CEOS OSVW Virtual Constellation Status and Next Steps

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Utrecht, Netherlands
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Outline

• What is CEOS and the Virtual Constellations
• Role of the OSVW-VC
• Role of the IOVWST
• Next Steps/Discussion Questions
Established in 1984 under auspices of G-7 Economic Summit of Industrialized Nations
- Focal point for international coordination of space-related Earth Observation (EO) activities
- Optimize benefits through cooperation of members in mission planning and in development of compatible data products, formats, services, applications, and policies

Operates through best efforts of Members and Associates via voluntary contributions

30 Members (Space Agencies), 22 Associates (UN Agencies, Phase A programs or supporting ground facility programs)

As the space component of the Global Earth Observation System of Systems (GEOSS), CEOS is implementing high priority actions in support of Group on Earth Observation (GEO) Tasks
Primary Objectives of CEOS

1. To optimize benefits of space-borne Earth observations through:
   - Cooperation of its Members in mission planning
   - Development of compatible data products, formats, services, applications, and policies;

2. To serve as a focal point for international coordination of space-related Earth observation activities;

3. To exchange policy and technical information to encourage complementarity and compatibility of observation and data exchange systems.
Strategic Implementation Team (SIT)

- Created in 1996 to advance the involvement of CEOS in the development of the Integrated Global Observing System (IGOS)
- Plays a central role in coordination of existing and future missions of CEOS Agencies in support of GEO, GCOS, WMO, UNFCCC, etc.
- Comprised of the Principals of CEOS Member Agencies and some Associates with the authority to commit Agency support to initiatives
- SIT Chair Key Responsibilities
  - Lead CEOS interaction with GEO/GEOSS and strengthen linkages to GEO and GEOSS
  - Lead CEOS Virtual Constellation for GEO development and implementation activities
  - Assist CEOS interaction with GEO Committees

SIT Objective: To define, characterize, and develop the vision for CEOS participation in GEO and strengthen CEOS linkages to GEOSS

CEOS Committee on Earth Observation Satellites
CEOS Virtual Constellations for GEO

- CEOS Virtual Constellations for GEO demonstrate the value of collaborative partnerships in addressing key observational gaps and bridging multiple GEO Societal Benefit Areas while maintaining the independence of individual contributions.
- Focus dialogue from “all topics/all agencies” to smaller, more specialized groups.
- Guidance for design and development of future systems to meet the broad spectrum of EO requirements:
  - Avoid duplication and overlap in EO efforts.
  - Close information gaps for GEO SBAs.
  - Establish and sustain global EO coverage and data availability.

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<th>Atmospheric Composition</th>
<th>Land Surface Imaging (LSI)</th>
<th>Ocean Surface Topography</th>
<th>Precipitation</th>
<th>Ocean Colour Radiometry</th>
<th>Ocean Surface Vector Wind</th>
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<th>Sea Surface Temperature</th>
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<td>Co-Leads: ESA and NOAA</td>
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OSVW-VC Objective

• To foster the best quality Ocean Surface Vector Wind data for applications in short, medium, and decadal time scales in the most cost effective and efficient manner through international collaboration, scientific innovation, and rigor
OSVW-VC Update (SIT-27)

• Continue to advocate for open and timely data access (China-SOA and Russia remain unresolved issues)
• Continue to advocate for orbit optimization for the Constellation
• Capacity building and user outreach
  – 1\textsuperscript{st} training course in the Use of Satellite Wind and Wave Products in Operational Marine Forecasting, Oostende, Belgium (2009).
  – 2\textsuperscript{nd} training course in the Use of Satellite Wind and Wave Products in Operational Marine Forecasting, Oostende, Belgium (2011).
  – 3\textsuperscript{rd} training course in the Use of Satellite Wind and Wave Products in Operational Marine Forecasting, Brazil (2012).
# GLOBAL SCATTEROMETER MISSIONS

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*Design Life | Extended Life*  
*Operating*    

*Design Life | Extended Approved*  
*Proposed*    

*sw 13apr11*
OSVW-VC Next Steps

• How should the OSVW-VC evolve?
• CEOS-Self-Study (CSS) on-going through 2013
  – Key recommendations recently released indicating increased emphasis on physical deliverables in support of CEOS priorities
  – Now entered the CSS implementation phase
• Revise/Update/Restructure the OSVW-VC Implementation Plan (for SIT-28)
  – Draft objectives
    • Participation and Data Policy
    • Calibration and Validation
    • Harmonization of Products
      – Product content and format harmonization
      – Inter-calibrated data products
      – Higher level products
    • Capability Demonstration and Capability Improvement
    • Future Requirements
    • Relation to Other Ocean Surface Variables
    • Training and Outreach
Role of the IOVWST
(an interpretation)

• Promotes remote sensing science in support of improved OVW products
  “Measurement team”
• Supports natural science research highlighting uses of OVW in earth sciences
  “Multi-disciplinary Science team”
• Forum to bring together international satellite OSVW community
  “OSVW Constellation team”
Next Steps/Discussion Questions

• Should/could the IOVWST take on the commitment of the OSVW-VC in addition to its traditional goals?
• Should/could the IOVWST adopt the Virtual Constellation for Ocean Surface Vector Winds? (parallel GHRSSST and OSTST)
• Would this evolution of IOVWST result in better access to OSVW data and/or improved “internationalization”
• Changing Environment with growing importance of “third-party” missions
  – Data access
  – Multi-mission intercomparisons
  – Ways to make recommendations
• BACKUP
CEOS Structure 2011-2012

Troika

Past Chair
ASI/Italy

Chair
ISRO/India

Future Chair
CSA/Canada

Strategic Implementation Team (SIT)
Chair: NASA
Vice Chair: CNES

Permanent Secretariat
Chair Agency
ESA, EUMETSAT, JAXA, NASA, NOAA

CEOS Executive Officer (CEO)
USGS (CEO) & NOAA (DCEO)

Systems Engineering Office (SEO)
NASA

WGCV
Chair: USGS
Vice Chair: CSA

WGISS
Chair: JAXA
Vice Chair: CNES

WGCapD
Chair: INPE
Vice Chair: NOAA

WGClimate
Chair: EC-JRC
Vice Chair: NOAA

CEOS SBA Coordinators
- Atmospheric Composition
  - NASA
  - ESA
- Precipitation
  - JAXA
  - NASA
- Land Imaging
  - USGS
  - ISRO
  - INPE
- Ocean Surface Topography
  - NASA
  - EUMETSAT

Virtual Constellations for GEO
- Ocean Color Radiometry
  - ESA
  - ISRO
  - NASA
- Ocean Surface Vector
  - Wind
  - NOAA
  - ISRO
  - EUMETSAT
- Sea Surface Temperature
  - ESA
  - NOAA

WGCV = Working Group on Calibration and Validation
WGISS = Working Group on Information Systems and Services
WGCapD = Working Group on Capacity Building and Data Democracy
WGClimate = Working Group on Climate
SBA = Societal Benefit Area (GEO)
What is CEOS

CEOS 101: Committee on Earth Observation Satellites. International body funded in 1984. Today 30 Members (Space Agencies) + 22 Associates

Aims at:

• optimizing benefits of spaceborne Earth observations through cooperation between agencies
• Serving as a focal point for international coordination of space-related Earth observation activities;
• Exchanging policy and technical information to encourage complementarity and compatibility of systems

Within CEOS, “Virtual Constellations” are the “specialized” sub-groups “atmospheric composition”, “precipitation”, “land imaging”, “OSVW”, “SST”, “ocean color”
OSVW-VC Draft Objectives

- Participation and Data Policy
- Calibration and Validation
- Harmonization of Products
  - Product content and format harmonization
  - Inter-calibrated data products
  - Higher level products
- Capability Demonstration and Capability Improvement
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