

Joint RA-II & RA-V Meeting in Conjunction with AOMSUC-14

Date

7 December 2024

09:00-16:00 IST

Meeting Notes

Opening of the Meeting

The meeting was opened by Riris Adriyanto from BMKG, who warmly welcomed all participants to the Joint RA-II and RA-V meeting. Riris conveyed greetings on behalf of Ms Agnes Lane (BoM), Leader of RA V Expert Team on Satellite Utilization (ET-SAT) and Dr Dohyeong Kim (KMA), leader of RA II Expert Team on Satellite Observations and Applications (ET-SOA), who were unable to attend.

He expressed his gratitude to the Indian Meteorological Department (IMD) for their generous hospitality and for hosting a successful conference and training session in New Delhi over the past week.

Participants then introduced themselves in a roundtable format (see **Annex 1**).

Dr. Mrutyunjay Mohapatra, Permanent Representative of India with WMO and Head of IMD, welcomed all attendees to the meeting, expressing his hope for productive discussions.

Ben Churchill, Director of the WMO Regional Office for Asia and the South-West Pacific, also extended his welcome to the participants. He highlighted key WMO activities in the Asia-Pacific region and underscored the significance of this meeting in fostering close collaboration between the satellite user community and satellite data providers in the region. Ben also reminded participants about the **Early Warnings for All (EW4ALL)** initiative launched by the UN Secretary-General in 2022, emphasizing its critical role in addressing major gaps in early warning systems globally.

Updates on working structure and Operating Plans of RA II and RA V

Yongqing Chen, Technical Coordinator (Infrastructure) from the WMO Regional Office for Asia and the South-West Pacific, provided an update on the working structure and Operating Plans of RA II and RA V (see [document 1](#)).

In RA II and RA V, the Regional Operating Plan is developed to facilitate the regional implementation of WMO programmes, incorporating resolutions and decisions made by Congress, the Executive Council, and the respective Regional Association.

The current RA II Operating Plan (2021–2024) was approved during RA II-17 (Phase 2) on 27 September 2021 and subsequently updated by the RA II Management Group in April 2022 and November 2022. A draft version of the RA II Operating Plan for the next intersessional period (2024–2027) has been prepared and will be submitted for approval at the upcoming RA II session (RA II-18). Similarly, the RA V Operating Plan (2024–2027) was endorsed by the President of RA V in April 2024.

Both the RA II and RA V Operating Plans for 2024–2027 include a key result area titled “Improve Satellite Observations and Applications.” These include various satellite-related activities planned for this period such as events related to AOMSUC, SG-SWCEM-EAWP meetings, satellite-based RA II WIGOS projects, and satellite-related training programs provided by regional training centres.

Each Regional Association established its governance structure during its respective RA sessions in 2021. This structure includes satellite-focused expert teams under the Working Groups on Infrastructure: the Expert Team on Satellite Observations and Applications (ET-SOA) in RA II and the Expert Team on Satellite Utilization (ET-SAT) in RA V. These teams aim to support WMO Members in promoting the utilization of satellite data in their respective regions.

Updates on RA II ET-SOA and RA V ET-SAT

Agnes Lane from BoM delivered a pre-recorded presentation providing updates on both the **RA V WG-I Expert Team on Satellite Utilization (ET-SAT)**, which she leads, and the **RA II WG-I Expert Team**

on **Satellite Observations and Applications (ET-SOA)**. For more details, please refer to [document 2](#).

She outlined the key activities conducted by the regional groups. Regarding actions in support of the **EW4ALL** initiative, the following updates were highlighted:

- A dedicated **Task Team** has been established to coordinate efforts.
- The group is working on:
 - Identifying satellite products required for addressing top hazards in RA-II and RA-V separately.
 - Conducting a gap analysis, including infrastructure and training needs.
 - Planning the next Task Team meeting for early 2025.

Participants were introduced to the **Satellite Data/Products Catalogue**, compiled based on input from Satellite Operators ([Data Call on Satellite Products for EW4ALL.xlsx](#)). Members were encouraged to explore this catalogue to fully utilize the available resources.

Indian Services Supporting the Asian Region

Ashim Kumar Mitra from IMD provided an overview of Indian services supporting the Asian region (see [document 3](#)). The **India Meteorological Department (IMD)** operates direct reception antennas for the **INSAT-3DR** and **INSAT-3DS** satellites, which replaced the discontinued **INSAT-3D**.

It was highlighted that IMD, in collaboration with ISRO, developed the **Real-Time Analysis Product Information Dissemination (RAPID)** tool, a web-based GIS platform for visualizing satellite data. Operational since January 2015, RAPID enables users to overlay data from INSAT-3DR/3DS satellites with model outputs, making it an essential tool for meteorological analysis and forecasting. IMD has recently conducted training sessions on processing and visualizing INSAT-3DR/3DS data using RAPID.

IMD also introduced an extensive training programme that it conducts, covering a range of topics, including:

- Intermediate Training Course/Integrated Meteorological Training Course
- Forecasters Training Course
- Advanced Meteorological Training Course
- Trainee Meteorologist Grade-II Course

The **Rapid Scan** facility for **INSAT-3DS** was also introduced, emphasizing its capability to observe specific areas of interest for hazardous events monitoring at **5-minute intervals**. International users can submit requests for rapid scan observations as needed.

Bodo Zeschke, AOMSUC International Conference Steering Committee Liaison Officer for Training, commended IMD's significant contributions to capacity development. He emphasized the importance of IMD becoming a formal member of the **CGMS-WMO Virtual Laboratory (VLab)** to share its expertise with the broader user community (**Action 1**).

Particular appreciation was expressed for IMD's efforts in training on **RGB interpretation**, as demonstrated during the training session. The user community expressed strong interest in participating in future online training sessions organized by IMD. In response, IMD committed to organizing an online workshop in 2025 to provide training on **RGB interpretation** and the **usage of lightning products** for users in the region.

WMO Members' reports

The session continued with presentations of reports submitted by WMO Members. A summary of the key outcomes from these reports is outlined in the table below.

Country (Focal Point)	Access to Satellite Data	Visualization Tools Used	Training needs
Australia (Agnes Lane)	GEO: - Himawari: HimawariCast, HimawariCloud - Previously operated FY-2 ground reception system (no longer operational). - Exploring receiving GK2A from KMA (forecasters use GK2A via CIRA/SLIDER). LEO: - 5 polar tracking ground stations: Crib Point, Learmonth, Shoal Bay, Casey, Davis - Satellite data received: - NOAA-18, 19, 20 - Terra, Aqua - SNPP - METOP-B, C	- Visual Weather: Proprietary software enabling integrated visualization of model output and satellite observations. - Panther: Visualization system developed in the Bureau. - McIDAS/CIMSS: Previously used for visualization (still used in some workstations).	N/A
Bangladesh (Nilufar Zahan)	- Himawari: HimawariCast, HimawariCloud - FY-4: Access via FTP; CMACast ground station service currently under upgrade. - GK2A (experimental): Satellite ground station for GK2A data reception.	- Himawari: SATAID software - FY-4: SWAP software - GK2A: iDAP software	1. Capacity building in satellite data and product utilization, including microwave (MW) data analysis. 2. Capacity building in numerical weather prediction (NWP) models with data assimilation techniques. 3. Capacity building for agro-meteorological applications, such as crop yield forecasting, damage assessment, NDVI analysis, and inundation mapping.
Fiji (Risiate Temo)	GEO: - Himawari: HimawariCast, HimawariCloud - GOES-18: Accessed via web portal - Additional access through web-based platforms such as Windy.com, CIMSS, and CIRA. LEO: - Web access to various online platforms and websites. - Used to receive via DB station NOAA-15 but has been decommissioned. - Very limited internet access.	- Visual Weather (currently migrating to IBL) and SATAID software - SATAID: Used specifically for TC applications.	1. RGB training. 2. Training for Forecasters and IT staff.
Hong Kong, China (TANG Wai Ho)	GEO: - Himawari: HimawariCast, HimawariCloud	- In-house development of Intranet webpages to display satellite image	1. Better ability to forecast rainstorm development and

Country (Focal Point)	Access to Satellite Data	Visualization Tools Used	Training needs
	- FY-2 series [FY2G, 2H]: CMACast - FY-4B: CMACast & Direct reception - GK2A & GK2B: Real-Time FTP service - GOES series [GOES-16, 18]: Internet - METEOSAT series [MSG-2, 3]: Internet LEO: - FY-3 series [FY3C, FY3D]: Direct reception & FY3E CMACast - EOS series [AQUA & TERRA]: Direct reception - NOAA series [N-18, 19, 20, 21 SNPP]: Direct reception - METOP series [Metop-B, C]: Direct reception - COMSIC-2 series: NSPO and NOAA Internet - SAR data from RADARSAT Constellation Mission and Sentinel-1A: Internet webpage - Tianmu-1 satellite constellation data (in trial use): Internet - The internet/communications are reliable at Hong Kong. - Internet link serves as primary source, while Direct reception as backup, because of the higher image resolution and larger bandwidth for data transfer.	and data (able to overlay various observational data, e.g. radar, on GIS-based webpage) - Workstations using PROTEUS to display direct reception data via HimawariCast as a backup for forecasters in case of Internet failure. - GMT software tool used to convert .NC data files to PNG graphic files for display. - Forecasters are also able to access online applications, including CIRA SLIDER, and CMA NSMC's Fengyun Live and SWAP	movement
Indonesia (Riris Adriyanto)	GEO: - Himawari: HimawariCast, HimawariCloud - GK2A: via FTP since 2020 - Previously operated FY-2 ground reception system (no longer operational) LEO: - Previously operated DB stations, but they are no longer operational. - Web access to various online platforms and websites.	- BMKG Portal: Provides satellite-derived products via satellite.bmkg.go.id. The portal serves as a one-stop platform for displaying all satellite data and derived products. - SATAID: Used for weather analysis.	1) Workshop on ML/AI for satellite data analysis (e.g., volcanic ash or smoke haze detection). 2) Training on satellite data management, archiving, and retrieval. 3) Webinars and conferences on advanced satellite data applications led by experienced practitioners. 4) Internships or exchange programs for IT professionals in satellite system administration, including data processing, server management, and troubleshooting.
Iran (Navid HajiBabaei)	- METEOSAT-IODC: EUMETCast	- pcwinsat: Part of the UKW software collection	1) Tailored training in satellite meteorology should align with each

Country (Focal Point)	Access to Satellite Data	Visualization Tools Used	Training needs
	- Internet access is unreliable and inadequate for monitoring, nowcasting, or operational forecasting purposes. - Severe limitations exist in accessing online data, such as CIRA SLIDER.	- XRIT2PIC: Utilized for visualizing MSG data	country's capacity and infrastructure. 2) Case-based training with professional instructors should be prioritized by WMO and EUMETSAT. 3) Financial support from WMO is essential for participation in international training and conferences.
Kazakhstan (Nurlan Abayev)	GEO: - MSG: EUMETCast, EUMETView - FY-2: a web application set up by CMA, CMACast (currently not operational) - Electro-L: Roshydromet web pages LEO: - NOAA, Terra/Aqua, Landsat, Sentinel: web portals - Antennas are reliable, but signal strength weakens during cloudy days. - LEO data primarily employed for research, disaster management, and monitoring extreme events.	- TmetVis: Software Package for visualizing satellite data distributed via EUMETCast system (by SADCA) - FY2: web application to visualize satellite data along with NWP models output	1) Interpretation of Atmospheric Processes Using Satellite Data. 2) Application of Satellite Data in Early Warning of Extreme Weather Events. 3) Utilizing Satellite Data in Flood Monitoring. 4) Big Data Processing.
Kyrgyzstan (Baktybekova Aizhanat)	- MSG: EUMETCast (as part of the SADCA project). - Uses visible and infrared images from MSG satellites to analyze cloud cover. - FY-2: CMACast installation has been initiated but not completed (currently not operational). - In Kyrgyzhydromet, only the Meteorological Forecasting Department utilizes satellite data. - Hydrological Forecasting, Agrometeorology, and Pollution Forecasting departments do not use satellite data. - The department has never accessed satellite data through websites.	- TmetVis: by SADCA.	1) Technical training for staff on operating equipment and software. 2) Advanced training for meteorologists in satellite imagery utilization for weather forecasting.
Maldives (Ahmed Muslim)	GEO: - FY-2/4: CMACast upgrade is under discussion	- MICAPS & SWAP: CMACast visualization software; previously used	1) Hand-on training on using, overlaying, interpreting various

Country (Focal Point)	Access to Satellite Data	Visualization Tools Used	Training needs
	(currently not operational), accessed via CMA web portal - INSAT: Access via web portal. - METEOSAT: Access via web portal. LEO: - No proper mechanism for accessing LEO data; most commonly used product is ASCAT wind data. - Internet bandwidth limitations prevent downloading large datasets. - 10-minute geostationary data cannot be currently received.	but requires an upgrade of the receiving system. It can overlay different data types (satellite, in-situ, model). - CIRA SLIDER can be accessed.	satellite data and products
Mongolia (Munkhzul Dorjsuren)	GEO: - FY2: CMACast - Himawari: HimawariCast & HimawariCloud LEO: - NOAA: Direct reception - MODIS: Direct reception - Suomi NPP: Direct reception	- Vxeos (eOsphere, UK Space Agency): NOAA, MODIS, SNPP - GMSOFT: FY-2 cloud maps - Visual Basic: Himawari data processing - Other visualization tools used: MRT, ENVI, ERDAS, ArcMap and QGIS	2) Data assimilation in numerical weather prediction using satellite data. 2) Flood forecasting based on satellite and in-situ data. 3) Development and implementation of software for active remote sensing systems. 4) Some issues with data processing of FY2 (only cloud maps are generated), need for training 5) SATAID software is currently not used to visualize Himawari data (further training needed).
Myanmar (Sandar Wai)	GEO: - Himawari: HimawariCast - FY-2/4: CMACast (upgraded in 2022 but not used due to lack of training) - Internet is unreliable (10M connection) - Request for Infrastructure for Direct Reception of KMA GK2A and relevant technical trainings	- SATAID: for Himawari data visualization - JMA QC/QPE package for archived radar, satellite, and AWOS data overlay and analysis	1) Hands-on training on CMACast and FY-2G. 2) Training on the utilization of KMA-GK2A products. 3) Capacity building in RGB imagery interpretation. 4) Training in TC imagery analysis and NWP tools. 5) Interpreting various types of satellite imagery. 6) Training on using satellite images for lightning detection and severe thunderstorm warnings.

Country (Focal Point)	Access to Satellite Data	Visualization Tools Used	Training needs
			7) Training in storm surge modeling, techniques for forecasting cyclone tracks, advanced methods for analyzing satellite images for cyclone forecasting. 8) Lack of knowledge on using CIRA SLIDER
Oman (Shima Alyazidi)	GEO: - MSG (IODC and 0-degree service): Direct reception - MTG: online access; working on direct reception + EUMETCast-Terrestrial - CMACast installation has been completed. However, the products and data are not yet available at the terminal for the forecasters. LEO: Internet - ASCAT, SST, lightning, altimetry products - Sentinel-1 and Sentinel-2 - Microwave products	- Visual Weather & McIDAS/CIMSS - Online portals used by forecasters: Eumetview, Worldview, EO Browser	1) MTG training. 2) Python and Satpy. 3) AI/ML 4) Big data
Pakistan (Wash Dev Khatri)	GEO: - FY-2/4 : CMACast (upgraded in 2022) - Meteosat : EUMETView - INSAT : IMD web portal LEO: - NOAA, Sentinel, FY-3: via Internet - mostly used for research, natural disaster and extreme event monitoring	- GeoReceive & Gmsoft are used to receive and visualize FY-2/4 satellite data. - MICAPS & SWAP : Not used. - Mostly jpg images (6 different types IR 1-3, Vapour, Visible) are being used by forecasting offices	1) Training on utilizing LEO satellite data. 2) Visualization techniques for LEO satellite data and products. 3) Open-source visualization software for LEO satellite data (e.g., QGIS, GEE, GRASS, R). 4) Training in satellite meteorology, including algorithms for deriving products.
Solomon Islands (Lenny Konamauri)	GEO: - Himawari : JMA web portal LEO: - ASCAT Ocean Surface Winds - HimawariCast is no longer operational and the data is not received for almost a year (due to the internal connectivity issue). - no storage capacity for satellite data at all.	- SATAID for HimawariCast data (currently not operational) - XyGrib for overlaying satellite, in-situ, and model data	1) Refresher training on analyzing and interpreting satellite images remains a top priority (cloud type, tropical convection, RGB composite imagery, the Dvorak Technique for TC analysis). 2) Use of satellite data for climate services (e.g., rainfall monitoring, altimetry datasets). 3) Need for training on satellite data

Country (Focal Point)	Access to Satellite Data	Visualization Tools Used	Training needs
			visualizations and plotting tools (e.g., SATAID, python) for tailored products.
Tonga (Taniela Takeifanga)	GEO: - Himawari: Himawari Cast Other online sources: CIMMS (NOAA), JAXA Realtime Rainfall watch, STAR (NOAA) - Internet and Communication Reliability (currently transitioning to the Starlink network.)	- SATAID for HimawariCast data - Challenges in integrating datasets from JMA systems, AWS, radar, and other external sources due to format and system differences.	1) Advanced features of SATAID software to utilize effectively for example RGB. 2) Access to JMA 2.5min rapid satellite images. 3) NOAA lightning cast training and case studies with BOM
Tuvalu (Limoni Mativa)	GEO: - Himawari: HimawariCast & JMA web portal - Internet stable, currently using the Starlink network	- SATAID for Himawari display - Himawari online services (Web Applications) - Met Connect Dashboard: proprietary web-based platform developed by MetraWeather that allows overlay of various datasets - NOAA, NIWA, BOM websites	1) In-country training for Satellite Data usage Himawari Sataid & RGB application training. 2) Tropical Cyclone training (Basic & Advance Level).
Vietnam (Nguyen Quang Vinh)	GEO: - Himawari: HimawariCast & HimawariCloud LEO: Terra, Aqua, NOAA, METOP, Suomi NPP, JPSS-1 and FY-3: direct reception via a newly established Dartcom Receiver	- SATAID software to exploit Himawari data. - iDAP software to exploit LEO satellite data - web GIS platform for visualization satellite products, weather radar, lightning detection.	- Lack of experience in exploiting products from LEO satellites.

Discussion on user requirements for satellite data utilization

Ben Churchill emphasized the significance of this session, highlighting its role as a critical resource for identifying relevant priorities. These priorities are expected to inform and support decision-making processes across the region.

The following key challenges were identified as common issues faced by many WMO Members in the region:

- Bandwidth limitations.
- Insufficient storage capacity.
- The need for additional training provided by satellite data providers.

JMA informed participants of plans to upgrade the HimawariCast receiving systems in 14 NMHSs, initially installed by WMO/JMA around 2015, in collaboration with WMO. Although these systems remain operational, updates are necessary as the workstations are aging. Additionally, JMA is working on securing funding to upgrade HimawariCast receiving systems in 5 more NMHSs, including the Solomon Islands, where systems were installed by JICA during the same period.

Riris Adriyanto from BMKG emphasized the importance of maximizing the benefits of rapid scan services provided by various satellite operators in the region. He suggested that further efforts should focus on harmonizing these services to enable a **one-stop-shop** type of website where users can submit dedicated requests to satellite operators. This topic was noted to be addressed by JMA, KMA, CMA under the agenda item on **RA II WIGOS Coordination Group activities**.

Anni Arumsari Fitriany from BMKG requested that information on training needs reported by WMO Members be shared with WMO-CGMS VLab Centres of Excellence (CoEs) in the region for their consideration (**Action 2**). This information was noted as an important resource for guiding WMO Regional Training Centres and VLab CoEs in developing training priorities, particularly in alignment with the priority hazards highlighted in Agnes's presentation.

Post-meeting note: This information has been included in the meeting minutes under the agenda item "WMO Members' Reports" and has also been circulated among VLab CoEs.

Di Xian from NSMC/CMA noted that CMA is willing to collaborate with NMHSs experiencing challenges in accessing and utilizing satellite data from FY satellites. Additionally, it was announced that **CMA** is planning to organize an **FY User Conference** in October 2025.

Allen Huang, Chair of the **AOMSUC International Conference Steering Committee (ICSC)**, stressed the importance of coordinating the dates for the **FY User Conference** and **AOMSUC-15**, which is also scheduled to be held in Indonesia in the October timeframe. He emphasized the need to avoid any overlap between these two events to ensure that the community can fully participate in both (**Action 3**).

Reports from RA I and RA III/IV

RAIDEG

Sarah Kimani (KMD, RAIDEG Chair) delivered a pre-recorded presentation providing updates from the **RA I Dissemination Expert Group (RAIDEG)** (see [document 4](#)).

She highlighted that the African user community is actively preparing for the transition to **MTG data**. **EUMETCast Africa** was noted as the primary mechanism for distributing satellite data and products to the RA I user community. The data is managed using the **PUMA system** (Preparation for the Use of MSG in Africa) and visualized with **Synergie**, which is being replaced by **Skyceiver** visualization software.

RAIDEG is engaged in several key activities, including:

- Conducting a survey on the initial use of MTG data in Africa and assessing readiness for the transition from MSG to MTG.
- Analyzing the initial MTG data disseminated across Africa.
- Assisting in MTG data and product validation campaigns in Africa.
- Recommending training needs and implementing training programs to address learning requirements in RA I for the new generation of satellite data and products.

The presentation concluded with information about an informal communication channel via WhatsApp for the African user community, emphasizing the value of such informal interactions in fostering collaboration and knowledge-sharing within the community.

SDR-Group-RA-III-IV

Diego Souza (INPE, SDR-Group-RA-III-IV Co-Chair) delivered a pre-recorded presentation providing updates from the **Coordination Group on Satellite Data Requirements for RA III AND RA IV (RA-III-IV-SDR-Group)** (see [document 5](#)).

The Group involves active participation from 18 member countries, including representatives from VLab. Various data access mechanisms are available in the region, with **GEONETCast-Americas** highlighted as a cost-effective option for accessing satellite data and products from regional providers. However, **internet-based access mechanisms** (including **NOAA Open Data Dissemination**) remain the most widely used. The Group has documented all available satellite data stations, which can be accessed at: <https://sdr.ucr.ac.cr/country-status>.

For data processing and visualization, members use a variety of tools, often developed in-house, with **Python** being the most commonly utilized. To support members and promote best practices, the SDR Group has established a **Task Team on Data Processing and Visualization**.

The presentation highlighted the [project](#), led by the **WMO World Weather Research Programme (WWRP)**. This initiative focuses on evaluating nowcasting capabilities and enhancing Early Warning Systems (EWS) across WMO Regional Associations.

Actions in support of **EW4ALL** were also discussed, including a **pilot project** by VLab in support of EW4ALL. In this initiative, regional VLab Centres of Excellence are invited to develop training resources tailored to monitoring their priority hazards.

Regions III and IV are actively utilizing **WhatsApp** as an informal communication channel to foster user engagement and strengthen collaboration.

It was emphasized that fostering interregional exchange between various regional groups is essential to enable them to benefit from each other's experiences. Inspired by successful examples from other regions, it was agreed to establish a **WhatsApp group** for the Asia-Oceania region. This group will aim to build a community of practice among satellite data users, facilitating the exchange of information, sharing of experiences, and strengthening collaborations (**Action 4**).

WMO-CGMS Virtual Laboratory (VLab) updates and plans

VLab as a Global Network of Training Providers

Wen Bo (CMA Training Centre, CGMS-WMO VLab Co-Chair) delivered a pre-recorded presentation providing updates from the **CGMS-WMO Virtual Laboratory for Training and Education in Satellite Meteorology** (see [document 6](#)).

The **Guidelines on Satellite Skills and Knowledge for Operational Meteorologists (SP-12)** is currently being revised to include additional skills related to the application of satellite data for **Climate Services** and **Agrometeorological Services**. The updated guidelines are under review by WMO Members and are expected to be approved by INFCOM Members via correspondence in early 2025.

Key Achievements Highlighted

- Progress in training initiatives addressing the priority areas of the **EW4All initiative**.
- **Europe and Africa Regions:** Preparations for and use of new Meteosat Third Generation Geostationary data and the expansion of monthly weather/webinar sessions.
- **Americas and Caribbean Regions:** Launch of a pilot project in support of the **EW4All initiative**.
- **Asia and Pacific Regions:** Sharing of responsibilities for monthly **Regional Focus Group** sessions.
- Revision of the enabling satellite skills document.

It was also announced that **Bernie Connell (CIRA/NOAA, CGMS Co-Chair)** and **Wen Bo (CMA TC, WMO Co-Chair)** will step down as **VLab Co-Chairs** in February 2025. VLab is currently seeking volunteers to take on the role of VLab Co-Chairs.

The activities from BoM, BMKG, CMA, and KMA

Bodo Zeschke, AOMSUC International Conference Steering Committee Liaison Officer for Training, presented key activities undertaken by **BoM, BMKG, China (CMA and Nanjing University of Information Science and Technology)**, and **KMA** over the past year ([document 7](#)). Anni Arumsari Fitriany provided a detailed overview of BMKG's activities.

The importance of the **Regional Focus Group (RFG)** meetings, coordinated by the Melbourne Centre of Excellence in collaboration with regional partners, was highlighted. The first RFG meeting was held in October 2013.

Bodo emphasized that, in collaboration with JMA, the National Himawari-8 Training Campaign was successfully hosted. This initiative supported the Australasia-Pacific region in preparing for the receipt and effective use of **Himawari-8 data** and associated **RGB composites** during 2014 and 2015. The knowledge gained from this training campaign will be invaluable when preparing for the transition to **Himawari-10**.

RA II WIGOS Coordination Group activities

Akihiro Shimizu from JMA, on behalf of **CMA, KMA, and JMA**, presented an overview of the **RA II WIGOS Coordination Group activities** (see [document 8](#)).

The presentation highlighted efforts made by these agencies toward the **harmonization of request-based high-frequency regional observations**. The rapid-scan services provided by CMA, JMA, and KMA were outlined.

JMA maintains a [portal site](#) under the RA-II WIGOS Project, which includes mutual links to information pages from each agency detailing their rapid-scan services.

JMA is currently developing an enhanced, user-friendly portal that will feature real-time visualization of observation locations from all three agencies on a single map. This expanded feature aims to display **request-based high-frequency regional observation sites** in real time, offering a more integrated and accessible tool for the user community.

Summary and Closure of the meeting

The Chairs emphasized the importance of addressing the needs expressed by **WMO Members**, ensuring that their requests are properly considered and acted upon to support future initiatives and collaborations. The active participation of Members in the meeting was specifically appreciated, highlighting that sharing experiences among countries represents a vital path forward.

The meeting concluded with the Chairs expressing their gratitude to **IMD** for their warm hospitality and exceptional efforts in hosting **AOMSUC-14** and the associated events in New Delhi.

Actions

Action 1: The WMO Secretariat to provide guidance to **IMD** for becoming a formal member of the **CGMS-WMO Virtual Laboratory (VLab)** to share its expertise with the broader user community.

Action 2: The WMO Secretariat to summarize training needs reported by **WMO Members** and share them with the **VLab Centres of Excellence** and **Satellite Operators** in the region.

Action 3: **CMA** and **BMKG** to coordinate the dates for the **FY User Conference** and **AOMSUC-15**, both scheduled for the October 2025 timeframe, to avoid scheduling conflicts.

Action 4: The WMO Secretariat to establish a **WhatsApp group** for the Asia-Oceania region to build a community of practice among satellite data users, facilitating the exchange of information, sharing of experiences, and strengthening collaborations.

Meeting agenda

<i>Time</i>	<i>Topic</i>	<i>Speaker</i>
09:00-09:30	Opening of the meeting	IMD, WMO RAP, Chair
09:30-09:50	Updates on working structure and Operating Plans of RA II and RA V	Yongqing Chen, WMO RAP
09:50-10:10	Updates on RA II ET-SOA and RA V ET-SAT	Agnes Lane, Chair of RA V ET-SAT (<i>pre-recorded</i>)
10:10-10:30	Indian Services Supporting the Asian Region	A. Mitra, IMD
10:30-11:00	<i>Coffee-break</i>	
11:00-12:45	WMO Members' report 1. Australia (<i>information document</i>) 2. Bangladesh (<i>not attending</i>) 3. Fiji 4. Hong Kong, China 5. Indonesia 6. Iran 7. Kazakhstan (<i>not attending</i>) 8. Kyrgyz Republic 9. Maldives (<i>not attending</i>) 10. Mongolia 11. Myanmar 12. Oman 13. Pakistan (<i>not attending</i>) 14. Solomon Islands 15. Tonga 16. Tuvalu 17. Vietnam	(7 min per each country)
12:45-13:00	Discussion on user requirements for satellite data utilization • Access to satellite data • Visualization tools • Training needs	Discussion
13:00-13:45	<i>Lunch break</i>	
13:45-14:15	Reports from RA I and RA III/IV	
14:15-14:30	RAIDEG	Sarah Kimani, KMD (<i>pre-recorded</i>)
14:30-14:45	SDR-Group-RA-III-IV	Diego Souza, INPE (<i>pre-recorded</i>)
14:45-15:45	WMO-CGMS Virtual Laboratory (VLab) updates and plans	
14:45-15:00	VLab as a Global Network of Training Providers	Wen Bo, VLab Co-chair (<i>pre-recorded</i>)
15:00-15:30	The activities from BoM, BMKG, CMA, and KMA	Bodo Zeschke, BOM
15:30-15:45	RA II WIGOS Coordination Group activities (CMA, JMA, KMA)	Akihiro SHIMIZU, JMA
15:45-16:00	Summary and Closure of the meeting	IMD, WMO RAP, Chair

Meeting participants

No	Name	Organization
Chairs		
1	Mrutunjay Mohapatra	PR of India with WMO
2	Riris Adriyanto	BMKG/Australia
3	Ben Churchill	WMO RAP
4	Allen Huang	AOMSUC ICSC Chair
Members		
5	Navid Hajbabaee	IRIMO/Iran
6	Shima Zaher Mohammed Alyazidi	CAA/Oman
7	Sandar Wai	DMH/Myanmar
8	Ahmed Muslim	Maldives Meteorological Service
9	Nguyen Quang Vinh	VMHA/Vietnam
10	Nurlan Abayev	Kazhydromet/Kazakhstan
11	Munkhzul Dorjsuren	NAMEM/Mongolia
12	Aizhanat Baktybekova	KyrgyzHydromet/Kyrgyzstan
13	TANG Wai Ho (Alan)	Hong Kong Observatory
14	Turki Theab Al-Harbi	NCM/Saudi Arabia
15	Saleh Ali Safar Alsaedi	NCM/Saudi Arabia
16	Moath Abdullatif Alkhalaf	NCM/Saudi Arabia
17	Faleh Saad Faleh Al-Johani	NCM/Saudi Arabia
18	Taniela Takeifanga	Tonga Meteorological Services
19	Bodo Zeschke	BoM/Australia
20	Lenny Konamauri	Solomon Islands Meteorological Service
21	Risiate Temo	Fiji Meteorological Service
22	Limoni Mativa	Tuvalu Meteorological Service
23	Anni Arumsari Fitriany	BMKG/Australia
24	Rif`at Darajat	BMKG/Australia
Satellite operators		
25	Ashim Kumar Mitra	IMD
26	Ram Kumar Giri	IMD
27	TAKAHASHI Masaya	JMA
28	TOKAIRIN Genki	JMA
29	Akihiro SHIMIZU	JMA
30	Jiyoung KIM	KMA
31	Daegyeom Jeon	KMA
32	Di Xian	CMA/NSMC
33	Chang Liu	CMA/NSMC
34	Heather Coll	NOAA/NESDIS
WMO Secretariat		
35	Yongqing Chen	WMO RAP
36	Ryuji Yamada	WMO RAP
37	Zoya Andreeva	WMO SSU