

# **Draft Agenda MODIS Science Team Meeting Working Group B QA Plan Overview**

**Thursday October 10th, 15.15-17.45**

Chairman : Wayne Esaias

Sponsor: David Roy

## **Introduction**

The MODIS Quality Assessment Plan is required by ECS in about one month, so that they can implement the functionality which will provide MODIS product developers with the information and system for assessing the quality of the MODIS data products. This Roundtable Discussion is intended to 1. approach completion of outstanding actions to ESDIS for QA, and 2. define commonalities in approach and needs for QA within the MODIS disciplines and L 1-A-B products. There are still many issues to be addressed within the MODIS arena. The structure of the roundtable will provide an opportunity for each discipline and L-1 B to outline its overall approach, and requirements for data access and manipulation. The QA program of the SeaWiFS Project will also be presented. We will then hear from ECS regarding timetables and expected capabilities. SDST will discuss their planned and potential role in this arena.

MODIS disciplines and 1B developers have ascribed to the recommended approach to include essential and summary QA information derived during the generation of the product within the granule metadata. In addition, all developers recognize that post-production QA steps are required, but there is some variation in the amount and intensiveness of the post-PGE phase. Identified speakers are therefore encouraged to present their overall approach, from immediate ESDIS actions thru post-production requirements and methodology. What data will be used (every product, every granule, subset region, decimation), where will it occur (PGE, TLCF, SCF), the procedures envisioned (eg hands off, hands on; comparisons with climatologies), context of comparisons and judgments, special needs in the post launch T&E phases, how derived data and information will be staged and incorporated in data bases, etc., how this information is to be used to evolve products. A simple example case (product) might be useful. Talks need not be formal.

**AGENDA.**

**1) Chairman Introduction and purpose of meeting:**

**2 Current OA Status - no more than 10' each**

SeaWiFS approach outlined M. Darzi  
MODIS L-1B Mike Jones  
Land Level 2-3 Paul Fisher  
Ocean Level 2-3 Bob Evans  
Atmospheres 2-3  
ESDIS approach, timelines Bob Lutz  
SDST approaches and potential role of TLCF Fleig

**3) Identification and definitions of key MODIS inputs needed by ESDIS.**

**4) General Discussion of OA Methodology.**

Discussion on commonalities, and differences.

Are special post-launch T&E capabilities required?

Identification of an approach that can encompass MODIS needs and ECS capabilities.

Role of the TLCF in MODIS QA.

The following are a set of questions to provide food for thought.

**5)** QA data are generated during the data production process (by the PGE) at the DAACs and after data production at the SCFs.

What is the utility of this QA data ? (see also 14)

i.e. how will production and post production QA results be used by :

- Science team
- Operational data processing personnel
- Data product users

**6)** What are the anticipated responsibilities/roles of the DAACs in the QA process ?

**7)** The science team members at each SCF will be sent data products from the DAACs for post production QA. This will be implemented by a subscription process. Email subscriptions will be defined at the SCF to trigger notification from the DAAC of data production events that necessitate QA of the data product.

What kind of events should be specified ?

How much data should be examined ?

What spatial and temporal sample of data should be examined ?

**8)** The results of post production QA performed at the SCF may be sent by the SCF to the DAAC to update the Science Quality Flag (see 9) for each granule of data examined using a metadata update utility tool.

Will the science team members at the SCF need to communicate data/information/QA requests with other SCFs and with non-EOS users ?

Is so then how will this be achieved ?

**9)** Mandatory summary QA results are stored in the ECS mandatory core metadata. They include flags describing whether the data granule has passed or failed some quality assurance criteria (each flag also has an associated textual explanation of the quality assurance criteria used). The flags :

- Automatic Quality Flag : assigned at the DAAC by the PGE and does not change thereafter.
- Science Quality Flag : assigned a default value by the PGE but is subject to updates as deemed appropriate by the SCF.

- Operational Quality Flag: managed by the DAAC (not yet defined)

What kinds of quality assurance criteria should be used to set the Automatic Quality Flag and the Science Quality Flag ?

**10)** How should QA performed at the SCF influence data production at the DAAC ?

Will there be SCF induced DAAC stop processing scenarios ?

Should an SCF QA timing schedule be enforced ?

**11)** What tools, resources, staff are required to perform QA at the SCFs ?

**12)** How will MODIS algorithm updates and reprocessing be handled in the management of the QA process ?

### **Specific Discussion of Product Level QA Parameters**

**13)** Mandatory summary QA results are stored in the ECS mandatory core metadata. They hold values describing whether the data granule has passed or failed some quality assurance criteria (see 9) and summarize for each granule the :

    % of data product missing

    % of data product interpolated

    % of data product out of bounds

What other non-mandatory kinds of QA result will be produced ?

Where will they be stored (in the product or externally) ?

How will they be stored in the data product (as metadata or per pixel data) ?

**14)** QA results stored in the data product will be :

    examined by algorithms that use the product to generate more refined products

    examined during post production QA analyses at the SCF

    examined by the data user for browse etc.

Is it necessary to ensure the inheritance of QA data between products to facilitate these processes ?

Two basic QA storage models present themselves :

**i.** Store only QA generated by the product and do not carry through QA generated by the other ingested products. Then use tools to extract QA from each product where necessary.

**ii.** Carry through QA results between data products necessitating the use of some kind of common QA storage format.

**15)** Is there an overall common QA parameter structure within the Atmosphere, Land and Ocean MODIS team's products ?

**Version 1.0 Delivery QA Status**

**16)** Will the resolution and content of QA parameters be defined for each product?  
If not, when will these product-level QA parameters be defined?

**17)** How much of the QA methodology and procedures are being tested within the Version 1.0 software ?

**18)** Does the present ESDISQA approach provide the necessary capability for MODIS Science Team use during the T&E phase immediately post launch when algorithms are being debugged and instrument initialization performed? If not, what is lacking, and how can necessary functionality be provided.