

Controlled Vocabularies and Linked Data in the Natural Environment Research Council

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**British Oceanographic
Data Centre**

NATURAL ENVIRONMENT RESEARCH COUNCIL



**Centre for
Ecology & Hydrology**

NATURAL ENVIRONMENT RESEARCH COUNCIL

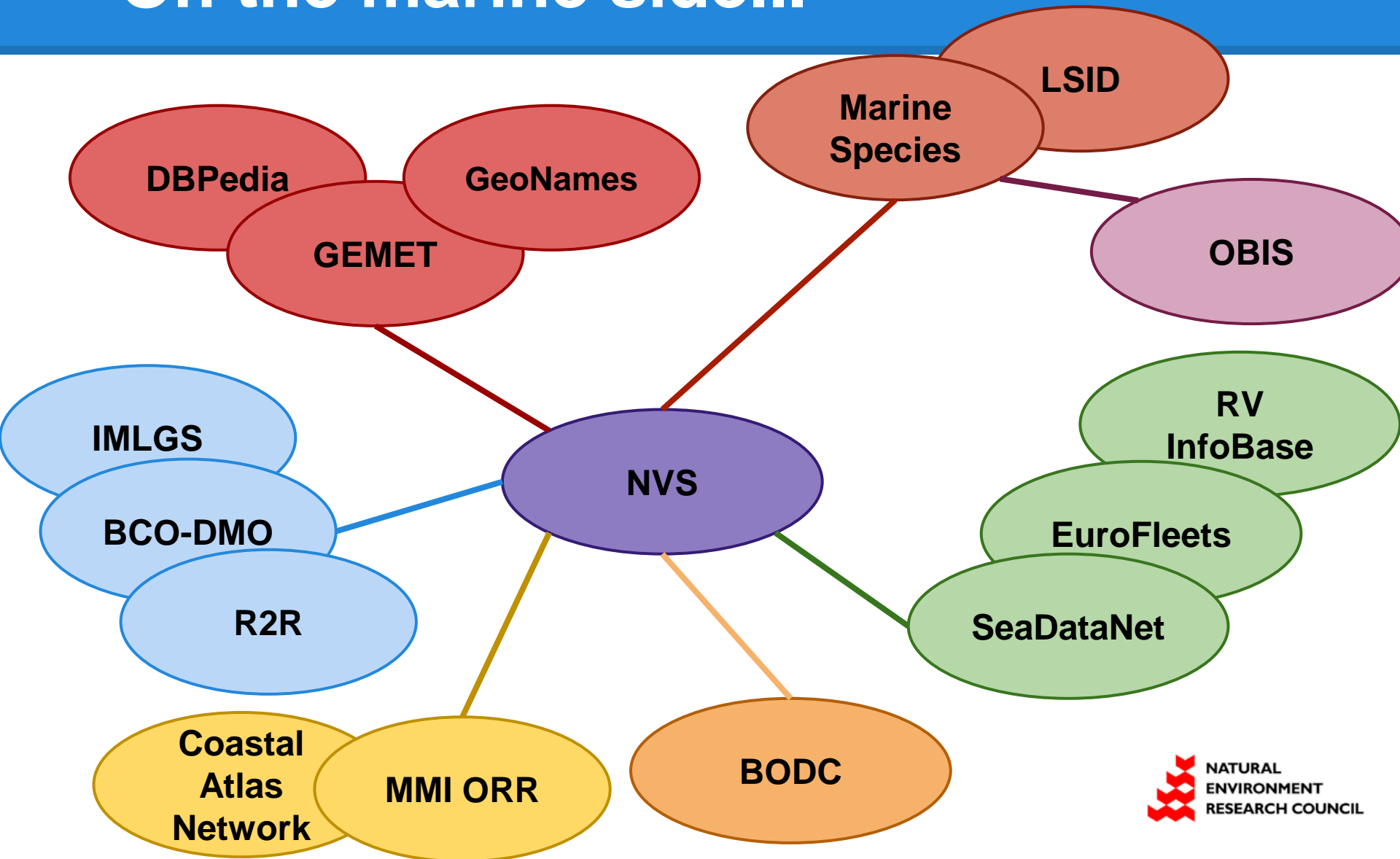


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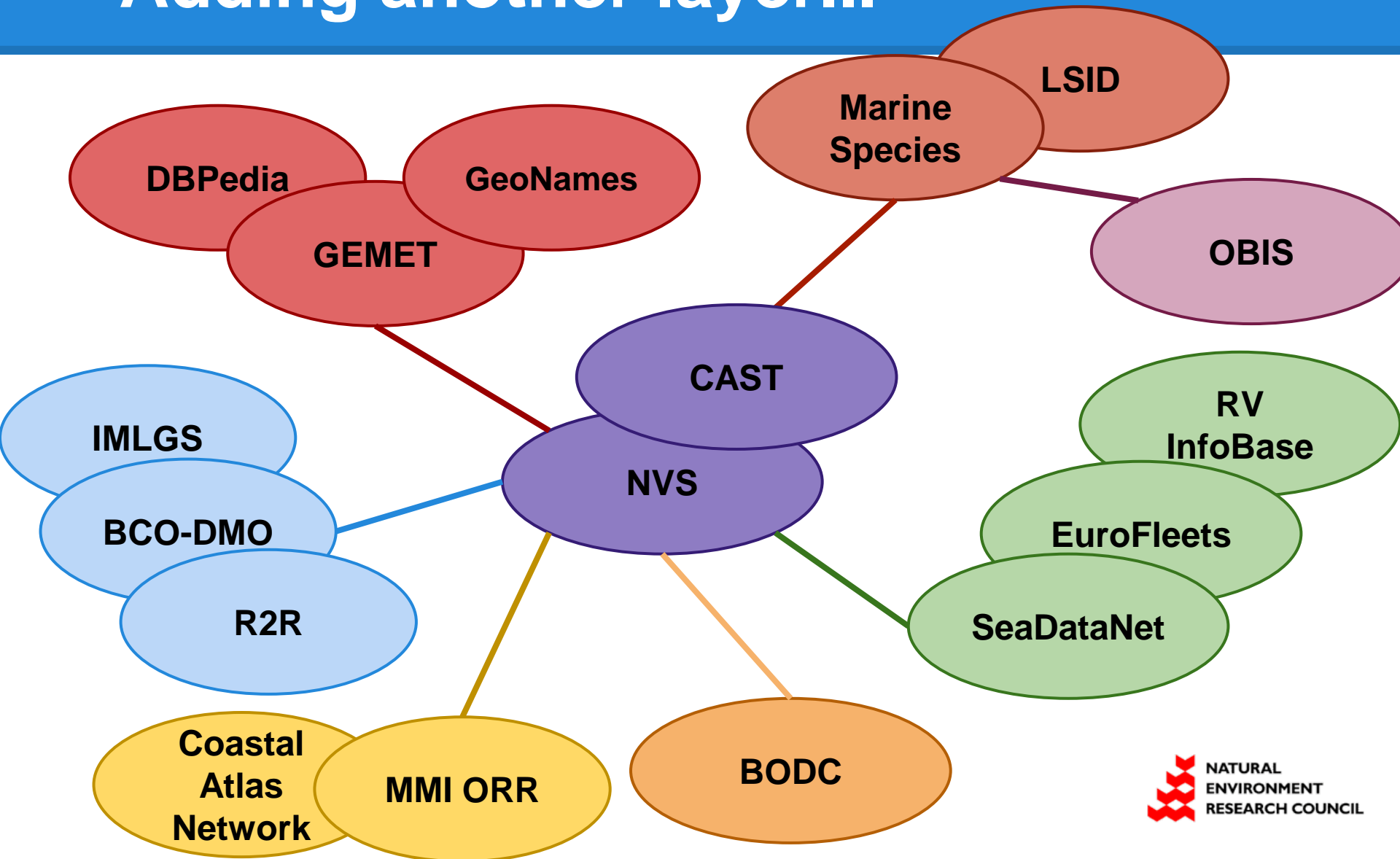
On the marine side...

- Many projects publishing data online
 - In open formats
 - With XML (meta)data representations
- Global
 - Oceanography is expensive
 - Research cruises foster a culture of sharing
- UK
 - British Oceanographic Data Centre, MEDIN
- EU
 - SeaDataNet, EuroFleets
- US
 - Rolling Deck to Repository, BCO-DMO

On the marine side...



Adding another layer...



CAST - CEH Analytical Services Thesaurus

- Developed to annotate CEH chemistry data resources.
Designed to describe whole process.
- Top concepts:
 - determinands
 - machine descriptions
 - measurement units
 - methods
 - filtration
 - preservation
- SKOS formatted and publicly available
 - External links: NVS, DBpedia



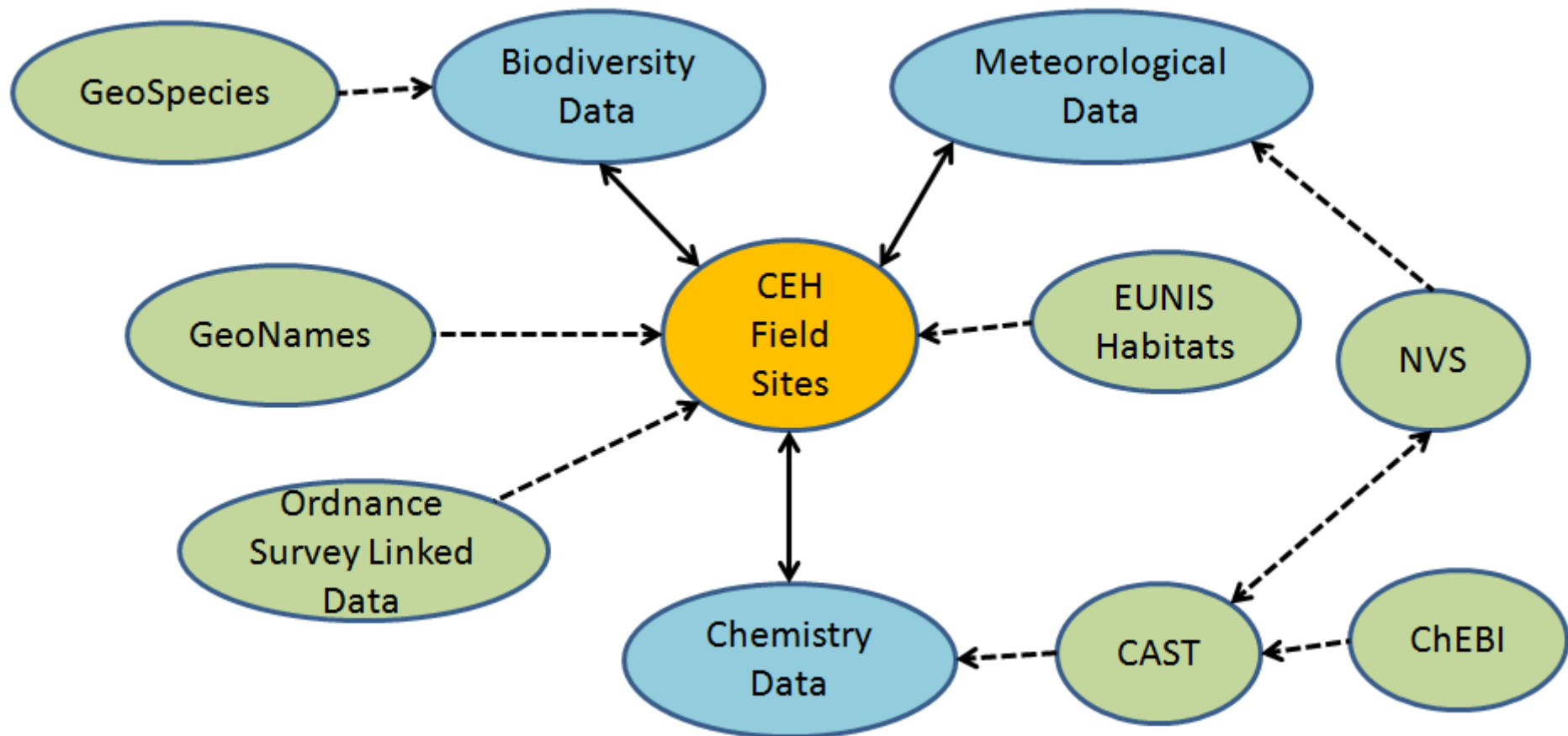
The screenshot shows the website for the BGS & CEH Vocabulary Service. At the top, there are logos for CEH (Centre for Ecology & Hydrology) and BGS (British Geological Survey), both part of the Natural Environment Research Council. The main heading is "BGS & CEH Vocabulary Service". Below this, there is a navigation bar with "HOME" and "ADMINISTRATION" links. A breadcrumb trail reads "YOU ARE HERE: HOME > CAST > CAST (EN)". The main content area features a search box labeled "CAST" with the placeholder text "Search the project". To the right of the search box, it displays "CAST (en)" and "Concept URI" with the URL "http://onto.nerc.ac.uk/CAST/o". There is an "RDF" icon with a right-pointing arrow. Below the search box, a section titled "Top Concepts" lists several terms: "determinands (en)", "measurement units (en)", "machine descriptions (en)", "methods (en)", "filtration (en)", and "preservation (en)". At the bottom right of the page, there is a small logo for "NERC - Centre for Ecology & Hydrology".

Promoting Vocabulary Use

- Many key terrestrial data resources are legacy, long-term monitoring datasets which don't use public, online vocabularies.
- Retrospective tagging is time-consuming and more difficult.
- CAST inserted into Analytical Chemistry LIMS so that datasets produced are fully tagged, automatically.

Result Name	Units	Value	Result URI	Method URI	Unit URI	Instrument URI
Alkalinity	mg/L	0	http://onto.nerc.ac.uk/CAST/8	http://onto.nerc.ac.uk/CAST/165	http://onto.nerc.ac.uk/CAST/158	http://onto.nerc.ac.uk/CAST/123
Cl	mg/L	1.09	http://onto.nerc.ac.uk/CAST/14	http://onto.nerc.ac.uk/CAST/181	http://onto.nerc.ac.uk/CAST/158	http://onto.nerc.ac.uk/CAST/142
NO3-N	mg/L	0.154	http://onto.nerc.ac.uk/CAST/15	http://onto.nerc.ac.uk/CAST/181	http://onto.nerc.ac.uk/CAST/158	http://onto.nerc.ac.uk/CAST/142
SO4-S	mg/L	0.234	http://onto.nerc.ac.uk/CAST/98	http://onto.nerc.ac.uk/CAST/181	http://onto.nerc.ac.uk/CAST/158	http://onto.nerc.ac.uk/CAST/142
Alkalinity	mg/L	2.8	http://onto.nerc.ac.uk/CAST/8	http://onto.nerc.ac.uk/CAST/165	http://onto.nerc.ac.uk/CAST/158	http://onto.nerc.ac.uk/CAST/123
Cl	mg/L	1.19	http://onto.nerc.ac.uk/CAST/14	http://onto.nerc.ac.uk/CAST/181	http://onto.nerc.ac.uk/CAST/158	http://onto.nerc.ac.uk/CAST/142
NO3-N	mg/L	0.013	http://onto.nerc.ac.uk/CAST/15	http://onto.nerc.ac.uk/CAST/181	http://onto.nerc.ac.uk/CAST/158	http://onto.nerc.ac.uk/CAST/142
SO4-S	mg/L	0.218	http://onto.nerc.ac.uk/CAST/98	http://onto.nerc.ac.uk/CAST/181	http://onto.nerc.ac.uk/CAST/158	http://onto.nerc.ac.uk/CAST/142
Alkalinity	mg/L	-1.5	http://onto.nerc.ac.uk/CAST/8	http://onto.nerc.ac.uk/CAST/165	http://onto.nerc.ac.uk/CAST/158	http://onto.nerc.ac.uk/CAST/123
Cl	mg/L	0.026	http://onto.nerc.ac.uk/CAST/14	http://onto.nerc.ac.uk/CAST/181	http://onto.nerc.ac.uk/CAST/158	http://onto.nerc.ac.uk/CAST/142

Planned Linked Data - Linked on terrestrial location



Resources

NERC Vocabulary Server

<http://vocab.nerc.ac.uk>

CEH Analytical Services Thesaurus

<http://onto.nerc.ac.uk/CAST>

International Coastal Atlas Network

<http://icoastatlas.net>

Example SPARQL Queries

<http://adamml.github.io/nvs-sparql/>

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