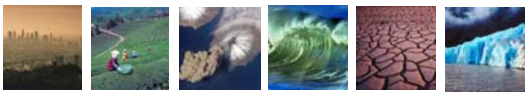


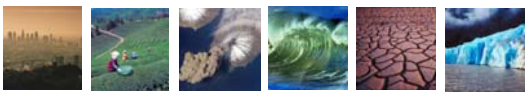
SIT-26 Constellation Status:

OCR-VC Status Report

M. Dowell (EC/JRC), P. Bontempi (NASA), H. Murakami (JAXA)

Contributions from IOCCG (V. Stuart & D. Antoine - Chair)

OCR-VC Targets



- ✓ Ensuring OCR continuity
- ✓ Provide high quality data sets (with WGCV)
- ✓ Data Harmonization, supporting ECVs (Climate SBA & WGClimate)
- ✓ Facilitate timely and easy access to data (user interface) (WGISS)
- ✓ Capacity building and Outreach (WGEdu)

Identified priorities

Product O.4.1 Ocean colour radiometry – water leaving radiance
Product O.4.2 Oceanic chlorophyll-a concentration

1. Inter-agency **OCR Essential Climate Variable (ECV) implementation** strategy and subsequent execution of this strategy... to be the climate data records
2. Concerted inter-agency effort on activities relating to **sensor inter-comparison** and **uncertainty assessment** of datasets required for the ECV generation

→ ***"The International Network for Sensor InTercomparison and Uncertainty assessment for Ocean Colour Radiometry" (INSITU-OCR)***

Activities since SIT-25

Advancing with OCR-VC implementation

- **OCR Essential Climate Variable (ECV)**
  - Feedback from OCR to GCOS IP revision
  - Input to Climate SBA chair for UNFCCC/SBSTA progress report on Systematic Observations
  - Continued work on product level gap-analysis for OCR across CEOS agencies
  - Provision of input from scientific community on GCOS Satellite Supplement revision for OCR (Nov 2010)
  - Discussion at IOCCG-16 meeting (Feb 2011) on priorities for inter-agency implementation strategy (→IOCCG roadmap)
  - Kick-off of ESA Ocean Colour - Climate Change Initiative project (Aug 2010)
- **INSITU-OCR**
  - Prioritization exercise at side meetings at 4th "Oceans from Space" symposium in Venice (Apr2010)
  - Dialogue with WGCV-IVOS and organization of dedicated workshop at IVOS conference (Oct 2010)

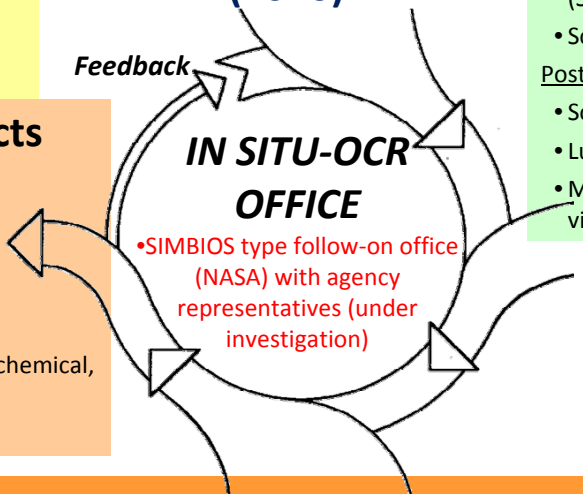
INSITU-OCR components (under discussion)

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

Satellite Data from Calibrated Sensors (2010)

Calibration Strategy
Prelaunch
- 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 calibration (ISRO, MOBY-C)



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

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

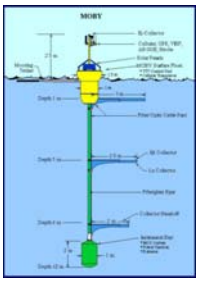
Product & Algorithm Validation
- Atmospheric & bio-optical algorithm validation and development (INSITU-OCR PIs and project staff)
- Match-up analysis via Aeronet OC sites, satellite QC, time series evaluation, Bio-Argo, ChloroGIN etc.
- **Earth System/Climate Model data assimilation**

Cal/Val of INSITU-OCR

International Network for Sensor InTercomparison and Uncertainty assessment for Ocean Colour Radiometry

- Satellite sensor inter-comparison
- Instrument inter-calibration
- Vicarious calibration approaches
- Product validation
- Uncertainty analysis
- Algorithm inter-calibration
- Building from previous investments/ prototype programs

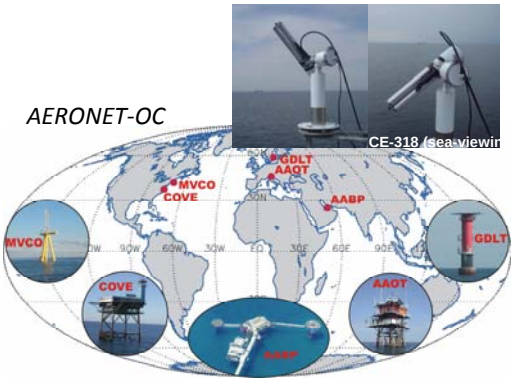
incl. networking and campaign of international observations



MOBY & MOBY-C

BOUSSOLE

AERONET-OC



OCR-VC workshop

JRC, Ispra, Italy Oct. 21 2010

1. Overview of best practices

- Cal/Val instrument, observation, and database programs
- OCR science programs
- User software

2. Discussion

- *identify **gaps** at the agency/sensor level and networking across agencies*
- *identify **resources** required for individual activities*
- *recommendations should be linked to the CEOS/GEO QA4EO process*

1) Calibration, Vicarious Calibration, inter-calibration
2) In-situ data - Protocols => Validation
3) Algorithm development - Processing software
4) Product inter-comparison, data merging

OCR-VC implementation actions

OCR-Essential Climate Variables

- Establish international interagency science team (standing or fixed term WG?) led by the IOCCG for inter-comparison of ECVs
  - evaluate and understand differences between the different ECVs developed by many groups around the world
  - recommend actions needed to produce ECVs at the quality and consistency required by GCOS
- Set-up community consultation meetings
  - review scientific progress and discuss protocols for ECV generation and performance assessment
  - seek user feedback for ECV products for the benefit of CEOS

INSITU-OCR

- Prepare a preliminary OCR community **white-paper** (scientists and space agency reps) on requirements for inter-agency initiative on INSITU-OCR (Q4 2011/Q1 2012)

Summary

- Progress with OCR-ECV implementation
- Prepare an INSITU-OCR community white-paper and implementation plan, including resource estimates for inter-agency aspects – end 2011
- Rotation of OCR-VC Co-leads (after the SIT, transition until plenary)

Mark Dowell (JRC)
Hiroshi Murakami (JAXA)
Paula Bontempi (NASA)

→

Peter Regner (ESA)
Prakash Chauhan (ISRO)
Paula Bontempi (NASA)