

Metadata and ncISO services



1. Why metadata is important
2. THREDDS and metadata
3. NcISO services
4. Data discovery systems
5. The brokering approach

1.1 What's metadata



Yeah, is that boring thing about data...

1.2 What's metadata



Contact
information



Access
information



Spatial
coverage



Time
coverage



Access
protocols



More...

1.3 We are data providers...

Catalog http://localhost:8081/thredds/metadata_catalog.html

Dataset: photo

- *Data type:* IMAGE
- *ID:* photoSharing

Access:

1. **HTTPServer:** [/thredds/fileServer/testStandardTds/images/22.jpg](http://localhost:8081/thredds/fileServer/testStandardTds/images/22.jpg)

Viewers:

- [NetCDF-Java ToolsUI \(webstart\)](#)

Catalog http://localhost:8081/thredds/metadata_catalog.html

Dataset: photo

- *Data format:* image/jpeg
- *Data size:* 29.0 Kbytes
- *Data type:* IMAGE
- *ID:* photoSharing

Documentation:

- **summary:** This is my staff picture taken few weeks after I started to work at UNIDATA
- **rights:** This image is distributed under creative commons license

Access:

1. **HTTPServer:** [/thredds/fileServer/testStandardTds/images/22.jpg](http://localhost:8081/thredds/fileServer/testStandardTds/images/22.jpg)

Contributors:

- Marcos Hermida (**Software Engineer**)

Keywords:

- staff pictures

Projects:

- UNIDATA Training Workshop 2012

Creators:

- **Marcos Hermida**
 - *email:* mhermida@unidata.ucar.edu
 - *http:* <http://www.unidata.ucar.edu>

Properties:

- category = "staff pictures"

Viewers:

- [NetCDF-Java ToolsUI \(webstart\)](#)

1.3 Enables data discovery



- **BETTER INTEROPERABILITY**
- **IMPROVES DATA EXCHANGE**

2.1 Default THREDDS metadata

- Access, spatial and time coverage....
- Unidata Data Discovery Conventions (UDDC)
- Get metadata from files (CF-conventions...)

2.2 Adding metadata to catalogs

- Metadata tags:
 - Documentation
 - metadata
 - property
 - ...
- Inheritance: `inherited="true"`

2.3 Minimal set of metadata?

- Depends on your needs

- UDDC recommendations:

<http://www.unidata.ucar.edu/software/netcdf-java/formats/DataDiscoveryAttConvention.html>

3.1 Why NcISO?

Translate TDS metadata into standard formats:

- ISO-19115**: Geographic information
- ISO-19115-2**: imagery and gridded data
- ISO-19119**: Geographic information services

3.2 What is NcISO?

- Developed by NGDC (National Geophysical Data Center)
- Not just translate into ISO:
 - NcML information of our datasets: ncml service
 - Assesses our metadata: UDDC service
 - ISO documents: ISO service

3.3 Enabling ncISO

- ThreddsConfig.xml:

```
<NCISO>  
  <ncmlAllow>true</ncmlAllow>  
  <uddcAllow>true</uddcAllow>  
  <isoAllow>true</isoAllow>  
</NCISO>
```

- ncISO for datasets in your catalogs:

```
<service name="ncml" serviceType="NCML" base="/thredds/ncml/" />  
<service name="uddc" serviceType="UDDC" base="/thredds/uddc/" />  
<service name="iso" serviceType="ISO" base="/thredds/iso/" />
```

3.4 ncISO demo (metadata tour)

-NOAA NCDC NOMADS:

* <http://nomads.ncdc.noaa.gov/thredds/catalog.html>

-NOAA Pacific Fisheries Environmental LabL:

* <http://oceanwatch.pfeg.noaa.gov/thredds/catalog.html>

-USGS Woods Hole Science Center:

* <http://coast-enviro.er.usgs.gov/thredds/catalog.html>

-UNIDATA IDD Real-time Archive:

* <http://motherlode.ucar.edu:8080/thredds/catalog.html>

3.5 nclSO exercise

1. Enable nclSO
2. Check your UDDC score
3. Add metadata and improve the UDDC score

4.1 GI-Cat, Geoportal

- Harvest metadata from thredds catalogs
- Enabling searches on TDS (brokers)
- Running instances:
 - EuroGeoss Broker:
<http://www.eurogeoss-broker.eu/>
 - ESIP Discovery Cluster :
<http://23.23.211.222:8080/geoportal/>

4.2 Issues harvesting metadata

- Tds instances don't provide too much metadata
- Crawl at dataset level. Don't harvest metadata at collection level.
- Provide access to datasets rather than to actual data

4.3 GI-Cat & Geoportal demo

Running instances:

- * EURO GEOSS (GI-Cat):

<http://www.eurogeoss-broker.eu/>

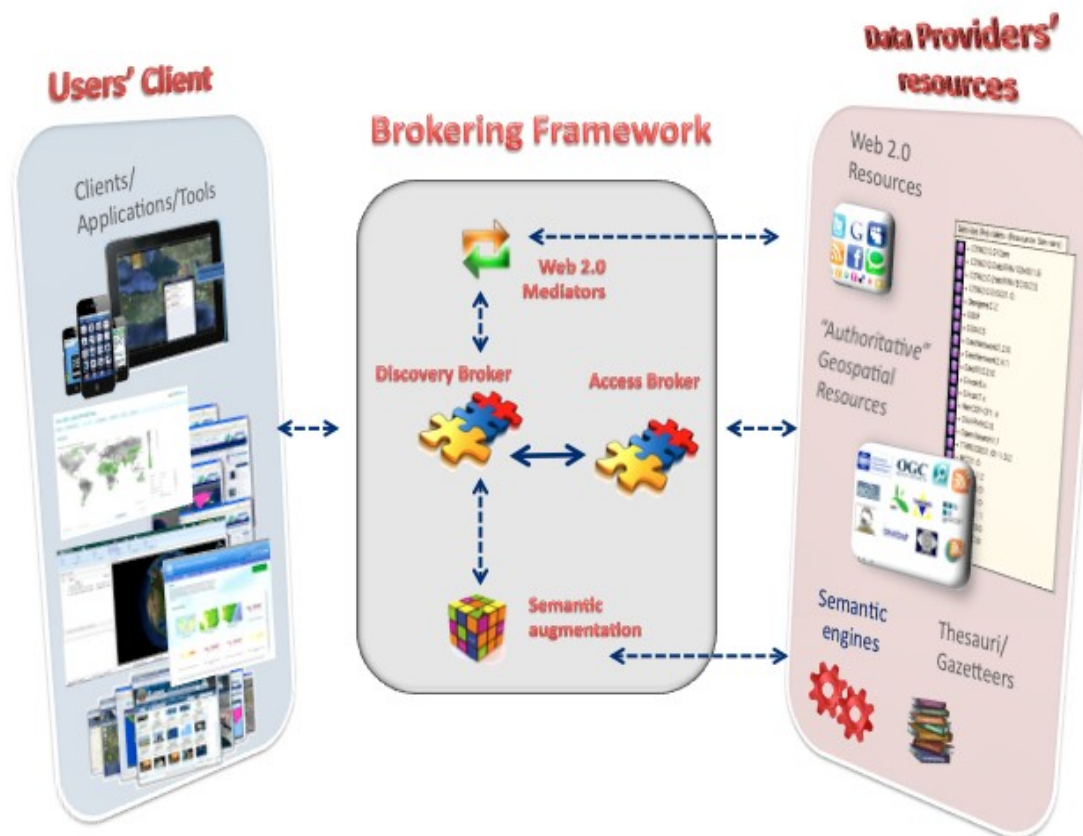
- * NGDC geoportal:

<http://www.ngdc.noaa.gov/geoportal/catalog/main/home.page>

- * ESIP Discovery Cluster:

<http://23.23.211.222:8080/geoportal/catalog/main/home.page>

5.1 Broker architecture



Sample Brokering Framework (from Earthcube Brokering Manifesto)

5.2 Examples

- * CSW catalog
- * OpenSearch