



GSICS Web Meeting

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Agenda

- EUMETSAT Bias Plotting Application
- NetCDF template for the GEO-LEO-IR products
- THREDDS configuration for local data subcategories
- Datacasting web feed protocol as a notification service



EUMETSAT Bias Plotting Application

Tb/Rad Conversion Formulas

All netCDF files must have these:

```
planck_function_constant_c1: 1.19104E-5  
planck_function_constant_c1_unit: mW(cm^-1)^-4 m^-2 sr^-1  
planck_function_constant_c2: 1.43877  
planck_function_constant_c2_unit: K cm  
brightness_to_radiance_conversion_formula: radiance=(c1 * wnc^3) / ((EXP(c2 * wnc/(alpha*tb  
+ beta))) - 1)  
radiance_to_brightness_conversion_formula: teff = ((c2 * center_freq)/alog(1. + (c1 *  
center_freq^3)/radiance)
```

Some netCDF files may also have this:

```
radiance_to_brightness_conversion_formula_alternative: tb = a1 + a2*teff + a3*teff^2
```



NetCDF Template for the GEO-LEO-IR Products

GEO-LEO-IR netCDF Template

- Template = Minimal common content; GPRCs can add additional content
- Available on the netCDF convention's wiki page
- Noteworthy new features:
 - Official text for the *license* global attribute
 - Global attributes and variables to support the bias plotting app
 - Four global attributes for defining rectangular geospatial region of product's applicability
 - *local_data_subcategory* global attribute

The *id* Global Attribute

- It's convention says: “*The combination of the **naming authority** and the **id** should be a globally unique identifier for the dataset*”
- There are software to produce truly global unique identifiers
- Traditionally, dataset identifier = dataset's file name
- My proposal is to use file name as the value of the *id* attribute, remove the *filename* attribute from the template



THREDDS Configuration

Representing Local Data Subcategories

- Option #1:
 - GSICS Product
 - Product Type (NRTC or RAC)
 - **Algorithm Type (GEO-LEO-IR)**
 - Monitored/Reference Instruments
 - Maturity Level (Demo/Pre-Op/Op)
- Option #2:
 - GSICS Product
 - Product Type (NRTC or RAC)
 - Monitored/Reference Instruments
 - Maturity Level (Demo/Pre-Op/Op)
 - **Algorithm Type (GEO-LEO-IR)**

Representing Local Data Subcategories

- Option #1 follows the logic of the file naming scheme
- Option #2 follows the logic of the THREDDS configuration files
- Option #1 allows for different monitored/reference instrument pairs per algorithm type
- Option #2 keeps the number of user clicks needed to reach file listing pages unchanged
- My proposal: Adopt Option #2
- For the server directory structure – no changes

Dataset Pages

- These are THREDDS pages reached by clicking on file links
- They display information about each dataset (i.e. file)
- Must-have content:
 - Data format, data size, naming authority, and ID
 - Summary text (copy the *summary* global attribute)
 - Rights text (copy the *license* global attribute)
 - Access links: OPeNDAP, HTTPServer, NCML, ISO, and UDDC
 - Keywords
- Nice to have content:
 - Creator and publisher information
 - Viewers (pretty print dataset content and bias plotting app)



Datacasting as a Notification Service

What is Datacasting?

- Created at NASA JPL: <http://datacasting.jpl.nasa.gov>
- Based on the Really Simple Syndication protocol version 2.0
- Allows embedding relevant ancillary information about Earth science data along with the normal RSS content
- RSS feed protocol is widely supported by web-based and desktop software
- Users who follow the feed can then filter and download only the files of interest to them



Benefits of Datacasting to GSICS

- Reach out to those users who are not technically skilled to utilize OPeNDAP but are interested in new data as soon as it is available
- An alternative to distributing NRTC products embedded in operational data
- Make mirroring of product files between GSICS THREDDS servers easier

Implementation Overview

- Create one Datacasting feed for each THREDDS server
- Each file's feed links: catalog XML and HTTPServer service
- Data-specific ancillary information to include in the feed:
 - Data category, international and local subcategory
 - Monitored platform and instrument
 - Reference platform and instrument
 - Data's validity period
 - Geospatial region of data's applicability
- Update the feed immediately after adding each new file to the THREDDS server



Datacasting in Thunderbird

The screenshot shows the Mozilla Thunderbird interface. The left sidebar displays the 'NOAA' account structure, including folders like 'Inbox (6)', 'Drafts', 'Sent Mail', and various data folders. The main pane shows a list of emails from 'nesdis.star.gprc@noaa.gov' with subjects starting with 'W_US-NESDIS-STAR,SATCAL+NRTC,GOES13+Imager-M...'. The selected email content is as follows:

From: nesdis.star.gprc@noaa.gov
Subject: **W_US-NESDIS-STAR,SATCAL+RAC+GEOLEOIR,GOES13+Imager-MetopA+IASI_C_KNES_20100414120000_demo_03.nc**
Website: http://gsics.nesdis.noaa.gov:8080/thredds/catalog/rac-goes13-imager-metopa-iasi-demo/catalog.html?dataset=rac-goes13-imager-metopa-iasi-demo/W_US-NESDIS-STAR%2CSATCAL%2BRAC%2BGEOLEOIR%2CGOES13%2BImager-MetopA%2BIASI_C_KNES_20100414120000_demo_03.nc
GOES-13 Imager Infrared Re-analysis Inter-Calibration Correction Coefficients using Metop-A IASI as Reference.
Data start time: 2010-04-14T12:00:00. Data end time: 2011-10-15T12:00:00.