

---

# Data and Information Standing Committee

Guenter Stangl/Federal Office of Metrology and  
Surveying/GGOS CO

Carey Noll/NASA GSFC

GGOS Bureau of Networks and Observations Meeting

Vienna Austria

April 26, 2017

---



# Data and information SC

---

- Within GGOS Bureau of Networks and Observations
- Formerly chaired by Bernd Richter, co-chair Carey Noll
- With Bernd's retirement, now chaired by Guenter Stangl from the GGOS CO, co-chairs Carey Noll and TBD (Geoscience Australia?)
- Goals and Objectives
  - Promote the use of metadata standards and conventions and recommend implementations of metadata management for GGOS in the pursuit of a metadata policy;
  - Promote interoperability among participating data centers with other databases and services;
  - Develop strategies to protect the intellectual properties on data and products;
  - Align metadata standards with the GEOSS approach and methodology, interface on data standards with GEO and ICSU.



# Data and information SG

---

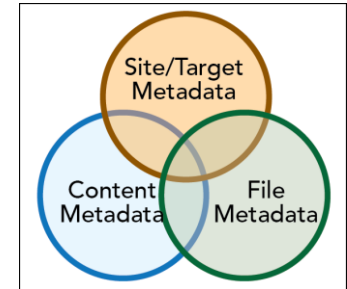
- Near-term activity:

Develop a metadata strategy for all ground-based measurement techniques and data products that provides discoverability and interoperability, is easily transferable via web services, and is based on internationally recognized data exchange methods; the plan is to implement a metadata scheme in two stages: a stage-one scheme for GGOS and GGOS relevant data products and a longer term, stage-two scheme for the full GGOS requirements.

# Metadata and web services overview



- Metadata common to the observation services:
  - Stations – site, instruments and contacts, specific details needed
  - Targets – object description, needs catalogue (satellites, quasars, reflectors)
  - Data – types, time span, units, relation to stations and targets
  - Products – only standard (basic) products of different services can be considered, a concise list of BNO services is necessary
- Rudimentary web services
  - Make data readable, compression/decompression, basic transformations – specific (e.g., Laser<->GNSS) or general software package (recognize and combine all sorts of observations, including meteo, ocean and elevation models)?





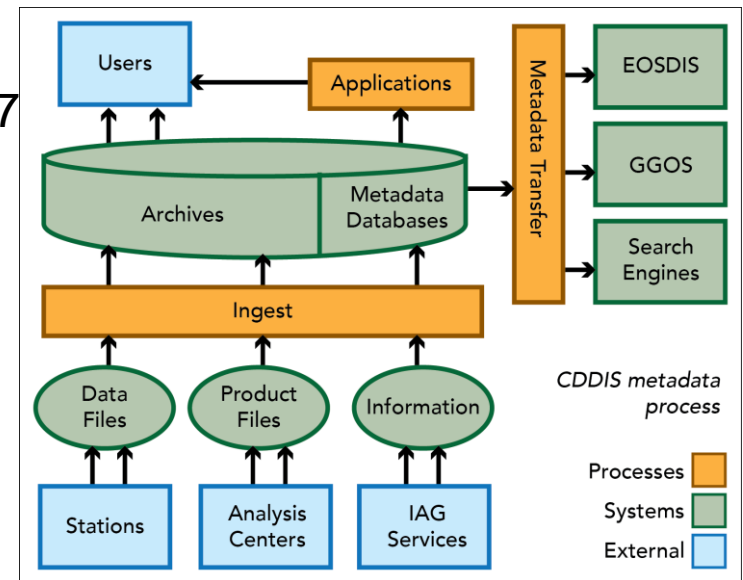
# Metadata "example" – CDDIS

---

- Levels of metadata
  - Collection
    - Grouping of science data that have information that is common across all the granules they contain
    - Describes general data set (e.g., GNSS daily data)
  - Granule
    - Smallest aggregation of data that can be independently managed (described, inventoried, and retrieved)
    - An instance of a collection (a file of data; e.g., observation data from GODE for 01-Aug-2015)
    - Metadata typically describe spatial and temporal parameters, quality, lineage of the data
- Currently updating collection level metadata to satisfy NASA requirements

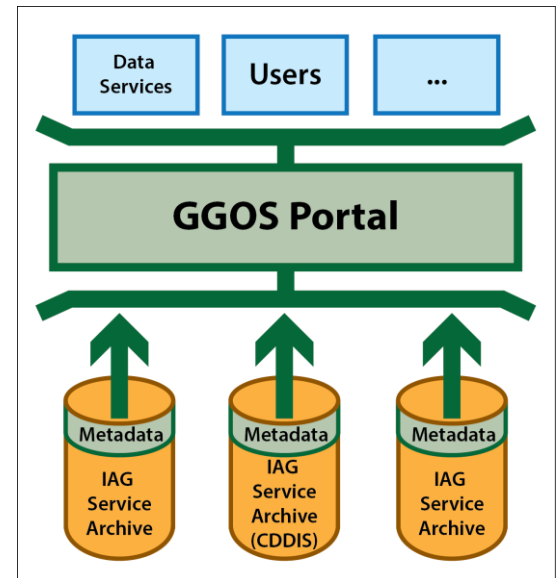
# Implementation plan – tasks (1 of 2)

- Adopt and implement a metadata system to provide access to information about GGOS relevant data products (December 30, 2017)
  - Initial records to describe “GGOS Collections” (e.g., products) can be made available through web applications accessing CDDIS metadata
  - Define the data product requirements for the GGOS relevant metadata (Mid-2017)
  - Present concepts at EGU/GGOS Consortium Meeting (After IAG, July 2017)
  - Other milestones: Status report (July 2017), prototype of Phase 1 (October 2017), implement operational data product metadata scheme (December 2017)



# Implementation plan – tasks (2 of 2)

- Adopt and implement a full metadata system including site information and relevant tools and capability
  - Candidate for site information could be based upon the Australian GL scheme currently under development
  - Definition of the requirements; definition of Phase 1 (March 1, 2018)
  - Resolve issues and applicability of the Australian GL scheme and recommend schema (EGU 2018)
  - Metadata implementation plan including definition of tasks, roles, and distribution of tasks, and plans for integration of components (June 2018)
  - Demonstration of Phase 1 prototype (GGOS Days, 2018)
  - Demonstration of Phase 1 first operational system (June 2019)





# Site metadata: IGS site log XML effort

---

- IGS site log contains the entire history of the stations; useful metadata for users; similar logs used by ILRS, IVS, IDS
- Effort underway to use site logs to improve discoverability of IGS metadata, data, and products
- Developing a mechanism for machine-to-machine synchronization of metadata, also vetting, consistency checking
- Collaborative effort between UNAVCO, SOPAC, GA, Land Victoria, EPN, BKG, GFZ, CDDIS, NGS, NRCan, JPL,...
- First goal: agreement on XML schema based on text site log
- Currently looking for use cases and mechanisms for using XML for automated for machine-to-machine exchange
- Lays groundwork that can be utilized by other services and thus promotes interoperability between services





# Current status

---

---

- See presentation by Fran Boler/UNAVCO
- BKG adaption of 2016 should be considered (no response yet)



# Implementation plan (2017-2018)

---

- Implementation within NASA CDDIS System:
  - Definition and sum up of metadata comprising all BNO services until Mid-2017
  - Presenting the concept at GGOS Consortium Meeting after July and before September 2017 (GGOS Days)
  - Status report July 2017, prototype October 2017 and start December 2017
  
- Operational phase (probably with Australian GL)
  - Decision about running and first experiences April 2018
  - Running prototype June 2018 – April 2019
  - Final operability since April 2019