



Australian Government

Geoscience Australia

ICSM Metadata Working Group Meeting #2

8th - 9th October 2018

Melbourne

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Welcome

Amelia Chapman

ICSM Member

Victorian Department of Environment, Land, Water and Planning

Agenda

Day 1: 10am - 4.30pm

1. Re-cap meeting #1 Canberra
2. DELWP demonstration – George Mansour
3. DCAT update – Dr Simon Cox
4. Issues for consideration
 - DC2020 – Esther Carey
 - Federated metadata infrastructure
 - Maritime S121 – Anna Potter
5. GDA2020 and ATRF – Nicholas Brown
6. MDWG Roadmap – Andrew Whiting

Day 2: 9am - 12pm

1. Re-cap meeting day #1
2. Issues for consideration
 - JSON, GeoJSON, API's
 - ESRI and other application integration
 - DCAT, CKAN alignment
3. MDWG Profile Sub-Group – Irina Bastrakova
4. MDWG Administration

Logistics

- WiFi
- Amenities
- Lunch
- Dinner
 - The Hof Downtown, 737 Bourke Street
 - Booking from 6 for 6.30pm

Expected meeting outcomes

- Endorsement of the roadmap
- Roles and responsibilities assigned
- Endorsement of the Profile Sub Group Recommendations
- Recognition of GDA2020 and guidance on how the MDWG will address



MDWG Meeting #1 – Canberra 13th June - Summary

- ✓ 32 individuals representing agencies from the Governments, Research, peak spatial bodies, EM & Agriculture Sectors.
- ✓ Since the workshop, the membership has grown to approximately 60 individuals. This clearly indicates the importance of the MDWG

General outcomes:

- ✓ Strong agreement that the working group is highly relevant
- ✓ Agreed series of TOR's noting they can change over time
- ✓ Agreed to create a roadmap articulating what the MDWG is planning to undertake and when
- ✓ Agreed to establish a Profile Sub Group, Roadmap sub group and a Technical Sub Group.

Meeting 1 Action Items

#	Action	Who	Status	Comment
1	Generate Workshop report with Terms Of Reference (Within 6 weeks)	GA – Graham Logan	Complete	Report sent to members
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	Complete	Profile group active - Reporting due at meeting
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	Complete	Profile group active - Reporting due at meeting
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	Complete	No Feedback.
5	Consider a shared community profile based of 19115-1 & 19115-3	MDWG	Open	
5.1	- Collate existing profiles related to the new 19115-1 standard	Profile Sub Group	Open	
5.2	- Assess profiles and prepare report outlining the commonality, pros and cons of each profile	Profile Sub Group	Open	
5.3	- 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	MDWG	Open	Cover at meeting
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	Complete	
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	Complete	
8	Establish a web presence to host all MDWG documentation and communication items – Gov Teams or ICSM website	MDWG Secretariat - GA	Complete	Website is established and sufficient for mean time
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	Open	
10	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).		Open	No Feedback
11	Invite the DTA and AIMS to the working group	MDWG Secretariat - GA	Complete	
12	Arrange face to face meeting – 3 months' time September 2018	MDWG Secretariat - GA	Complete	
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	Complete	Presented at PCTI, will report to ICSM
14	MDWG representative to de-brief EMSINA on the outcomes of the workshop and the groups associated work plan	MDWG Secretariat - GA	Open	

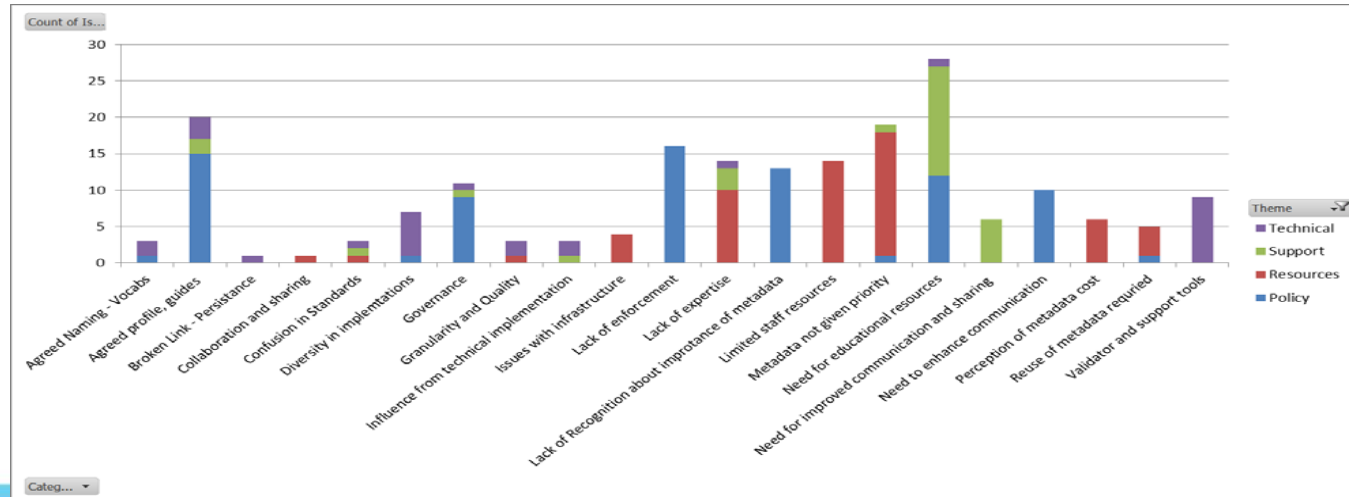
Recap of Workshop 1



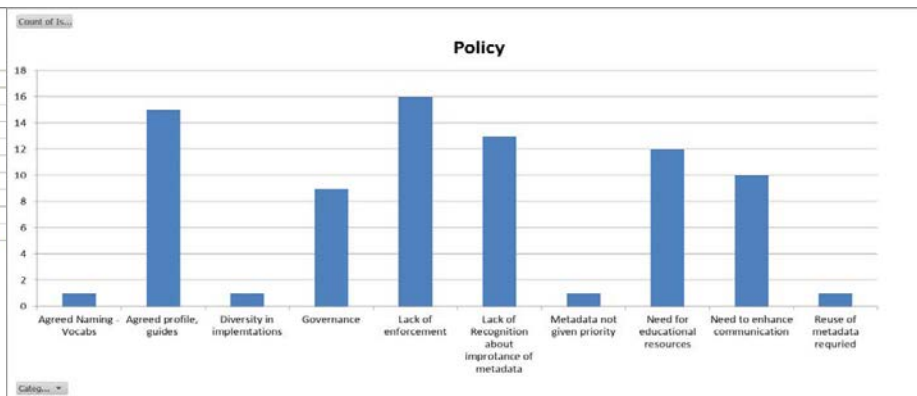
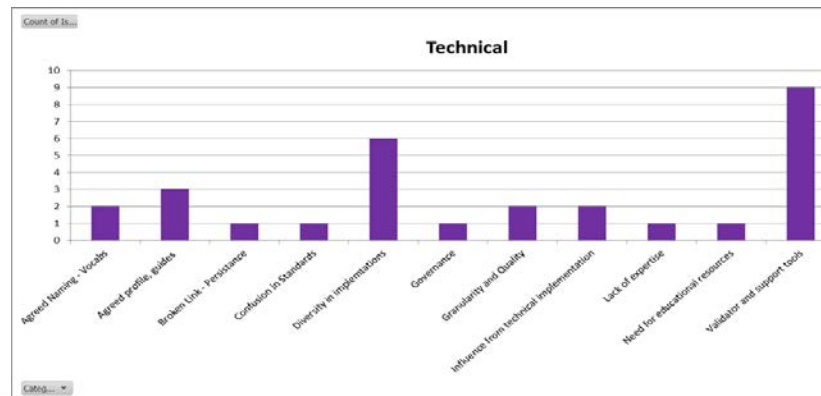
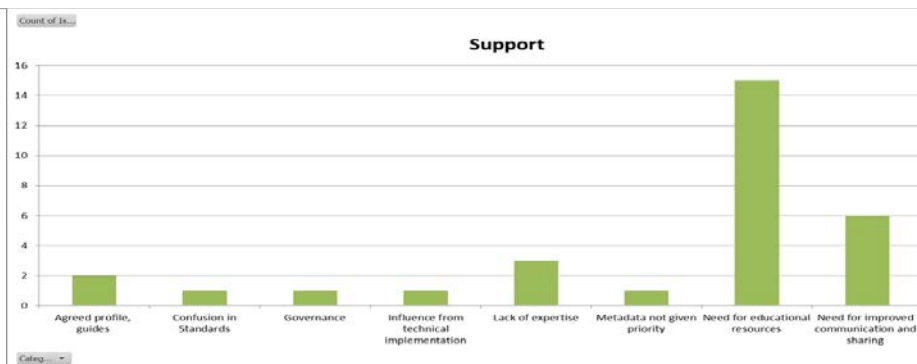
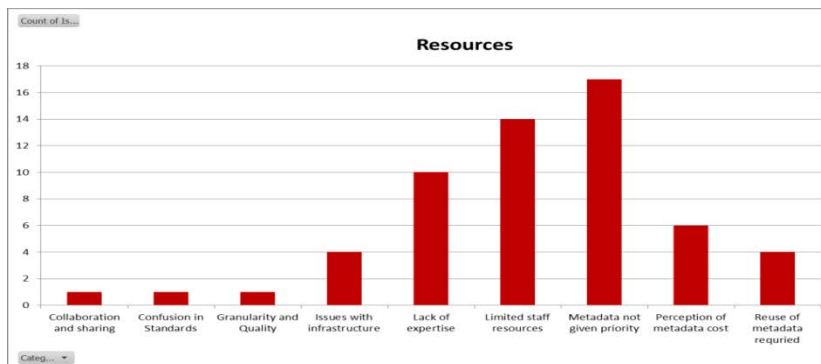
- Two activities organised to collect view of participants

Activity 1: Metadata issues and challenges

- ✓ Participants asked to identify as many issues that they face with metadata
- ✓ Issues were then grouped, counted, categorised and graphed



Categorised Issues and Challenged



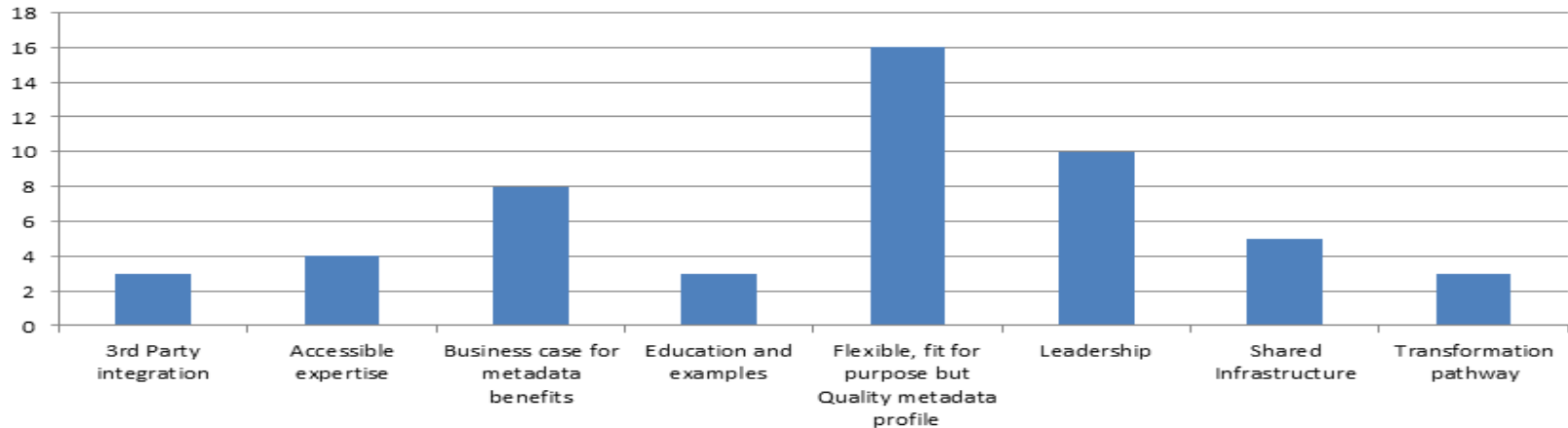
Key Findings

1. The need for **guides, profiles, tools and supporting documentation** so that users can consistently apply metadata in the same way and to reduce confusion and diversity in approaches.
2. The need for **communication material to support education** and help inform managers, data custodians and user of the importance of metadata
3. The need to **build up skills and resources to support metadata application** and reduce the potential burden of maintenance upkeep.



Activity 2 Requirements

- ✓ Participants asked to list requirements for their agency requirements to improve metadata capability
- ✓ Requirements grouped, counted and graphed



	Classification	Working Group Requirement
1	Flexible, fit for purpose but Quality metadata profile	Develop a easy to understand, flexible, fit for the majority of purposes profile which clearly articulates what each element is and why It is important. Ensure the profile can be easily extended to meet the specific needs of individual organisation needs.
2	Leadership	Need ongoing leadership identifying what is the preferable standard for implementation and management. Articulation on how to utilise the standard, education on the value and importance of metadata, and the ongoing monitoring and championship of metadata.
3	Business case for metadata benefits	Clearly articulate the case for change to the new version of the metadata standards. The case needs to include benefits, dis-benefits, requirements and implications. This case needs to target decision makers, metadata system managers, and data custodians to improve the overall understanding of the importance, whilst providing a framework to assist decision making about planning requirements.
4	Shared Infrastructure	Assess the viability of a hosted, federated metadata system to assist agencies without the capability, capacity and or business barriers to manage standards compliant metadata, which can be disseminated. <i>Where does data.gov.au fit.</i> Ensure tools are available to assist in the creation and compliance assessment of metadata records.
5	Accessible expertise	Make discoverable what expertise is available to advise and assist end users on the implementation and management of the standard, profiles and technology options. Ensure best practice frameworks are easy to understand and can be utilised by all key stakeholders including technical experts, data managers and decision makers to support the uptake of the standards consistently.
6	3rd Party integration	Ensure the new profiles and supporting technologies can enable seamless integration between different users and application choices including crowd sourced data and common applications such as ESRI.
7	Education and examples	Based off the agreed profile, develop a suite of examples, which clearly articulate what a quality metadata record looks like. This resource will provide real world examples, which can be easily adopted to meet the needs of non-expert.
8	Transformation pathway	Develop a roadmap and a national picture to measure the status of metadata capability nationally. Ensure there is a clear path on how to migrate from existing standards base to the new standards, including associated tooling and mapping.

Summary

1. Workshop 1 defined issues, challenges and requirements
2. Information fed into Roadmap Working Group
3. Issues and requirements informed work of Profile Working Group

Jurisdiction Demonstration

George Mansour

Victorian Department of Environment, Land, Water & Planning

Data Catalogue Vocabulary (DCAT) update

Dr Simon Cox

CSIRO

Issues for Consideration

1. **National Archives DC2020** (Digital Continuity Policy)- Esther Carey, National Archives of Australia
2. **Federated – Shared metadata capability** – Andrew Whiting, GA
3. **Maritime S121 and metadata** – Anna Potter, GA

GDA2020 and ATRF – Managing through metadata

1. Nicholas Brown – GA

2. Group Discussion

- What role does the MDWG provide?
- ICSM paper on GDA2020
- How is your organisation planning to record GDA2020

MDWG Roadmap

- Meeting Action items 1 & 10, the Metadata Roadmap Sub Group was established to begin develop a roadmap
- Membership comprised of:
 - Byron Cochrane
 - Jacqueline LeLievre
 - Kristy Van Putten
 - Graham Logan
 - Irina Bastrakova
 - Andrew Whiting
 - Margie Smith

A graphic with the words "THANK YOU" in a bold, blue, sans-serif font. The text is arched over a blue, stylized wave that flows from left to right and ends in a small swirl.

The Roadmap

- Using the requirements identified from Activity 1 & 2 at the Canberra workshop
- A series of granular tasks were identified and aligned to meet the requirements
- The tasks were then classified and generally prioritised
- Forming the Detailed roadmap

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7	Education and examples	Based off the agreed profile, develop a suite of examples, which clearly articulate what a quality metadata record looks like. This resource will provide real world examples, which can be easily adopted to meet the needs of non-expert.
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The Detailed Roadmap structure



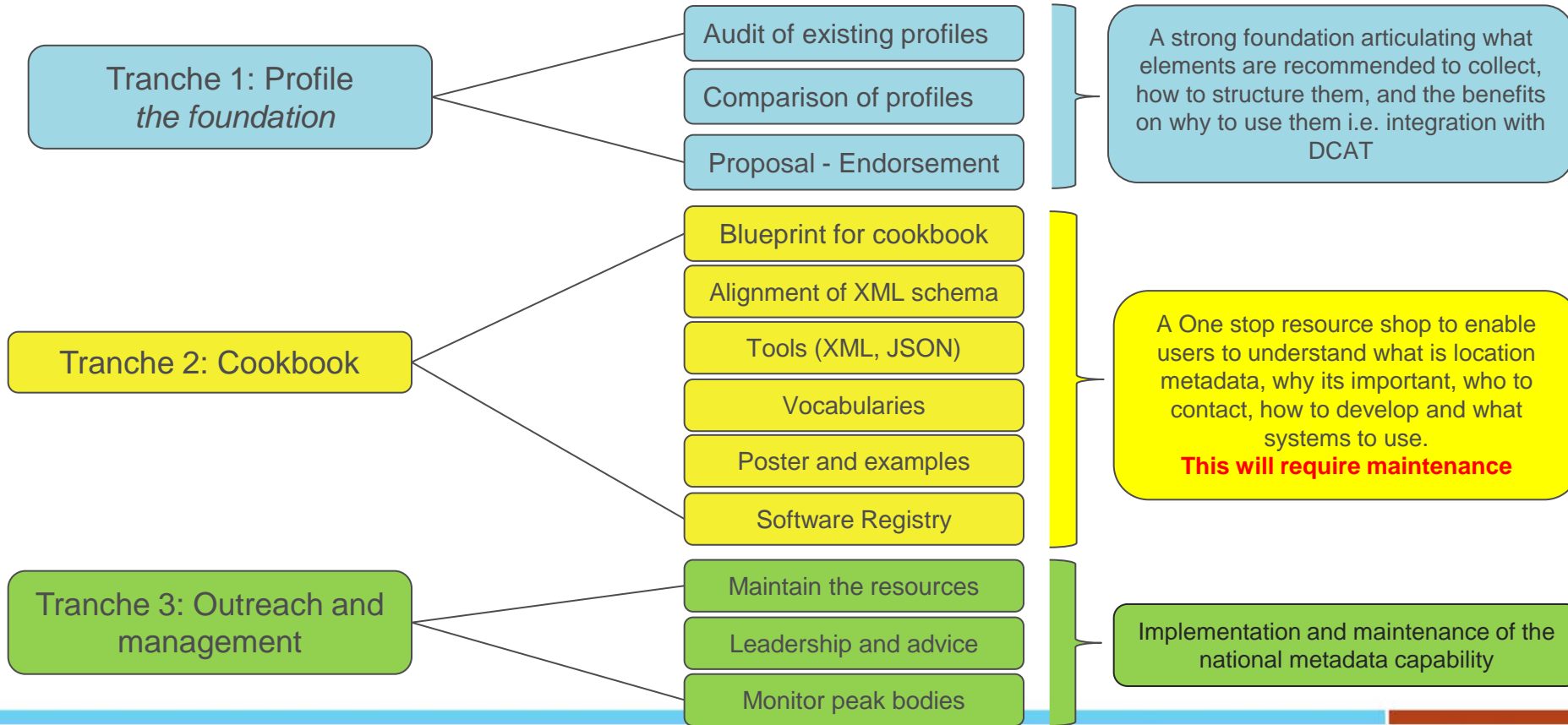
ANZ Metadata Working Group detailed Roadmap

Note: All references to the term profile may be changed depending on the working group naming resolution in #1.2

#	Classification	Workshop Requirement Addressed	Activity	Objective	Outcome	Who	Flow	Status	Comment
Tranche 1: Develop a new profile documenting the agreed core elements which are contained within the new 19115-1 standard <i>The profile will form the basis to develop a best practice framework, ensuring all components are referencing the same foundation</i>									
1.01	Profile	Flexible, fit for purpose but Quality metadata profile	19115-1 Profile Audit and Recommendations for a new ANZLIC profile	*Gather, compile and analyse published profiles which relate to the latest 19115-1 standard. *Provide recommendations to the MDWG on the relevance, naming and the level of authority i.e. ANZLIC endorsed	The MDWG have a clear understanding of: *What profiles currently exist related to 19115-1 and the commonality between each *Recommendations of the structure of a new profile *Recommendations on the naming of a new profile *Recommendations on the level of authority of a new profile *A Framework to build new guidelines, communications and schemas upon	Profile Sub Group - Action		Complete	Audit complete
1.02	Endorsement	Flexible, fit for purpose but Quality metadata profile	Recommendations on new profile accepted by the MDWG	MDWG to review, discuss and endorse the recommendations tabled by the PFIG. Activity to produce the guidelines established.	Resource allocated to produce the new profile.	MDWG - Decision		In Progress	
1.03	Profile	Flexible, fit for purpose but Quality metadata profile	New 19115-1 profile developed	Develop a new 19115-1 profile in alignment with the recommendations from the PFIG. Profile to contained what each element is, why it is within, and how it should be populated.	A baseline profile is produced aligned to the recommendations made by the PFIG, along with a brief description of what each element is and why it is important. This document will become apart of the new profile implementation guidelines.	Profile Sub Group - Action		Complete	Profile design is complete, now waiting for resolution by the MDWG
1.04	Endorsement	Flexible, fit for purpose but Quality metadata profile	New 19115-1 profile endorsed by the MDWG	MDWG endorse the new 19115-1 profile.	MDWG have a endorsed baseline profile which a guideline framework consisting of webpages, schemas, tools, examples can be built upon ensuring all reference the same baseline.	MDWG - Decision		In Progress	
Tranche 2: Develop a cook book clearly articulating what is the new standard, why it is important, how it is implemented and what resources are available to support a users implementation									
2.0	Planning	Flexible, fit for purpose but Quality metadata profile	Develop a blue print articulating what elements need to be contained within the cookbook	The blueprint will articulate what elements the guidelines will contain with the objective or clearly communicating: *The release of the new 19115-1 standard and its benefits *Why metadata is important (use cases) *What are the core recommended elements (profile) *How to manage and disseminate the profile (19115-3 schema) *What tools are available to assist in developing and managing the data *What resources are available to assist in this transformation and management	The blue print will articulate all the components which will be contained within the guideline framework. Each component will articulate what it is, where it fits and why its important. The blueprint will ensure all the key areas for communicating elements within metadata capabilities addressed.	TBC			
2.0	Schema - Tech	Flexible, fit for purpose but Quality metadata profile	Align the existing 19115-3 schema within GitHub to the new Profile	Modify the 19115-3 schema to align to the new profile developed	The XML schema will be produced to align directly to the new profile, and to ensure it is completely contained within the ISO 19115-3 published schema on GitHub. Where possible this schema may be reduced, to remove the elements which are not associated with the new profile, ensuring ease of implementation and consistency in implementation.	TBC		In Progress	
2.0	Schema - Tech	Flexible, fit for purpose but Quality metadata profile	Develop a XML creation and validation tool	To achieve consistency in the way metadata is implemented, this service will either produce the xml statement in compliance to the profile or QA if the XML is pre produced.	A tool to assist the consistent implementation of the 19115-3 XML implementation.	TBC			
2.0	Schema - Tech	Flexible, fit for purpose but Quality metadata profile	Develop a JSON creation and validation tool	To achieve consistency in the way metadata is implemented, this service will either produce the xml statement in compliance to the profile or QA if the JSON is pre produced.	A tool to assist the consistent implementation of the 19115-3 JSON implementation.	TBC			
2.1	Schema - Tech	Flexible, fit for purpose but Quality metadata profile	Develop a vocabulary registry to govern the terms within the 19115-3 schema	To enable consistent descriptions of the key words within the standard, the register will be governed and accessible online.	A consistent and governed way to describe the key terms within the new standard.	TBC			
3.1	Support	Business case for metadata benefits	Develop a simple poster which articulates the core elements within the new profile	Produce a easy to understand and communicate resource (poster or other) which outlines the core elements contained within the new 19115-1 profile	A simple one page poster to clearly and easily communicate the core elements which need to be captured to meet the requirements of the new profile.	Profile Sub Group - Action		In Progress	Draft poster currently in design

Generalised roadmap

Structured into three core Tranches



Day 1 Re-Cap and Closing

Dinner: booking at 6 pm at The Hof Downtown,
737 Bourke Street <http://thehof.com/menu/>



Issues for consideration

1. New issues related to Metadata

- JSON, GeoJSON, and integration with API's
- ESRI and other application integration
- Metadata alignment with GetCaps, DCAT1 and CKAN

2. Scope of the MDWG. Do we consider 19115-2 (Imagery & Gridded Info)

Metadata Profile Sub Group

Metadata Profile Sub Group was formed to focus on:

- ✓ Assessing the content of metadata profiles, including implementations, practices and elements supplied by GA, ABARES and Defence
- ✓ Compiling and defining a set of core elements that should be considered for implementing the metadata.
- ✓ Providing recommendation to the ICSM Metadata Working Group (MDWG) on core set of elements to ensure consistency in resource description and interoperability between metadata catalogues.

Metadata Profile Sub Group - work extension

- Substituted Technical Sub-Group to look at 'technical' aspects related to:
 - Metadata implementation examples
 - Tools and applications
 - Documentation: Technical, User guides, etc.

Membership



Activities



- ✓ Cross-walks between provided metadata profiles were developed.
 - Detailed crosswalk between GA and ABARES metadata profiles
 - High level crosswalk to identify common elements between ISO 19115-1 (GA, ABARES, AAD), RIF-CS (ARDC) and DCAT (V1.1) standards
 - Review and feedback was provided by GA, ABARES, AAD, BoM, ARDC, LINZ and Aus. Defence
- ✓ GDA2020: consultation with experts in GA and LINZ, identified list of relevant elements in ISO19115-1
- ✓ GA Metadata Profile of ISO19115-1:2014 was finalised and published (<https://ecat.ga.gov.au/geonetwork/srv/eng/catalog.search?node=srv#/metadata/4fce6238-8d55-499c-bff5-98518552f4b4>)
- ✓ Home page for the GA Metadata profile and supporting documentation and tools, including schemaron for GA profile, some code lists (<http://pid.geoscience.gov.au/def/schema/ga/ISO19115-1-2014>)
- ✓ Membership was extended to include NCI
- ✓ Terrestrial Ecosystem Research Network (TERN) assessed and is adopting GA Metadata Profile.

Element Selection Approach



- Major focus - Adequate Resource description to ensure:
 - ✓ Streamline and simplify discovery of data; and reduce time on its finding
 - ✓ Improve authoritative access to data and reduce the risk of breaching security and legal restrictions
 - ✓ Enable machine-to-machine access and integration of data across multiple information standards and disciplines
 - ✓ Prepare for modern and future technologies (e.g. Machine Learning, Linked Data,) thus stimulating innovation and data re-use
- Associated tasks
 - ✓ Enable development and share of common codes, APIs and infrastructures to reduce a need for duplicated development and coast of maintenance



Common Elements – Metadata Record

ISO Element	ISO (default)	GA (ISO)	ABARES (ISO)	AAD (ISO)*	ARDC (RIF-CS)	RIF-CS element	DCAT (https://w3c.github.io/dxwg/dcat/)
Metadata	M	M	M	M	M		dcat:Catalogue
Identifier	O	M	M	M	M	Key	dct:identifier
Date	M	M	M	M	M	Collection @dateAccessioned	dct:issued/dct:modified
Responsible party	M	M	M	M	O	Related Party	dcat:contactPoint
Locale	C (M)	M	M	M	N/A		dct:language
Metadata Scope: Scope Code	M	M	M	M	M	Type and subtype (e.g. Collection/Service)	dct:subject
Legal Constraints	O	O	M	M	O	Description 'notes'	dct:rights
Reference for Legal	O	O	O	O	O	Licence	dct:license
Security Constraints	O	M	M	O	O	Description 'notes'	
Reference for Security	O	M	O	O	O	Licence	

* When implemented in the ISO19115-1

Common Elements - Resource

ISO Element	ISO (default)	GA (ISO)	ABARES (ISO)	AAD (ISO)*	ARDC (RIF-CS)	RIF-CS element	DCAT https://w3c.github.io/dxwg/dcat/
Data Identification		M	M	M	M		
Locale	M	M	M	M	N/A		dct.language
Abstract	C (M)	M	M	M	M	Description 'full'	dct.description
Purpose	M	O	M	O	O	Description 'lineage'	dct.description
Status	O	O	M	M	O	Description 'lineage'	
Topic Category	O	M	M	M	O	Subject	dcat:keyword
Point of contact	C	M	M	M	M	Related Party	dct:contactPoint
Extent: geographic description	O	O	M	M	O		dct.spatial
Extent: bounding box	O	C	C	M	O	Spatial Coverage	dct.spatial
Extent: vertical	O	C	O	O	N/A		dct.spatial
Extent: temporal	O	C	M	M	O	Temporal Coverage	dct.temporal
Spatial Reference System	O	C	O	N/A	O		
Type	O	C	M	N/A	O	Spatial Coverage	dct:confirmsTo
Code	O	C	M	N/A	O		dct:confirmsTo
Authority	O	C		N/A	N/A		dct:confirmsTo
Citation	M	M	M	M	M	Citation Metadata	
Title	M	M	M	M	M	Title	dct.title
Identifier (uri)	O	M		M	M	Identifier	dcat:identifier
Date	O	M	M	M	M	Date	dct:issued/dct:modified
Cited Responsible party	O	M	M	M	M	Contributor	dct:creator
Edition	O	O	C	O	O	Version	dct:confirmsTo
Series	O	O	C	O	O	Context	prov:wasMemberOf
Cited Responsible party (publisher)	O	C	M	N/A	M	Publisher	dct:publisher

Common Elements - Resource

Package	ISO element	GA (ISO)	ABARES (ISO)	AAD (ISO)*	ARDC (RIF-CS)	RIF-CS element	DCAT (https://w3c.github.io/dxwg/dcat/)
Keywords	O	M	M	N/A	M		
ABS Field of Research	O	M	O	M	M	Subject	dcat:keyword
ABARES Keyword	O	N/A	M	O	N/A	Subject	dcat:keyword
other keywords	O	O	O	O	O	Subject	dcat:keyword
Format	O	M	O		N/A		
Maintenance	O						
Frequency Update	O	M	M	O	N/A		
Lineage	O	M	M	O	M		
Statement	O	M	M	N/A	M	Description 'lineage'	prov:has_Provenance
Source	O	O	C				dct:source
Constraints	O	M	M	M	M		
Legal	O	M	M	O	M	Rights	dct:rights
Reference for Legal	O	M	O	O	M	Licence	dct:license
Security	O	M	M	O	O	Rights	
Reference for Security	O	M	O	O	O	Rights	
Distribution	O	C	M	O	M		dcat:distribution
Format	O	C	M	O	M	Format	dct:format
Distributor	O	O	M	O	M	Related Party	dct:publisher
Online Resource	O	O	M	O	O	Location url	dcat:accessURI/dcat.downloadURL/dcat:endpointDescription
Associated Resource	O	O	O	N/A	O	RelatedInfo	dct:relation

Elements to define GDA 2020

GDA2020:

- Time of collection to enable dynamic datum transformations
- Reference System Information (geographic and temporal)
- History of Transfer

Class	Element	Description
Temporal Extent		Time period covered by the content of the resource (e.g. date/time when the resource was collected, described)
Reference System		Record information about reference system
	Reference System Type	Type of the reference system (e.g. Geographic Identifier)
	Authority	Citation of the registering authority defining and maintaining the reference system (e.g. EPSG)
	Code	Unique code identifying the reference system within this registering authority
Lineage		
	Statement or Process Steps	Information about history of resource generation, including spatial coordinate transfers

Next Steps

- Metadata:
 - Continue mapping to other profiles and standards
- Cookbooks:
 - Use Guides
 - Implementation Examples (human readable)
 - XML Examples
 - Technical documentation
- Tools:
 - Metadata creation, editing, maintenance
 - Conversion from ISO 19115 to ISO 19115-1
 - Conversion from ISO19115-1 to DCAT, CKAN, RIF-CS, etc.
 - Metadata Validation
 - Vocabulary system: managing & publishing common vocabularies



MDWG Administration

1. Any other business:

- What applications does everybody currently use to manage metadata

2. ICSM website and Trello

3. Next meeting location and date

4. Action items

Data response to SBAS and ARTF – impact upon metadata – Assuming GDA2020 is in place.

Data Type

Data collection Method

End Product

Metadata

Scenario 1

Buildings



50
m



Image taken on 22 Aug
2017



All buildings collected on same
date as image
Each building has centroid
within a 50m tolerance

Update Product
Metadata statement

Scenario 2

Utility stop valve

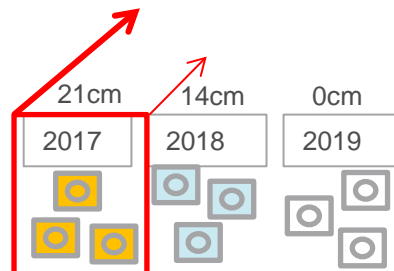


5c
m

DGPS – 30 seconds per point



Accuracy no less than 5cm



7cm variance each year meaning
in 1 year, the point is outside of its
tolerance.

3 years variance between starting
and finishing.

The original points are now **21cm**
off position in relation to the new
datasets

Update Product
Metadata statement

Maintain feature level
metadata

Make feature level
metadata
discoverable
consistently?