

Ocean Color Radiometry – Virtual Constellation Update

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Changes/Update from Previous SIT



- Accomplishments/Future Plans:
 - Accomplishment: IOCCG standing WG for evaluation of ECVs (w/CEOS OCR-VC co-leads)
 - Accomplishment: INSITU-OCR WG established
 - Future: ECV evaluation by IOCCG WG
 - Future: INSITU-OCR white paper outline – October 2011, draft April 2012
- Main 2011 Achievements/Outcomes:
 - IOCCG endorsement of INSITU-OCR, WG on ECVs; development on INSITU-OCR and an iOCRT

Changes/Update from Previous SIT



- International Network for Sensor InTercomparison and Uncertainty assessment for Ocean Colour Radiometry (INSITU-OCR)
- Concerted inter-agency/international effort on activities relating to sensor inter-comparison and uncertainty assessment of datasets required for the OC ECV generation
- A prioritized effort of OCR-VC
- Participant selection – Willingness to commit to writing on strict timeline, expertise, geographic distribution across CEOS agencies, tie in OCR-VC workshop recs from 2010
- Timeline: outline October 2011, full draft April 2012

INSITU-OCR components (under discussion)

Mission Feedback

- Science community input
- Comparison with other appropriate products
- New Mission
- Protocol development

Satellite Data from Calibrated Sensors

Calibration Strategy

Pre-launch

- Lab. characterization & calibration (SI-traceable)
- Solar calibration (transfer-to-orbit)

Postlaunch (operational adjustments)

- Solar calibration (daily)
- Lunar calibration (monthly)
- Multiple sites L_{wn} time series for vicarious calib. (ISRO, MOBY-C)

Improved Products & Algorithms

- Reprocessing due to improvements in calibration, binning schemes, product compatibilities, etc.
- New products from bio-geochemical, atmospheric fields, etc
- Data distribution interface

Feedback

IN SITU-OCR OFFICE

- SIMBIOS type follow-on office (NASA?) with agency representatives (under investigation)

In Situ Data

- Collection of required bio-optical and atmospheric measurements (INSITU-OCR PIs)
- *in situ* instrument calibration (Project round robin SI-traceable, IOPs, AOPs)
- Data collection following NASA Ocean Optics protocols
- Archive of calibrated QC *in situ* data (SeaBASS)
- Calibrated instrument pool
- Development of new instrumentation

Satellite data processing software

- SeaDAS & BEAM for ACE, OCM-2, MERIS, OLCI, SGLI, GOCI, GEO-CAPE, etc.

Product & Algorithm Validation

- Atmospheric & bio-optical algorithm validation & development (INSITU-OCR PIs & project staff)
- Match-up analysis via Aeronet OC sites, satellite QC, time series eval., Bio-Argo, ChloroGIN etc.
- Earth System/Climate Model data assimilation

Changes/Update from Previous SIT



- **IOCCG Working Group on Essential Climate Variables (ECVs) and assessments**
- A proposal for establishing the IOCCG WG was initiated under 16th IOCCG annual meeting in Feb 2011. It was confirmed at the 20th IOCCG Executive meeting in Sept 2011 and the framework and scope for the WG was defined.
- Agencies are expected to support such WGs with dedicated resources.
- Answer request from CEOS to evaluate ECVs; need for having this done in an independent, systematic and recurrent way.
- Fully characterized and broadly accepted GCOS-compliant global OC ECV products are very valuable inputs for climate studies.
- Existing products generated by different instruments or space agencies lack consistency & exhibit small but consistent biases that need to be resolved.
- The various ECV products require validation and inter-comparison to establish confidence limits for long and coherent time series of global OC ECV products.
- Relationship with CEOS WGClimate, and more generally to CEOS VC

Changes/Update from Previous SIT



- CEOS MIM
 - Assessment of appropriate parameter/instrument lists and utility levels (i.e., High/General/Potential/Marginal)
 - Cooperation with international science community (IOCCG)
 - Phytoplankton Chlorophyll *a*, CDOM, and “ocean imagery”
 - Water-leaving radiance?

Changes/Update from Previous SIT



The IOCCG has agreed on preparing for an **“IOCCG international community consultation meeting”**, starting in 2013.

Rationale:

This will be a fully open “community consultation meeting”, with objectives of:

- Providing a forum for discussions on various topics
- Helping IOCCG in its oversight role
- Building / reinforcing the international OC scientific community
- Enrolling more people into community work than is feasible through IOCCG meetings and WGs only
- Producing synthesis documents of interest for the community in question
- Reinforcing the community voice when it comes to high-level agency discussions

First steps towards an international meeting in 2013:

- IOCCG to hold two half day sessions to obtain feedback from ocean color community on objectives, content and organization of such an international meeting
- Focus on April 2012 NASA OCRT in US and ESA MERIS/AATSR workshop (October 2012) in ESRIN (Frascati). Other occasions may also be used to address the largest possible audience
- Look towards the 2013 “IOCRT” (name TBD)
- Open questions: IOCCG sponsorship, frequency (yearly, bi-yearly?), ...



Near Future Plan

- Achievements by end 2011
 - INSITU-OCR white paper: Outline by end of October 2011
 - Meeting of writing team Dec 2011 – Feb 2012, Washington or JRC – self-funded
 - First draft by end of April 2012
 - IOCCG WG on ECVs assessments 2011/2012
 - Previous action: IOCCG Level-1 Requirements report target completion Dec 2011, printing in 2012
- Information on any decisions that need to be made at CEOS Plenary:
 - iOCRT for 2013, IOCCG engagement of academic community at 2012 NASA and ESA meetings