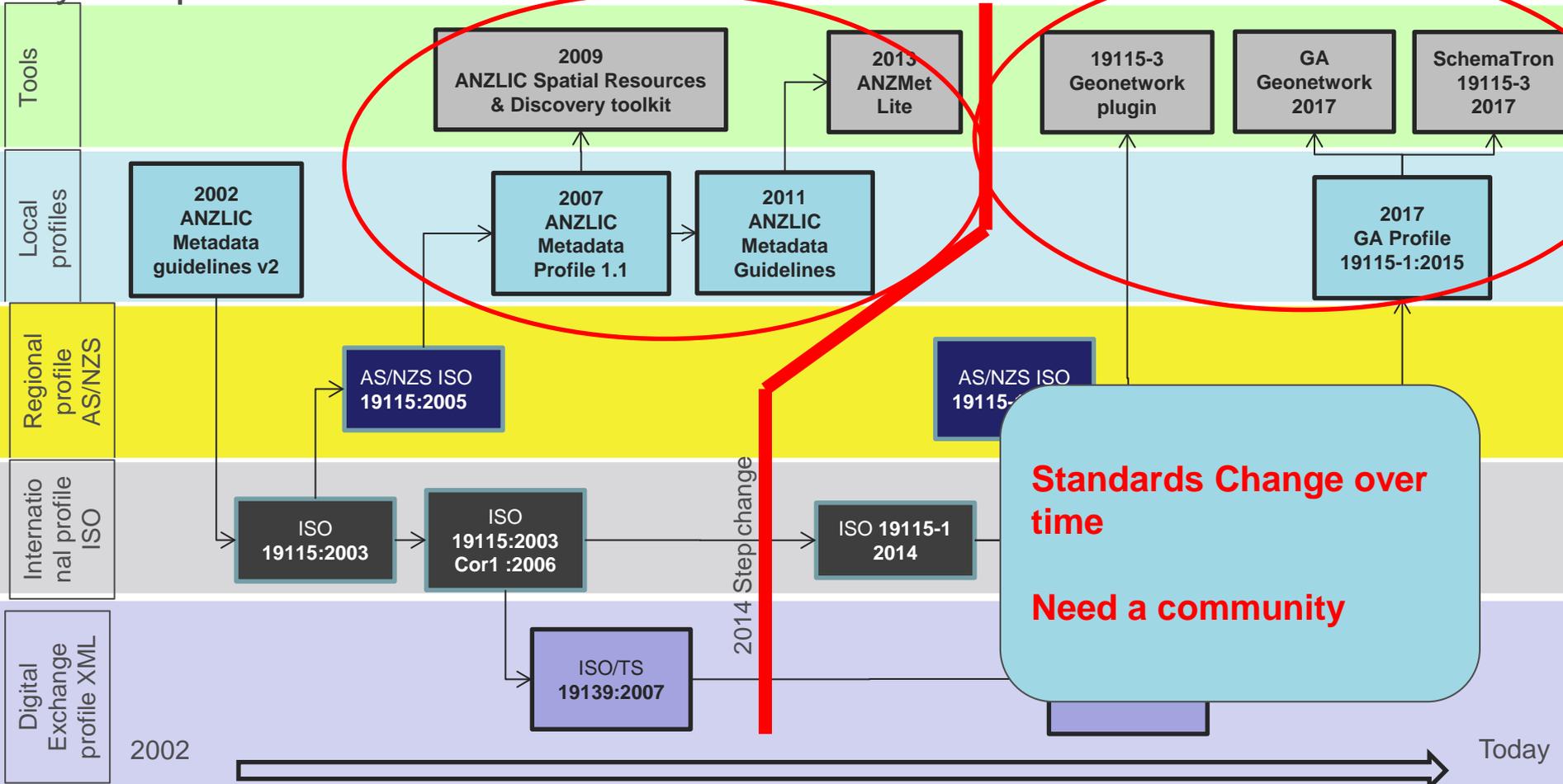
- Metadata has a number of national and international standards
- **Issue is in the way everybody has implemented the standard**
- This means to consume metadata into bespoke applications like the LINK, ELVIS, National Map, data.gov.au

We have to write bespoke code

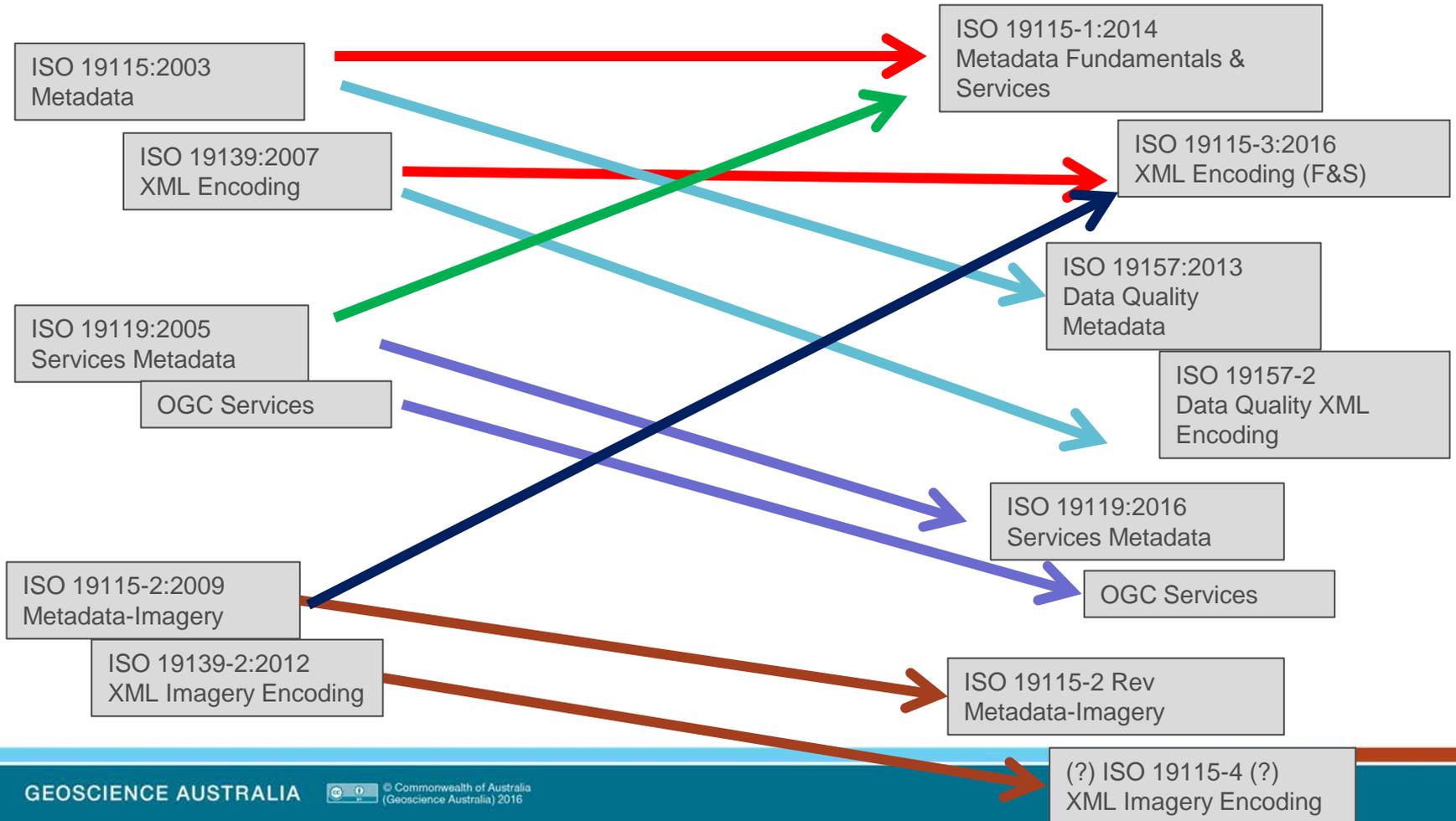


My interpretation of the Standards Environment

Our Journey



ISO 19115 – What's new and what's different



Outcomes form the working group

- Develop a **community profile** based off the new standard
 - Propose the **adoption** by ANZLIC (only elements contained within the standard)
- Develop some easy to use **best practice** resources to ‘**easily**’ assist custodians in transitioning to the new standard including:
 - Updated websites
 - Tools – catalogues, QA systems, production systems
- Maintain a active forum for
 - Communication both within the community and to outside domains
 - Provision of advice to those who need it, and to
 - Monitor and respond to the developments within the standards ecosystems (ISO, OGC, W3C)



Australian Government

Geoscience Australia

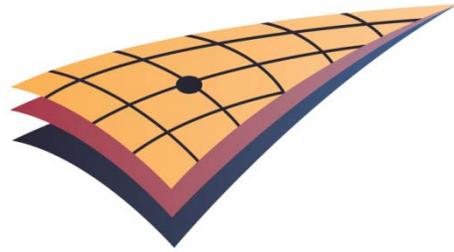
Phone: +61 2 6249 9111

Web: www.ga.gov.au

Email: feedback@ga.gov.au

Address: Cnr Jerrabomberra Avenue and Hindmarsh Drive, Symonston ACT 2609

Postal Address: GPO Box 378, Canberra ACT 2601



EMSINA

Emergency Management Spatial Information Network Australia

National Metadata Working Group

Kane Orr

EMSINA (GA)

13th June, 2018



www.emsinagroup.org



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



emsinagroup@gmail.com



[emsinagroup](https://www.facebook.com/emsinagroup)

Who is EMSINA?

1 min

Importance of Metadata 4 EM

2 min

Our Metadata Journey

10 min

Is it possible...

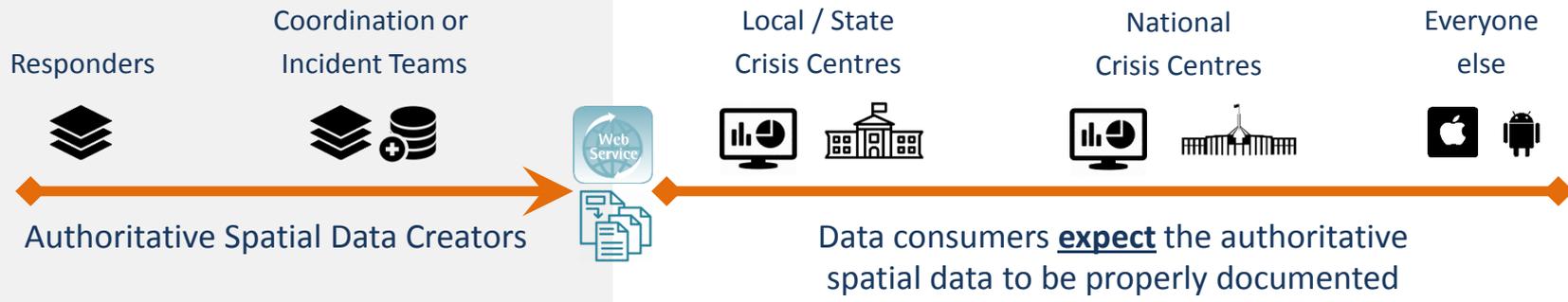
2 min

Our Offer...

1 min

Importance of METADATA to the Emergency Management Sector

Ever increasing reliance upon **authoritative** 'live' spatial material (webservices) for hazard/event awareness, analysis and critical decision making:



When everything goes right, spatial metadata is now becoming scrutinised in...

Sector Inquiries | Government Inquiries |
Royal Commission's | Coroner Reports | Media

Who is EMSINA?

1
min

Importance of
Metadata 4 EM

2
min

Our Metadata
Journey

10
min

Is it possible...

2
min

Our Offer...

1
min

...and that is why the EM Sector
wants to be on the front foot with Metadata compliance!

....doesn't sound hard, but lets follow
EMSINA's journey to achieve this



The Australian Emergency Management Sector is very fortunate to have EM-LINK

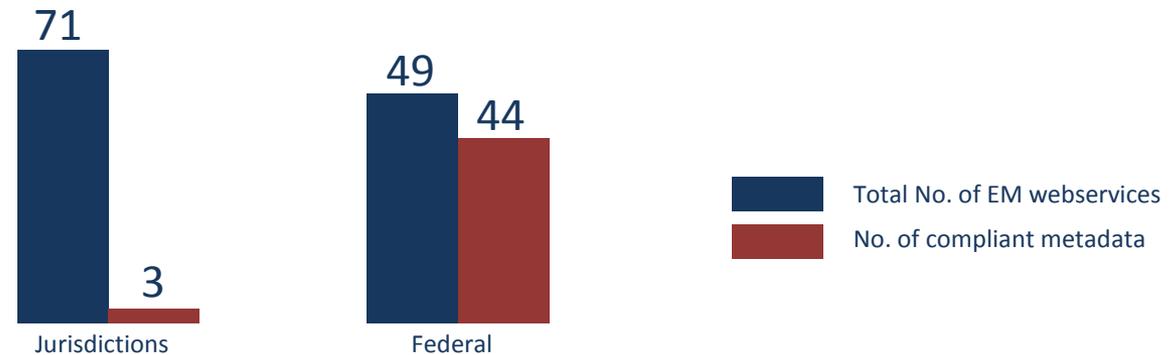
Catalogue of Australia's 120 authoritative EM webservice

- Instant access information
- Consistent data usage
- 100% Custodian driven
- Communication device (changes)
- Backbone to the Australian Govt. 'live' National EM picture
- **Gap analysis tool**
 - id. data gaps (success)
 - Dig into the data



- EM-LINK gap Analysis...

- Professional interest group's such as EMSINA to perform gap/capability analysis e.g.
 - Analysis:** 47 of 120 webservice metadata are 'ISO' compliant



- Solution:**

- Dec 2017:** Group 'Agreed' project to update all EM webservice metadata in EM-LINK up to 'current ISO standard' – *published in our [annual workplan](#)*
- Jan 2018:** Investigation work:
 - 1st Question: *what is the current standard?*
 - ANZLIC website: showing **old** and **confusing information**
 - Online request for assistance **referred back to GA to answer...OK a bit strange**, but we continued on...

Who is EMSINA?

Importance of Metadata 4 EM

Our Metadata Journey

Is it possible...

Our Offer...

1 min

2 min

10 min

2 min

1 min

- AS/NZS ISO 19115.1:2015 METADATA
- ANZLIC METADATA PROFILE
- NATIONAL ADDRESS MANAGEMENT FRAMEWORK
- NATIONAL NESTED GRID
- EXTERNAL RESOURCES
- CRC-SI REVIEW OF GEOCODED ADDRESSING
- METADATA
- ARCHIVED FOUNDATION SPATIAL DATA FRAMEWORK

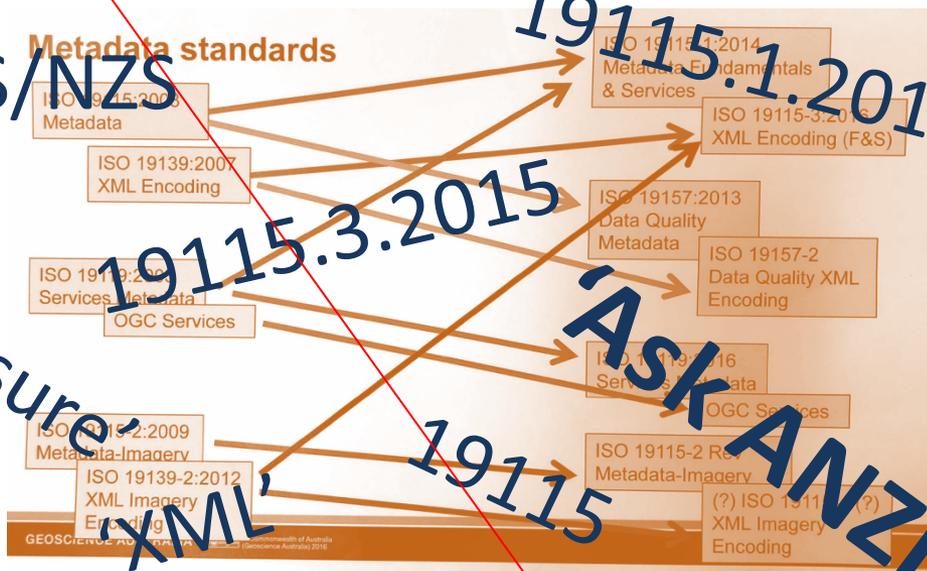
oh...?

'I Think'



'could be this one'

Metadata standards



'Unsure', 'XML', '19115'

'19115:2005', '19115:2015'

Google

2011 Metadata | ANZLIC
www.anzlic.gov.au/resources/metadata
 Reference material. ANZLIC Metadata Profile (version 1.1) Metadata Profile Guidelines (version 1.2, July 2011) [PDI] You've visited this page 2 times. Last visit: 6/06/18

2007 ANZLIC metadata profile
 The ANZLIC Metadata Profile adopts established Australian ...
 More results from anzlic.gov.au »



Stopped Project

Who is EMSINA?

1
min

Importance of
Metadata 4 EM

2
min

Our Metadata
Journey

10
min

Is it possible...

2
min

Our Offer...

1
min

Our Group's experience got us thinking a little wider...

Could the traditionally poor metadata uptake not be
lack of time, laziness, after thoughts, etc

is it possible that...

Common spatial users (i.e. not the people in this room) do not have:



clear, easily understandable documentation, validation tools, examples,
authoritative support about 1 implementing, 2 publishing, 3 maintaining a
standards compliant metadata statement in a timely fashion?

Who is EMSINA?

1
min

Importance of
Metadata 4 EM

2
min

Our Metadata
Journey

10
min

Is it possible...

2
min

Our Offer...

1
min

Short Term:

- Formal meeting invite to our Brisbane Meeting – 26 and 27 July
 - Representative to de-brief EMSINA on the outcomes of this meeting



Long Term:

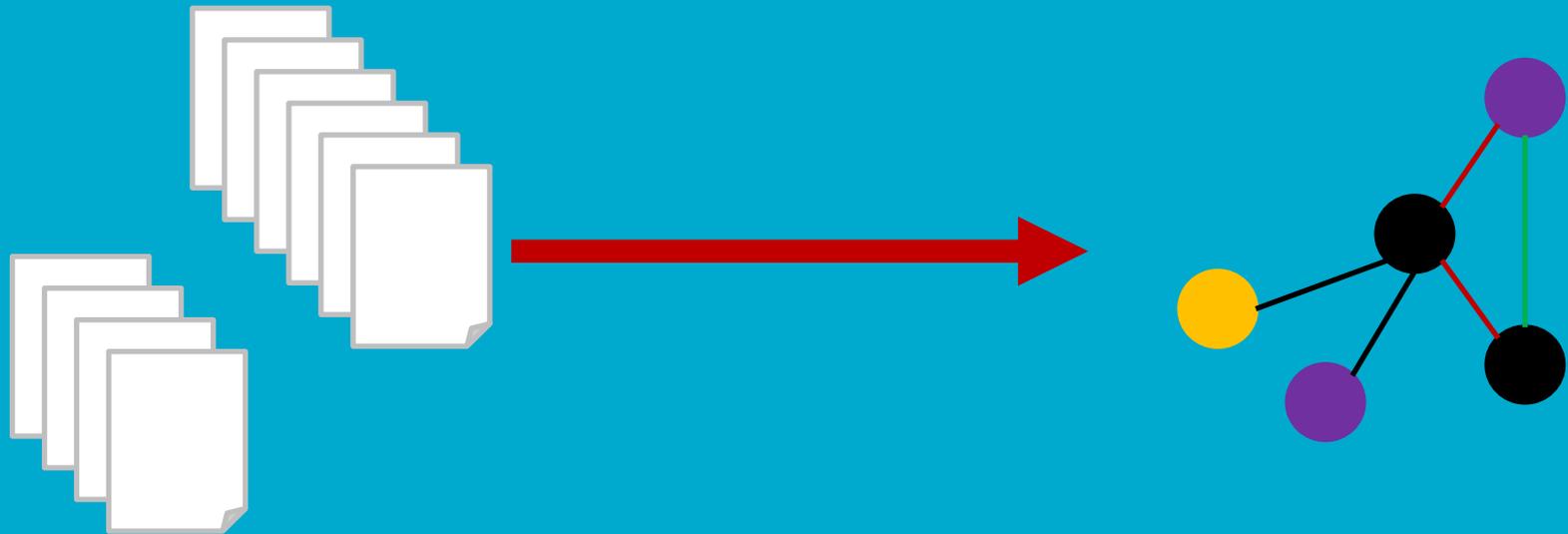
- Where possible a local EMSINA member would like to observe/participate in your future meetings
 - Formally report back to the EMSINA membership



Two Way Partnership:

- Please utilise the EMSINA Group for reviewing, testing, providing *feedback...*
 - *I believe you will find there are lots of spatial experts who want to help!*





Metadata and Linked Data. Where is it all going?

By Nicholas Car for the ANZ MDWG, 2018-06-13

LAND & WATER
www.csiro.au



Supported by:



About me!

Nicholas Car

Senior Experimental Scientist

Environmental Informatics Group

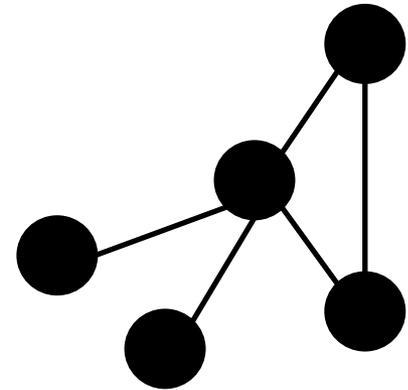
CSIRO Land & Water

Brisbane

- Interested in the totality of Australia's information
- Formerly at GA
- Now working across agencies, as best I can
- Co-chair of the Aust. Gov. Linked Data WG – linked.data.gov.au
 - with Armin here!

Outline

- Profile upgrade opportunities
- Emergent graph



Outline

- Profile upgrade opportunities
- Emergent graph

Profile upgrade opportunities

1. Tighten up parts of the standard for particular purposes
2. Implement things for an entire community – ANZ
3. Cater for an “emergent graph”

Profile upgrade opportunities

1. Tighten up parts of the standard for particular purposes
 - Irina will walk you through GA's requirements

Profile upgrade opportunities

1. Tighten up parts of the standard for particular purposes
 - Irina will walk you through GA's requirements

e.g. Metadata entity set information (MD_Metadata):

<http://pid.geoscience.gov.au/def/schema/ga/ISO19115-1-2014>

Name	Definition	Change from ISO19115-1
metadataIdentifier	unique identifier for this metadata record	Optional -> Mandatory
parentMetadata	identification of the parent metadata record	Conditional -> Conditional (changed condition)
referenceSystemInfo	description of the spatial and temporal reference systems used in the resource	Optional -> Conditional
metadataConstraints	restrictions on the access and use of metadata	Optional -> Mandatory
metadataScope	the scope/type of resource for which metadata is provided	Conditional -> Mandatory
resourceLineage	information about the provenance, source(s), and/or the production process(es) applied to the resource	Optional -> Mandatory

Profile upgrade opportunities

2. Implement things for an entire community – ANZ

Profile upgrade opportunities

2. Implement things for an entire community – ANZ
 - Shared expectations
 - Certain fields are expected from all participants

Profile upgrade opportunities

2. Implement things for an entire community – ANZ

- Shared expectations
 - Shared codelists

Our community can use a Profile to indicate particular codelists that we nominate for community use.

- Particular keywords
- Particular catalogue item types
- Particular roles
- **Particular agencies**



<http://pid.geoscience.gov.au/def/schema/ga/ISO19115-1-2014>

Profile upgrade opportunities

3. Cater for an “emergent graph”

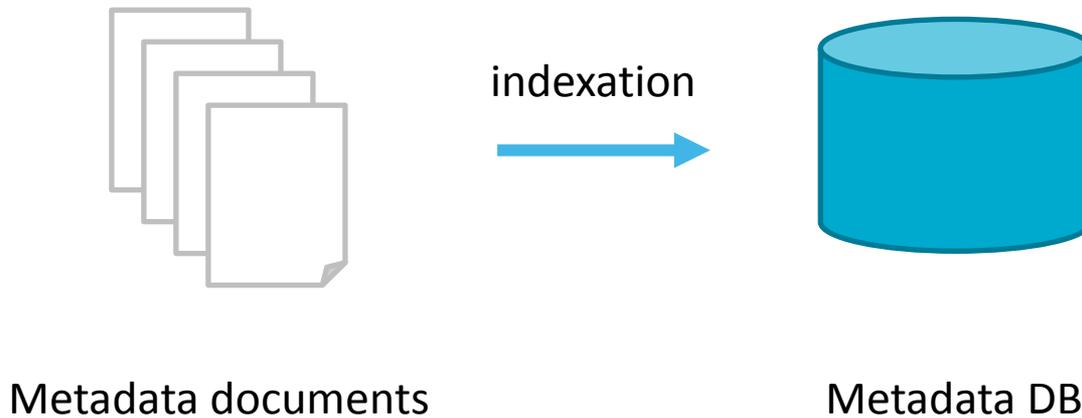
I will explain...

Outline

- Profile upgrade opportunities
- Emergent graph

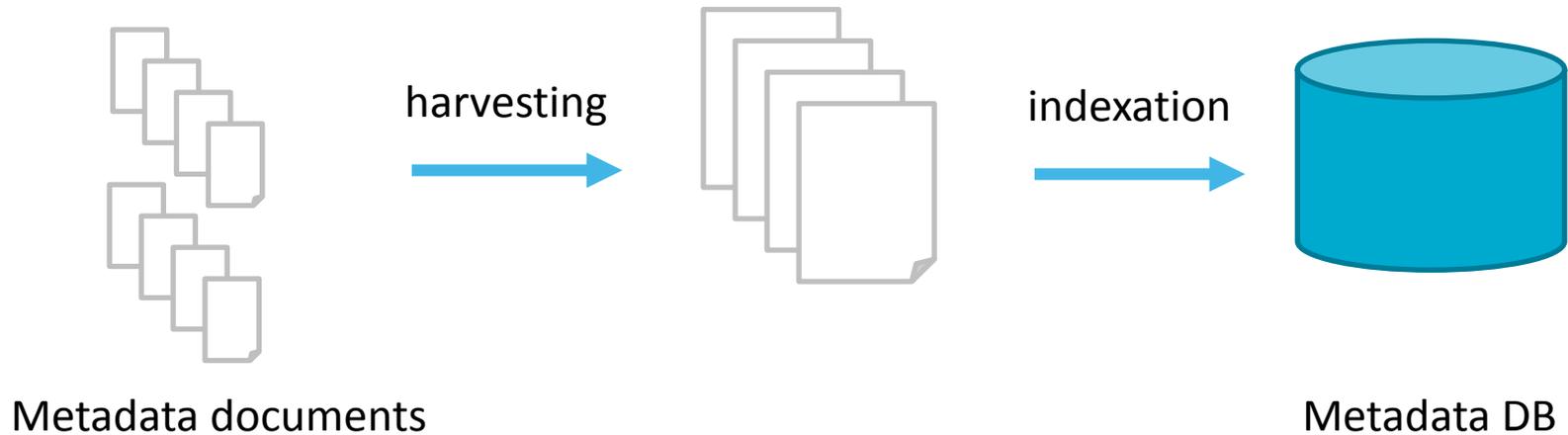
Emergent graph

We are used to this:



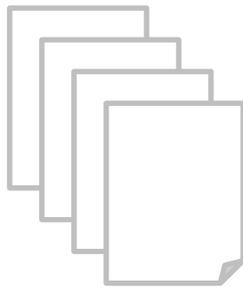
Emergent graph

And to some extent this:

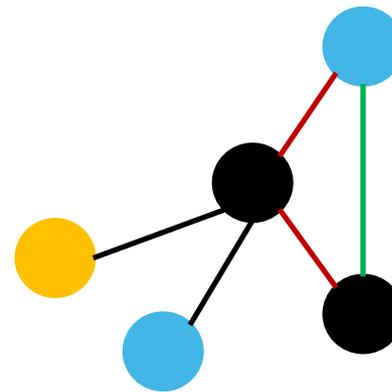


Emergent graph

We want this:



Metadata documents



Information graph

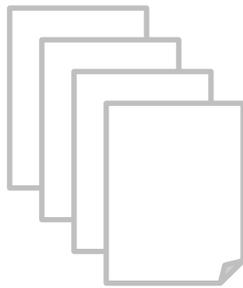
Emergent graph

An information graph:

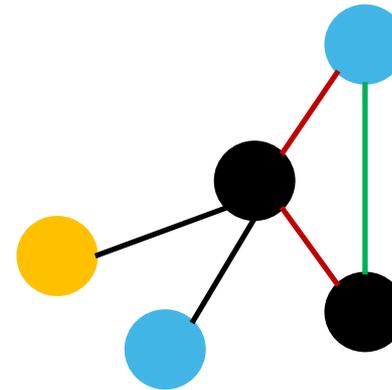
* better represents the way we understand information

* If done using Linked Data, can Join information at any granularity and across many systems

We want this:



Metadata documents



Information graph

Emergent graph

An information graph:

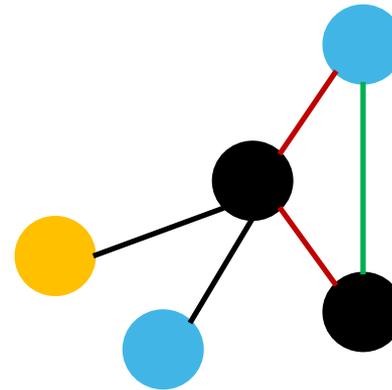
* why?

* The total information we want is stored in many, different systems

We want this:



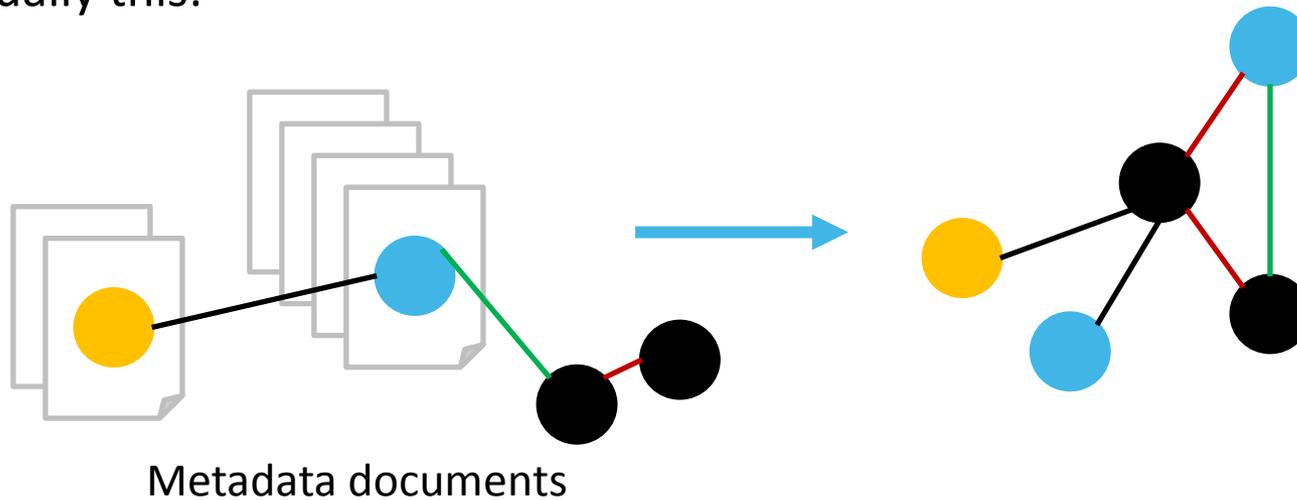
Metadata documents



Information graph

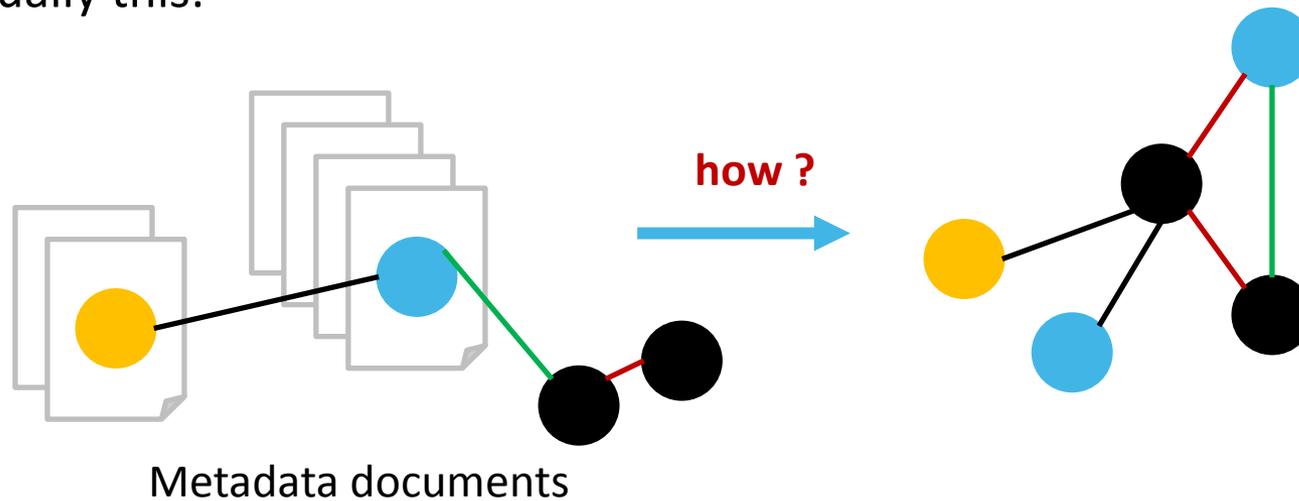
Emergent graph

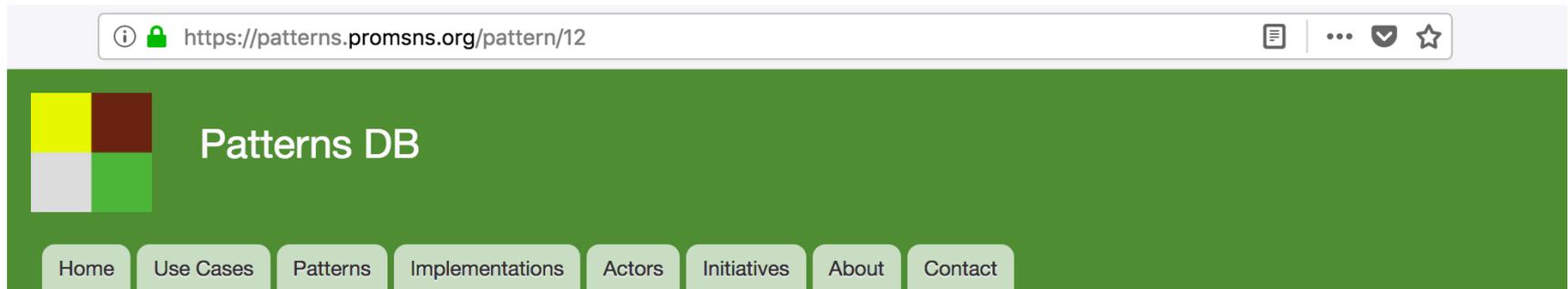
Actually this:



Emergent graph

Actually this:





Home

User login

Username *

Password *

[Log in using OpenID](#)

- [Create new account](#)
- [Request new password](#)

CAPTCHA

This question is for testing whether or not you are a human visitor and to prevent automated spam

Associating metadata in documents with graph provenance

Submitted by admin on Mon, 04/30/2018 - 22:41

Contributor:

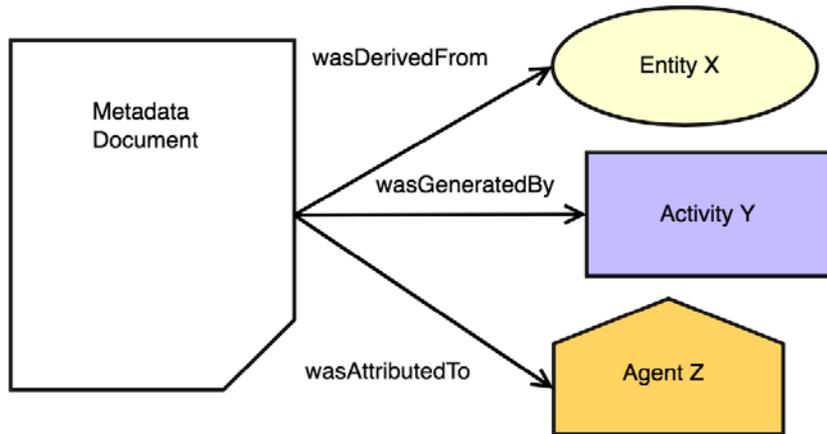
Nicholas Car

Introduction

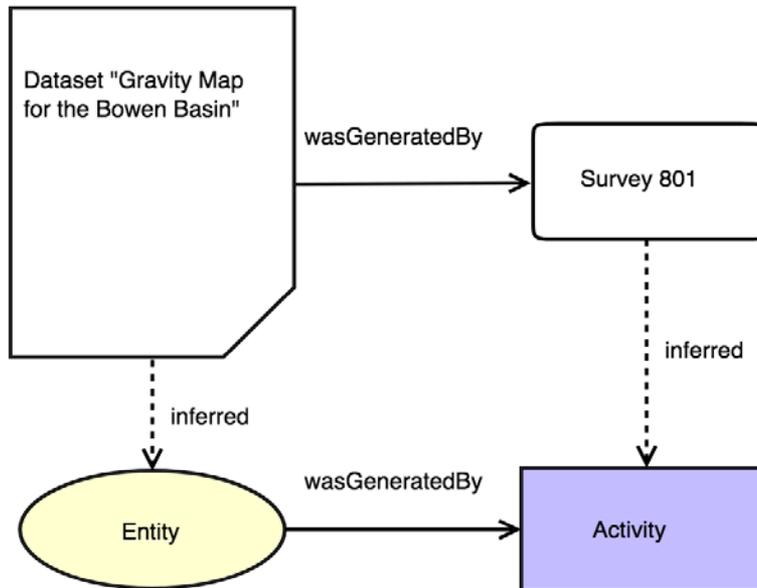
Many organisations already contains systems that deliver metadata about objects for which they now want to deliver standardised, graph-based provenance information, perhaps using PROV. These metadata systems, such as catalogues, sometimes have legacy methods for delivering provenance or lineage, such as free text fields perhaps linked to the items as a dc:source property. Sometimes, as per ISO19115-2 documents, structured machine-readable provenance is given but it is not able to be directly mapped to PROV.

Emergent graph – how, at GA

(but first why: information in multiple places/systems)

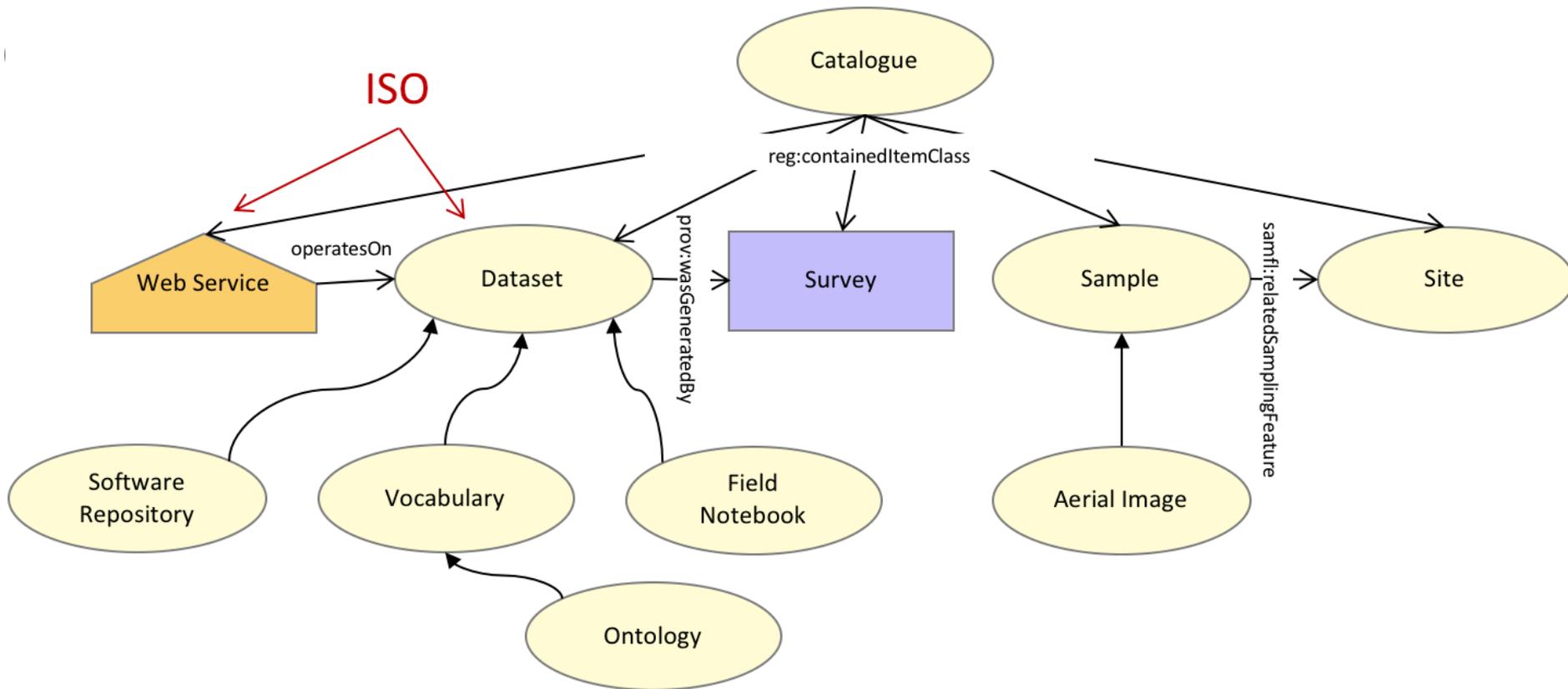


Pattern 12.2



As implemented in test at GA

Emergent graph – how, at GA



<http://pid.geoscience.gov.au/def/ont/ga/pdm>

GA's top-level data model relates items within IS19115-1 catalogues and others



Schemas Register

About this Register

This is the static register (index) of GA's enterprise schema for data models. Its purpose is to present the static URIs to each of them which is particularly useful for machines that wish to automatically index them, more so than than humans who can search for them manually.

This Register is not yet in production and this page serves only as a placeholder for now

Schemas

- [ISO19115-1:2014 GA Profile](#)
 - [ISO19115-3:2016 GA Profile \(XML schema for ISO19115-1:2014 GA Profile\)](#)

Emergent graph – how, at GA

gapDS_AssociationTypeCode_series	ISO19115-1:2014	associated through a common heritage such as produced to a common product specification
gapDS_AssociationTypeCode_stereoMate	ISO19115-1:2014	part of a set of imagery that when used together, provides three-dimensional images
gapDS_AssociationTypeCode_generated	Geoscience Australia / PROV-O	inverse of wasGeneratedBy where the domain resource generated the range resource implying that the domain resource is a temporal event, such as a data processing action, and the range resource is an entity
gapDS_AssociationTypeCode_hadDerivation	Geoscience Australia / PROV-O	inverse of wasDerivedFrom where the range resource was derived from the domain resource
gapDS_AssociationTypeCode_informed	Geoscience Australia / PROV-O	inverse of wasInformedBy
gapDS_AssociationTypeCode_wasDerivedFrom	Geoscience Australia / PROV-O	the domain resource was derived from the range resource which must have been an entity (i.e. not an actor with agency or a temporal event)
gapDS_AssociationTypeCode_wasGeneratedBy	Geoscience Australia / PROV-O	the domain resource was generated by the range resource which must have been a temporal event such as a data processing action or a field survey

http://pid.geoscience.gov.au/def/schema/ga/ISO19115-3-2016/codelist/assocTypeCode_codelist.html

Emergent graph – how, at GA

Dataset 82033 was derived from Dataset 70908 - **wasDerivedFrom**

```
<mri:associatedResource>
  <mri:MD_AssociatedResource>
    ...
  </mri:MD_AssociatedResource>
</mri:associatedResource>
```

→

```
<cit:CI_Citation>
  ...
</cit:CI_Citation>
<mri:associationType>
  <mri:DS_AssociationTypeCode codeList="codeListLocation#
    DS_AssociationTypeCode" codeListValue="wasDerivedFrom" />
</mri:associationType>
```

↓

```
<cit:CI_OnlineResource>
  <cit:linkage>
    <gco:CharacterString>
      http://pid.geoscience.gov.au/dataset/ga/70908
    </gco:CharacterString>
  </cit:linkage>
  ...
```

Emergent graph – FSDF

<http://pid.geoscience.gov.au/def/ont/ga/link>

LINK Ontology

IRI:

<http://pid.geoscience.org.au/def/ont/ga/link#>

Version IRI:

<http://pid.geoscience.org.au/def/ont/ga/link/1.2>

Current version:

1.2

Authors:

Nicholas Car

<http://orcid.org/0000-0002-8742-7730>

Ontology source:

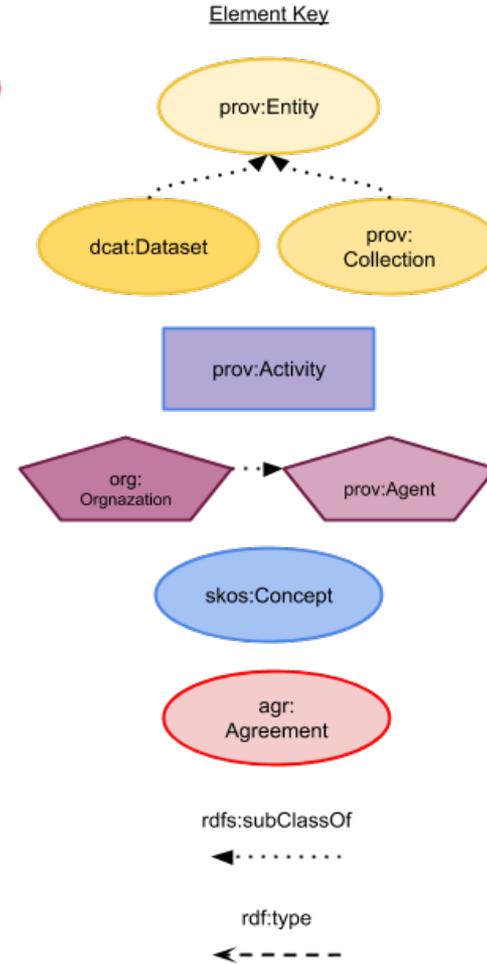
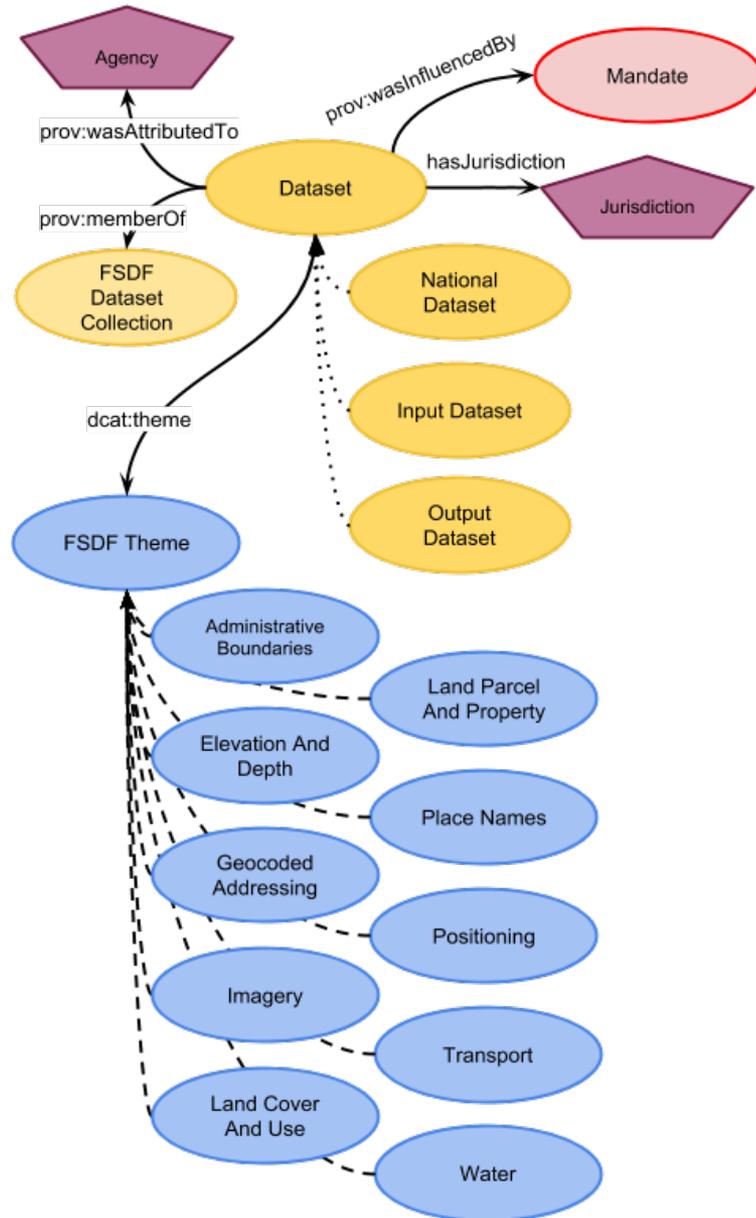
[Ontology in RDF \(turtle\)](#)

Further documentation & examples:

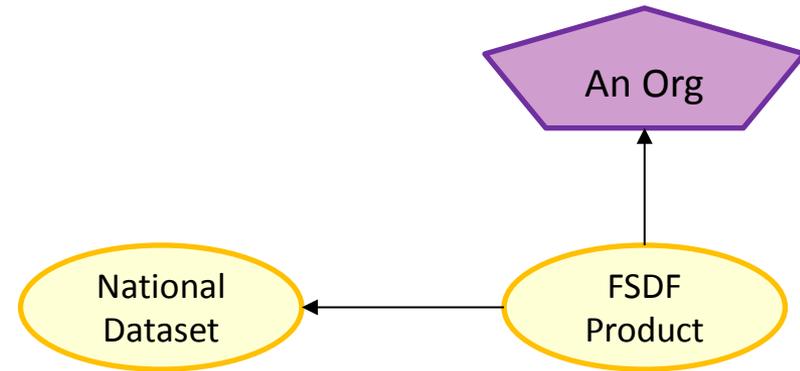
[This ontology on GitHub](#)

(c) Geoscience Australia 2018

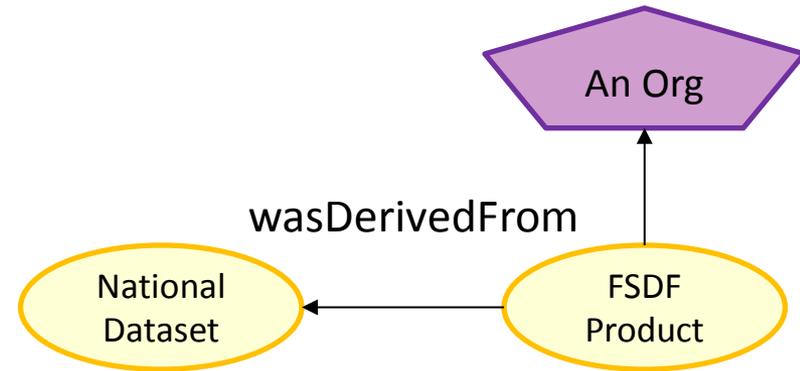
Emergent graph – FSDF



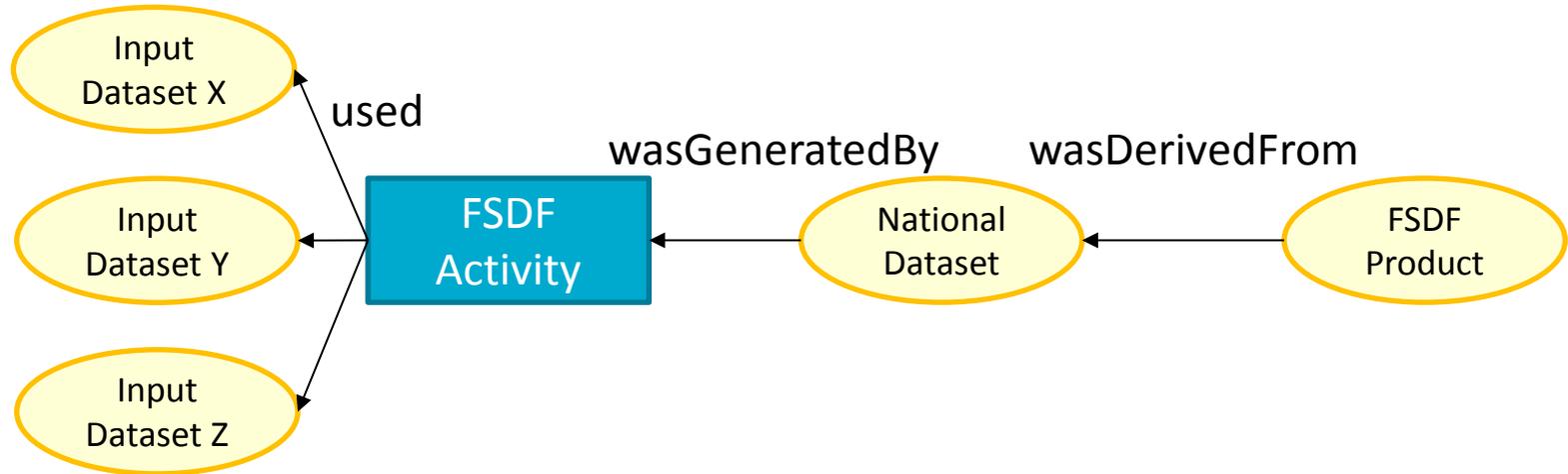
Emergent graph – FSDF



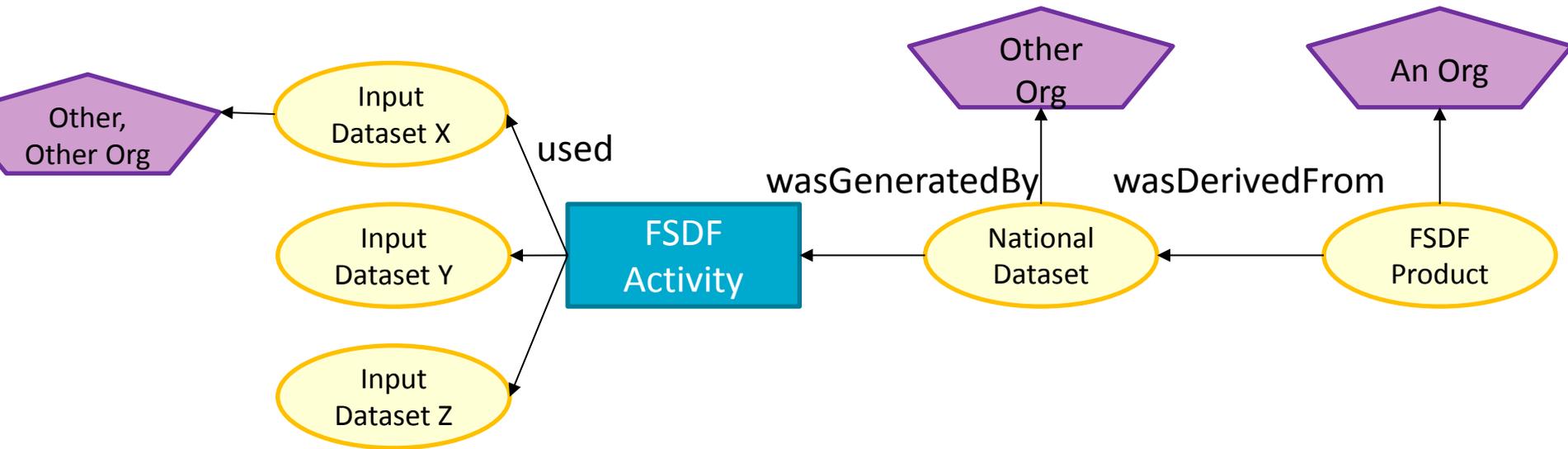
Emergent graph – FSDF



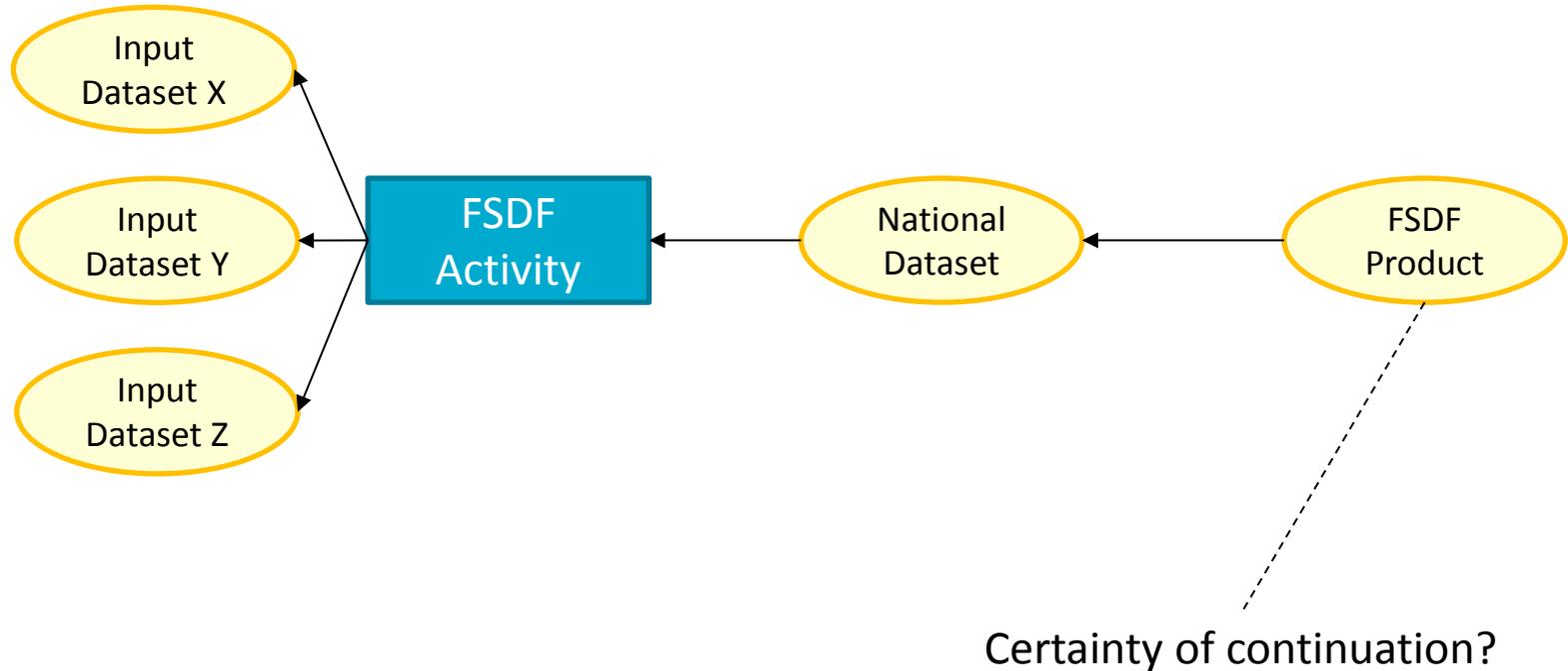
Emergent graph – FSDF



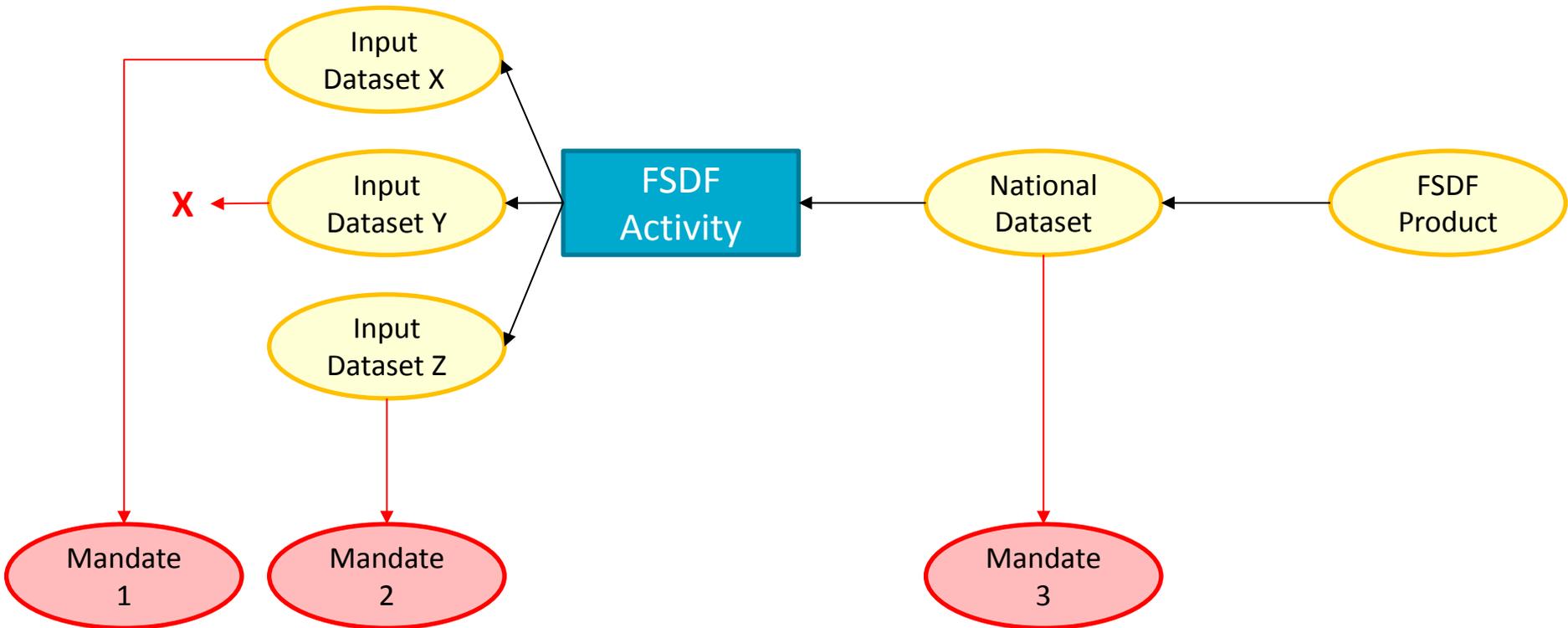
Emergent graph – FSDF



Emergent graph – FSDF



Emergent graph – FSDF



Emergent graph – Linked Data

- Use URIs to identify everything
 - Datasets, Orgs, Mandates
 - Elements within datasets

Emergent graph – Linked Data

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 - Datasets, Orgs, Mandates
 - Elements within datasets
- Use the Internet to hop across systems / orgs
 - Items in one catalog link to items in another via URIs

Emergent graph – Linked Data

- Use URIs to identify everything
 - Datasets, Orgs, Mandates
 - Elements within datasets
- Use the Internet to hop across systems / orgs
 - Items in one catalog link to items in another via URIs
- Use LD mechanics to get different views of things
 - Purse ISO19115-1
 - ANZLIC Profile
 - Profile X
 - PROV

Go forth and interoperate!

Nicholas Car
Environmental Informatics
Land & Water, Brisbane
nicholas.car@csiro.au

LAND & WATER
www.csiro.au



Element Key

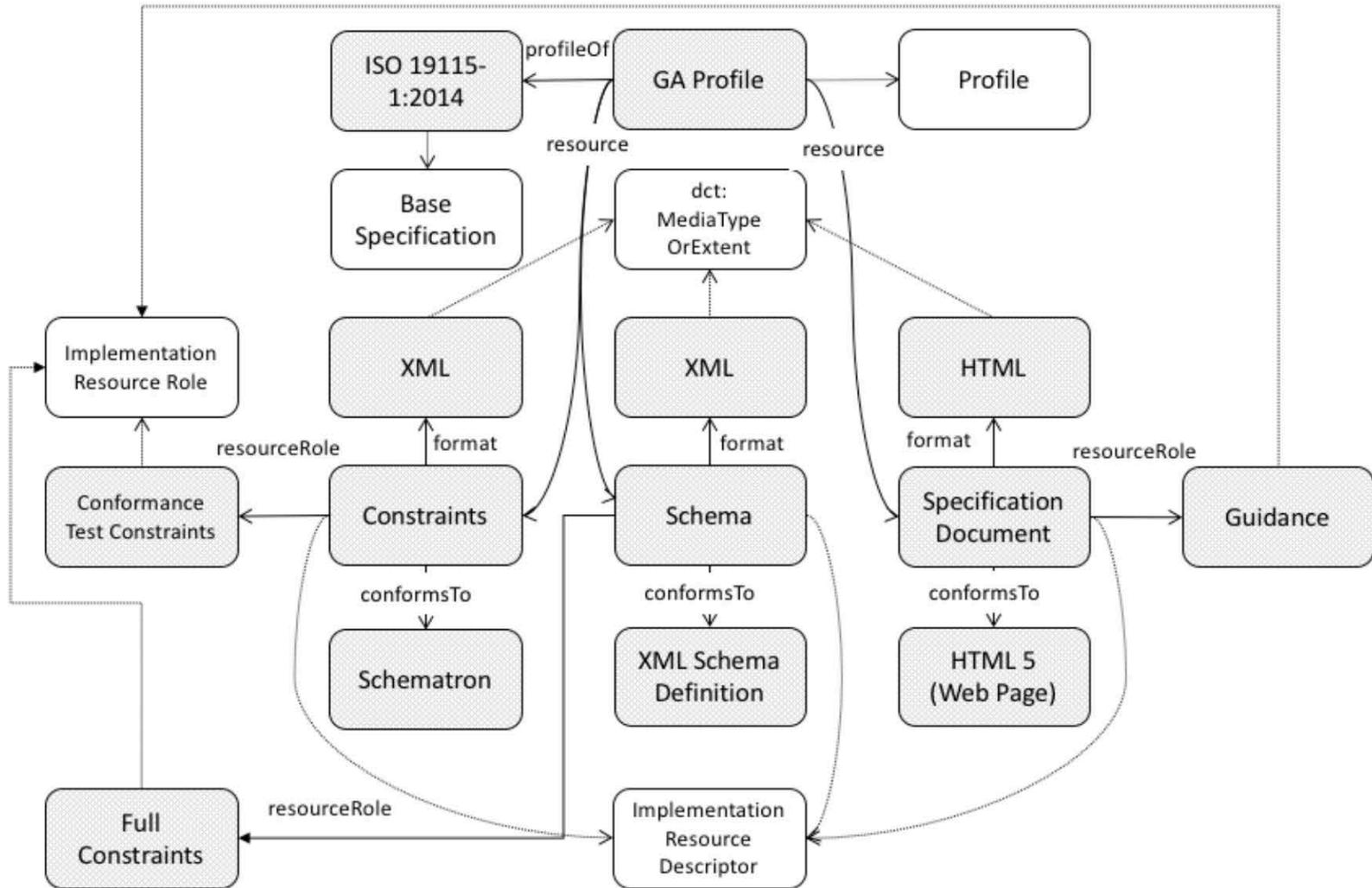
owl:Class

owl:Named Individual

property

rdf:type

rdfs:subClassOf



The Australian Government Records Interoperability Framework (AGRIF) ontology

IRI:

<http://reference.data.gov.au/def/ont/agrif>

Version IRI:

<http://reference.data.gov.au/def/ont/agrif/0.7>

Current version:

0.7

Previous version:

0.6

Authors:

Armin Haller
John Machin
Katharine Stuart

Contributors:

Nicholas Car

Publisher:

Australian Government Linked Data Working Group

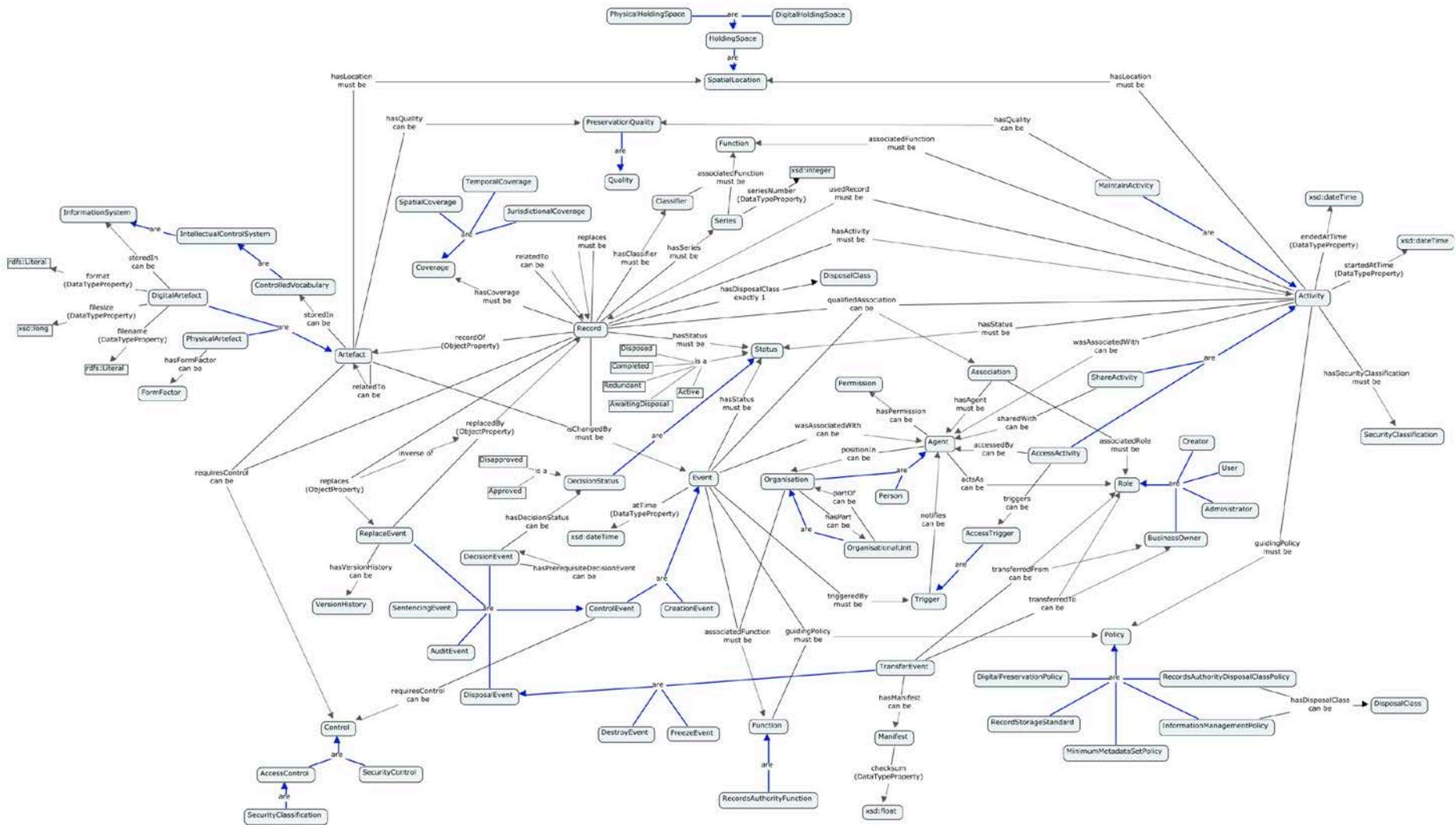
Other visualisation:

[Ontology source](#)

Further documentation & examples:

[This ontology on GitHub](#)

(c) Commonwealth of Australia (Department of Finance) 2017



Storage Systems ontology

IRI:

<http://purl.org/storagesys>

Version IRI:

<http://purl.org/storagesys/0.1>

Authors:

Nicholas Car

<http://orcid.org/0000-0002-8742-7730>

Contributors:

Mikael Borg

Paul Millar

Research Data Alliance Working Group on Storage Service Definitions

Ontology source:

[in turtle](#)

[in RDF/XML](#)

Further documentation & examples:

[This ontology's full documentation on GitHub](#)



[Home](#) › [Portfolios](#) › [Treasury](#) › Australian Bureau of Statistics

Australian Bureau of Statistics

(ABS)

Treasury

The ABS is Australia's official national statistical agency. It was established over 100 years ago as the Commonwealth Bureau of Census and Statistics, following enactment of the Census and Statistics Act 1905. The agency became the Australian Bureau of Statistics in 1975.

[Read full description](#) ▾

[\(02\) 6252 5000](tel:(02)62525000)

www.abs.gov.au

ABN [26 331 428 522](#)

[\(02\) 6252 5566](#)

Appropriations

\$368,919,000

Departmental expenses

\$414,881,000

Average staffing level 2387

Alternates View

Instance <http://test.linked.data.gov.au/org/O-000928>

Default view: [auorg](#)

Token	Name	Formats	Description	Namespace
auorg	AU Org View	text/html text/turtle application/rdf+xml application/rdf+json text/n3 application/json	A view of basic properties of main classes in the AU Org Ontology	http://test.linked.data.gov.au/def/auorg#
alternates	Alternates	application/rdf+xml application/rdf+json application/json	The view that lists all other views	http://promsns.org/def/alt

<<http://test.linked.data.gov.au/org/O-000928>> a
 auorg#NonCorporateCommonwealthEntity ,
 org:Organization ;
rdfs:label "Australian Bureau of Statistics" ;
...
auorg:budgetAppropriations "368919000"^^auorg:AustralianDollars ;
auorg:portfolio <<http://test.linked.data.gov.au/portfolio/78921>> ;
...
owl:seeAlso <<http://www.abs.gov.au>> ;
vcard:hasStreetAddress <<http://gnafld.net/address/GAACT714857871>> ;
...

Address GAACT714857871

G-NAF View

Property	Value
Address Line	Cameron Offices 45 Benjamin Way, Belconnen, ACT 2617
Building Name	Cameron Offices
First Street Number	45
Street Locality	Benjamin Way
Locality	Belconnen
State/Territory	ACT



Australian Government
Geoscience Australia



GA's Adoption of 19115-1 and 19115-3

Irina Bastrakova

13 June 2018

The Revised 19115: ISO 19115-1:2014

2014: ISO published new version of the ISO 19115: ISO 19115-1:2014

2015: OGC and Standards Australia approved its adoption and published AS/NZS ISO 19115.1:2015

The image shows a Microsoft Word document titled 'SU Header' with a blue header bar. The document content includes three sections of geographic information standards:

- Geographic information - Registry of representations of geographic point location**
Product Designation: AS/NZS ISO 19145
Scope: Adopts ISO 19145:2013 which specifies procedures to be followed in establishing, maintaining and publishing registers of unique, unambiguous and permanent identifiers, and meanings that are assigned to items of geographic information.
History: First published as AS/NZS ISO 19145:2015.
- Geographic information - Metadata - Part 1: Fundamentals**
Product Designation: AS/NZS ISO 19115.1
Scope: Adopts ISO 19115-1:2014 to define the schema required for describing geographic information and services by means of metadata.
History: First published as AS/NZS ISO 19115:2005. Jointly revised and designated as AS/NZS ISO 19115.1:2015.
- Geographic information - Ontology - Part 1: Framework**
Product Designation: AS SA/SNZ TS ISO 19150.1
Scope: Adopts ISO/TS 19150-1:2012 to define the framework for semantic interoperability of geographic information. This framework defines a high level model of the components required to handle semantics in the ISO geographic information standards with the use of ontologies.
History: First published as SA/SNZ TS ISO 19150.1:2015.

Overlaid on the right side of the document is a screenshot of a web browser showing the OGC logo and the text 'of OGC® Abstract ISO 19115:2003 to ISO'. Below this, a text box states: 'The update has been approved by the OGC Architecture Board (OAB) and the Metadata Domain Working Group (DWG). The period for public comment ends 07 May, 2016'. At the bottom, another text box explains: 'ISO 19115-1:2014 defines the schema required for describing geographic information and services by means of metadata. It provides information about the identification, the extent, the quality, the spatial and temporal aspects, the content, the spatial'.

The Revised 19115. 19115-1 2015



About

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Home News Foundation Spatial Data Framework **Resources** ANZLIC Council Open Data Projects

AS/NZS ISO 19115.1:2015
METADATA

ANZLIC METADATA PROFILE

NATIONAL ADDRESS MANAGEMENT
FRAMEWORK

NATIONAL NESTED GRID

EXTERNAL RESOURCES

CRC-SI REVIEW OF GEOCODED
ADDRESSING

METADATA

ARCHIVED FOUNDATION SPATIAL
DATA FRAMEWORK

[Home](#) / [Resources](#) / [AS/NZS ISO 19115.1:2015 Metadata](#)

AS/NZS ISO 19115.1:2015 Metadata

Introduction

This page contains information and resources to assist in the implementation of metadata standard AS/NZS ISO 19115.1:2015 - geographic information. Guidelines have been developed that provide comprehensive examples on how to implement some key elements. This page refers to the version of the 19115 standard approved in 2015. For previous versions of guidance, go to the ANZLIC Metadata Profile pages also on this website.

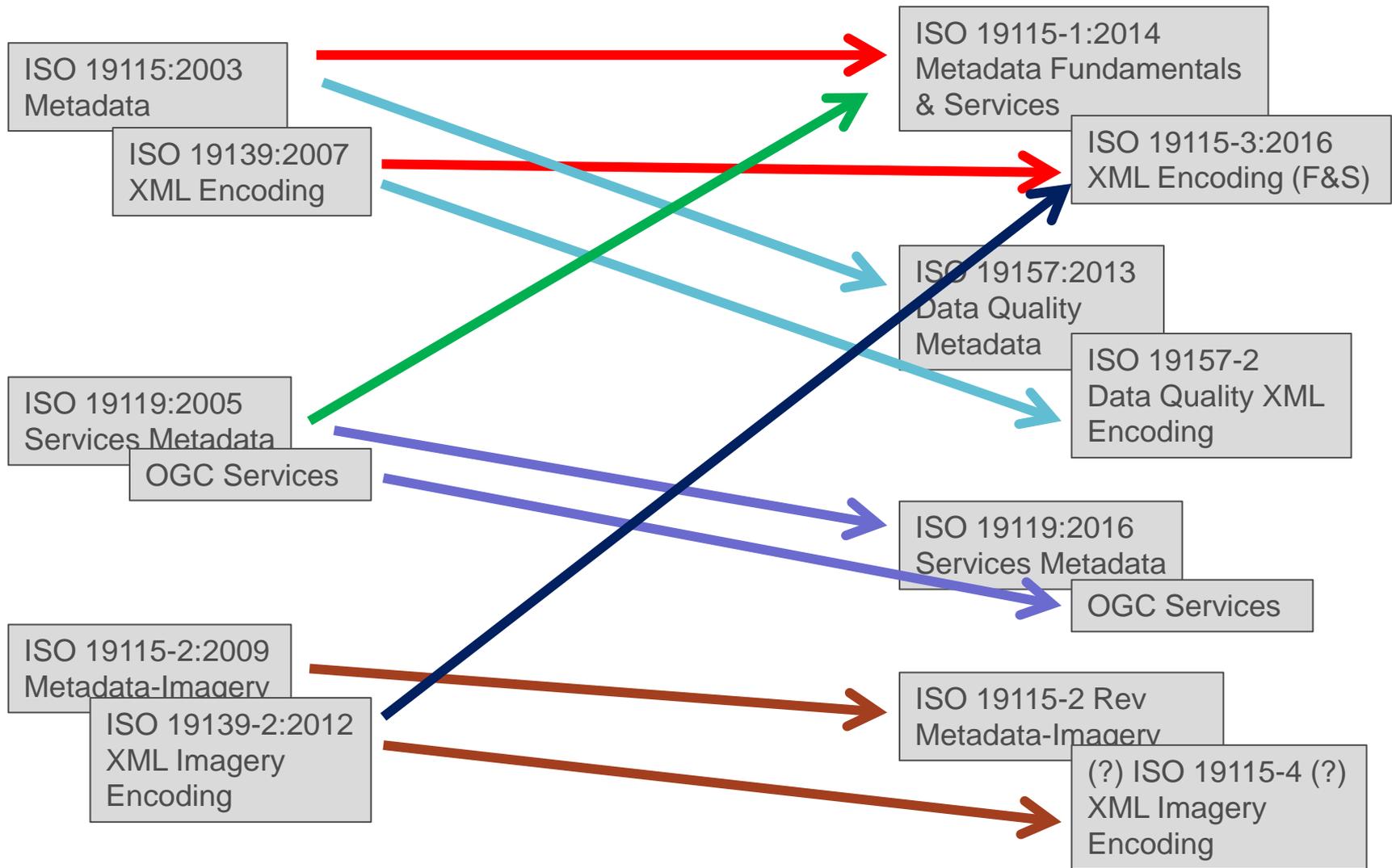
Metadata standard AS/NZS ISO 19115.1:2015 Geographic information - Metadata - Fundamentals has been approved for use by Standards Australia and Standards New Zealand and was published on 13 February 2015. ANZLIC recommends transition to this revised standard to better support sharing of digital information resources.

The previous metadata standard promoted by ANZLIC was a profile of AS/NZS ISO 19115:2011 Geographic Information - Metadata. The resources applicable to its implementation are maintained at the following [link](#). The only difference between the ANZLIC Profile and the ISO 19115 standard was the conditionality of one element, the File Identifier which provides a unique identifier for the metadata record. All other elements and element conditions were the same.

ANZLIC recommends a transition to 19115-1
(<http://www.anzlic.gov.au/resources/asnzs-iso-1911512015-metadata>)

However there are still 7000 elements to choose from

ISO 19115-1:2014 – What's new & what's different



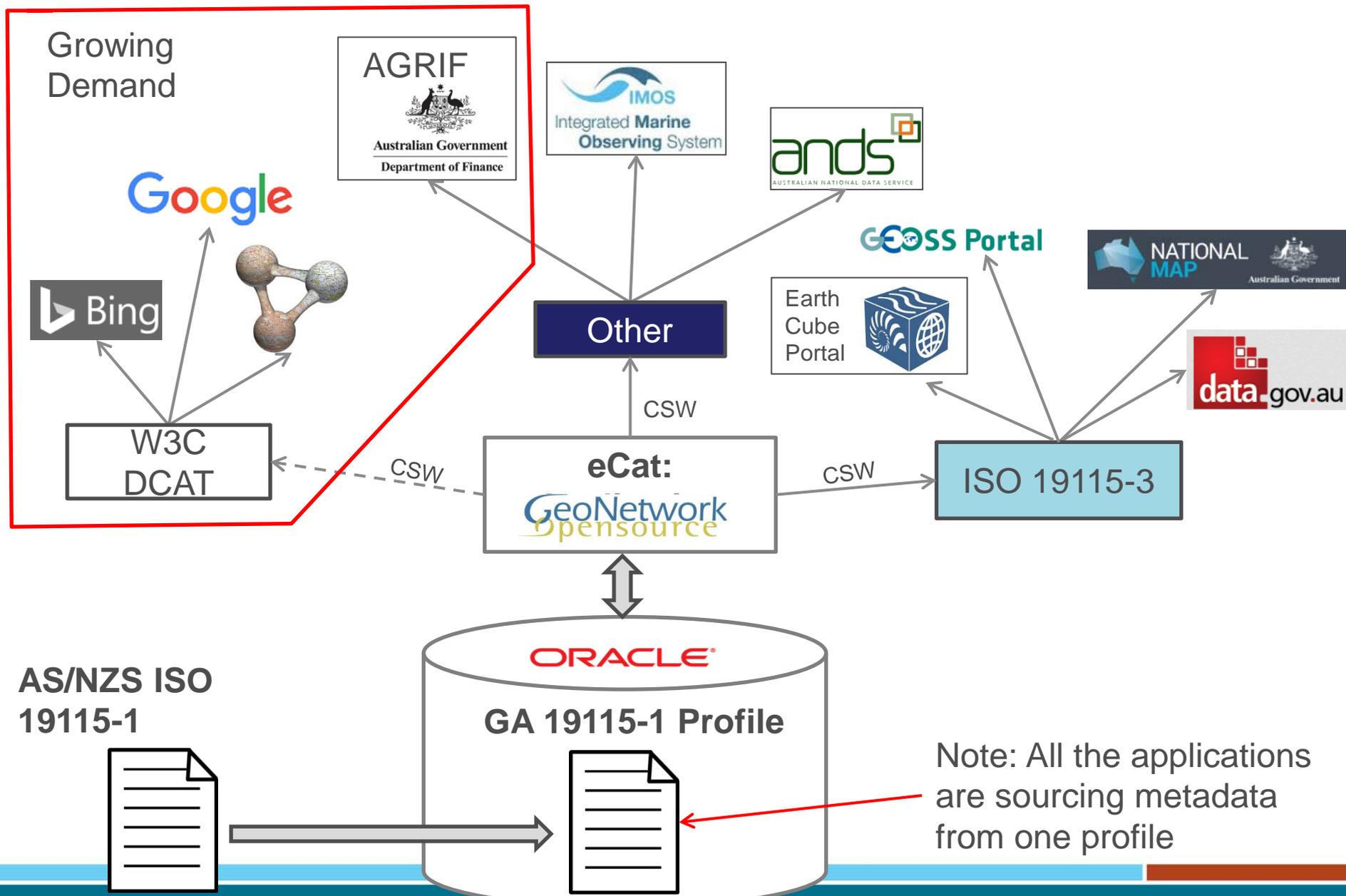
ISO 19115-1: Major changers

- Metadata for services
- Bi-directional linking of services and datasets
- Horizontal linking with associated resources
- Improved constraints information
- Semantic web enablement (Identifiers and Keywords)
- Removal of data quality element information (completeness, accuracy, etc.)

What do we need to implement the standard?

- Agreed profile to ensure consistency
- Database to store metadata
- Tools to create and edit metadata
- Tools to validate xml
- Tools to access catalogue and resources
- Metadata exchange tools

GA Profile, applications and integrations



Our challengers

Compliance:

- Government and Collaborator defined laws, policies, standards, rules

Supplier of data and products:

- National and international projects
- Numerous stakeholders
- Products for multiple disciplinary use for many purposes

Technology:

- Growing demand for machine discovery and access to data and products

GA Metadata Profile as a risk mitigation
and resource management tool

GA Metadata Profile vs ISO 19115-1

Critical business elements:

- Lineage: history of the data/product creation and its source
- Constraints: licencing arrangements and security classification
- Maintenance: frequency of updates
- Formats: for storage and distribution
- Extents: temporal, horizontal and vertical (where applicable)
- Location of the data/product: storage, access & distribution links

GA's Profile of AS/NZS ISO19115-1

- GA Early adoption of the 19115-1
- Developed profile to reign in the 7000 elements, and to
 - comply with government data regulations

Understanding the resource content
Unique persistent identifier to assist with Linked Data

Security and legal permissions for governmental regulations

Technical specification & associated web services & applications

Detailed preservation metadata for, including provenance

Tags, Keywords and code lists to assist with Linked Data

Geoscience Australia Profile of AS/NZS ISO 19115-1		
Metadata Attributes	Attribute Justification	Other uses
Background: ISO19115-1:2014 is the latest revision of 19115:2003/ Cor 1:2006. ISO 19115-1:2014 defines the schema required for describing geographic information and services by means of metadata. The Geoscience Profile, is a selection of core elements which meet GA's business and federal governments requirements, whilst enabling mapping to other standards. This poster documents the core Metadata attributes, their justification and other uses of these attributes.		
Metadata Record Metadata		
Metadata Identifier	unique ID of a metadata record	Persistent ID of the metadata record that can be referenced in catalogues
Scope	what metadata record is describing	
Time	when metadata record was created or updated	
Contact	who can be contacted about metadata record	
Access, Use, Security	public or constrained	
Standard	what standard metadata record is following	
Language	what is metadata record language	
Descriptive Resource Metadata (Context to the resource)		
* Title	Resource Name	
Identifier	DOI for published and internal identifier	Persistent ID will be referenced in catalogues, applications, Linked Data.
* Abstract	Brief description of the resource	
* Purpose	Why it was created, and its intended application	
Time	When resource was created, revised or published	
Contact	Point of contact i.e. custodian, steward etc	
Extents	Geographic: Horizontal and Vertical, Temporal	
Subject	Tags, Keywords and groupings	Indexes search, machine access and semantic web
Language	Resource language	
Access and Rights Metadata (Constraints for access and use)		
Legal Constraint:	Access and use of the resource	
Type of constraint	License, copyright	
Constraining reference	URL	
Security Constraint:		
Classification	Public, confidential	
Security Reference	URL	
Use Limitation	Fitness for use i.e. not for navigation	
Technical Resource Metadata (Formats and nodes for access)		
Format	Production and distribution	
Technical Specifications	Schemas, profiles	
Linked Applications		Enables access to and use of data.
Linked Services		Enables access to and use of data.
Linked Datasets		Enables access to and use of data.
Preservation Resource Metadata (for ongoing management and disposal in accordance to regulations)		
Status	Management status i.e. active, archived	
* Lineage	Development history, data sources	
Associated resource	Provenance workflow	
Maintenance		
Update Frequency		
Storage	Link to location of production version	
Distribution	link to location of service, dataset etc	
Tags and Key works (to enhance data discovery and classification)		
Topic Category	ISO level resource grouping (high level) Classification used in project / activity funding	
ABS field of research	processes in Australia and New Zealand	
Other Key Words	Defined by Custodian	

Tooling - GeoNetwork

- Open Free Software: Edit and search tool
- Open Layers based Map Viewer provides access to OGC (WMS) and other (KML, OWS)
- International development support
- List of known GeoNetWork Nodes

The image is a collage of four screenshots from the GeoNetwork website:

- Top Left:** Documentation page for GeoNetwork, showing a sidebar with navigation links for various versions (3.4.x, Unstable, 3.2.2, 2.10) and articles & links.
- Top Middle:** Search results page for 'Australian Geoscience Australia'. It shows a search bar, a list of resources categorized by type (Dataset, Document, Non-geographic dataset, Service, Software) and topics (Boundaries, Elevation, Geoscientific information, Imagery base maps earth cover, Oceans). A map preview is visible at the bottom.
- Top Right:** Community page, featuring a 'Mailing list' section with links for users and developers, and a list of nodes with their respective URLs.
- Bottom Middle:** A section titled 'Make your maps' with a map preview and the text 'Publish & describe resources'.

Node Name	URL
geoNorge	http://www.geonorge.no/geonetwork/srv/en/main_home
GEOSS GEOportal	http://www.geoportal.org
New Zealand's Geodata.govt.nz	http://www.geodata.govt.nz
PBL - Netherlands Environmental Assessment Agency	http://geoservice.pbl.nl/geonetwork/srv/en/main_home
SADC	http://www.sadc.int/geonetwork
SANDRE	http://sandre.eaufrance.fr/geonetwork
SOPAC - Pacific Islands Applied Geoscience	http://geonetwork.sopac.org

XML Publication and Validation

GA Profile, Schematron and Validation tool:

(<http://www.ga.gov.au/data-pubs/datastandards/cataloguestandard>)

- ISO 19115/ISO 19139, ANZLIC, GA Profile
- ISO 19115-1/ISO 19115-3, GA Profile (In progress)

The image shows a composite screenshot of the Geoscience Australia website and the Metadata Profile Validator tool. The website page, titled 'Catalogue standard', provides information about the metadata profiles used in the eCat system, including links to the GA Profile schema and vocabularies. The Metadata Profile Validator tool is shown in the foreground, displaying an XML document for validation. The XML document is an instance of the MD_Metadata schema, using the ISO 19115-3 and ANZLIC schemas. The tool's validation options are checked for Schema Validate, ISO 19115-3 Validate, and Geoscience Australia Profile Validate. The validation results show that the document is schema valid and valid according to the ISO 19115-3 and Geoscience Australia Profile schematron assertion sets.

Catalogue standard

Standard metadata and vocabularies for our data catalogue

At Geoscience Australia we have an enterprise data catalogue, eCat, where data is published using a metadata profile based on the ISO19115:2014 standard which allows for an enterprise community standard. We are also standardising the geoscience keywords to be consistent with the international standard.

The schema and vocabularies used in the eCat are available

- [GA Profile schema](#)
- [Vocabularies](#)

Previous version

The metadata standard previously implemented and used widely in the Australian Government was the ANZLIC Metadata Profile which was based on the ISO19115:2005 version. This standard will be superseded when the ISO19115-3 is finally published sometime in 2018-2019.

- [Legacy catalogue standard ANZLIC Metadata Profile](#)
- [The Metadata Profile Validator](#) for validation of XML documents against the metadata profiles.

For more information on Data Standards in GA please contact: data@ga.gov.au

Metadata Profile Validator

The Metadata Profile Validator allows validation of XML documents against the metadata profiles of Geoscience Australia Metadata (PDF 2.3MB) profiles. It quickly identifies missing elements in the XML document.

To validate, copy your XML document to the Input XML Document field and select the metadata profile options against different metadata profiles and select "Validate".

Input XML Document:

```
<?xml version="1.0" encoding="UTF-8"?>
<mdb:MD_Metadata xmlns:mdb="http://standards.iso.org/iso/19115/-3/mdb/1.0"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:cat="http://standards.iso.org/iso/19115/-3/cat/1.0"
  xmlns:gfc="http://standards.iso.org/iso/19110/gfc/1.1"
  xmlns:cit="http://standards.iso.org/iso/19115/-3/cit/1.0"
  xmlns:gcx="http://standards.iso.org/iso/19115/-3/gcx/1.0"
  xmlns:gex="http://standards.iso.org/iso/19115/-3/gex/1.0"
  xmlns:lan="http://standards.iso.org/iso/19115/-3/lan/1.0">
```

Validation Options (All 3 are required for Geoscience Australia Profile compliance)

- Schema Validate
- ISO19115-3 Validate
- Geoscience Australia Profile Validate

Validation Results ✓

Validation completed at: 2018-06-12T15:05:30.994+10:00

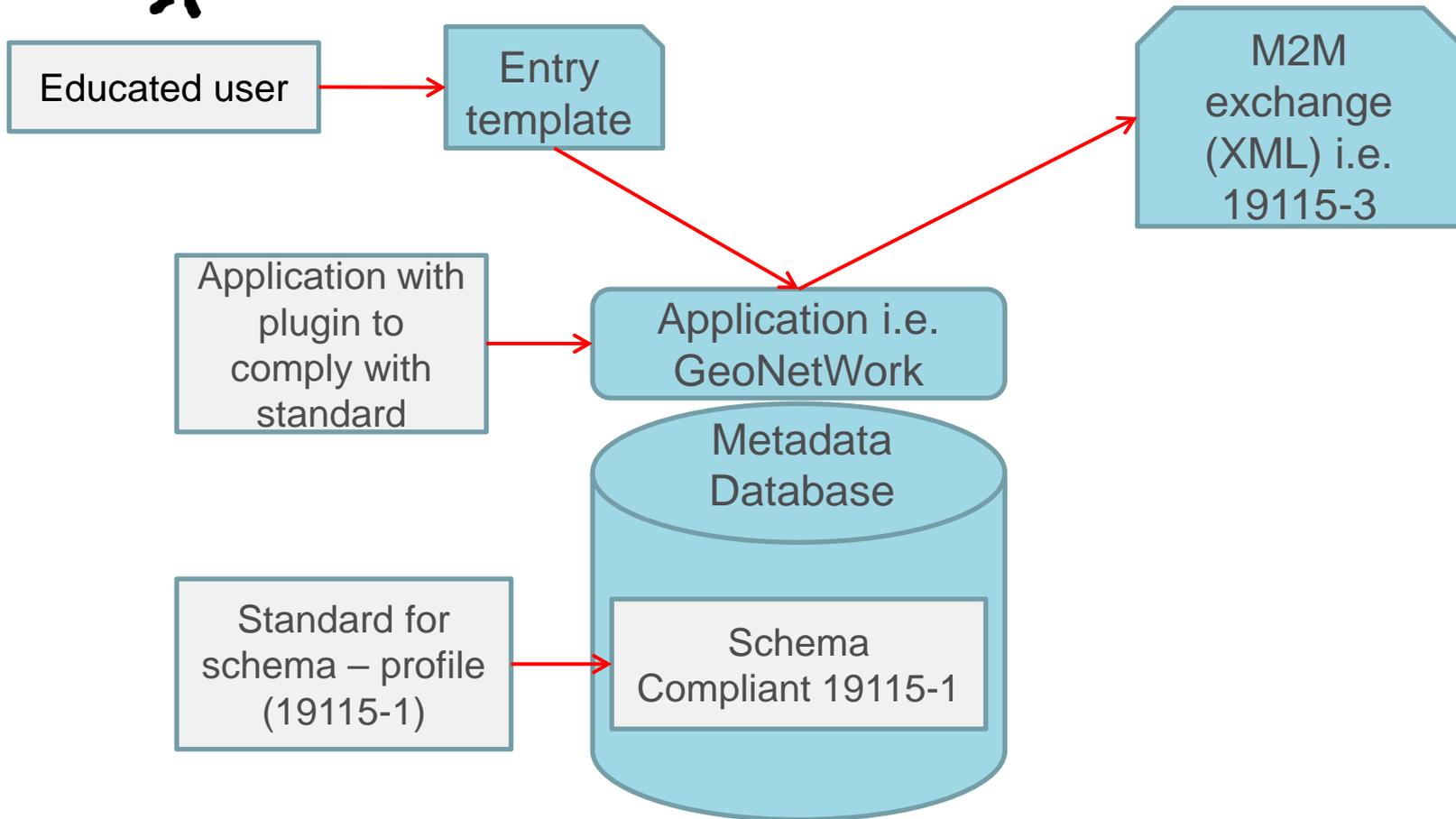
- ✓ Document is schema valid
- ✓ Document is valid according to the ISO19115-3 schematron assertion set
- ✓ Document is valid according to the Geoscience Australia Profile schematron assertion set

Other options

- ESRI: proprietary, no support for 19115-1 yet
- CKAN (The Comprehensive Knowledge Archive Network): common, open source, generic
- Aristotle: structured metadata (ISO 11179-3), open source, rarely used
- In-house development

All these tools require consistent exchange profile and ability to map to it.

Metadata Ecosystem





Australian Government
Geoscience Australia



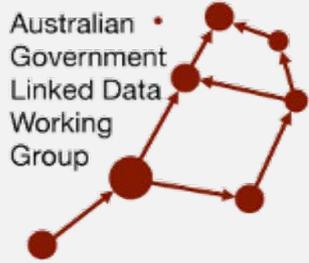
Phone: +61 2 6249 9111

Web: www.ga.gov.au

Email: irina.bastrakova@ga.gov.au

Address: Cnr Jerrabomberra Avenue and Hindmarsh Drive, Symonston ACT 2609

Postal Address: GPO Box 378, Canberra ACT 2601



How can you contribute to the W3C and the AGLDWG?

Dr Armin Haller

Co-Chair AGLDWG, Office Manager W3C Australia

Senior Lecturer, ANU

ABOUT W3C:

“LEADING THE WEB TO ITS FULL POTENTIAL”



Tim Berners-Lee
WEB INVENTOR
AND
W3C DIRECTOR

- Founded 1994; celebrating 25 years
- Membership organization with more than 400 members
- 70 staff in US (MIT), China (Beihang), France (ERCIM) and Japan (Keio)
- Focus on Web ecosystem: users, developers, browsers, etc.
- Developing new technologies for Open Web Platform that are transforming industries like Mobile, Entertainment, Automotive, Digital Publishing, Web Payments and Manufacturing (Web of Things)
- W3C focuses both on the Open Web, as well as specific industry requirements brought by industry segments

W3C DEVELOPS ROYALTY-FREE STANDARDS

- Standard platform levels playing field; reduces development costs
- Level playing field enables greater, faster innovation
- Participation allows organizations to shape platform, ensure their needs are met, standardize best practices across complex ecosystems
- Participants gain early access to insights and successful standards implementations



GLOBAL PARTICIPATION

	2014	2015	2016	2017
Members	406	405	427	471
Full	86	94	95	87
Community & Business Groups / People	180 >4.4K	225 >6.3K	251 >7.4K	292 > 9K
Students enrolled in W3C courses	2.6K	48K	300K	600K

WORKING GROUPS

- W3C has at any point 20+ open working groups (e.g. CSS, Web Authentication, Automotive, Web of Things etc.)
- Relevant open working groups:
 - Dataset Exchange Working Group
 - Web of Things Working Group
 - Spatial Data on the Web (SDW) Interest Group

SDW INTEREST GROUP

Joint W3C/OGC interest group

- Builds upon the outcomes of the *Spatial Data on the Web Working Group*
- The Spatial Data on the Web IG is scoped to realize the W3C side of the Joint W3C/OGC Organizing Committee (JWOC), i.e.:
 - to facilitate direct cooperation between the spatial information and Web communities, allowing each to benefit from the other's data, technologies and methods.
 - to publish joint work where appropriate and may recommend the creation of formal standards-defining working groups where necessary in one or both standards development organizations.

SDW WORKING GROUP

Was chartered to:

- determine how spatial information can best be integrated with other data on the Web;
- determine how machines and people can discover that different facts in different datasets relate to the same place, especially when 'place' is expressed in different ways and at different levels of granularity;
- identify and assess existing methods and tools and then create a set of best practices for their use;
- complete the standardization of informal technologies already in widespread use.

WHAT WAS ACHIEVED?

Spatial Data on the Web Best Practices

W3C Working Group Note 28 September 2017



This version:

<https://www.w3.org/TR/2017/NOTE-sdw-bp-20170928/>

Latest published version:

<https://www.w3.org/TR/2017/NOTE-sdw-bp-20170928/>

Spatial Data on the Web Use Cases & Requirements

W3C Working Group Note 25 October 2016

This version:

<https://www.w3.org/TR/2016/NOTE-sdw-uc-20161025/>

Latest published version:

<https://www.w3.org/TR/2016/NOTE-sdw-uc-20161025/>

Latest editor's draft:

<http://w3c.github.io/sdw-uc/>

Previous versions:

<https://www.w3.org/TR/2016/NOTE-sdw-uc-20161025/>

Editors:

Frans Knibbe

Alejandro

OGC Document Number:

OGC 15-07

Repository:

[We are on](https://www.w3.org/2015/spatial/wiki/OWL-Time)

Changes:

[Change log](#)

[Diff to previous](#)

[Commit history](#)

Copyright © 2016

Abstract

This document describes the use cases and techniques for spatial data on the Web, both W3C and

Time Ontology in OWL

W3C Recommendation 19 October 2017

This version:

<https://www.w3.org/TR/2017/REC-owl-time/>

Latest published version:

<https://www.w3.org/TR/2017/REC-owl-time/>

Latest editor's draft:

<https://w3c.github.io/sdw/time/>

Implementation report:

<https://www.w3.org/2015/spatial/wiki/OWL-Time>

Previous version:

<https://www.w3.org/TR/2017/PR-owl-time/>

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Contributors:

Jerry R. Hobbs

Feng Pan

Repository:

[GitHub](#)

[Issues](#)

OGC Document Number:

OGC 16-071r2

Please check the [errata](#) for any errors or omissions.

Semantic Sensor Network Ontology

W3C Recommendation 19 October 2017 (Link errors corrected 08 December 2017)

This version:

<https://www.w3.org/TR/2017/REC-vocab-ssn-20171019/>

Latest published version:

<https://www.w3.org/TR/2017/REC-vocab-ssn-20171019/>

Latest editor's draft:

<https://w3c.github.io/sdw/ssn/>

Implementation report:

<https://w3c.github.io/sdw/ssn-usage/>

Previous version:

<https://www.w3.org/TR/2017/PR-vocab-ssn-20170907/>

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Repository:

[GitHub](#)

[Issues](#)

OGC Document Number:

OGC 16-079

Overview of the CoverageJSON format

W3C Working Group Note 11 July 2017



This version:

<https://www.w3.org/TR/2017/NOTE-coveragejson-20170711/>

Latest published version:

<https://www.w3.org/TR/2017/NOTE-coveragejson-20170711/>

Latest editor's draft:

<https://www.w3.org/TR/2017/NOTE-coveragejson-20170711/>

QB4ST: RDF Data Cube extensions for spatio-temporal components

W3C Working Group Note 28 September 2017



This version:

<https://www.w3.org/TR/2017/NOTE-qb4st-20170928/>

Latest published version:

<https://www.w3.org/TR/2017/NOTE-qb4st-20170928/>

Latest editor's draft:

<https://www.w3.org/TR/2017/NOTE-qb4st-20170928/>

Publishing and Using Earth Observation Data with the RDF Data Cube and the Discrete Global Grid System

W3C Working Group Note 28 September 2017



This version:

<https://www.w3.org/TR/2017/NOTE-geo-qb-20170928/>

Latest published version:

<https://www.w3.org/TR/2017/NOTE-geo-qb-20170928/>

Latest editor's draft:

<https://w3c.github.io/sdw/geo-qb/>

Previous version:

<https://www.w3.org/TR/2017/NOTE-geo-qb-20170105/>

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OGC Document Number:

OGC 16-125

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SPATIAL DATA ON THE WEB BEST PRACTICES

- For data publishers and tool developers, aiming at consumption by ordinary Web developers.
- Evidence to support best practices for real users, plus identified gaps in practice with advice.

W3C Working Group Note

Spatial Data on the Web Best Practices

OGC® W3C
Making location count.

W3C Working Group Note 28 September 2017

This version:
<https://www.w3.org/TR/2017/NOTE-sdw-bp-20170928/>

Latest published version:
<https://www.w3.org/TR/sdw-bp/>

Latest editor's draft:
<https://w3c.github.io/sdw/bp/>

Previous version:
<https://www.w3.org/TR/2017/NOTE-sdw-bp-20170511/>

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SPATIAL DATA ON THE WEB BEST PRACTICES - LINKABILITY

Sources such as the Best Practices for Publishing Linked Data [LD-BP] assert a strong association between Linked Data and the Resource Description Framework (RDF) [RDF11-PRIMER]. Yet we believe that Linked Data requires only that the formats used to publish data **support Web linking** (see [WEBARCH] section 4.4 Hypertext)...

..However, we must make clear to readers that there is **no requirement for all publishers of spatial data on the Web to embrace the wider suite of technologies associated with the Semantic Web**; we recognize that in many cases, a Web developer has little or no interest in the toolchains associated with Semantic Web due to its addition of complexity to any Webcentric solution.

SPATIAL DATA ON THE WEB BEST PRACTICES - SPATIAL RELATIONS

- We identify topological, directional and distance relations.
- We propose an update to GeoSPARQL to standardise geometry, geometry versions, coordinate reference systems
- GeoSPARQL uses DE-9IM, RCC8 and simple features topological vocabularies

We advise using simple features from GeoSPARQL

- Equals — `geosparql:sfEquals`
- Disjoint — `geosparql:sfDisjoint`
- Touches — `geosparql:sfTouches`
- Crosses — `geosparql:sfCrosses`
- Within — `geosparql:sfWithin`
- Contains — `geosparql:sfContains`
- Intersects — `geosparql:sfIntersects`
- Overlaps — `geosparql:sfOverlaps`

We advise asserting such predicates where useful.

SPATIAL DATA ON THE WEB BEST PRACTICES – GEOMETRY

- Use owl:sameAs (carefully), geonames:nearby or foaf:based_near
- Or schema:sameAs or bbc:sameAs
- But place is a social construct that may be imprecise and opinionated: The Sahara, Renaissance Italy...

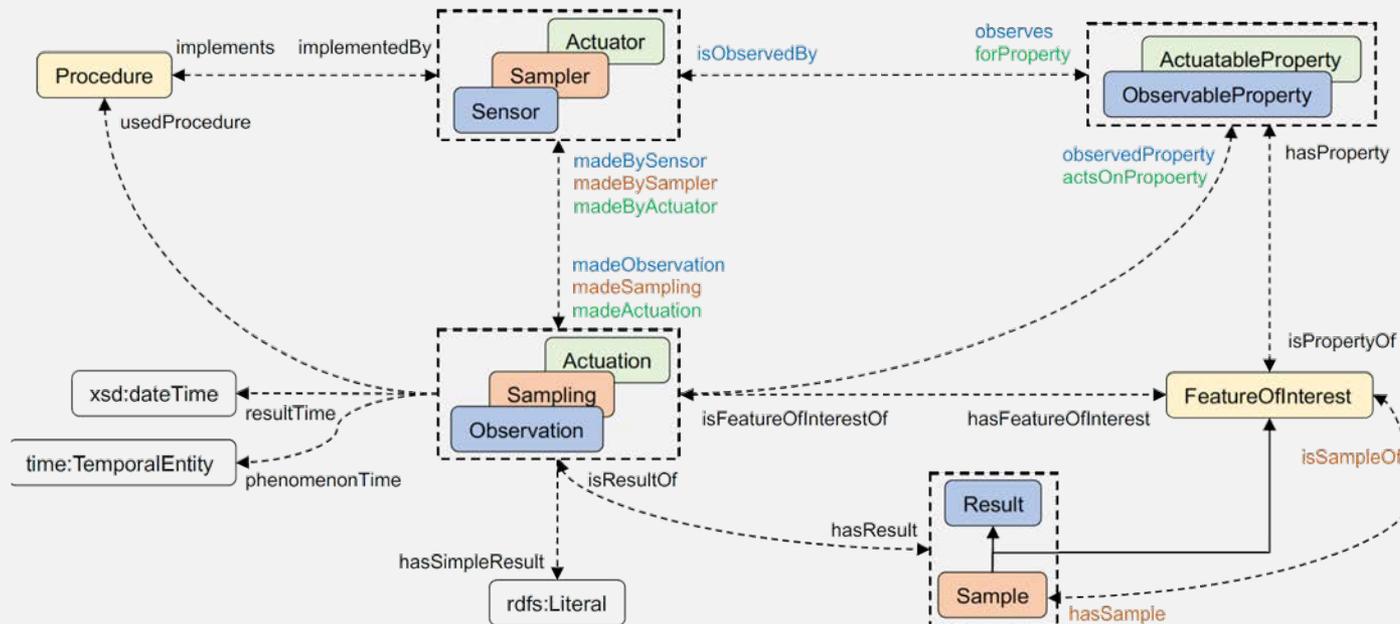
- We propose samePlaceAs

*Is ancient Byzantium the same place as modern Istanbul?
What about the nightclub that moved across the street to avoid demolition?*

- Propose schema:samePlaceAs but ongoing...

SEMANTIC SENSOR NETWORKS (SSN) ONTOLOGY

- Modelling sensors, actuators, samplers, data, systems, and physical objects being observed/sampled/actuated on.



PHYSICAL SAMPLE LOD REPOSITORY

- Geoscience Australia's web API delivering metadata for physical samples stored in it's repositories.
- Multiple 'views' and 'formats' of samples' metadata is available, including Dublin Core and W3C's SOSA ontology

Applying geoscience to Australia's most important challenges

Australian Government
Geoscience Australia

GA Home API Home Sample Register OAI-PMH Endpoint About

Sample

IGSN Ontology view

Property	Value
IGSN	AU1
GA Sample ID	2000362001A
Date Acquired	missing
Sampling Location (WKT)	<http://www.opengis.net/def/crs/EPSSG/0/4283> POINTZ(137.545818 -34.213763 26)
horizontal datum:	4283
State	SA
Current Location	GA Services building
Access Rights	Public
Publisher	Geoscience Australia
Sample Type	core
Method Type	Corer:Rock
Material Type	rock
Lithology	None
Sampling Feature Type	borehole
Custodian:	Geoscience Australia
Collector	Raymond, O.

Functional endpoints

Provenance	?_view=prov
Pingback endpoint	/pingback

<http://pid.geoscience.gov.au/sample/>

AUSTRALIAN GOVERNMENT LINKED DATA WORKING GROUP

Community of Commonwealth Government experts and champions, with invited non-voting participation of individuals, corporations and other entities.

- Established in August 2012, with strong growth in membership since the Government released the outcomes of an inquiry on [Data Availability and Use in the Australian Government](#).
- No official Government mandate or related legislation, but a community of practice that promotes and represents a series of federal Government entities who seek to implement and use Linked Data technologies for the betterment of Australian Government data sharing.
- Several members have signed an MoU to support the use and persistence of linked.data.gov.au URIs.



Australian Government
Geoscience Australia



Australian Government
Australian Taxation Office



Australian Government
Bureau of Meteorology



Australian Government
Department of Human Services



Australian Government
Digital Transformation Agency

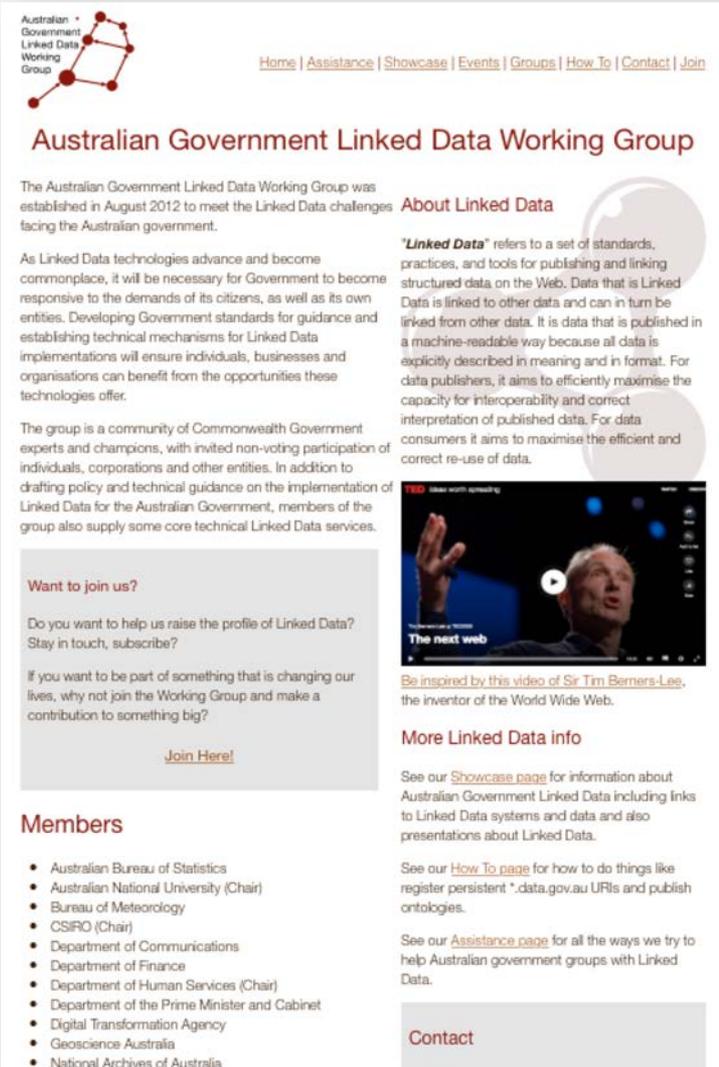


Australian Government
Department of Finance



Australian Government
Department of Communications

WEB PRESENCE



Australian Government Linked Data Working Group

[Home](#) | [Assistance](#) | [Showcase](#) | [Events](#) | [Groups](#) | [How To](#) | [Contact](#) | [Join](#)

Australian Government Linked Data Working Group

The Australian Government Linked Data Working Group was established in August 2012 to meet the Linked Data challenges facing the Australian government.

About Linked Data

"**Linked Data**" refers to a set of standards, practices, and tools for publishing and linking structured data on the Web. Data that is Linked Data is linked to other data and can in turn be linked from other data. It is data that is published in a machine-readable way because all data is explicitly described in meaning and in format. For data publishers, it aims to efficiently maximise the capacity for interoperability and correct interpretation of published data. For data consumers it aims to maximise the efficient and correct re-use of data.

The group is a community of Commonwealth Government experts and champions, with invited non-voting participation of individuals, corporations and other entities. In addition to drafting policy and technical guidance on the implementation of Linked Data for the Australian Government, members of the group also supply some core technical Linked Data services.

Want to join us?

Do you want to help us raise the profile of Linked Data? Stay in touch, subscribe?

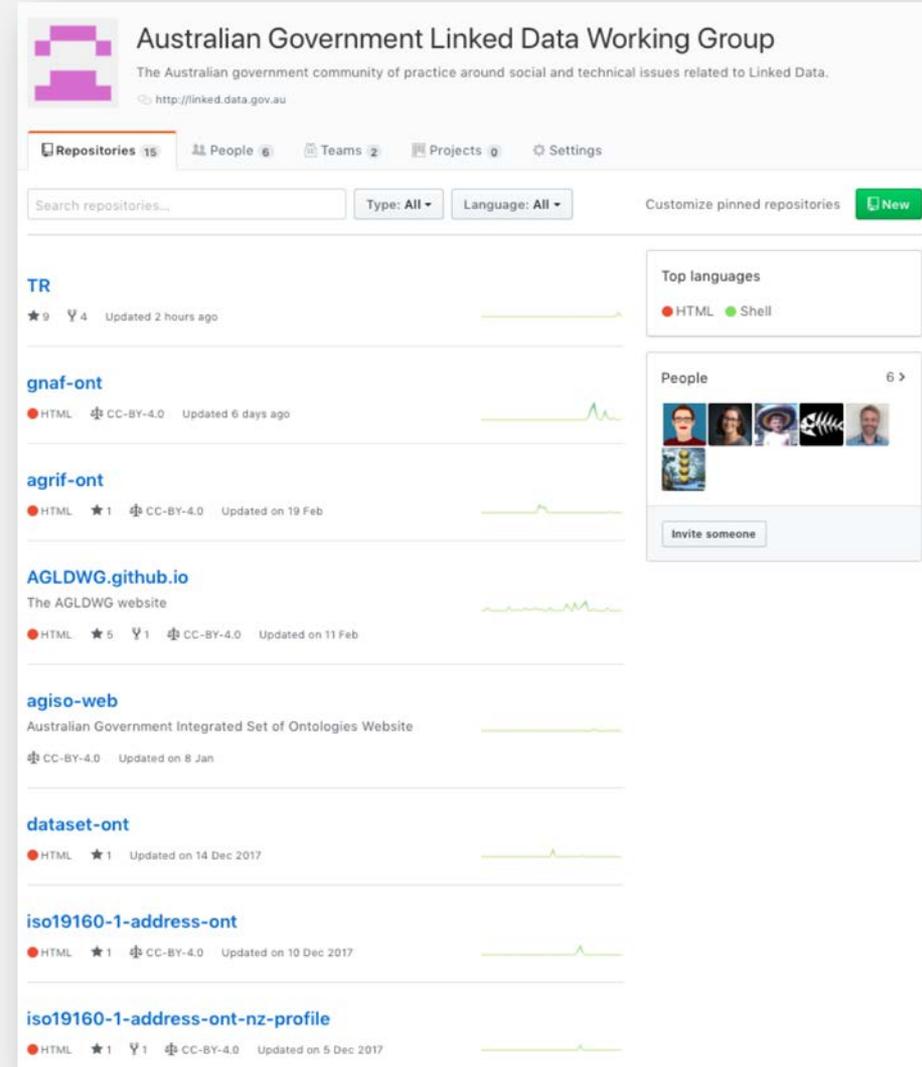
If you want to be part of something that is changing our lives, why not join the Working Group and make a contribution to something big?

[Join Here!](#)

Members

- Australian Bureau of Statistics
- Australian National University (Chair)
- Bureau of Meteorology
- CSIRO (Chair)
- Department of Communications
- Department of Finance
- Department of Human Services (Chair)
- Department of the Prime Minister and Cabinet
- Digital Transformation Agency
- Geoscience Australia
- National Archives of Australia

Contact



Australian Government Linked Data Working Group

The Australian government community of practice around social and technical issues related to Linked Data.

<http://linked.data.gov.au>

Repositories 15 | People 6 | Teams 2 | Projects 0 | Settings

Search repositories... Type: All Language: All Customize pinned repositories [New](#)

TR

★9 ♿4 Updated 2 hours ago

gnaf-ont

HTML CC-BY-4.0 Updated 6 days ago

agrif-ont

HTML ★1 CC-BY-4.0 Updated on 19 Feb

AGLDWG.github.io

The AGLDWG website

HTML ★5 ♿1 CC-BY-4.0 Updated on 11 Feb

agiso-web

Australian Government Integrated Set of Ontologies Website

CC-BY-4.0 Updated on 8 Jan

dataset-ont

HTML ★1 Updated on 14 Dec 2017

iso19160-1-address-ont

HTML ★1 CC-BY-4.0 Updated on 10 Dec 2017

iso19160-1-address-ont-nz-profile

HTML ★1 ♿1 CC-BY-4.0 Updated on 5 Dec 2017

Top languages: HTML, Shell

People: 6

[Invite someone](#)

<http://linked.data.gov.au/>

<https://github.com/AGLDWG>

TERMS OF REFERENCE

- Establish **technical guidance publishing public sector information using Linked Data** as a delivery technology
- Determine **governance rules and processes** for the effective management of Australian Government Linked Data
- **Promote Linked Data** across the Australian Government
- Engender the development of **Linked Data infrastructure**

URI GUIDELINES

- Top level reserved domain
<http://{subdomain}.linked.data.gov.au/>
- {subdomain} includes a set of 25 reserved keywords defined by AGIFT
 - environment
 - governance
 - transport
 - reference
 - ...

URI GUIDELINES

Set of general guidelines aimed at helping government stakeholders to define and manage URIs for 'Linked Datasets' and the resources described within.

Overarching principles:

- Use HTTP URIs so that the Linked Dataset URI can be resolved; and
- provide at least one machine-readable representation in RDF.

General guidelines on:

- Minimum features of a Linked Dataset;
- Domain structure of a Linked Dataset;
- Recommended URI patterns;
- Recommended Publication infrastructure for Linked Datasets;
- and URI naming conventions.

<https://github.com/AGLDWG/TR/blob/master/guidelines/latest.md>

AUSTRALIAN GOVERNMENT INTEGRATED SET OF ONTOLOGIES (AGISO)

Working Group is in the process of developing a proposal for an integrated set of ontologies

- Currently, there are several ontologies (e.g. Dataset ontology, AGRIF) being developed with a 'whole of government' focus
- AGISO aims to integrate these ontologies allowing them to be used individually or collectively in a seamless way: as if they were one data model
- In making this proposal, the AGLDWG steps beyond international precedent regarding government Linked Data initiatives, in that we intend to provide semantic modelling resources and governance, not just guidelines and recommendations for Linked Data publication

DATASET ONTOLOGY

Designed to describe the characteristics of datasets published on <http://data.gov.au/>

- Contains elements to describe datasets such as:
 - Publication
 - Update
 - Origin
 - Governance
 - Spatial and temporal coverage
 - Aspects of Organisational Custodianship
 - Governance arrangements

AUSTRALIAN GOVERNMENT RECORDS INTEROPERABILITY FRAMEWORK (AGRIF)

Ontology to describe the structure, functions, and activities of the Australian Government, providing sufficient context for the effective use of Government information assets.

- Contains elements to describe records such as:
 - Record
 - Artefact
 - Event
 - Policy
 - Coverage
 - Role
 - Agent

<http://w3c.org.au>

<http://linked.data.gov.au>

<https://github.com/AGLDWG>

QUESTIONS?

ANZ Metadata Workshop report

Background:

On the 13th June 2018, the Australian and New Zealand, Location Information Metadata Working Group (ANZ MDWG) was re-established by request of the Australian and New Zealand Land Information Council (ANZLIC) and the Intergovernmental Committee on Surveying and Mapping (ICSM). The working group will support a wider understanding and consistent application of location information metadata, based on agreed standards.

In attendance were 32 individuals representing agencies from the governments (State, Territory and Federal), Research organisations (ANU, Australian National Data Store, CSIRO) and peak standard bodies (ISO, OGC, W3C and Linked Data). The group also welcomed Kane Orr from the Emergency Management Spatial Information Network Australia (EMSINA), who exposed the group to some of the challenges this community faces.

The associated workshop presentations, content and summary report will be posted upon the ICSM website (page to be established *Action 8*) and communicated in due course.

Workshop Outcomes

The working group:

- Agreed the group is highly relevant and should aim to meet on a quarterly basis. A clear preference for face to face meetings was expressed by the participants. However, video conferencing was viewed as acceptable if suitable facilities could be organised. The next meeting will be in 3 months' time (September 2018).
- Agreed to accept the Draft Terms of Reference (*Appendix 1*) in their current state, noting:
 - The TORs may change and evolve over time due to priorities and external influences
- Agreed the MDWG requires a roadmap to clearly articulate 'what' the group is focusing on and by when. The roadmap will assist in communicating to interested parties the group's core objectives and timelines. The roadmap will be based off outcomes identified within the workshop report (action item 1)
- Noted some concern surrounding the development of a "Profile". However, it was agreed to assess existing profiles related to the new 19115-1 standard, and consider if a community profile should be developed and tabled for endorsement by ICSM and ANZLIC. It was agreed a profile would be beneficial in communicating the standard to the common user in an easy to understand way
- Agreed to form sub groups to focus on short term projects. These groups will report findings and developments back to the MDWG. The Sub Groups include:
 - Profile Sub Group
 - The intent of this group is to gather, compile and analyse profiles which relate to the latest 19115-1 standard. These profiles will include those supplied by Geoscience Australia, ABARES and Defence. Recommendations will be made to the MDWG on the relevance of a profile, in helping communicate which elements should be considered in implementing the standard consistently. Refer to *Appendix 2* for membership.
 - Roadmap Sub Group
 - The intent of this group is to develop a roadmap which clearly outlines what the group is to work on and when expected deliverables are to be produced. Refer to *Appendix 2* for membership.
 - Information from working group activities 1 and 2 will be used as inputs to help inform priorities for the Roadmap activities.
 - Technical Sub Group – *outcome from day 2*
 - The intent of this sub group is to discuss and share the 'Technical' elements related to metadata. This will provide a specific forum to discuss which applications exist, how are they developed, what can be shared, how can be tuned etc. This sub group will compile a list of options for managing and disseminating to be included in the MDWG best practice resources tool kit. i.e. CKAN, GeoNetwork, ESRI . Membership to be determined.
- Invitation to utilise the EMSINA group for reviewing, testing, and providing feedback on working group activities

The next meeting will be in September 2018. Location is to be determined.

Action Items

#	Action	Who
1.	Generate Workshop report with Terms Of Reference (Within 6 weeks)	GA – Graham Logan
2.	Formally establish the MDWG Profile Sub Group (refer to Appendix 2 for membership). Arrange a meeting within 3 week of the workshop	MDWG Secretariat - GA
3.	Formally establish the MDWG Roadmap Sub Group (refer to Appendix 2 for membership). Arrange a meeting within 3 week of the workshop	MDWG Secretariat - GA
4	Members to contact the MDWG Secretariat (Andrew.whiting@ga.gov.au) if they are interested in been involved with the Technical Sub Group	All MDWG
5.	Consider a shared community profile based of 19115-1 & 19115-3 <ul style="list-style-type: none"> • Collate existing profiles related to the new 19115-1 standard • Assess profiles and prepare report outlining the commonality, pros and cons of each profile • Based off the report the MDWG will discuss the current profiles and make recommendations on the relevance, - Value / Cost and look and feel of a ANZLIC based profile. Discuss the formality of the profile 	<ul style="list-style-type: none"> - MDWG - Profile Sub Group - Profile Sub Group - MDWG
6.	ABARES to provide their profile to the MDWG Secretariat (Andrew.whiting@ga.gov.au) for registration distribution to the Profile Sub Group	Evert Bleys: ABARES
7.	ANDS to provide their service elements profile to the MDWG Secretariat (Andrew.whiting@ga.gov.au) for registration distribution to the Profile Sub Group	Melanie Barlow: ANDS
8.	Establish a web presence to hose all MDWG documentation and communication items – Gov Teams or ICSM website	MDWG Secretariat - GA
9.	Develop a roadmap for where the MDWG are aiming to go including strategic directions, key milestones and core items for consideration based off the workshop report (Action item 1)	Roadmap Sub Group
10	<i>Action from day 2.</i> Establish a technical sub group for the socialisation and knowledge gathering on what technologies exist for managing metadata, their pros / cons, implications and management of a catalogue of options for use. MDWG members are to indicate their interest in this group by emailing MDWG Secretariat (Andrew.whiting@ga.gov.au).	Technology Sub Group
11.	Invite the DTA and AIMS to the working group	MDWG Secretariat - GA
12.	Arrange face to face meeting – 3 months' time September 2018	MDWG Secretariat - GA
13.	Report to ICSM the establishment of the MDWG, and ensure ICSM working groups are aware of the MDWG and appreciate its role. PCG and PCTI need to appreciate the impact of metadata and utilise this function.	GA – ICSM Secretariat
14.	MDWG representative to de-brief EMSINA on the outcomes of the workshop and the groups associated work plan	MDWG Secretariat - GA

Appendix 1 Terms Of Reference

- Actively **monitor and assess** the impact of future changes to metadata standards, in order to advise ANZLIC on policy impacts and stakeholders on the scale and impact of technical changes, through the managed knowledge of current national capabilities in metadata
- **Create and maintain** a roadmap documenting what the MDWG is going to undertake and when
- **Develop, and manage** a series of best practice resources (profiles, applications, websites (ANZLIC and ICSM), FAQs, models) to assist both general and technical audiences in understanding, implementing and managing the latest versions of metadata standards
- **Engage** with interested industry organisations (SIBA, ESRI, etc.) to communicate working group developments and directions
- **Provide advice** to spatial communities on the value, implementation and management of metadata and associated systems
- **Provide a forum** for metadata custodians to share and exchange knowledge related to implementing, maintaining and updating metadata frameworks
- **Provide a forum** for inward and outward communication between international (ISO and OGC peak bodies), other interest groups (Australian Government Linked Data Working Group, GeoNetwork community of practice etc.) to inform and seek feedback from core foundation spatial data custodians
- **Govern** associated metadata tools, models, vocabularies, and resources, which are published on by ICSM and or ANZLIC.
- Report to ICSM and ANZLIC on key activities, and metadata developments

Appendix 2

Metadata Working Group Secretariat

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Defence	Geospatial Standards office
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Evert Bleys	Evert.Bleys@agriculture.gov.au

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Jacqueline LeLievre	Jacqueline.LeLievre@delwp.vic.gov.au
Kristy Van Putten	kristy.vanputten@act.gov.au

MDWG Membership and attendance to Workshop 1

Group	Jurisdiction	Who	Attended Y/N	Sub Groups
Cth	Defence	Maree Wilson	N	
Cth	Defence	Greg Reynolds	Y	PSG
Cth	Defence	Francisco Navidad	N	
Cth	Defence	Mark Bradley	Y	
Cth	Defence	Kevin Chen	N	
Cth	Defence	Shanti Rowilson	Y	
Cth	Defence	Dee Jago	Y	
Cth	GA	Irina Bastrakova	Y	PSG
Cth	GA	Andrew Whiting	Y	RMSG
Cth	GA	Graham Logan	Y	RMSG
Cth	Dpt Agriculture	Evert Bleys	Y	PSG
Cth	Dpt Agriculture	Jodie Mewett	Y	
Cth	Australian Antarctic Division	Dave Connell	Y	PSG
Cth	Environment	Damian Woollcombe	N	
Cth	Environment	Glenn Johnstone	Y	
Cth	ABS	Marcus Blake	Y	
Cth	BOM	Kate Roberts	Y	PSG
Cth	ANDS	Adrian Burton	Y	
Cth	ANDS	Melanie Barlow	Y	
Cth	ANZLIC	Brian Sloan	Y	
Cth	ANZLIC	Ann Beaumaris	Y	
Interested	CSIRO	Nicholas Car	Y	PSG
Interested	ANU	Armin Haller	Y	
Interested	EMSINA	Kane Orr and or Chair	Y	
Juris	ACT	Kristy Van Putten	Y	RMSG
Juris	ACT	Michael Clifford	Y	
Juris	ACT	Josh Thomson	Y	
Juris	NSW	Ajoy Saha	N	
Juris	NT	Phillip Rudd	Y	
Juris	QLD	Ian Beitzel	Y	
Juris	SA	Greg Vangaans	N	
Juris	TAS	Todd Baker	N	
Juris	TAS	Leigh Fannon	N	
Juris	VIC	Jacqueline LeLievre	Y	RMSG
Juris	VIC	George Mansour	Y	
Juris	WA	Jenny Smith	N	
Standards	TC/211	Chris Body	N	
Standards	ISO	Margie Smith	Y	RMSG
Standards	OGC	Aaron Sedgmen	Y	
New Zealand	NZ	Richard Murcott	N	
New Zealand	NZ	Byron Cochrane	Y	PSG, RMSG
Cth	GA	Andy Marshall	Y	
Cth	EMSINA	Kane Orr	Y	

