Making metadata be FAIR, in particular enhancing the 'R'? – The Approach of the Australian Metadata Working Group.

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Abstract

Any catalogue describing objects will contain metadata: such systems are built to improve findability (F) and accessibility (A). However, a content rich metadata framework, carefully developed by communities with broad interests, can also ensure an interoperability (I) and re-usability (R) of described objects. The Australian Metadata Working Group (MDWG), supported by the Australian and New Zealand Land Information Council and Intergovernmental Committee for Surveying and Mapping, is building one of these FAIR frameworks. The group comprises of federal and jurisdictional governments, research organisations and academia which provides a wide spectrum of use cases of multi-disciplinary community needs. The MDWG recognises multiple aspects of reusability to ensure consistent adoption of the Australian Metadata Profile based on the ISO 19115-1 standard including: Reusability of content: defining a list of elements to ensure content-rich self-describing metadata that can be interpreted by both humans and machines to: capture data dictionaries to enable dataset reconstruction record technical details for services to ensure their correct usage and associated code reuse understand resource quality and provenance to ensure its correct usage specify licence and security conditions to understand preventing the reuse factors consistent reuse of existing community vocabularies (or develop and openly publish new for reuse by others) record resource formats to support access to resources Reusability of the Australian Metadata Profile through publishing its model and XML to ensure consistent adoption of metadata patterns: developing XML examples building user guides and other communication materials Reusability of tools and their deployment: investigation and testing metadata creation, publishing and validation tools, sharing tricks and lessons learnt The MDWG has successfully delivered reusable tools, a consistent profile and user guide plus defined metadata elements with clear purposes. The wealth of combined expertise, sharing of resources and technical support also provided the first example of the ISO 19115-1 standard adoption and re-use of metadata tools, thus, providing great savings to organisations in developing and implementation time and budget.

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## ANZLIC/ICSM Metadata Working Group
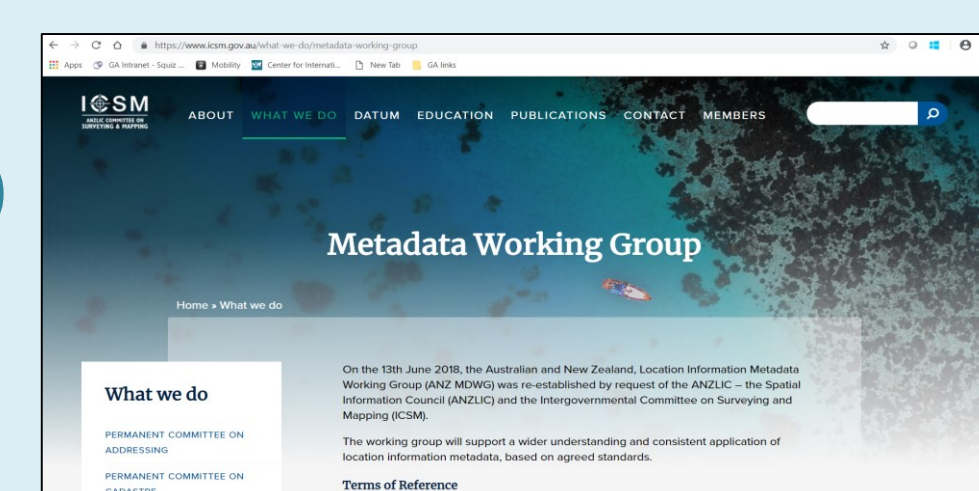
Who we are and what we do:

➢ Australia and New Zealand Federal and Jurisdictional Government Agencies, Research and Academia

  ▪ > 35 Organisations

➢ Forum for communication and engagement with spatial communities and interest groups

➢ Supported by the Australian and New Zealand Spatial Information Council (ANZLIC) and the Intergovernmental Committee on Surveying and Mapping (ICSM)

➢ https://www.icsm.gov.au/what-we-do/metadata-working-group

Our targets:

➢ Support:

  ▪ wider understanding & consistent application of metadata

➢ Improve:

  ▪ data discoverability by enabling machine-to-machine access & integration across disciplines

➢ Reduce

  ▪ costs due to the ability to reuse & share developed codes, applications & services

➢ Reduce

  ▪ business risk and liability through clear identification of legal & security constraints

➢ Improve:
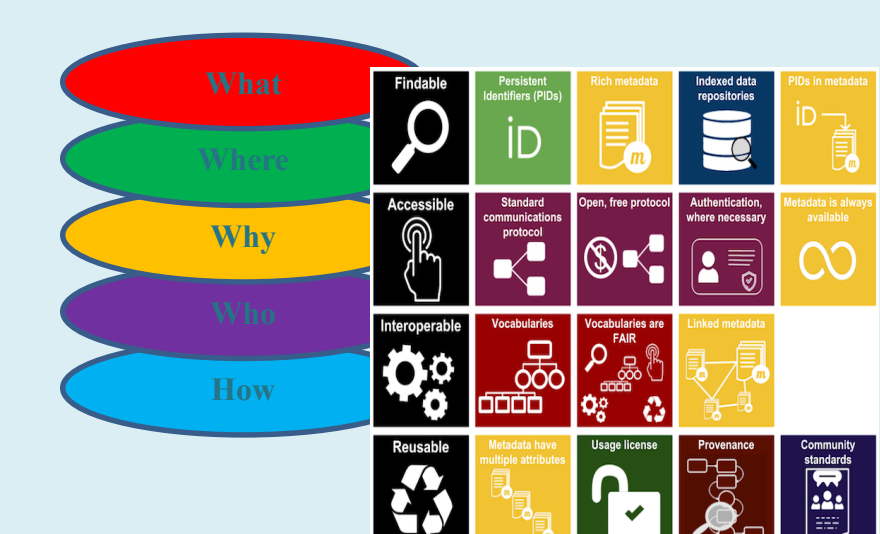
  ▪ efficiency through client self-service
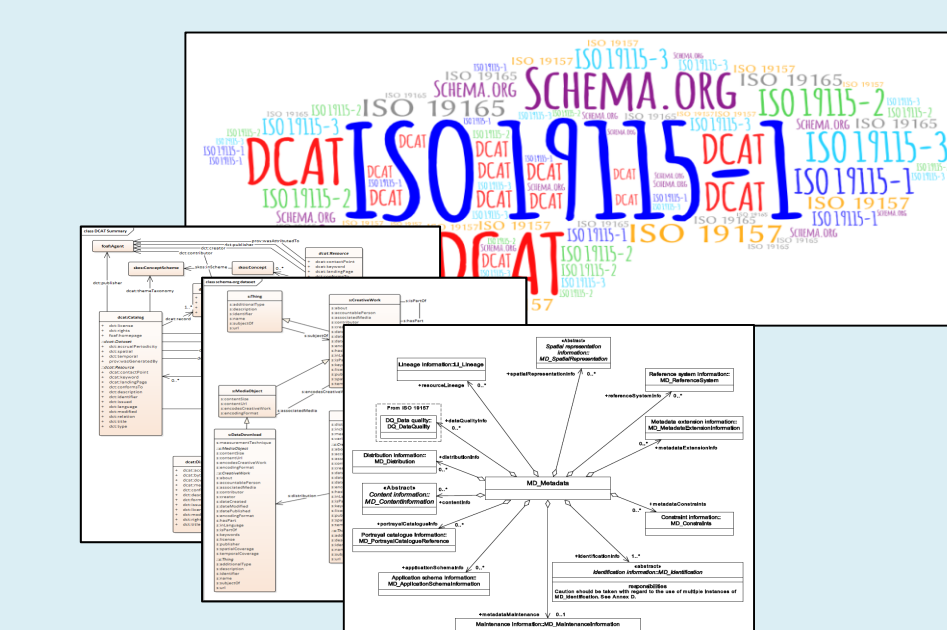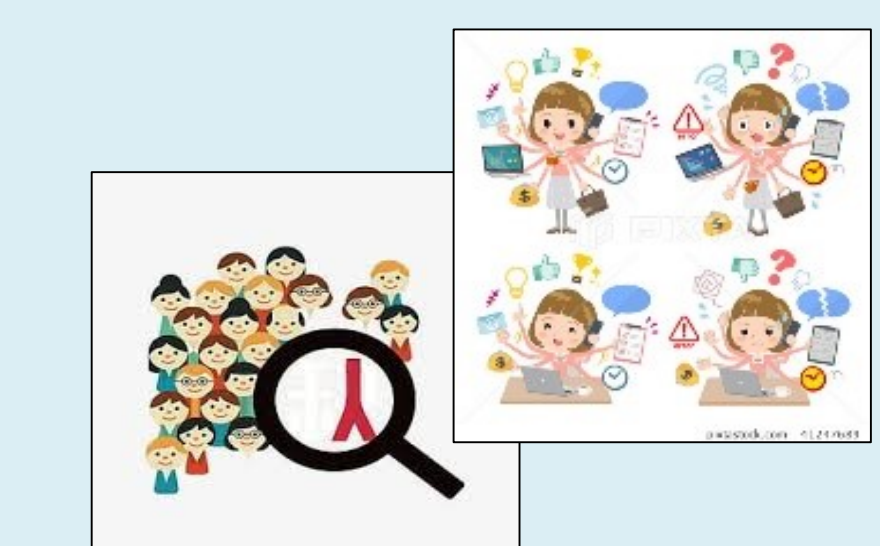
The Challenges
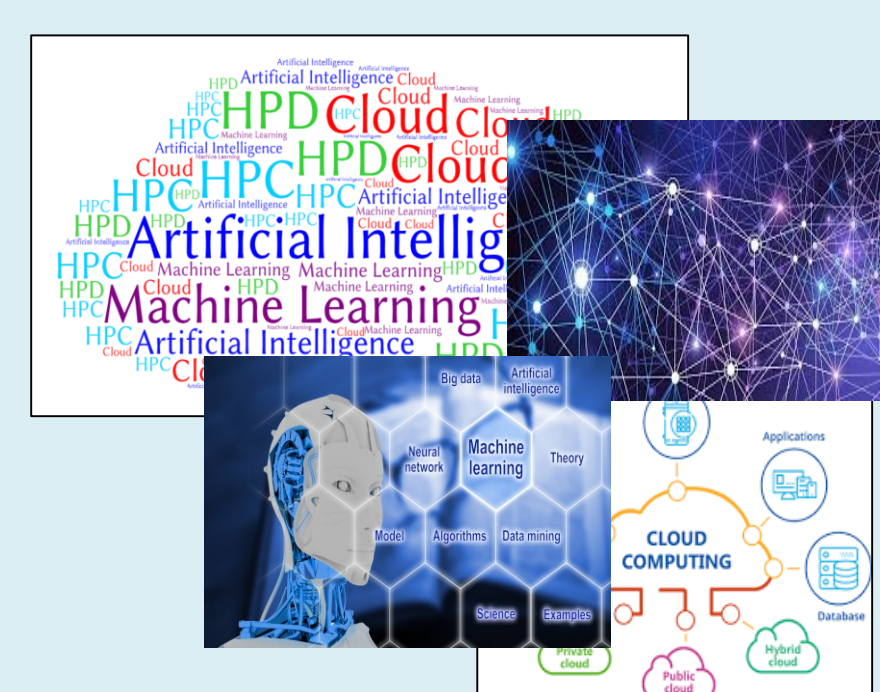
Change in Technology

People's Expectations

Requirements for Data

Complexity in standards

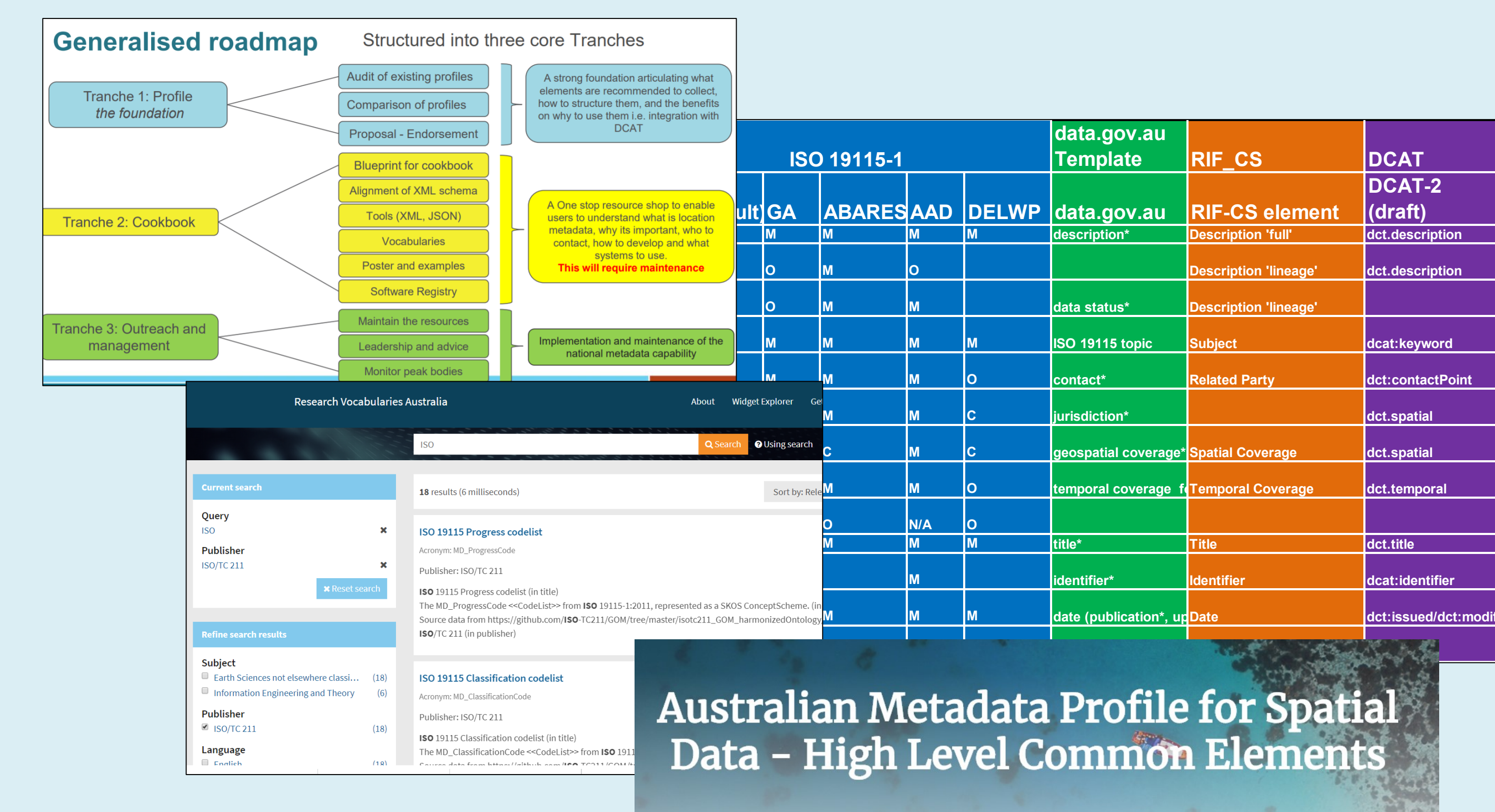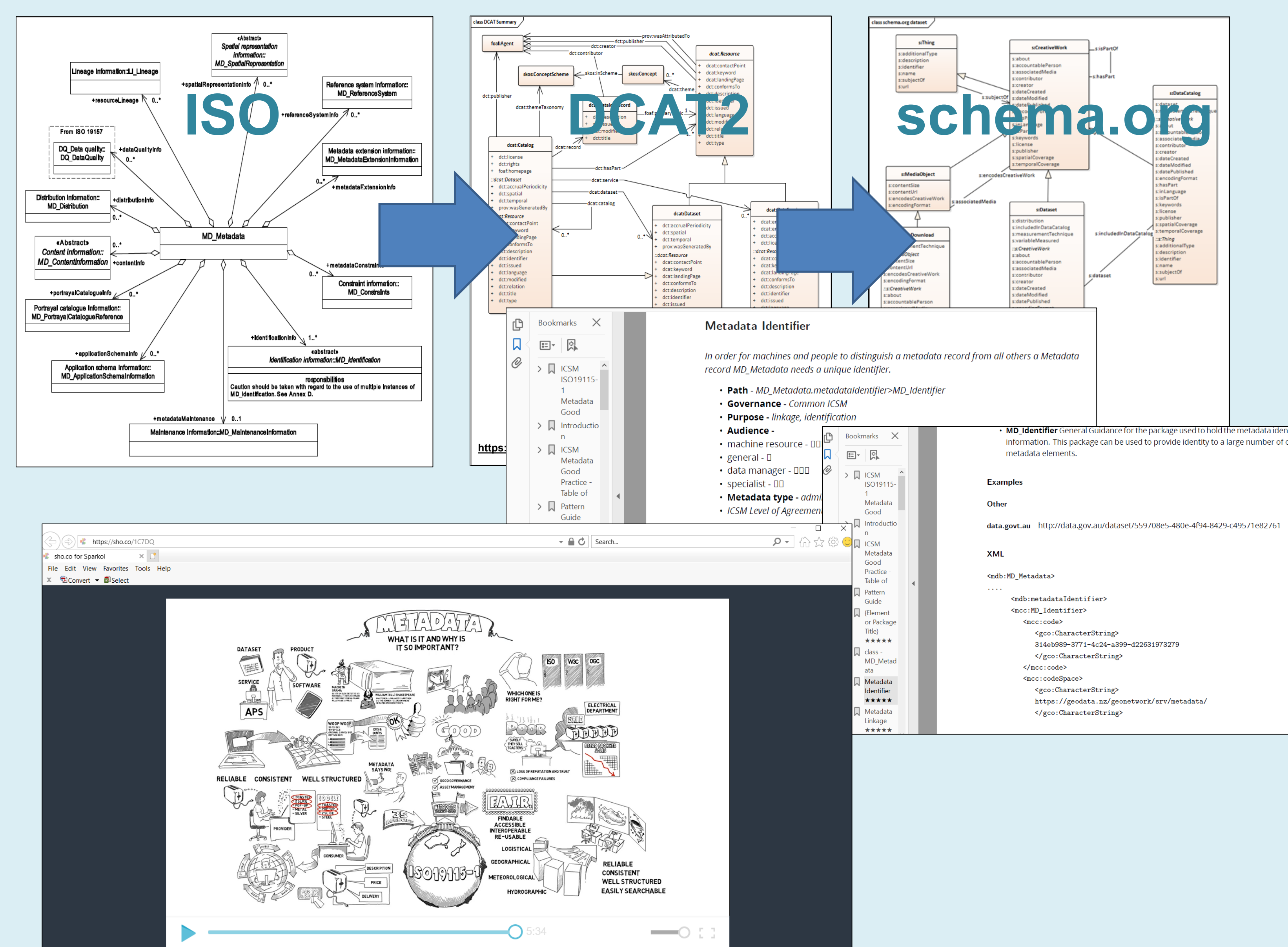**Lack of Skills & Resources**

Budget, Time & Rules

Building FAIR Metadata with an emphasis on the 'R'

Reusability of Content

Development of content-rich self-describing metadata to:

- Be interpreted by both humans and machines
- Capture data dictionaries - enable dataset reconstruction
- Record technical details for services - correct usage & code reuse
- Understand resource quality & provenance - ensure its correct usage
- Specify licence & security conditions - understand reuse constraints
- Reuse community vocabularies or publish new for reuse by others
- Record resource formats - support access to resources

ISO → DCAT2 → schema.org

Australian Metadata Profile for Spatial Data – High Level Common Elements

Reusability of Metadata Patterns

Adoption of metadata patterns by:

- Development Australian Metadata Profiles for:
  - Data
  - Services
  - Imagery
  - Digital Data Preservation
- Publishing their models and XMLs to ensure
- Developing XML examples
- Building user guides
- Developing cross-works between metadata implementations (ISO, W3C, etc.)
- Creating communication materials

Reusability of tools

Investing into common tools by:

- Investigation and testing metadata tools for
  - Creation
  - Publishing
  - Validation
- Publishing deployment scripts
- Re-use of existing tools
- Sharing tricks and lessons learnt