



World Meteorological Organization

Weather • Climate • Water

Terms of Reference and Review of Activities

COORDINATION GROUP ON SATELLITE DATA REQUIREMENTS
FOR REGION III AND IV

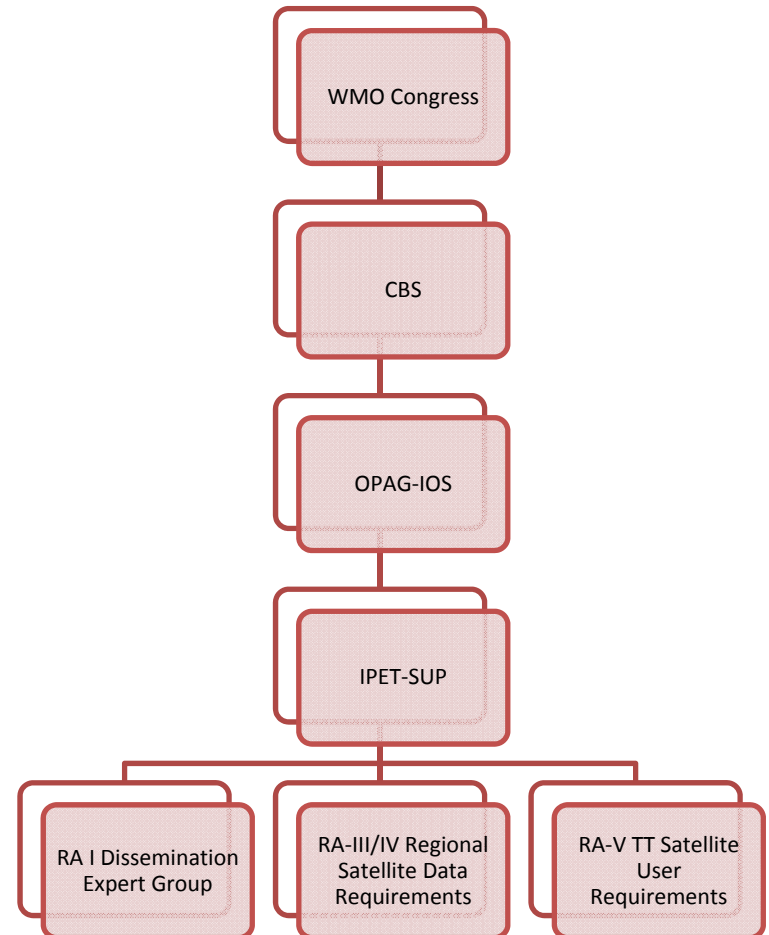
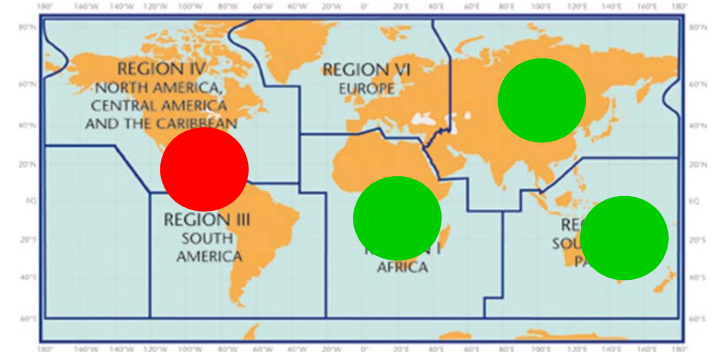
FIRST SESSION

GREENBELT, MD, USA, 27-28 APRIL 2015

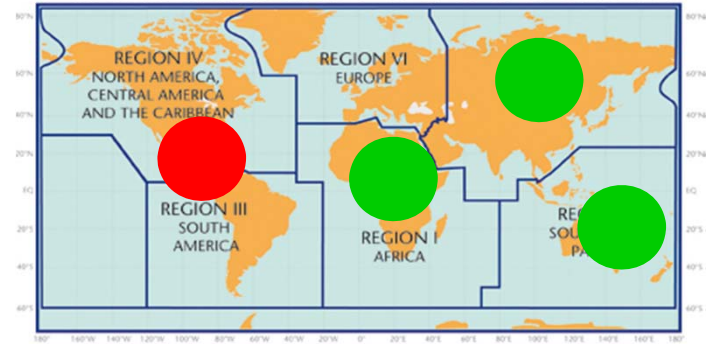
Stephan Bojinski, WMO

Defining Regional Requirements for Satellite Data Access and Exchange

- ✓ Regional approach to defining / maintaining requirements for satellite data access and exchange
- ✓ In support of all WMO programmes
- ✓ Builds on positive experience:
 - RA I (Africa): Dissemination Expert Group
 - RA II (Asia): WIGOS Project on Satellites
 - RA III/IV (Americas): RA-3-4-SDR
 - RA V (SW Pacific): Task Team on Sat Utilization
- ✓ Operational users, Training centres (VLab CoEs), Science, others
- ✓ Regional Events (User Conferences, Training Events, Regional Group Mtgs)



RA-3-4-SDR in the WMO Regional Associations



- WMO Regional Associations are a coordination mechanism for meteorological, hydrological and related activities by Members of WMO
- RA III (2014): Recognized Group as technical advisory body of the Working Group on Infrastructure and Technology Development
 - President of RA III: Julián Báez, Paraguay
- RA IV (2013): Recognized Group as advisory group of the Task Team in charge of the WMO Integrated Global Observing System (WIGOS) and the WMO Information System (WIS) implementation
 - President of RA IV: Juan Carlos Fallas Sojo, Costa Rica



8 Terms of Reference of the RA III-RA IV Coordination Group on Satellite Data Requirements

The Group:

1. Consists of a representative number of members from the satellite data user community in the Region, satellite data providers and WMO. The Group is chaired by one or two representatives from key satellite data user organizations of the Region.

Status:

RA-3-4-SDR-1 2015

Name	State / Territory
Venantius Descartes	Saint Lucia
Fitzroy Pascal	Dominica
Egbert Westby	Belize
Homero Jacome	Ecuador
Mark Oduber	Aruba
Glendell de Souza	BCT

Name	Institution	Country
Estela Collini	Servicio de Hidrografía Naval (SHN) and Servicio Meteorológico Nacional (SMN)	Argentina
Luiz Augusto Machado	Center for Weather Forecasting and Climate Studies (CPTEC), National Institute for Space Research (INPE)	Brazil
Wagner de Aragão Bezerra	National Institute of Meteorology (INMET)	Brazil
David Bradley	Meteorological Service of Canada	Canada
Miguel Egaña	Dirección Meteorológica de Chile	Chile
Olga Gonzalez	Institute of Hydrology, Meteorology and Environmental Studies (IDEAM)	Colombia
Luis Fernández	National Meteorological and Hydrological Institute (INAMEH)	Venezuela
Bryan Thomas	Meteorological Office	Trinidad and Tobago
Satellite operators		
Paul Seymour	NOAA NESDIS	USA
Kelly Sponberg	NOAA NWS and UCAR	USA
Sally Wannop	EUMETSAT	International

Total: 13 countries

8 Terms of Reference of the RA III-RA IV Coordination Group on Satellite Data Requirements

2. Maintains an updated list of satellite data and products available to the Region through existing dissemination services. Data and products shall be classified by categories of variables and derived products.

Status: OK, ongoing.



8 Terms of Reference of the RA III-RA IV Coordination Group on Satellite Data Requirements

3. Regularly reviews sources of regional needs and undertakes, as needed, further information gathering, such as surveys, to ensure that views of WMO Members in the Region are adequately represented.

Status: OK, ongoing.



8 Terms of Reference of the RA III-RA IV Coordination Group on Satellite Data Requirements

4. Analyzes the requirements for each relevant category of product, and identifies which requirements are not adequately met by existing services. The unmet requirements are prioritized, taking into account:
 1. The applications supported and their impact
 2. The number and representativeness of the users
 3. The status of the required data or products
 4. The quality and suitability of the required data or products.

Status: Initial analysis; needs more work



8 Terms of Reference of the RA III-RA IV Coordination Group on Satellite Data Requirements

5. Formulates recommendations pertaining to:
 1. Existing satellite data/products (with detailed references) to be included in existing distribution services, or moving a product from one service to another, or assigning lower priority to an existing product (or removing it if obsolete)
 2. Amendments of existing products or development of new products
 3. Evolution (upgrade, or consolidating) of data dissemination means, or other (e.g. training, tools, user equipment)
 4. Short-term action to implement these recommendations

Status: Initial analysis; needs more work



8 Terms of Reference of the RA III-RA IV Coordination Group on Satellite Data Requirements

6. The Group maintains a dialogue with satellite data providers of relevance to the Region, and other partners as needed, to ensure that its recommendations are implemented.

Status: OK, ongoing. Discussion needed on additional partners.



8 Terms of Reference of the RA III-RA IV Coordination Group on Satellite Data Requirements

7. The Group uses the [WMO Procedure for Documenting Regional Requirements for Satellite Data Access and Exchange](#), for guidance.

Status: **OK, completed.**



8 Terms of Reference of the RA III-RA IV Coordination Group on Satellite Data Requirements

8. The Group meets in person at least every two years, and, to ensure continuity, works through collaborative tools during the intersessional period.

Status: **OK, ongoing.**



Expected Benefits

Coordination Group on Satellite Data Requirements in Region III and IV

- Identify and synthesize user needs for satellite data, products and associated training
- Effective user-provider dialogue towards meeting these requirements
- Find user-friendly and affordable cost-sharing arrangements for data access and distribution
- Prepare for the next generation of meteorological satellites
- Support operational services, application development, and capacity building in meteorology (weather and climate) in the Region
- Exploit synergy through links with other users, applications and GEO SBAs





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Thank you for your attention

Contact: sbojinski@wmo.int

Backup slides



Transition from GOES-N,O,P to GOES-R,S (1)

- Most geostationary systems start a new generation in the next 8 years: Himawari-8 (Oct. 2014), FY-4A, GOES-R, GEO-KOMPSAT-2A , MTG-I1, Electro-M1
- [Guideline for Ensuring User Readiness for New Generation Satellites](#) adopted by CBS-15 :
 - NMHSs should set up preparation projects
 - Satellite operators to provide technical information and tools
 - SATURN portal provides a single access to this information

www.wmo-sat.info/satellite-user-readiness

- For RA III: GOES (East) is essential
- Considerable improvement with GOES-R
- Transition requires special attention



Transition from GOES-N,O,P to GOES-R,S (2)

- Date of start of GOES-R/S operations over RA III cannot be predicted
- No overlap period with current GOES series
- Difficulty for NMHSs to plan GOES-R receiving equipment and increased risk of not being ready in due time
 - To reduce this risk and facilitate user uptake, WMO ET-SUP recommended to disseminate proxy data (during commissioning) then pre-operational datasets (during storage and early operations) via Geonetcast-A
 - Infrastructure is in place
 - The SDR Group would propose priority datasets
 - **Proposal: NOAA to investigate this possibility**



Reference User Readiness Project: Background

- **Frame user readiness planning**
 - Generic timeline with respect to launch date
 - (-5/-4/-3 years etc.)
 - Deliverables for users and satellite operators

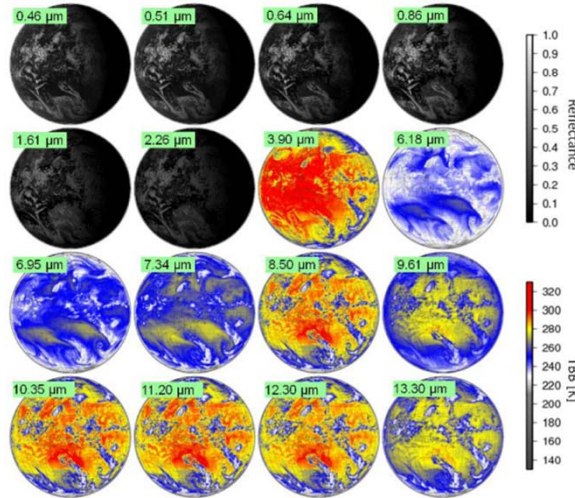
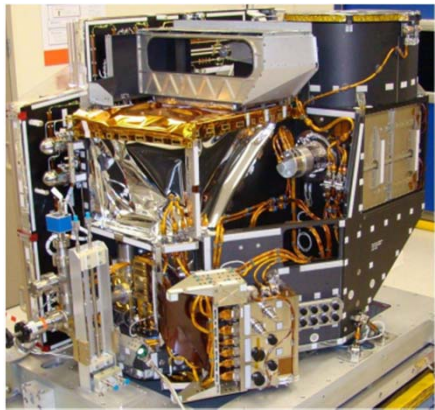
Users (e.g. NMS)	Satellite operators
Budget planning, R&D	Operation plans & schedules
Data reception & handling	Instrument characterization
Data processing & visualization	Data access specifications
Training and capacity building	Test data and tools; Software
Contributions to cal/val	User dialogue channels

- The detailed timeline of activities and deliverables is available in the SATURN portal

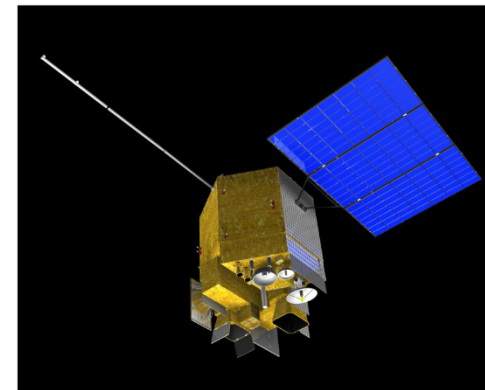


Japan, China, Russia, USA, Rep. Korea, EUMETSAT: upcoming new generation of geostationary satellites

Himawari-8 / AHI

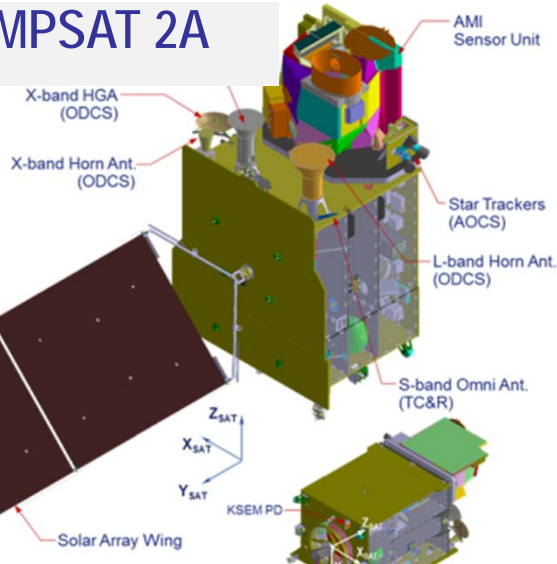


FengYun-4/A,B GIIRS, AGRI, LMI, SEP



GEO-KOMPSAT 2A

Weight: 10,000 kg
 Length: 3x4.9 (m)
 Width: 9.1x5.1 (m)
 Mission: (Meteo Imager)
 Environment: Space Environment



Meteosat Third Generation Imager series Sounder series



Summary of User issues in the Americas

- Transition from GOES to GOES-R
- GOES-R data reception (Direct readout: GRB; PDA; GNC-A): changes from GOES
- Access to data, to products
- Training material
- User feedback mechanisms
- NPP
- Data reception, direct readout, pre-processing, DBNet



WMO Recommendations

IPET-SUP-1 (2015)

- **Recommendation** : in regional requirements tables, a distinction should be made between products needed for routine operations, and those needed in emergency situations.
- **Recommendation**: NOAA to continue delivering basic imagery in GeoTIFF format from GOES-R on GNC-A.



WMO Recommendations

ET-SUP-8 (2014)

- **RECOMMENDATION 8.19: NOAA NESDIS to consider using an extended check-out period to make GOES-R data available on a pre-operational basis.**
- **RECOMMENDATION 8.21: NOAA NESDIS, in collaboration with international partners, to develop a GOES-R preparation project for users in RA III and RA IV (outside the US).**
- **RECOMMENDATION 8.22: T. Mostek and CIRA to facilitate organization of GOES-R related events through the VLab and dedicated user conferences, such as the 2015 NOAA Satellite Conference.**



17th World Meteorological Congress

Side event

"Ensuring User Readiness to New-Generation Meteorological Satellites"

- held on Wed 27 May 2015 between 12.15 and 13.15 at the CICG conference centre in Geneva, Switzerland
- Focus is on preparation of users for Himawari-8 and the upcoming GOES-R and JPSS systems
- 191 WMO Member states and territories represented at Congress



Capacity building

- Two Centres of Excellence of the Virtual Laboratory :
Brasil (INPE), Argentina (SMN, CONAE, UBA) supported by NOAA
- Weather briefings (with CoE in Costa Rica and Barbados)
- Webinars (*Geonetcast-Americas: Remote sensing tools for decision making on environmental phenomena and disasters, 07/2014*)



<http://vlab.wmo.int>

- NOAA 2015 conference : 27 April-1 May 2015, Greenbelt, MD, USA



Space Weather

- Effects of solar events on the Sun-Earth environment, including radiation burst, particle fluxes, ionospheric and geomagnetic disturbances
- Impacts on aviation, radio HF communications, GNSS signal, electric power grids (induced current)....
- Increasing attention by ICAO
- Inter-Programme Coordination Team on Space Weather (ICTSW) currently includes 23 WMO Members (Brasil from RA III)
- Members are encouraged to identify partner organizations with experience in this area to participate in ICTSW.



Terms of Reference of the RA III- RA IV Coordination Group on Satellite Data Requirements (Summary)

- Need standing expert group to regularly review the satellite data needs, and dialogue with satellite operators, along EC-65 Res.12
- RA III and RA IV would benefit of a common expert group
- Initial ad-hoc group: Argentina, Brazil, Canada, Colombia, Chile, Trinidad &Tobago, Venezuela, + CONAE, INPE, EUMETSAT, NOAA
- Maintains a database of required data and products
- Has reviewed the contents of GEONetCast-A, EUMETCast
- Fruitful dialogue with NOAA on GOES-East scanning optimization
- Terms of Reference (in Annex) were endorsed by RA IV
- Would support WG-ITD, SG-OBS (To be discussed under item 5.3)

