GEOSS Quality Assurance Strategy

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QA4EO Team Members

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QA4EO Background

- The GEOSS must deliver timely, quality, long-term, global information to meet the needs of its nine SBAs

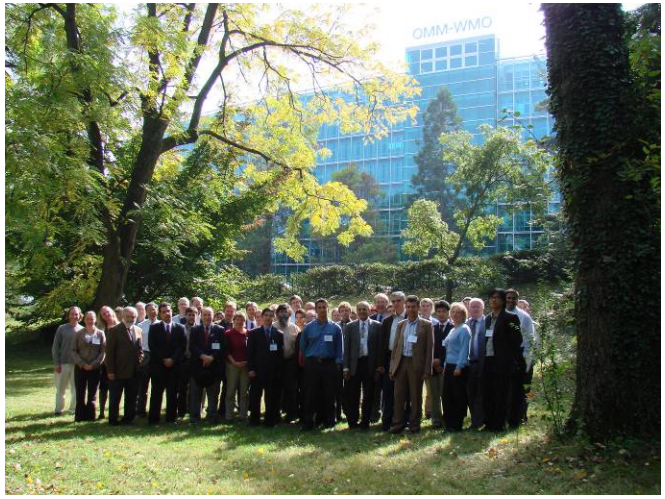
- This will be achieved through the synergistic use of data derived from a variety of sources (satellite, airborne and surface-based) and the coordination of resources and efforts of the members

- Accomplishing this vision, starting from a system of disparate systems that were built for a multitude of applications, requires the establishment of an internationally coordinated framework to **facilitate interoperability and harmonization**

- The QA4EO was established and endorsed by the CEOS as a direct response to a GEO Task DA-06-02 (now **Task DA-09-01a**)

Origin of QA4EO

- **CEOS WGCV discussed the principles and operational details during two workshops**



Geneva WMO Oct. 2007
Guiding principles

Gaithersburg NIST May 2008
Establishing an operational framework

- **QA4EO was generated by representatives from the different Cal/Val communities**

QA4EO Principle

- Measurement/processes are only significant if their “quality” is specified
- All data and derived products must have associated with them a Quality Indicator (QI) based on documented quantitative assessment of its traceability to community agreed (ideally SI) reference standards
- A QI should provide sufficient information to allow all users to readily evaluate a product’s suitability for their particular application, i.e. its “fitness for purpose”
- QA4EO encompasses a framework and set of guidelines, derived from best practices and with example templates included to aid implementation

QA4EO Documents

- Framework & Key Guideline documents were peer-reviewed by representatives from the different cal/val communities
  - Approved by WGCV **(28th Plenary Meeting, Oct. 2008)**
  - Endorsed by CEOS **(22nd CEOS Plenary, Nov. 2008)**
  - Reviewed by GSICS and WMO **(early 2009)**

- A guide was issued in order to provide a new user with an overview and guidance on getting started with QA4EO
  - QA4EO documents including the framework, key guidelines, and the guide can be found at on the QA4EO web site:

http://qa4eo.org/documentation.html

What QA4EO is…

it's a general **framework**

based on **1 essential principle**

and composed of **7 key guidelines**

These are "living documents" (i.e. v.3.0) and
they offer a **flexible approach** to allow
the **effort for the tailoring** of the guidelines to be
commensurate with the final objectives.

It is a **user (costumer) driven** process.

…and what is not

…**not** a **certification** body

…**not** a set of **standards** for QC/QA activities and processes that would limit competitiveness or innovation and evolution of technology and methodologies

…**not** a framework developed with a **top-down** approach

…the QA4EO process and its implementation should **not be judgemental and bureaucratic**

QA4EO Applicability and Relation to other Entities

Satellite data

Airborne data

Ground data

QA4EO: Applicable to all activities

Specific QA4EO Task Team

QA4EO guarantees the correct exploitation and the optimal interoperability of the remote sensing data acquired by the large variety of sources

GEO SBA and other committees

A QUALITY ASSURANCE FRAMEWORK FOR EARTH OBSERVATION

QA4EO and GEOSS

- **QA4EO workshop on Facilitating Implementation, Sep. 2009 was chaired by GEO, organized by CEOS WGCV and GSICS**

- **Active involvement of SBA and representation into the Task Team:**
  - Ecosystems: Matthew Hansen, SDSU
  - Climate: Howard Diamond, NOAA
  - Health: Phil Dickerson, US-EPA
  - Weather: AMDAR programme
  - Energy: being confirmed

- **Contributing to the GEO AIP Phase 3**

- **QA4EO compliancy Questionnaire being integrated into the GEO Architecture/Portal**

QA4EO Future Activities

- Each entity is implementing QA4EO in its programmes
  - Eg. ESA carrying out many activities and referenced in SoW
- International efforts and coordination for joint activities
  - e.g. intercomparisons, intercalibrations
- Discussion on Long Term Data Preservation
- GEO QA4EO Workshop: Spring 2011 in the UK
  - Implementation by SBAs and progress by Space-related