netCDF-LD: Enabling Linked Data for netCDF

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netCDF-LD is an approach for constructing Linked Data descriptions using the metadata and structures found in netCDF files. netCDF-LD enhances netCDF metadata, enabling information found in netCDF files to be linked with published conventions and controlled vocabularies used to express the content such as CF and ACDD. We are currently working on an OGC encoding standard for encoding linked data semantics into netCDF files and interpreting netCDF Classic files as RDF graphs.

<table>
<thead>
<tr>
<th>Linked Data</th>
<th>netCDF-LD</th>
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<tbody>
<tr>
<td>Commonly used format. Lots of uptake and tools.</td>
<td>Linked Data is a set of World Wide Web Consortium (W3C) best practices to allow structured data to be published so that it can be interlinked on the web and support semantic queries. Resource Description Framework (RDF) is used to express the information and relationships.</td>
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<tr>
<td>Many conventions. Lots of data in netCDF!</td>
<td>Recipe for constructing Linked Data from netCDF files (via aliasing and prefixing). Opportunity to define conventions and validate them. Enhance the usefulness of netCDF data by enabling linking to other resources.</td>
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Want to Contribute?
You can:
- Suggest improvements
- Explore adoption
- Provide feedback on the specification
- Join the working group

Contact: Jonathan Yu (CSIRO), jonathan.yu@csiro.au
Links:
- [https://github.com/opengeospatial/netCDF-Classic-LD](https://github.com/opengeospatial/netCDF-Classic-LD)
- [http://tinyurl.com/netcdf-ld](http://tinyurl.com/netcdf-ld)

Example tools

$ python nc2rdf.py example.cdl

netCDF-HDF file (reads metadata)

CDL or netCDF/HDF file

RDF

Other data

Load into triple store DB for semantic queries

Knowledge graph generated from 5 netCDF files

SDN_ParameterDiscoveryCode

BactTaxaAbundSed

sea_surface_elevation

air_temperature

sea_surface_height_above_sea_level

feature__ocean

medium_id

scaledQuantityKind_id

substanceOrTaxon_id