



**The CEOS
Ocean Vector Wind Constellation:
*Current Status and Challenges***

***Stan Wilson, NOAA; Hans Bonekamp, EUMETSAT;
and B.S. Gohil, ISRO – Co-Chairs***

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What is CEOS and the OVW Constellation?

- *The Committee on Earth Observation Satellites, CEOS, is a voluntary international forum of 29 space agencies & 19 associated organizations*
- *CEOS is planning the space arm of GEOSS*
- *The OVW Constellation is a group within CEOS that includes representatives of some – but not all – agencies involved in scatterometry*
- *CEOS provides an opportunity for the OVW Constellation to promote global scatterometer missions*

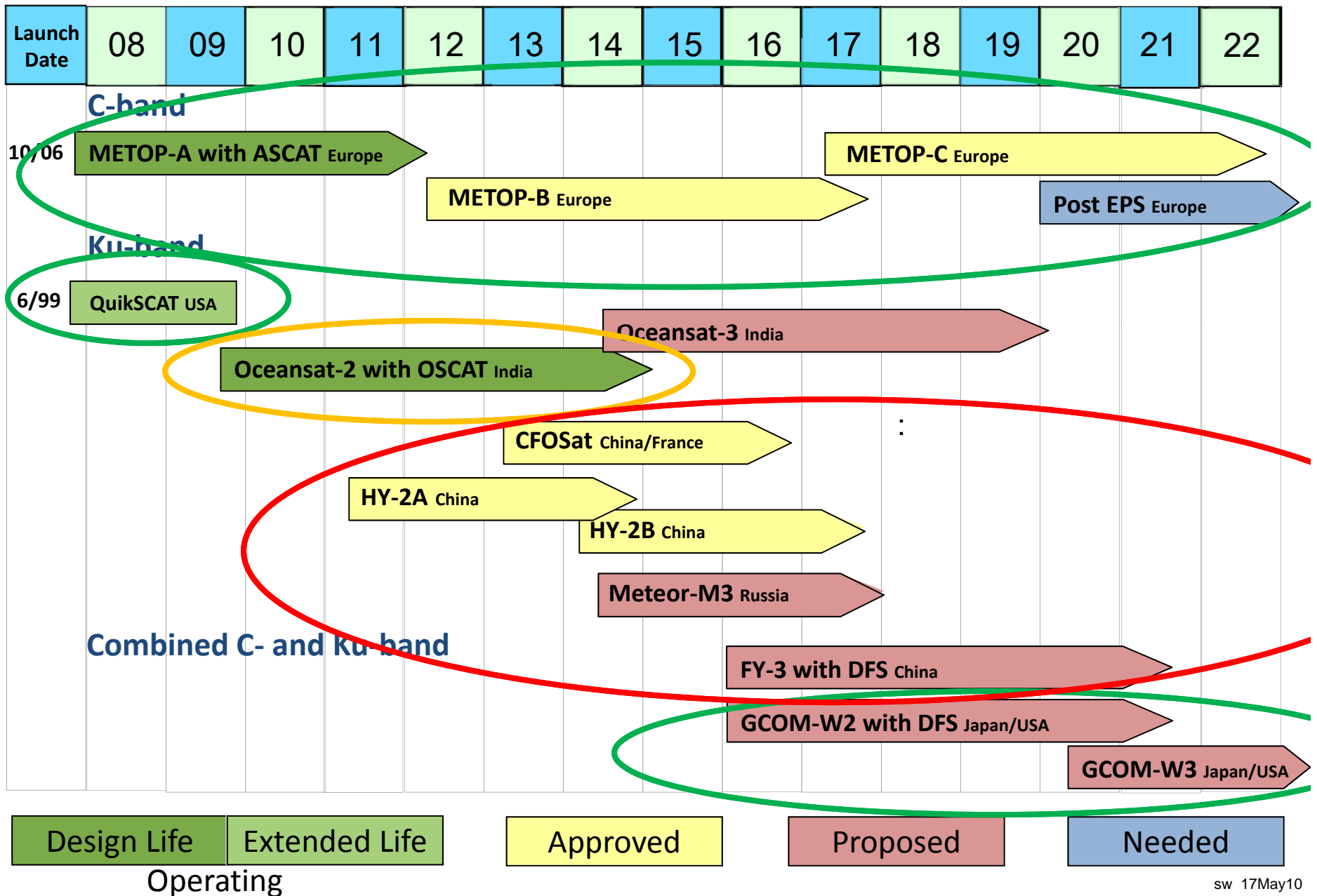
What does the CEOS OVW Constellation do?

- *Pursues timely & free data access in support of the 'public good'*
 - *To provide opportunity for all to benefit*
- *Facilitates cal/val for each scatterometer*
 - *To provide confidence in observations*
- *Promotes use of OVW, particularly for non-specialist operational users, to strengthen advocacy base*
 - *To provide sustained support for future scatterometry*

Pursues Timely & Free Data Access

- ***This has not been, is not and/or will not be an issue with:***
 - *NASA QuikSCAT*
 - *EUMETSAT MetOp with ASCAT and planned Post-EPS*
 - *NOAA proposed DFS on JAXA GCOM-W2 & -W3*
- ***This is currently being addressed with:***
 - *ISRO Oceansat-2 with OSCAT*
- ***This remains an issue with:***
 - *SOA/CNSA – HY-2A – launch 2011*
 - *SOA/CNSA/CNES – CFOSat – launch 2013*
 - *RosHydroMet/RosCosmos – Meteor-M3 – proposed 2014*
 - *CMA – DFS on FY-3 – proposed 2016*

Timely Data Access: Green – OK; Yellow – Underway; Red – TBD



Facilitates Cal/Val for each Scatterometer

- *Collaborators working to support ISRO on Oceansat-2 OSCAT cal/val include: NOAA, NASA, KNMI, ECMWF, UK Met Office, Meteo France, CSIC (Spain), IFREMER...*
- *NOAA & EUMETSAT are discussing with ISRO how they can help support timely access to OSCAT data, once the commissioning phase has been completed and the operational phase begins*

Promotes the use of OVW, particularly for non-specialist, operational users

*As an example of non-specialist operational
users...*

- *Most developing-country marine forecast centers with responsibility for high-seas forecasting in GMDSS MetAreas are not routinely using OVW (and altimeter-derived significant wave height) in their operational analyses, warnings and forecasts today*

*GMDSS = Global Maritime Distress and Safety System of the WMO
and International Maritime Organization*

GMDSS Met Area	High-Seas Operational Forecast Responsibility	Data routinely used in operational forecasts? If so, how are they accessed?			
		Surface Vector Winds		Significant Wave Height	
		QuikSCAT Status 22 Nov 09	ASCAT 12 Dec 09	Jason-1 & -2 12 Dec 09	ENIVSAT 12 Dec 09
V	<i>Marine Meteorological Service, Brazilian Navy</i>	Yes FTP	No	No	No
–	<i>National Institute for Space, Brazil</i>	Yes FTP	No	No	No
VI	<i>Servicio Meteorológico Nacional, Argentina</i>	Some FTP	No	Some FTP	No
VII	<i>South African Weather Service</i>	No	No	No	No
VIII-S	<i>Mauritius Meteorological Service</i>	No	No	No	No
X	<i>Australian Bureau of Meteorology</i>	Yes FTP	Yes FTP	Yes GTS	Yes FTP
XIV-N	<i>Fiji Met Service</i>	Yes FTP	Yes FTP	No	No
XIV-S	<i>Met Service of New Zealand</i>	Yes FTP	Yes FTP	No	No
XV	<i>Servicio Meteorológico de la Armada, Chile</i>	No	No	No	No

Approach

- *If two of the most easily understood satellite products relating to the ocean surface are:*
 - *Ocean Vector Winds (OVW) from scatterometers*
 - *Significant Wave Height (SWH) from altimeters*
- *And if two of the most important products required by a marine forecaster for a surface analysis are:*
 - *SVW – wind speed and direction*
 - *SWH – or sea state*
- *Why aren't these centers using OVW and SWH products routinely in operational high-seas forecasting today?*
- *Depending on what we find, are there any lessons to be learned?*



Initial Training Course

Use of Satellite Wind & Wave Observations for Marine Forecasting

*Co-organized by NOAA and EUMETSAT
on behalf of the CEOS OVW & OST Constellations and
in conjunction with the WMO Space Program.
Hosted by the IOC Office for the IODE,
with support from the Flanders Government,
Oostende, Belgium, 14-18 December 2009*



http://www.iode.org/index.php?option=com_oe&task=viewEventRecord&eventID=513

Workshop Participants

11 INSTRUCTORS

- 1. Europe – EUMETSAT***
- 2. France – MeteoFrance***
- 3. Netherlands – KNMI***
- 4. New Zealand Met. Service***
- 5. Norway – MetNo***
- 6. U.S.A. – NOAA &
U. of New Hampshire***

15 STUDENTS

- 1. Argentina – SMN, CONAE &
UBA***
- 2. Brazil – SMM & INPE***
- 3. Chile – SMA & UdeC***
- 4. Fiji Met. Service***
- 5. India Space Research Org.***
- 6. So. African Weather Service***
- 7. Spain – National Met. Institute***
- 8. Italian Weather Service***
- 9. Belgium – Royal Met. Institute***

Basic Questions Facing an Operational Forecaster

- *How do I know what observations are available from multiple satellites?*
- *How do I get access to those observations?*
 - *A single-point-of-access for OVW & SWH*
- *How do I integrate those observations within my own analysis/forecast system?*
- *How do I use those observations in my operational forecasts?*
 - *Common analysis/display system*

Single Point-of-Access

- *Single point of access – ‘one-stop shopping’ – for SWH?*
 - *Only one set of procedures needed for the user*
 - *A common operational product could be available in a single self-describing, hardware-independent format*
 - *Products could be packaged specific to each area of interest to offer a very low data rate*
 - *Both graphic display and digital products could be available*
 - *Each new source could be easily incorporated into service without any involvement on the part of the users*

Local Interfacing

- *Interface with local operational analysis/display system*
 - *Argentina – SMN – MESSIR VISION – moving to GEMPAK/N-AWIPS*
 - *Brazil – MMS – GEMPAK/N-AWIPS*
 - *Brazil – INPE – GRADS*
 - *South Africa – NINJO Work Station*
- *Currently lacking this capability*
 - *Chile – considering GEMPAK/N-AWIPS*
 - *Fiji – suggest checking with Australian BoM & Met NZ*

Planning for Next Training Course

- *Develop a single-point-of-access for use in course using QuikSCAT and ASCAT data for testing*
- *Wait for OSCAT data to become available for operational use and then provide it, together with ASCAT data, via the single-point-of-access*
- *If new funding can be obtained, hold it in South America to maximize local participation*
- *Otherwise hold it again at the IOC facility in Oostende*

Challenges to the OVW Constellation



- *Can we convince all space agencies to provide timely, free access to their data?*
- *For non-specialist users (especially operational):*
 - *Can we agree on a single, inter-calibrated C-band ASCAT and Ku-band QuikSCAT & OSCAT global data set to provide the common product(s)?*
 - *Can we provide a global data base from which a given user can obtain timely access to the common product(s) in a common format(s) corresponding to his area and time of interest?*