QA4EO

A QUALITY ASSURANCE FRAMEWORK FOR EARTH OBSERVATION

Pascal Lecomte / Greg Stensaas

WGCV

WGCV - GEO Tasks

TASK-DA-09-01a: GEOSS Quality Assurance Strategy

http://www.grouponearthobservations.org/cdb/ts.php?id=54

- **Develop a GEO data quality assurance strategy and implementation process**, beginning with space-based observations and expanding to in-situ observations, taking account of existing associated GEOSS quality assurance work, and including the quality issues of derived Earth observation information products.
- A Quality Assurance framework for Earth Observation (QA4EO) has been developed and is now being implemented.

QA4EO Executive Summary

- **The Quality Assurance framework for Earth Observation (QA4EO) principles:**

- **It is critical that data and derived products are easily accessible in an open manner and have associated with them an indicator of their quality traceable to reference standards (preferably SI) to enable users to assess its suitability for their application i.e. its "fitness for purpose".**

- **This Quality Indicator needs to be unequivocal in its interpretation and derivation , yet sufficiently flexible, to be implemented across the full range of EO activities which are coordinated through GEO.**

QA4EO Executive Summary

- **QA4EO implementation is supported by a framework document and a set of key guidelines to assist in its interpretation and implementation**
  - **QA4EO Website** http://qa4eo.org/
  - **CEOS and workshop revisions**
  - **QA4EO Principles and Guidelines Version 4.0**
- **Organizations that fund and oversee the development and execution of Earth Observation programs are responsible for implementing the /MWO/GSICSQA4EO key guidelines**
- **CEOS Implementation Board established/presented at Plenary and GEO-V**
- **Similar Strategic Oversight Panel proposed at the GEO level**
  - **GEO Panel/Team to be composed of diverse members representing the EO community**
  - **Responsible for managing QA4EO documents, clearly communicating QA4EO concepts to data providers and users alike, and mediating QA4EO disputes between data providers and users**

QA4EO Strategic Implementation Team for GEO

• GEO Secretariat	Rob Koopman	
• GEO DA-09-01a task team co-chair	Pascal Lecomte / Irwin Alber	
• WMO	Jérôme Lafeuille	
• FAO	John Latham	
• CEOS	Gregory Stensaas	
• GSICS	Mitchell Goldberg	
• Metrology	Nigel Fox / Carol Johnson	NPL/ NIST

Social Benefit Areas - PoC

- Disasters
- Health
- Energy
- Climate
- Water
- Weather
- Ecosystems
- Agriculture
- Biodiversity

Observers

- GEO Architecture and Data Committee
- GEO Data Sharing Taskforce
- INSPIRE
- OGC
- GMES
- GCOS
- ISPRS

QA4EO Strategic Implementation team for GEO

- GEO Secretariat experts have been tasked to 'contribute' one dataset and associated authority per SBA to QA4EO implementation.

- A Task-Level symposium in South Africa to help implementation of QA4EO across tasks.

- GEO Work Plan Symposium - May 17th to 19th, 2010 - Pretoria

- Contacts have been identified for
  - Climate,
  - Energy,
  - Health.

QA4EO Events

- Two previous QA4EO Planning Workshops
- ESA GMES Initiative, UK National Initiative, WMO-BIPM Workshop
- Many Sessions and Papers
  - IGARSS Sessions
  - ASPRS Sessions
  - Papers being written for Canadian Journal of Remote Sensing support QA4EO methods
- Future Implementation Workshop (Sep 2010)

ESA initiative for GMES

- **QA4EO meeting held by ESA on February 18th, 2010**

- Comprehensive efforts are already put in place to reach complete traceability of measurements/processes and characterisation of instrument. Accessibility of documentation might be an issue.
- The detail at which an instrument can be characterised can vary. Any made assumption should be clearly documented and be added in the error propagation chain. Some additional efforts might be required to achieve full error propagation at instrument level. The rigorous full QA4EO approach should be seen as a long term process.
- Long-term sustained cal/val programmes, independent of any specific mission, are essential for data gaps and long-term intercalibration between instruments. This is an issue with the current mission oriented budgets for cal/val activities.
- The implementation of QA4EO needs to be tackled from a programmatic approach.
- It was recognised that QA4EO is also an opportunity for harmonisation at the international level and will allows dialogue between different expert groups in a constructive manner.

UK National Initiative

- **UK EO Data Quality Workshop – March 9th, 2010**
  - The aim of the workshop was to explain the concepts behind QA4EO in the context of the drivers for quality assurance an to help develop a framework and roadmap for how the UK could exploit its leading position.

  - Initial priorities arising from the discussion would appear to be:
    1. Lead the QA4EO in GEO activity.
    2. Increase support for international participation
    3. Support UK Case Studies

WMO-BIPM workshop

- WMO-BIPM workshop on "Measurement Challenges for Global Observation Systems for Climate Change Monitoring: Traceability, Stability and Uncertainty" (WMO, 30th March to 1st April 2010)

- The event reinforced the **remarkable increase of awareness and attention** that is being dedicated at the international level **towards data quality issues**.
- Participants fully recognised the internationally-established Quality Assurance Framework for Earth Observation (QA4EO) as a keystone to assure the correct applicability of the products and the development of long-term studies based on complex interoperability requirements.