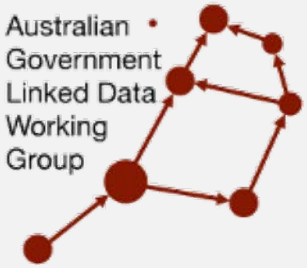


W3C Australia

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 eco-systems
- 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

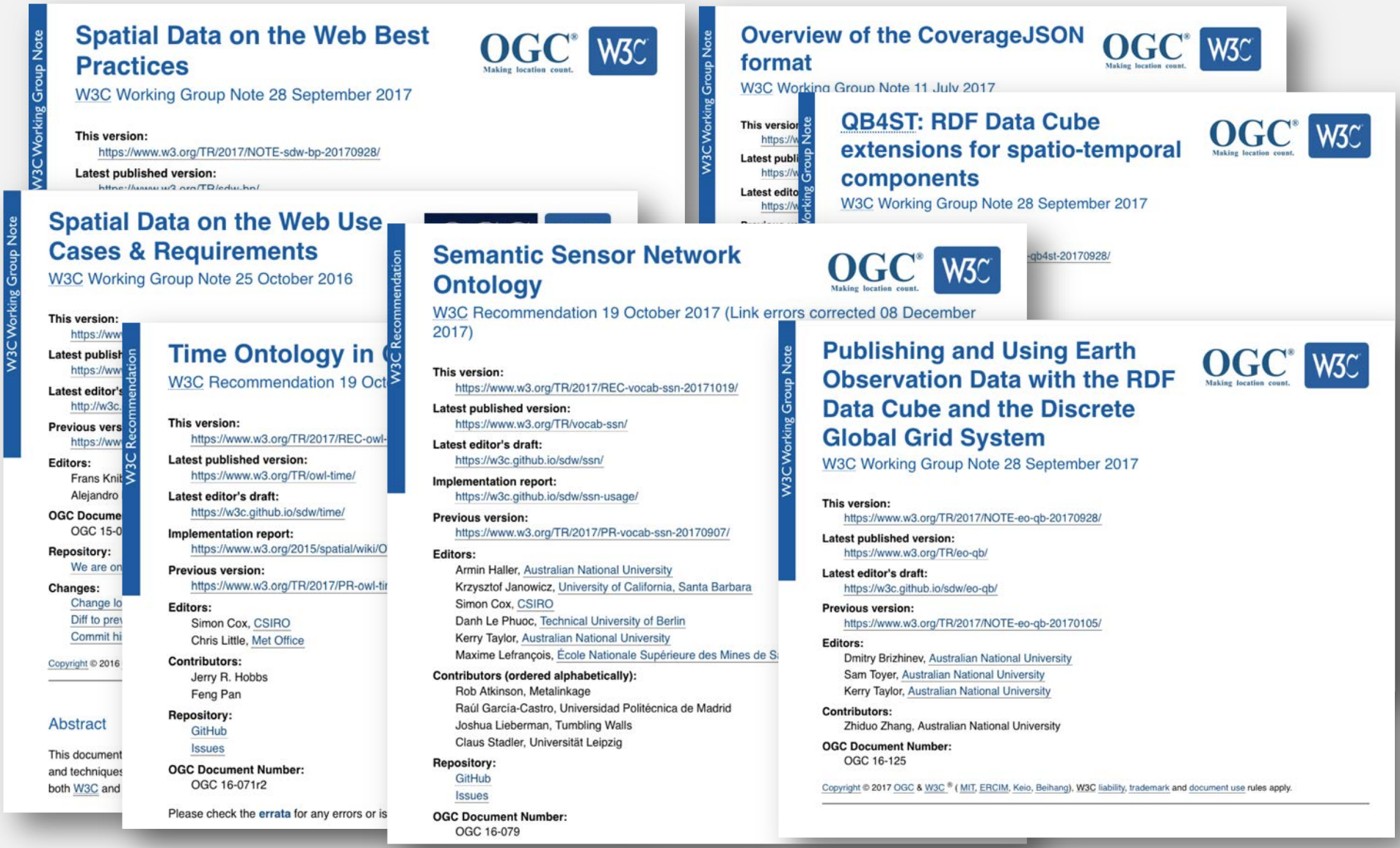
Was chartered to:

- 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.

https://www.w3.org/2015/spatial/charter

W3C® OGC

WHAT WAS ACHIEVED?



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® Making location count. W3C

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…

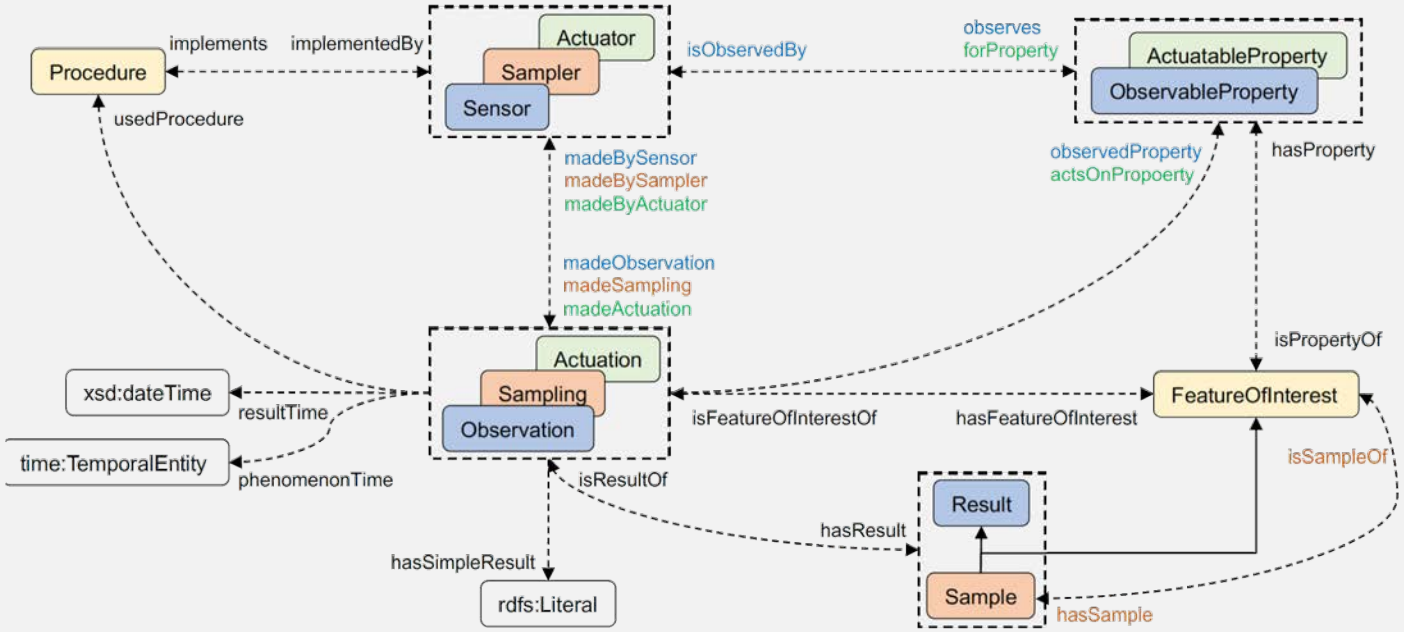
- We propose samePlaceAs

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…

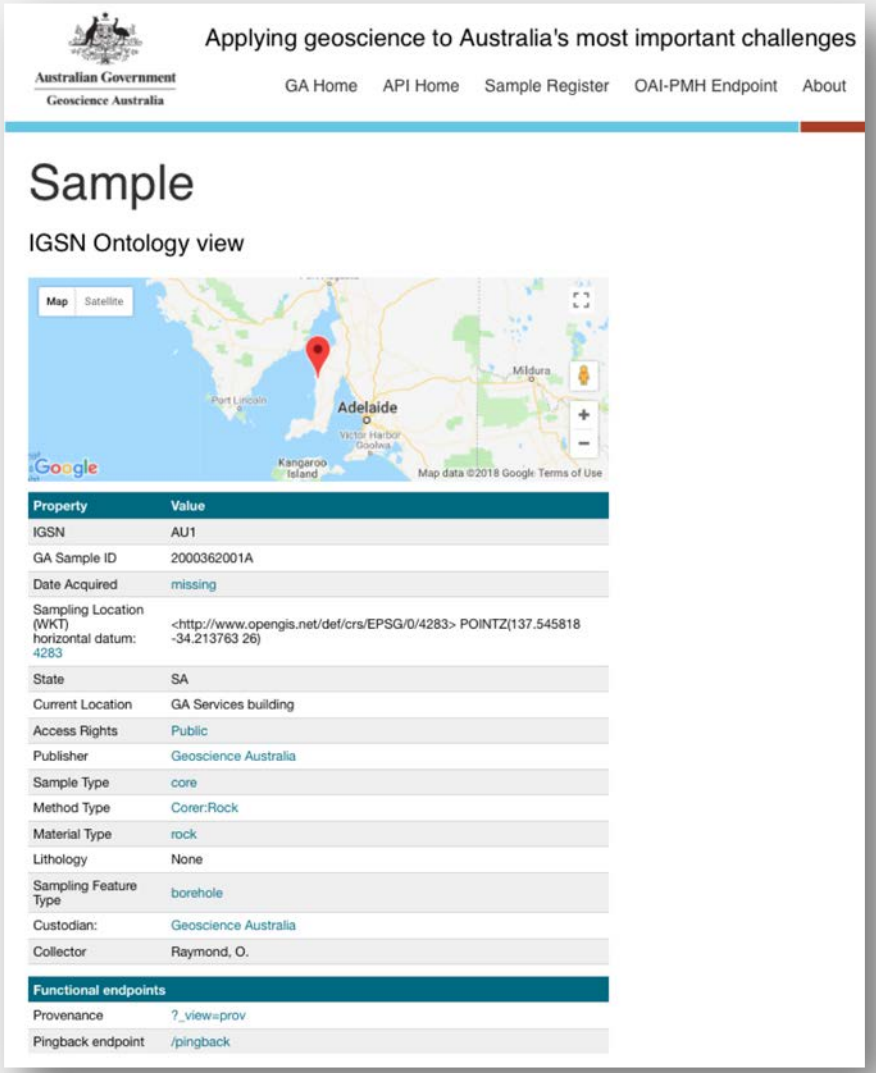
SEMANTIC SENSOR NETWORKS (SSN) ONTOLOGY

- 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



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

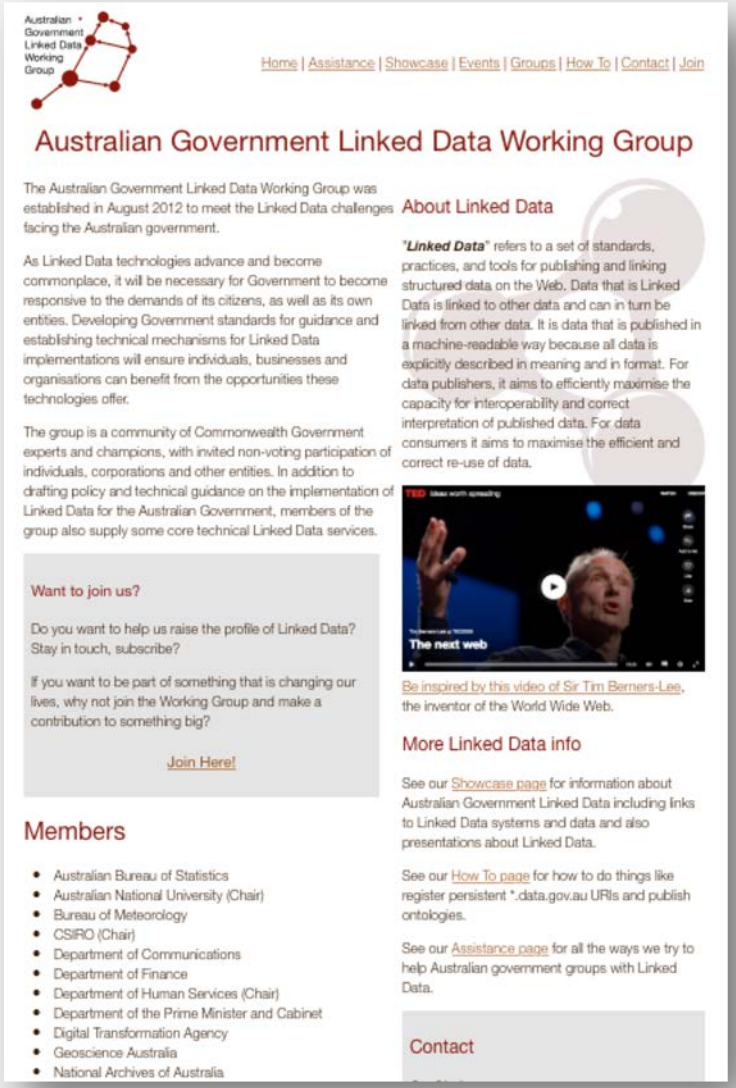
Australian Government Linked Data Working Group

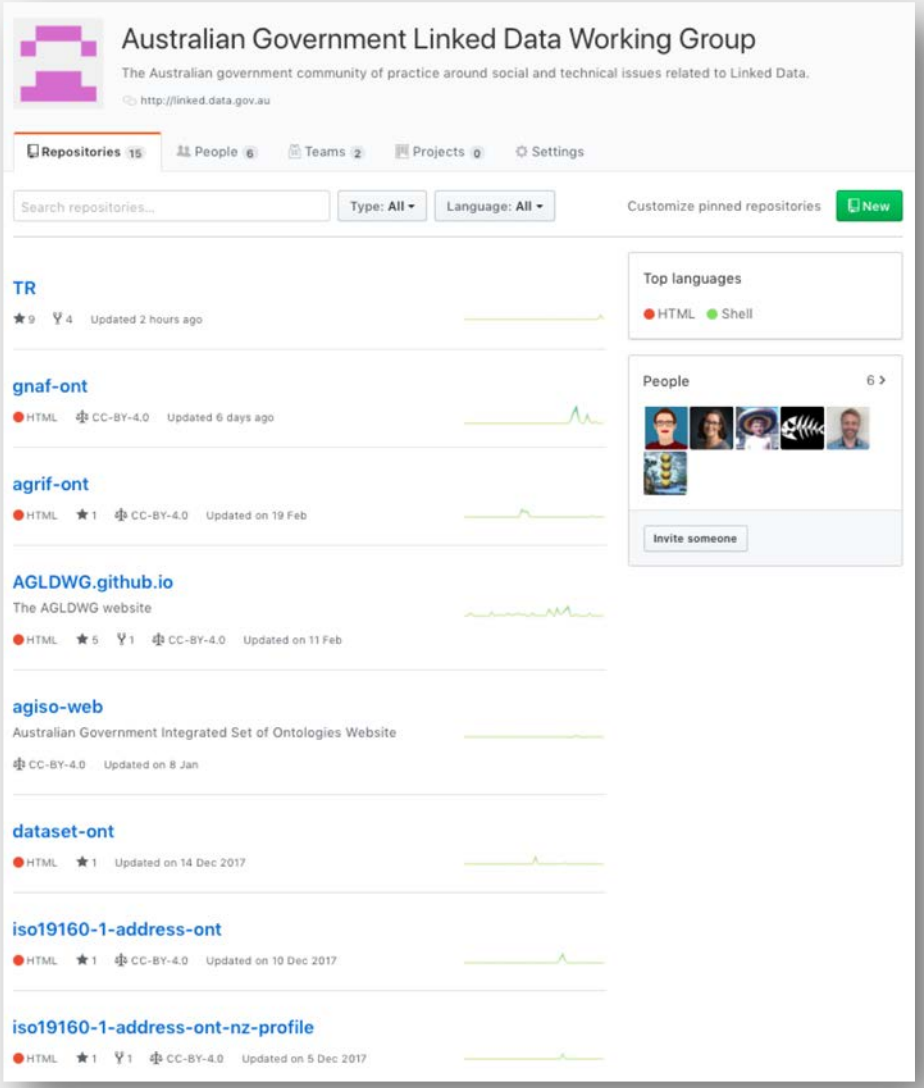
Community of Commonwealth Government experts and champions, with invited non-voting participation of individuals, corporations and other entities.

- 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.

National Archives of Australia
Link Digital web design & marketing
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
NCI National Computational Infrastructure
PSMA Australia
Australian Government Department of Finance
Australian Bureau of Statistics
CSIRO
Australian Government Department of Communications

Web Presence





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

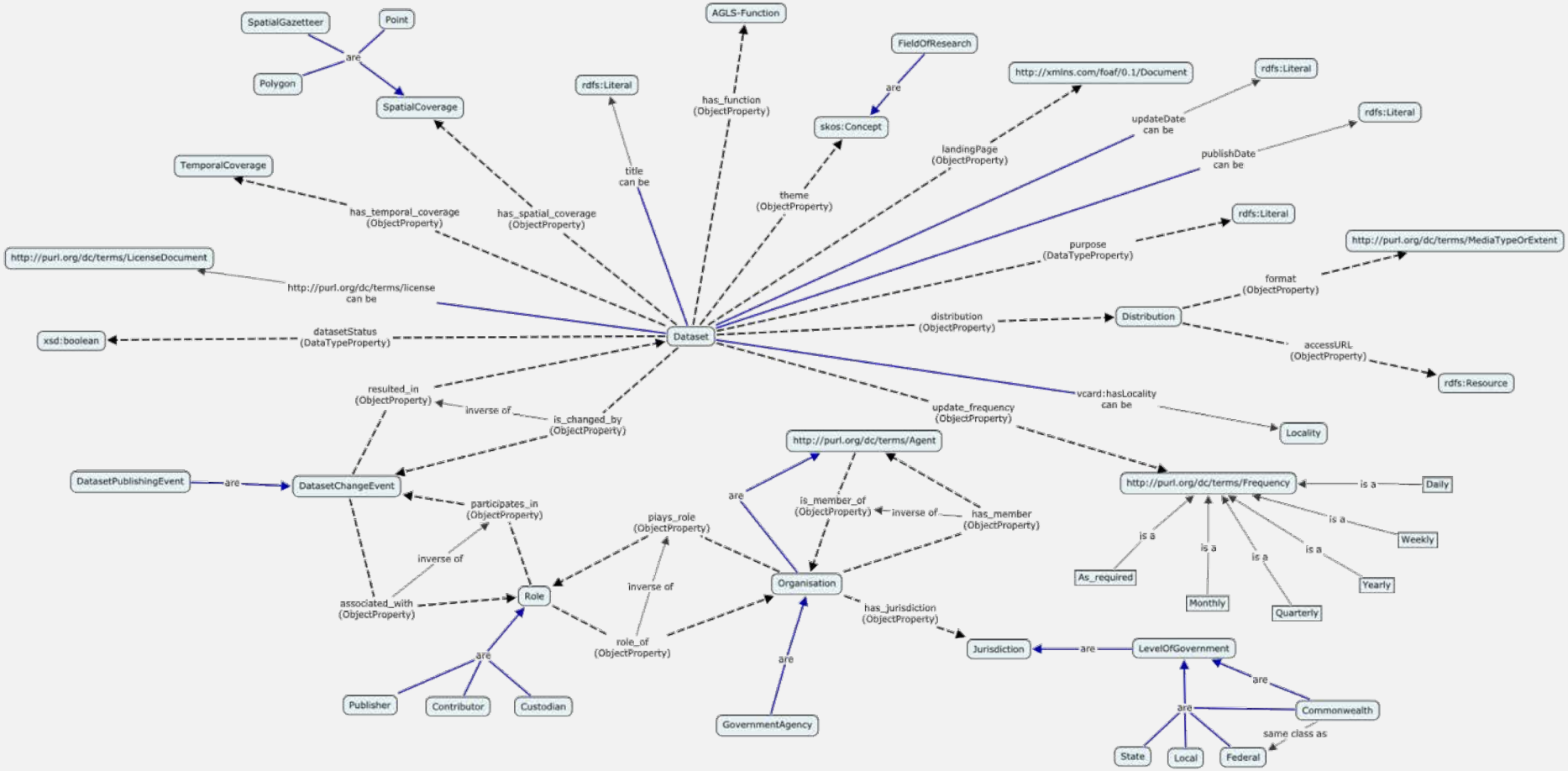
- Currently, there are several ontologies (e.g. Dataset ontology, AGRIF) being developed with a 'whole of government' focus
- AGISO aims to integrate these ontologies allowing them to be used individually or collectively in a seamless way: as if they were one data model
- In making this proposal, the 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

DATASET ONTOLOGY



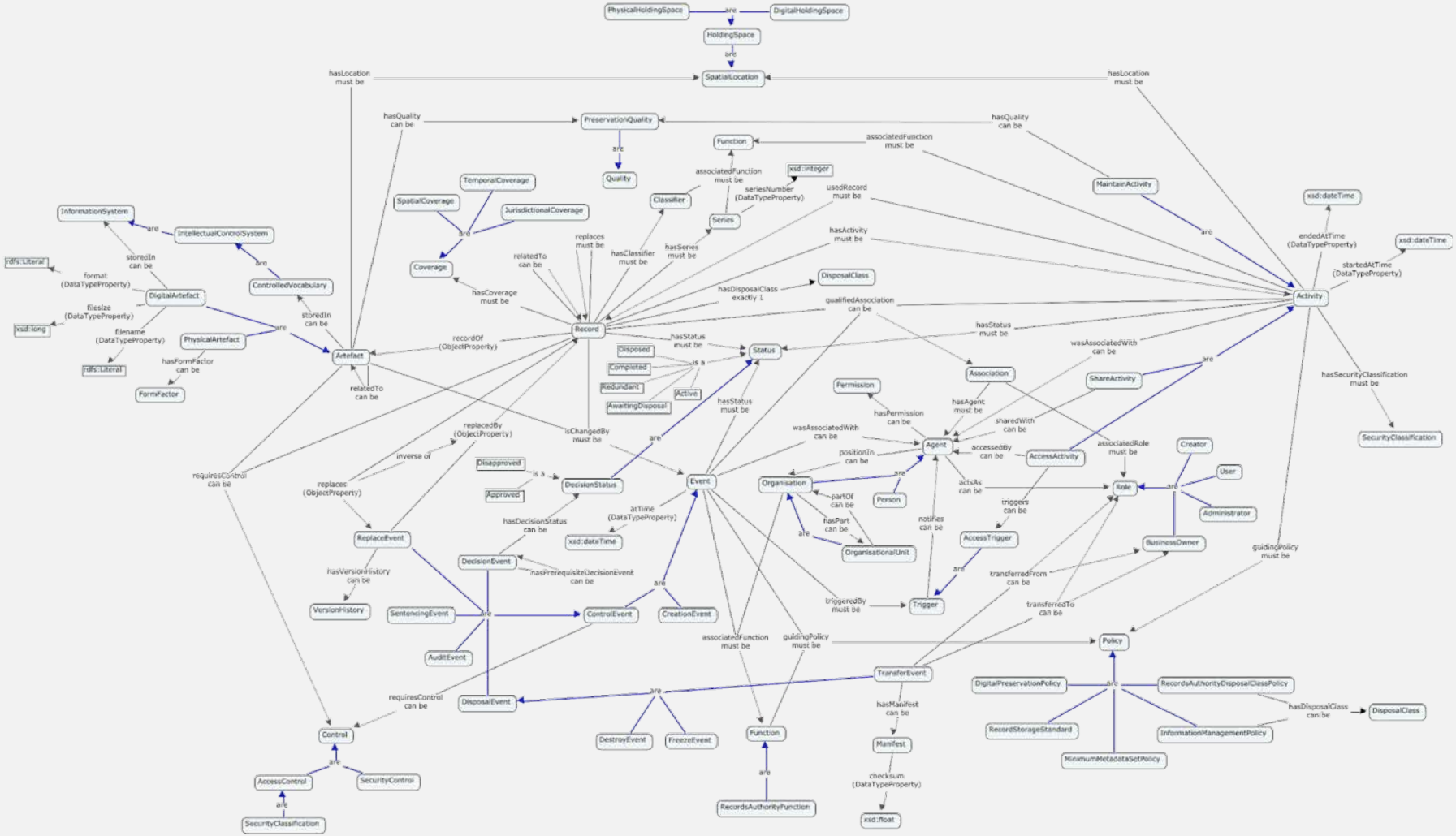
http://reference.data.gov.au/def/ont/dataset

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

Australian Government Records Interoperability Framework (AGRIF)



http://pid.data.gov.au/websrv/reference/def/ont/agrif/

http://w3c.org.au
http://linked.data.gov.au
https://github.com/AGLDWG

QUESTIONS?