



Working Group on Information Systems and Services-47

Services Metadata Use Cases

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Earth and Observation System Data and Information System (EOSDIS)



Problem Statement

- Is it a Service or a Tool?
 - Many different types of tools/services
 - Much confusion and disagreement over what constitutes a tool or a service
- How can the Service or Tool be used?
 - Many different ways to utilize and interface with various tools and services
- How should Metadata representations be structured?
 - EOSDIS had a single Services Metadata model that was growing too complex
 - Needed to be restructured, but how?

Possible Solution

- Break out Metadata models for each distinct use case
 - Never mind what it is (Tool or Service), how do you plan to use it?
 - Back-end automation?
 - Transferal of content and context?
 - Offline reference?
 - Pros:
 - Allows for an Agile approach:
 - Metadata use case models can be expanded and prioritized as needed
 - Adding or modifying use cases will have limited disruption to metadata models
 - Distinct metadata models for distinct use cases reduces ambiguity and complexity
 - Cons:
 - More to integrate and maintain
 - Potential for repetitious model entries:
 - A single Tool or Service could potentially have entries in several use-case metadata models
 - Workaround: Related metadata model use case entries must be linked together

Some Key Use Cases being developed:

End-to-End Services (E2E)

- Enables a data transformation service to be applied to data sets behind-the-scenes:
 - User finds and selects a data set
 - User selects the desired service option
 - e.g. subset by [variable]
 - Metadata linking dataset and applicable services calls the selected service to perform upon the selected dataset
 - Done on the backend, transparent to user
 - Enabled via HTTPS API endpoint, like OPeNDAP or EGI
 - e.g. OGC Web Map Service
 - User receives transformed data set



End-to-End Services (E2E):

AMSR-E/Aqua

Sort by: **Relevance** Only include collections with granules Include non-EOSDIS collections

Tip: Add + collections to your project to compare and download them

AMSR-E/Aqua Daily L3 12.5 km Tb, Sea Ice Concentration and Snow Depth

AMSR-E/Aqua Daily L3 25 km Tb and Sea Ice Concentration Polar Grids

AMSR-E/Aqua Daily L3 6.25 km 89 GHz Brightness Temperature Polar Grids

AMSR-E/Aqua L2A Global Swath Spatially-Resampled Brightness Temperature

Supports custom service options to be performed. (e.g. subsetting, etc.)

Customizable Collection in Earthdata Search

AMSR-E/Aqua

Back to Collections

AMSR-E/Aqua Daily L3 6.25 km 89 GHz Brightness Temperature (Tb) Polar Grids V002

6730 Granules

Sort by: **Start Date, Newest first** Granule Search: Search Single or Multiple Granule IDs... **Granule filters**

| START | END | START | END | START | END | START | END |
|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| 2011-10-03 00:23:11 | 2011-10-03 21:49:11 | 2011-10-03 00:23:11 | 2011-10-03 21:49:11 | 2011-10-02 00:29:33 | 2011-10-03 00:23:41 | 2011-10-02 00:29:33 | 2011-10-03 00:23:41 |
| 2011-10-01 00:35:36 | 2011-10-02 00:30:03 | 2011-10-01 00:35:36 | 2011-10-02 00:30:03 | 2011-09-30 00:41:44 | 2011-10-01 00:36:06 | 2011-09-30 00:41:44 | 2011-10-01 00:36:06 |

AMSR_E_L3_Sealce6km_V13_20111001.hdf

AMSR_E_L3_Sealce6km_V14_20111001.hdf

AMSR_E_L3_Sealce6km_V13_20110930.hdf

AMSR_E_L3_Sealce6km_V14_20110930.hdf

MONTH: Oct, Nov, Dec, Jan 2011, Feb, Mar, Apr, May, Jun, Jul

Configure & Download Granule

1 AMSR-E/Aqua Daily L3 6.25 km 89 GHz Brightness Temperature (Tb) Polar Grids V002

Review & Select Service Options

Review

1 Granule

44.3 Megabytes

Granule List

Quality Information

AMSR-E Quality Assessment

QA Summaries

Quality Assessment summaries are produced for each AMSR-E standard product file. For information on the QA summaries, please refer to the MSFC AMSR-E Quality Assessment Web site: <http://www.srboc.mscf.nasa.gov/AMSR-E/qa/>

Quality flags

The quality flags found in individual products are detailed in each product's guide document. Please refer to the NSDC AMSR-E/Aqua Data Summaries Web site: http://eosdis.crda.nasa.gov/data_summaries.html for access to product documentation.

Version information

AMSR-E product versions are designated by a Product Maturity code indicating the level of validation and algorithm refinement. Validated products are also assigned an associated Validation Stage. For information on the Product Maturity codes as well as changes included in algorithm versions, please refer to the NSDC AMSR-E/Aqua Data Versions Web site: http://eosdis.crda.nasa.gov/data_versions.html

Select Data Access Method

Stage for Delivery: Standard Product Customized Product

Email Address: valent.dion@nasa.gov

Reformat Output (Optional)

Output File Format: GeoTIFF

Spatial Subsetting (Optional)

Projection Options

Re-projection Options: No Change

Advanced Settings (Optional)

Resample Dimension: No Resampling

Band Subsetting (Optional)

Choose Bands: 12 of 12 bands selected

2 Add access method Access these granules again with different options

2 Contact Information & Submit

E2E Customization Options

Some Key Use Cases being developed :

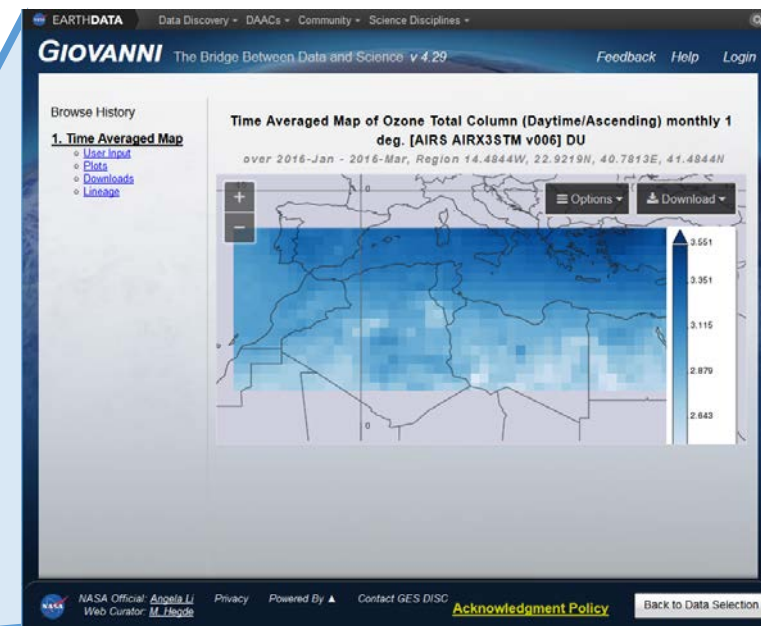
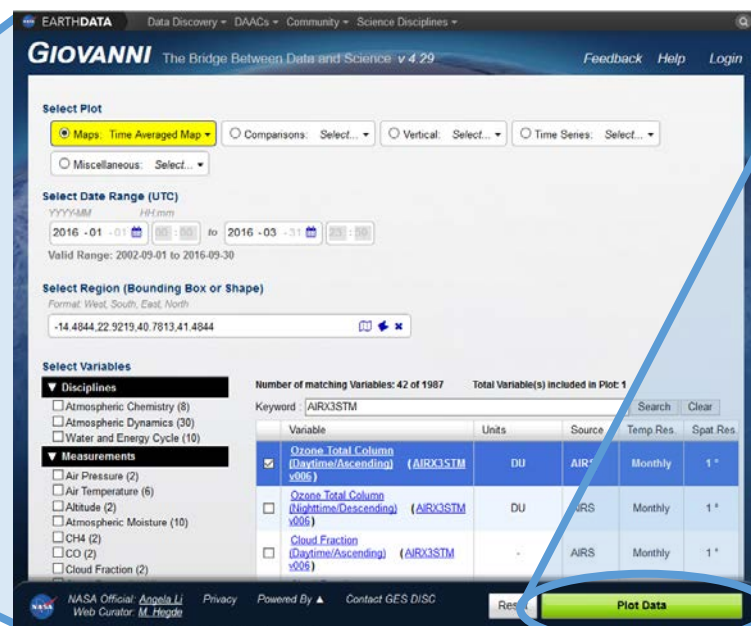
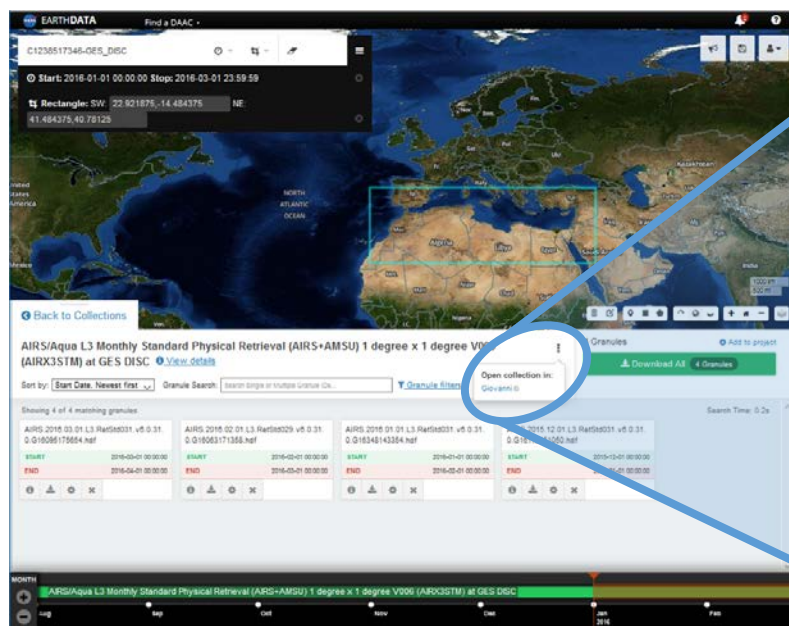
Smart Handoffs

- Enables transferal of search results and/or context to another tool
 - User finds and selects a data set
 - User wants to view or manipulate the dataset in another tool
 - e.g. GIOVANNI, SOTO
 - User selects option to transfer search context to associated, enabled tool
 - e.g. dataset name, geospatial or temporal search parameters, etc.
 - User is redirected to the desired tool with previous search context pre-populated
 - via a well-defined API endpoint
 - via a WMS/WCS/THREDDS call
 - User carries on with their analysis in their desired tool
- GUI-instigated (supported) or API accessible (planned)

Smart Handoffs:

Collection in Earthdata Search with a Smart Handoff metadata association...

...to a more specialized data extraction tool like Giovanni:



<https://search.earthdata.nasa.gov/search>

<https://giovanni.gsfc.nasa.gov>

Some Key Use Cases being developed :

Downloadable Tools

- Associates datasets to applicable tools which must be downloaded to the user's processing platform to use them locally
 - User finds and selects a data set
 - User wants to see what Downloadable Tools are applicable to the selected data set
 - e.g. Python, R libraries, Panoply
 - User selects desired Local Tool and is redirected to a primary splash page, containing:
 - Information about the tool,
 - How to install and use it,
 - A download option
 - User downloads the dataset to perform local processing

Some Key Use Cases being developed :

Service Entry Resource Formats (SERFs)

- Legacy records from the GCMD describing tools and services, primarily from the IDN community
 - Efforts to identify and update still-valid SERF records recently concluded
 - Valid SERF records were migrated over to UMM-Service
- Curation concerns
 - Remaining legacy SERFs, and the SERF docBUILDER have been deprecated
 - Future curation of SERF records in UMM-S will be enabled with OpenMMT
 - The Open Metadata Management Tool will allow users with an Earth Data Login credential to propose new or modifications to existing metadata records – including services
- Services Refactoring
 - UMM-S SERFs will need to be reallocated to applicable use-case sub-models
 - Do *NOT* want to recreate a bottomless tool repository



Special thanks to EED-2/GCMD team

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