The need for a QA strategy

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The need for a QA Strategy

for GEOSS to be fully successful, the Calibration, Validation and intercalibration between all instruments is of key importance

GEOSS, and the idea of the virtual constellation, would not ‘fly’ if the calibration cannot be executed properly

José Achache (GEO Secretariat)

Geneva Workshop “Guiding Principles”

What can we do together on Cal/Val QA as an international effort ?

Pre-launch

Mission Requirements

- Instrument performance specifications

Design/Build/Test

- Industry lead with Gov. oversight and Standard lab participation
- ISO certification

Post-launch

On-orbit verification

- **Onboard calibration**
- **Vicarious calibration**
  - Cal/val sites
  - Lunar calibration
  - Intersatellite
  - Cross platform

Longterm monitoring

- **Longterm drift**
- **Degradation**

Product validation

Re-Calibration

On-orbit standards & traceability (TRUTHS, and others)

-Guidelines & framework
-Cal/Val sites
-Data access policy
-Cal/Val portal
-Best practices
-Harmonization
-Other

GEOSS and Data Quality Assurance

- *The success of GEOSS will depend on data and information providers accepting and implementing a set of interoperability arrangements, including technical specifications for collecting, processing, storing, and disseminating shared data, metadata, and products.* (-- from the GEOSS 10 yr. Implementation plan)

- A critical element of interoperability is **Data Quality Assurance**, because: *Data accessible ≠ Data usable*

- Cal/Val is critical to data quality assurance and data usability

- Data quality assurance (GEO DA-06-02, led by WGCV and IEEE) is a fundamental and cross cutting task for GEOSS

A Roadmap

Need for Quality Assurance in Earth Observation

Expressed by the user communities and recognised by GEOSS

1. Definition of Guiding principles

   The Geneva Workshop

2. Guidelines Framework

   A documentary framework (draft)

3. Establishing an Operational Framework

   The Gaithersburg Workshop

4. Key Guidelines

   A documentary framework (to be approved)

5. Implementation

Recommendations

- For data to be useable it must have associated with it a quality descriptor that makes clear its suitability for particular applications ‘fitness for purpose’.

- A quality descriptor can only be assigned through an appropriate quality assurance (QA) process, which itself is dependent on the results of calibration and validation activities performed, traceable to internationally accepted standards.

Recommendations from Geneva Workshop
“Guiding Principles”

Workshop *"Guiding Principles"*

- GEO/CEOS Workshop on Calibration and Validation Processes, 2 – 4 October 2007, at the GEO Secretariat headquarters in Geneva.

- 45 participants discussed processes & guidelines to establish GEOSS interoperability

- Consensus on a roadmap towards the establishment of Cal/Val best practices
  - Guidelines will include all aspects of the data processing chain from acquisition to delivery and archiving.
  - Dedicated CEOS WGCV Cal/Val portal.
  - Sufficient resources are required to ensure the continued end-to-end operation and maintenance.

Operational Framework

- The ultimate requirement, as identified by the CEOS WGCV Cal/Val community, is the need to establish a set of Cal /Val guidelines based on the adoption of ‘best-practises’ that can be endorsed by CEOS under the auspices of GEO and for implementation by the agencies.
- In this context, Cal/Val is concerned with all technical disciplines and all activities processed throughout a data product’s lifetime, ranging from data acquisition, through processing and to dissemination and archiving.

Operational Framework

- This framework establishes a set of "operational principles" supported by a number of "key guidelines" to support the establishment, and aid the implementation, of more detailed specific guidelines and activities needed to enable interoperability.

- As of today there are 15 key guidelines are proposed