

World Meteorological Organization

Weather • Climate • Water

Satellite User Preparedness Ensuring the preparedness of users to the new generation of satellites by WMO

Presented to CGMS-41 plenary session, agenda item [C.5]

based on WMO Briefing to Side Event at 65th Executive Council, 17 May 2013

WMO; OBS/SAT

Ensuring user preparedness

- Satellites widely used by WMO Members in support of weather, climate, water applications
- New generation of <u>geostationary</u> meteorological satellites to enter operations in 2015-2018, including:
 - Himawari-8 (JMA)
 - FY-4 (CMA)
 - GOES-R (NOAA)
 - GEO-KOMPSAT-2 (KMA)
 - MTG (EUMETSAT)







Opportunities and Risks

Opportunities

- Capabilities <u>improve</u> (e.g., sampling rate, spatial resolution, spectral channels)
- Leading to more accurate and timely forecasts
- New products
- Improved service levels

Risks

- Data rates increase <u>drastically</u>, by factors of 10-100
- Data formats will change
- Data delivery mechanisms will change
- Operational services are dependent on current spacecraft

Affecting all WMO Regions

Guidance by WMO

- CBS Guideline for Ensuring User Readiness for New Generation Satellites (2012)
 - "operational users [NMHSs] to establish user readiness projects 5 years prior to launch"
 - "satellite operators to assist users in introduction of new data streams into operations"
 - Technical / programmatic information
 - Format specification, test datasets, prototype products
 - Parallel operation / parallel dissemination
 - Training

http://www.wmo.int/pages/prog/sat/documents/SAT-GEN_CBS-15-GuidelineUserReadiness.pdf



Deficiencies in preparing users

 Many Members report they are <u>insufficiently prepared</u> to the new generation of meteorological satellites



 Source: WMO 2012 Satellite User Survey - 227 responses from 95 countries

Side Event at WMO Executive Council, May 2013

- Briefings by CGMS members on user preparation:
 - JMA (Himawari-8/9)
 - NOAA (GOES-R, NPP)
 - EUMETSAT
 - CMA (FY-4)
- Briefing by Australian Bureau of Meteorology
 - User perspective

http://www.wmo.int/pages/prog/sat/meetings/E(65-SideEvent-UserPrep.php



Overview of User Preparedness

- Two areas of preparedness
 - New capability or
 - Improved capability over what already exists
- Continuity of service provision
 - Critical path, maintaining services acreate the transition
 - Legacy products and services
- Maximising value of service
 - Additional investment
 - New products and services





Australian Bureau of Meteorology Perspective

- Two major transition exercises
 - 2003 transition from GMS-5 GOES-9
 - SVISSR to GVAR
 - Need to maintain continuity of service
 - Forecasters
 - Products and website
 - Ingest and processing systems tested
 - Products migrated to new satellite
 - 2005 transition from GOES-9 MTSAT-1R
 - GVAR to HRIT

Satellite Data Value Chain

>> Different stages in the chain cover different activities and require a range of organisational capabilities



Satellite Data Value Chain

> Different stages in the chain require different preparatory activities



Way forward

- Development of user preparedness plans necessary
 - CGMS-40 WMO-WP-13
 - R40.03: "Satellite operators and trainers to take note of the new "CBS Guideline for ensuring user readiness for new generation satellites" and <u>plan appropriate projects to ensure user readiness</u>"
- Briefing at WMO Exec Council May 2013
 - Operators are making good progress in addressing this issue
 - e.g. JMA activities re Himawari-8
 - GOES-R Proving Ground
- Information may be hard to find for some users
 - Want to ensure users are empowered to make decisions

Requested Action

- Agencies are requested to nominate focal points for a "task team" to prepare an online 'user guide'
 - to be published on the WMO website
- Designed as a one-stop shop for information on
 - receiving systems
 - proxy datasets
 - training material
- Users can use this information to
 - Effectively plan their own activities to adjust to changes
 - Minimise service delivery risk associated with transition to new systems

4th Asia-Oceania Meteorological Satellite Users Conference

- 9-11 October 2013
 - Hosted by the Bureau of Meteorology in Melbourne
- Side event 7-8 October
 - Focus on user preparedness for next generation GEO
- http://www.virtuallab.bom.gov.au/events/aomsuc/





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Thank you for your attention

www.wmo.int/sat

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Background Material



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Guidelines on user readiness for new satellite systems, adopted by CBS in Sept 2012 (Summary)

- Information/training of prospective users
 - User conferences and workshops on new capabilities
 - Portals providing instrument specifications, data formats
 - Proxy data sets, tools and demonstration products
 - Guidance on receiving hardware/software
 - Training material and training events
- System operation
 - Some overlap period of old/new satellites
 - Some overlap of old/new dissemination systems
 - Satellite-independent dissemination system (e.g. GEONETCast)
- User organizations
 - Set up a user readiness project (e.g.~5 years) prior to launch
 - Networking through online collaboration

http://www.wmo.int/pages/prog/sat/documents/SAT-

Education and Training Capacity building



WMO-CGMS Virtual Laboratory for Education and Training in Satellite Meteorology





A network of 13 Centres of Excellence sponsored by 8 satellite operators

To provide training on meteorological and environmental satellite systems, data, products and applications;

To foster research and the development of applications for societal benefit at the local level by the National Met Services.

To assist NMSs in preparing for new generation satellites



http://vlab.wmo.int

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Online resources maintained by WMO Space Programme:

http://www.wmo.int/sat

OSCAR Satellite capabilities wmo.int/oscar

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WMO Space Programme Activities



Space Programme Governance

