

Data Services

netCDF, CF, OPeNDAP

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netCDF usage at time of UWG meeting last year

- All RSS DISCOVER MEaSURES products converted to netCDF during ingest
- Some airborne field campaign datasets delivered by PIs in netCDF
- Some field campaign ancillary datasets were converted to netCDF on ingest for easy display as map layers in field campaign portals

netCDF files offered in FY14 = 331,501

netCDF files offered in FY15 = 443,682

- Increase of 112,181 (33%)

Changes in netCDF usage

- Hurricane and Severe Storm Sentinel (HS3) data products
 - Working with the HS3 science team to ensure conformance with netCDF/CF data and metadata standard
 - Using NOAA NODC templates and guidelines as a resource
 - Most data already provided in netCDF
- Format translation to expand netCDF offerings
 - AMSU datasets generated in netCDF as well as original HDF-EOS
 - Preparing for LIS/OTD Climatology translations
 - Additional HS3 data undergoing conversion now
 - MSU/AMSU Temperature datasets translated from ASCII
- Investigating tools to augment and or translate HDF-EOS5 files
 - Investigating [HDF-EOS5 Augmentation Tool](#), which allows native HDF-EOS5 files to be accessible via netCDF mechanisms
 - Exploring additional HDF-EOS5 translation methods

CF-Compliance

- All HS3 & DISCOVER MEaSUREs netCDF files are CF compliant
- Goal of CF compliance for any new netCDF datasets
- Format-shifted files will also be CF compliant
 - LANCE AMSR2
 - MSU
 - LIS/OTD climatologies
- Referred to [NOAA's NODC NetCDF Templates v1.1](#)
 - Future work pending: develop in-house netCDF templates
- Multiple CF-Compliance tools available
 - <http://redmine.iek.fz-juelich.de/projects/cfchecker>
 - <http://puma.nerc.ac.uk/cgi-bin/cf-checker.pl>

Ensuring CF compliance

Example of updates during HS3 translation

- variables updated to have CF compliant attribute (attribute value altered)
- variables updated to include standard attributes necessary for CF compliance

HAMSR data

Original metadata:

```
double time(along_track=18158);  
    :units = "seconds";  
    :comment = "seconds since 2000-01-01 00:00:00.0";  
    :scale_factor = 1.0; // double  
    :long_name = "Measurement time";
```

Update metadata:

```
double time(along_track=18158);  
    :units = "seconds since 2000-01-01 00:00:00.0";  
    :comment = "seconds since 2000-01-01 00:00:00.0";  
    :scale_factor = 1.0; // double  
    :long_name = "Measurement time";  
    :standard_name = "time";
```

OPeNDAP efforts

- Per UWG feedback, increased data offerings via OPeNDAP to include entire public catalog
 - <https://ghrc.nsstc.nasa.gov/opendap/>

Metadata improvements currently underway

MetaData Summary:

Documentation:

summary: The product is a 0.5 deg x 0.5 deg gridded composite of total viewing times). Best-available detection efficiency corrections and instrument

processing_level: 3

Linked Document: [Data Access](#)

Linked Document: [Browse](#)

Linked Document: [Dataset Guide Document](#)

Linked Document: [PI Documentation](#)

Linked Document: [Algorithm Information](#)

Linked Document: [Software](#)

Linked Document: [Software](#)

Linked Document: [Homepage](#)

Linked Document: [DOI \(Collection level\)](#)

Linked Document: [DOI](#)

Linked Document: [Citation instructions](#)

Date:

2001-08-24 (*published*)

2015-01-28T17:00:10 (*modified*)

Time Coverage:

start: 1995-05-04

end: 2013-12-31

Annual

Geospatial Coverage:

Geospatial Coverage Instance

north-south:

start: -90

size: 180

resolution: 0.5

units: degrees_north

east-west:

start: -180.00

size: 360

resolution: 0.5

units: degrees_east

Properties:

Collections = Lightning Products, Lightning from Satellites

Platforms = MICROLAB-1, TRMM

Instruments = LIS, OTD

keyword = ATMOSPHERIC ELECTRICITY

Questions

1. With regard to limited translation of older datasets into netCDF do any particular GHRC holdings spring to mind as priorities for future translation?
2. How do you want to explore our data before you download?
 - Interactive visualization - what visualization tools do you use?
 - Exploratory analytics - what kinds of analysis capabilities would you like?
3. Do you commonly use a client application such as Ferret, IDV, Panoply, or others?
 - Which application(s) do you use most often?
4. How do you access our data?
 - Download to your machine
 - Through an analysis or visualization tool
 - Using your own program like IDL or Python
5. We are developing a python API for interacting with OPeNDAP, which you will hear about in session 5D. Are there any new features you would like to see in an OPeNDAP API?
6. Any other comments, concerns, questions?