



Linked climate research data (and other LD activities at RAL)

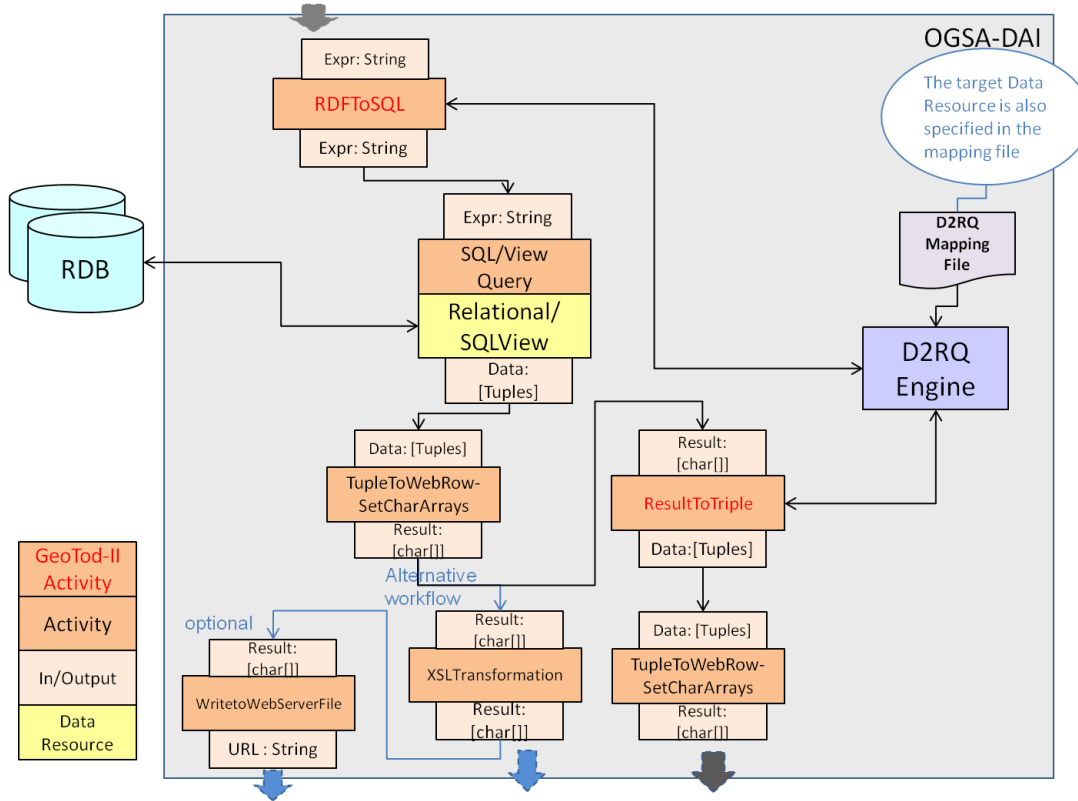
Dr. Andrew Woolf
STFC e-Science Centre
Rutherford Appleton Laboratory

GeoTOD

- *Geospatial Transformation with OGSA-DAI*
- OGSA-DAI
 - Data integration middleware developed over almost a decade of UK e-Science
 - Enables workflows of activities, including transformation, distributed query, views, etc.
- Project aims
 - Incorporate D2RQ within OGSA-DAI activities (RDF2SQL, Result2Triple)
- Also, UML→RDFS generator

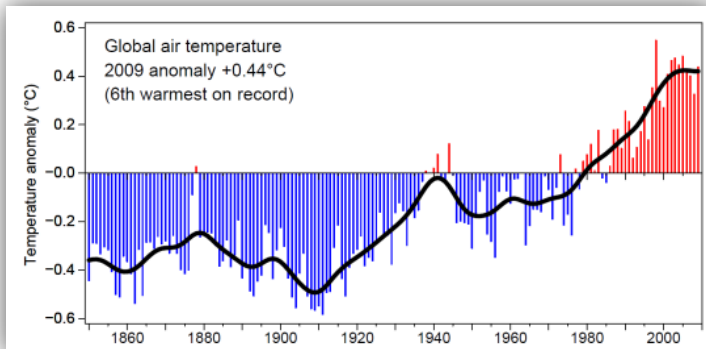


GeoTOD

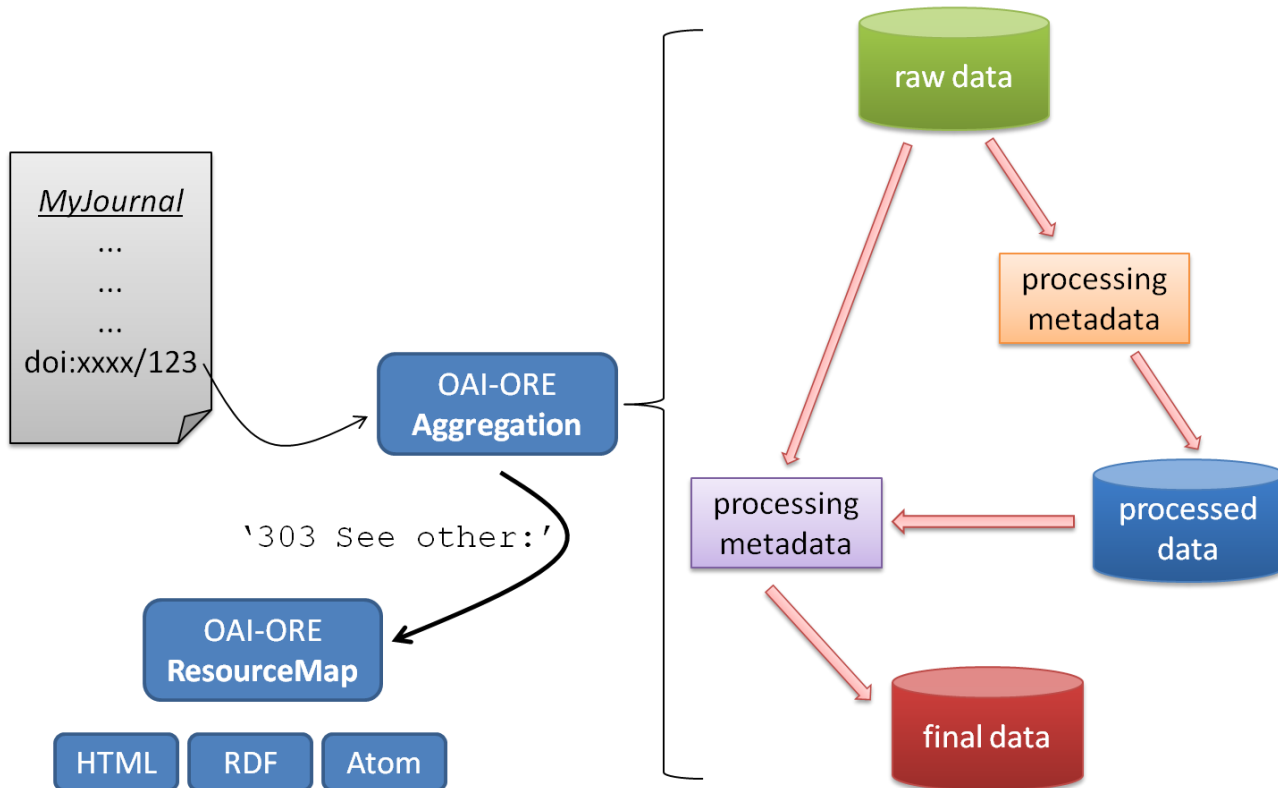


ACRID

- *Advanced Climate Research Infrastructure for Data*
- Collaboration with Climatic Research Unit, University of East Anglia
- Various inquiries following 2009 email hacking recommended greater access to data and workings
- Project aims:
 - Information architecture, tools, infrastructure for managing climate data and processing workflows
 - ‘linked-data’ approach for climate data publishing and citation
 - Prototype using four high-profile climate datasets



ACRID



Location URIs paper

- Our proposed approach:
 - Spatial Thing
 - most sensible for cases where an INSPIRE *thematic identifier* exists
 - {concept} same as INSPIRE {class}
 - Reference data
 - unique INSPIRE reference data mostly unlikely
 - instead, provide *list* of relevant, known, spatial objects
 - Spatial object
 - direct proxy of INSPIRE spatial object
 - alternative representations



Location URIs paper

'Spatial Thing'

<http://ea.gov.uk/id/HY/Watercourse/Thames>



'303 See other:'

'web document'

<http://ea.gov.uk/doc/HY/Watercourse/Thames>

owl:sameAs <http://ea.gov.uk/so/HY/Watercourse/ea-UKrivers/e7w1>

owl:sameAs <http://geotod/so/HY/Watercourse/stfc-strategi/4a97>

owl:sameAs <http://ceh.nerc/so/HY/Watercourse/nerc-hydrodb/thames-001>

'content negotiation'

'Spatial Object'

<http://geotod/so/HY/Watercourse/stfc-strategi/4a97.rdf>

<http://geotod/so/HY/Watercourse/stfc-strategi/4a97.html>

<http://geotod/so/HY/Watercourse/stfc-strategi/4a97.kml>

<http://geotod/so/HY/Watercourse/stfc-strategi/4a97.gml>



Science & Technology
Facilities Council

My dataset



Linked data issues

- Overarching goal:
 - Ensure INSPIRE compliance = linked-data compliance
 - Can't have multiple infrastructures, service stacks, data pipelines
 - INSPIRE takes precedence!
- Implication:
 - effort on geospatial LD may be wasted until INSPIRE ontologies complete!



Linked data issues

- INSPIRE → LD is possible in principle
- How do we develop tools?
 - implementing INSPIRE over CKAN is wrong!
 - implementing LD over INSPIRE is sensible
 - Geonetwork
 - Geoserver



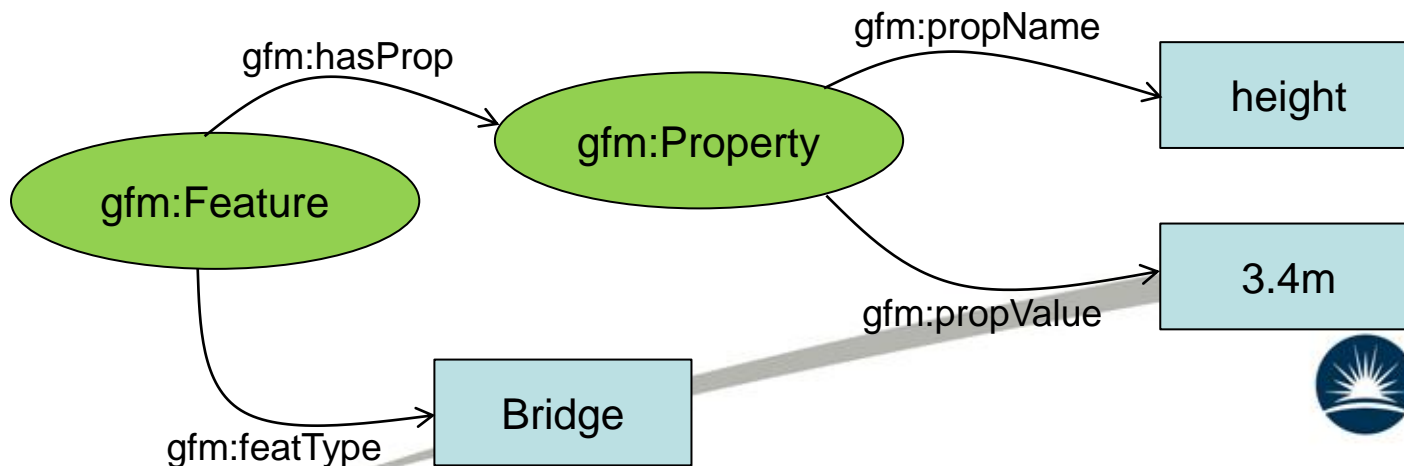
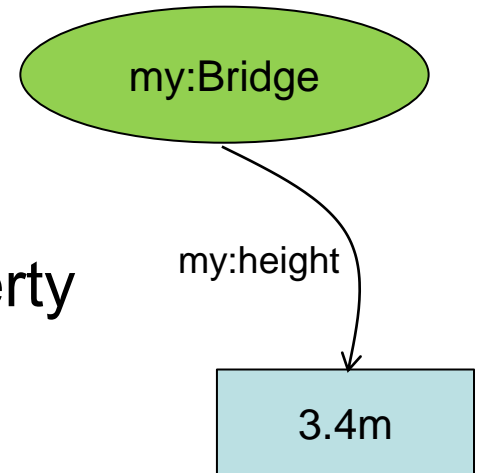
Geometry in RDF

- RDF property range XMLLiteral
 - opaque to RDF consumer
- OWL ontology for geo
 - Cf. GeoSPARQL (General Feature Model + ‘simple features’ + ogc:asGML)
- Direct ‘translation’ of ISO 19107, ISO 19108, ISO 19123 etc.



Mapping GFM to RDF

- Mapping directly?
 - Each GF_FeatureType → rdfs:Class
 - Each GF_AttributeType → rdfs:Property
- Mapping at meta-level?
 - Generic 'Feature' rdfs:Class
 - Generic 'Attribute' rdfs:Property



Projects

- ACRID
 - <http://www.cru.uea.ac.uk/cru/projects/acrid>
 - <http://www.jisc.ac.uk/whatwedo/programmes/mrd.aspx>
- GeoTOD
 - website coming...





Thanks

andrew.woolf@stfc.ac.uk