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Establishment of WMO RA V Virtual Laboratory (VLab) for Meteorological Satellite Education and Training Center of Excellence (CoE) in Indonesia: **Challenges and Opportunities**

Dr. Nelly Florida Riama

**Head of Center for Education and Training of BMKG
/Director of Indonesia RTC of RA V WMO**

**Session 2 - Tuesday, 7 November 2023:
Application for Weather Analysis and Nowcasting (IV)**



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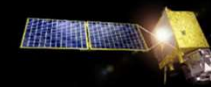
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AOMSUC-13

제13차
아시아-오세아니아 기상위성
사용자 컨퍼런스

13th Asia-Oceania Meteorological Satellite Users' Conference





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1. Background: RA V Members (including Indonesia) Challenges

RA V: Archipelagic Countries, **Surrounded by Ocean**



Indonesia: 70% Ocean, 30% Land



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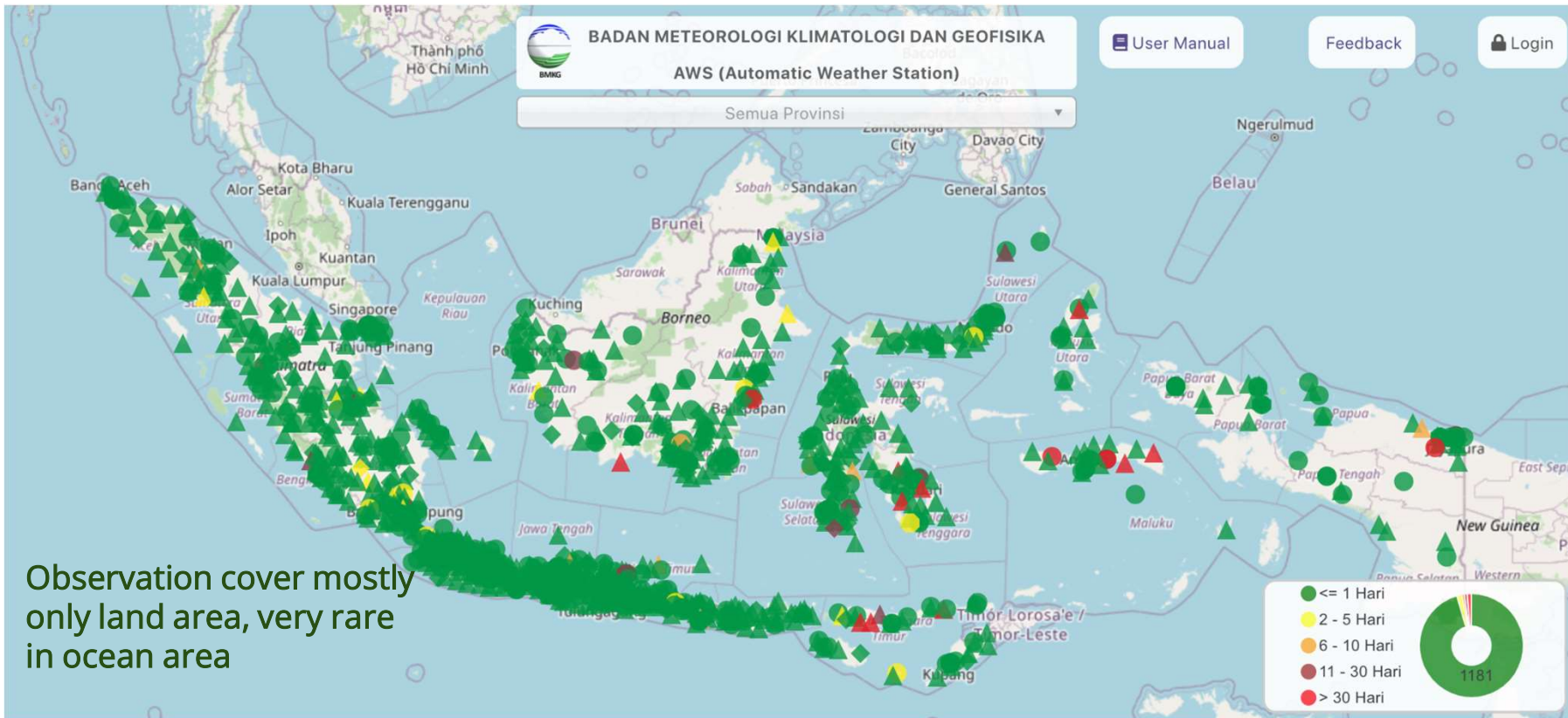
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1. Background: The Need of Satellite Data to Cover Ocean and Surrounding Areas





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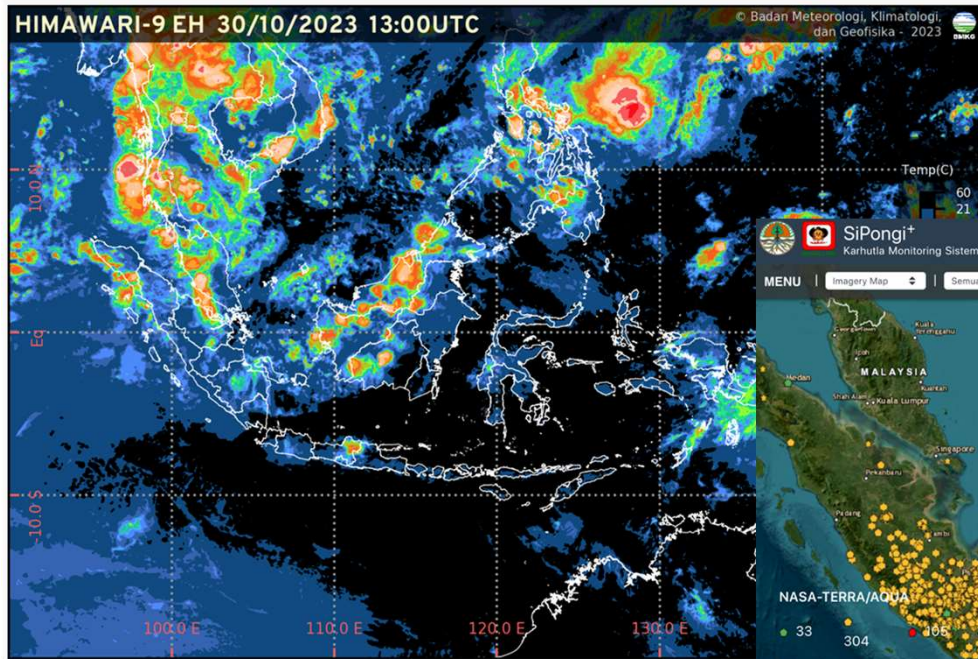
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1. Background: Satellite Data as the Solution



Cloud

Hotspot





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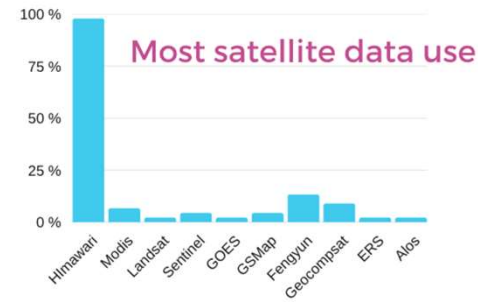
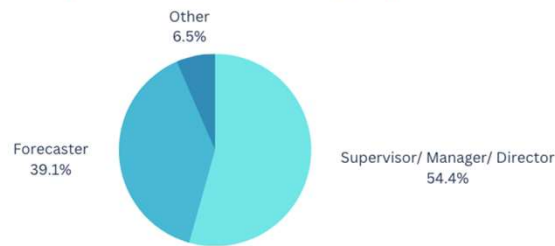
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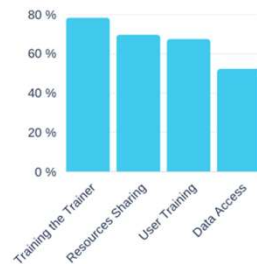
2. Capacity Development on Satellite in Indonesia

SURVEY RESULT ON SATELLITE TRAINING

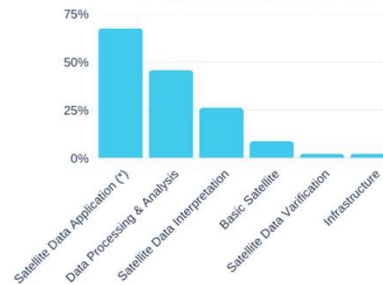
Respondent's Profile (46)



Most Needs in Satellite's Training



Topics in Need



Satellite Data Application (*):
Aviation, Climate, Marine, Tsunami,
DRR, Space Weather

Specific topics i.e.:
Hotspots and Trajectory, Hotspots,
VA, Convective Cloud, RDCA, HCAI,
RGB, TS, Mountain/ Gravity Wave)



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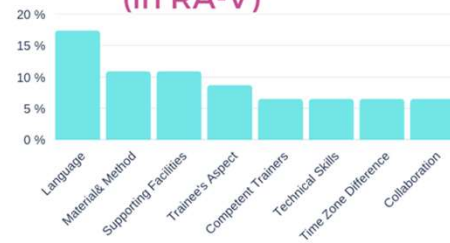
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2. Capacity Development on Satellite in Indonesia

SURVEY RESULT ON SATELLITE TRAINING

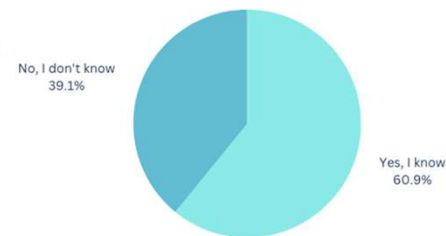
Training Challenges
(in RA-V)



Training Challenges
(in BMKG)



Document on "Guidelines
on Satellite Skills and
Knowledge for Ops Met"





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3. BMKG as the Indonesia VLab Center of Excellence and Its Activities

THE INTERNATIONAL PARTNERS

Area of collaboration:

- Resources Sharing
- Lecturers/Trainers
- Issues Updates
- Events
- Community of Practice
- etc.



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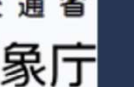
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Korea Meteorological
Administration





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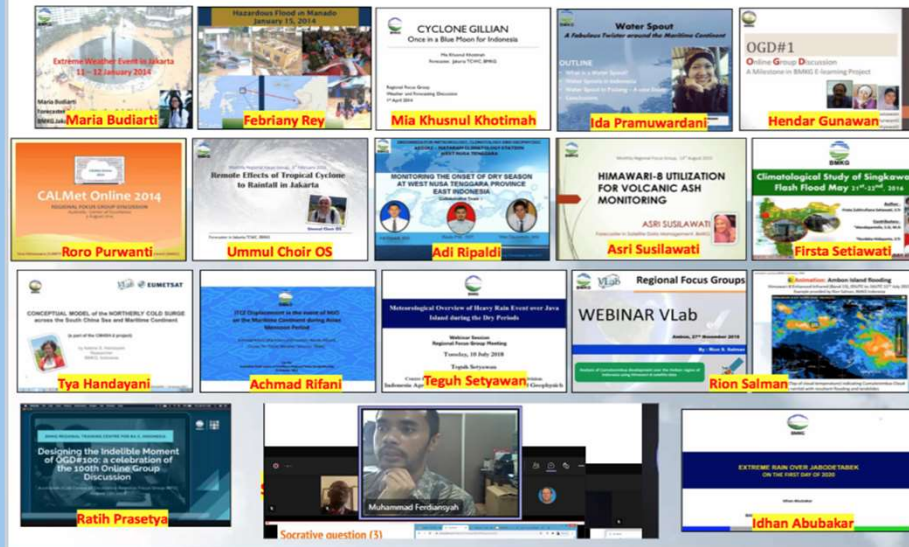
BMKG's participation in Australian VLab RFG

Since 2013

The session



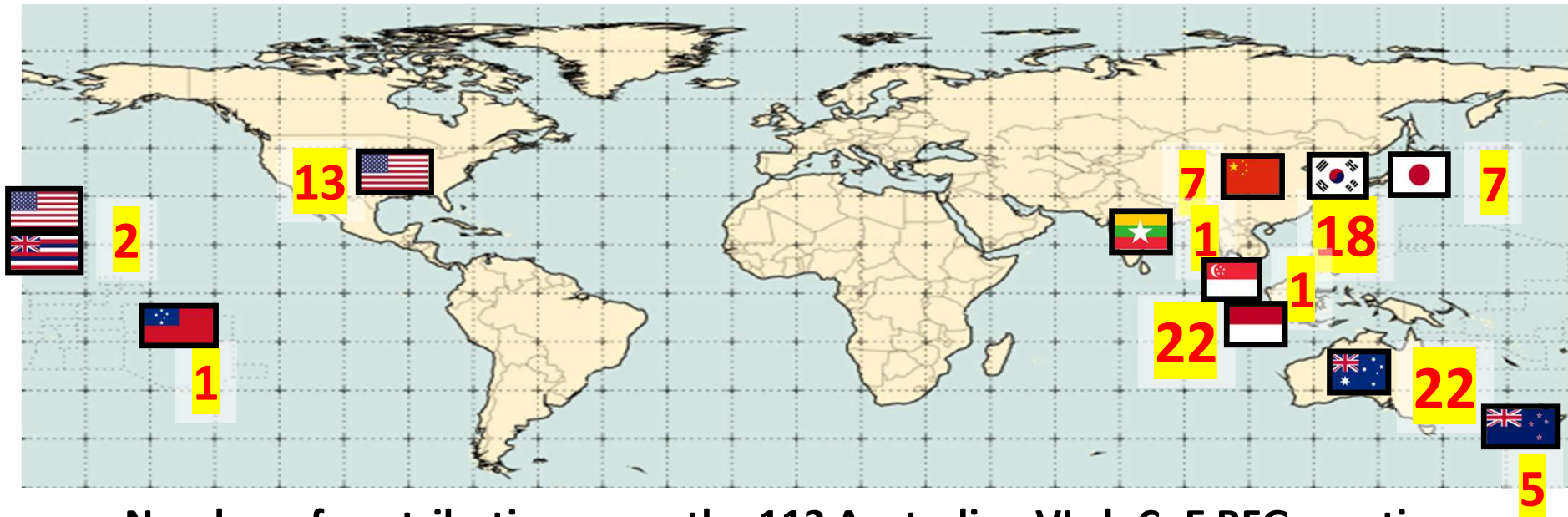
BMKG Indonesia presentations: useful resource



Pictures: Bodo Zeschke, Roro Yuliana



BMKG Contributions to Australian 113 Regional Focus Group meetings October 2013 to September 2023



Number of contributions over the 113 Australian VLab CoE RFG meetings

Total number of presentations by colleagues during the 113 sessions = 101

Average number of contributions by colleagues per session = 0.89

Source: B.Zeschke/ BoM, 2023

Involvement in CM4SH Project-II* 2014 - 2015

3. BMKG as the Indonesia VLab Center of Excellence and Its Activities

The image displays two screenshots from the WMO-VLab website. The left screenshot shows the 'CM4SH Project - Indonesia Team' page, which includes a navigation menu, a team list with member photos and roles (Wido - NWP modeling, Rezza - Satellite analysis, Sena - Climate modeling & Analysis, Tya - Literature survey, Roro - Point of Contact, & Administration Support, Adit - Instructional Designer), and a 'CoE: Moodle Login' section. The right screenshot shows the 'Conceptual Models for Southern Hemisphere' page, featuring a map of the region and a detailed description of a 'Northerly Cold Surge'.

WMO-VLab Website Content:

- Navigation:** Home, Vlab News, Centres of Excellence, Calendar of Events, Library, RFG, Event Weeks, Projects, Publications, Contacts.
- CM4SH Project - Indonesia Team:** Indonesia team, The Agency for Meteorology, Climatology and Geophysics, Indonesia (BMKG).
- Team Members:**
 - Wido - NWP modeling
 - Rezza - Satellite analysis
 - Sena - Climate modeling & Analysis
 - Tya - Literature survey
 - Roro - Point of Contact, & Administration Support
 - Adit - Instructional Designer
- CoE: Moodle Login:** Includes fields for username and password, and a Login button.
- Follow VLab:** Includes social media icons for Facebook and RSS.
- Newsletter subscriptions:** Includes a Name field, an E-mail field, a checkbox for agreement, and a Subscribe button.
- Recent News:**
 - Global Campus Innovations - Education and Training publication by WMO
 - EUMETSAT series of online short courses
 - Time for reflection: 2019 VLab Annual Report

Conceptual Models for Southern Hemisphere:

- Region:** Indonesia
- Model:** Northerly Cold Surge
- Description:** The southward movement of cold air outbreaks from the Siberian-Mongolian High (SMH) are an important aspect of the intraseasonal variability of the winter monsoon. This cold and dry intrusion - often called "cold surge" - is associated with a rise in surface pressure, a sharp drop in temperature in China and a strengthening of northerly winds extending as far south as the equator.
- Map:** Shows the path of a cold surge from China/Hong Kong through the South China Sea towards Indonesia, with labels for 'Dry air mass', 'Cold northerly flow', 'South China Sea', 'Cumulus convection', 'Enhanced deep convection', 'Java Sea', and 'Indonesia'.

*Conceptual Model For Southern Hemisphere (BMKG - BoM - WMO VLab - Eumetsat)

The Online Training

Satellite-Derived Flood Product and Its Implementation in IBF and Warning Services, 19 - 23 June 2023



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3. BMKG as the Indonesia VLab Center of Excellence and Its Activities

Training of the Trainers on Satellite-Derived Flood Products (BMKG-NOAA)

OGD#188

M. Inaduddin S. Faah | Wilam Straka | Achmad Rifani

"SATELLITE DRIVEN FLOOD PRODUCTS AND ITS IMPLEMENTATION ON IMPACT-BASED FORECAST AND WARNING SERVICES"

Presenter 1: Mr. Wilam Straka III (NOAA): Overview of Satellite Flood Products
 Presenter 2: Mr. M. Inaduddin S. Faah (BMKG): Forecasting the Unpredictable an In-Depth look at the SAFMG System for Flash Flood Risk Assessment
 Presenter 3: Mr. Achmad Rifani (BMKG): Tailoring IBFS to Suit User Needs
 Moderator: Mr. Adityawarman

LIVE ZOOM MEETING
bit.ly/OGD-188

THURSDAY, 15 JUNE 2023
02.00 - 03.30 UTC / 09.00-10.30 WIB

Free E-Certificate
Term and Condition Apply

Adityawarman

223 participants

BMKG Corporate University

Rr. YULIANA PURWANTI, S.Si

Dashboard | My courses | Home | Trainings | MOOC | Scholarship | Support | English

Dashboard > Courses > Meteorologi > Training SFP 2023

GENERAL

ONLINE TRAINING on
Satellite-derived Flood Product and Its Implementation on IBF and Warning Services

19 to 23 June 2023

BMKG Indonesia WMO Regional Training Center

FORUM / Announcements

Navigation

- Dashboard
- 53 home
- LMS BMKG
- My courses
 - Administrasi
 - Diklat Fungsional
 - More...
- Courses
 - Meteorologi
 - Training SFP 2023
 - Participants
 - Badges
 - Competencies
 - Grades
 - GENERAL

52 participants
22 participants complete assignments (42%)



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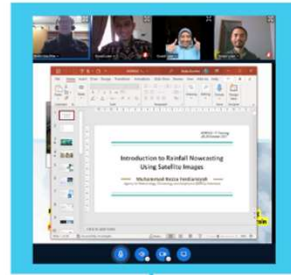
3. BMKG as the Indonesia VLab Center of Excellence and Its Activities

**BMKG
Pathways
to CoE
VLab
started in
2013**

Meeting with **WMO Education
and Training Office**
Geneva, 22 June 2022



Brainstorming with **BoM - Australia Vlab CoE**
online, 24 June 2022



10th VLMG Meeting
Darmstadt, 26 - 30 September 2022



1

2

3

4

5

6



Online VLab Focal Point Meeting
12 May & 13 May 2022



Meeting with WMO Space Program
Geneva, 23 June 2022



VLMG Online "Mirror" Meetings
29 June & 1 July 2022

**Approved as
CoE
VLab
in July
2023**



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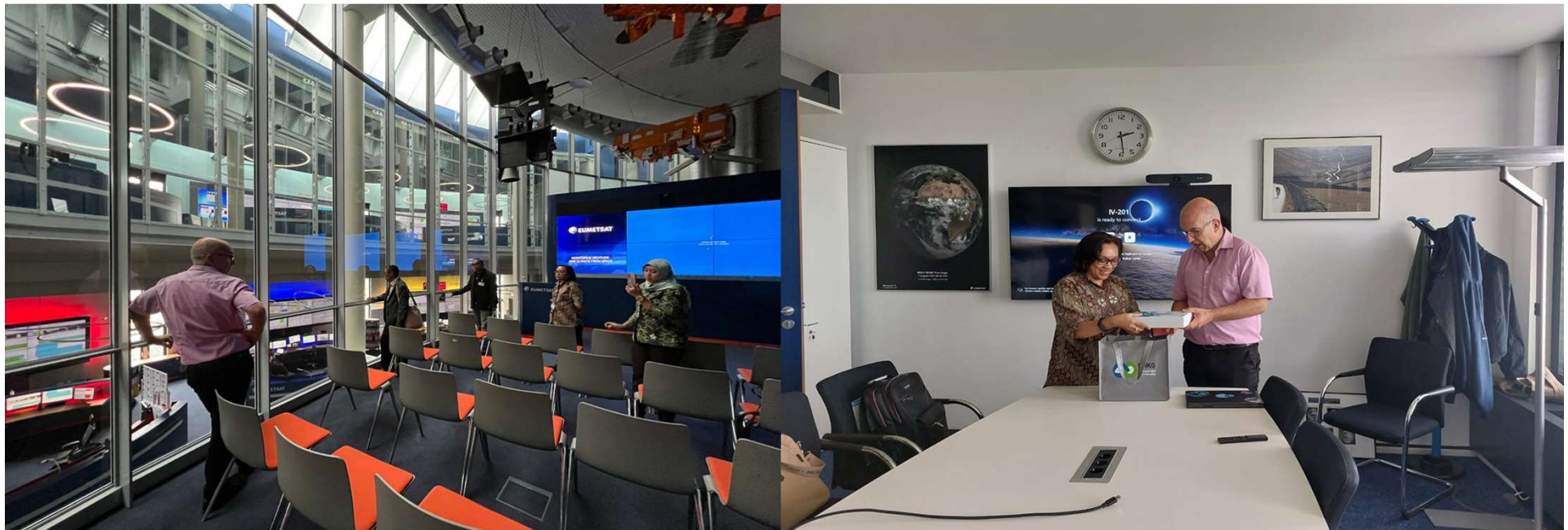


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Benchmarking to EUMETSAT Darmstadt, Germany, July 2023





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OUR FUTURE PROGRAMS

Ongoing Contribution and Upcoming Activities



Collaboration Projects

- Review on WMO Guidelines in Satellite and Knowledge for Operational Meteorology

- Develop further collaboration with other CoE, satellite operators, RTC and partners



Meetings

- VLab Management Group Meetings,
- Asia-Oceania Meteorological Satellite Users' Conference (AOMSUC)



Trainings

- WMO Satellite Training in Marine Services 2024

- WMO Development of Competency in Weather Forecasting Course (EW4All) 2024



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3. BMKG as the Indonesia VLab Center of Excellence and Its Activities

2023

2024

2025

Way forward

Joint RFG with BoM/ KMA/
JMA/ NOAA/ other VLabs

Joint RFG with BoM/ KMA/
JMA/ NOAA/ others VLabs

Joint RFG with BoM/
KMA/ JMA/ NOAA/
other VLabs

Active participation in
AOMSUC-13 Korea

Training on the Implementation
of Satellite Altimetry Data for
Improving Operational
Metocean Services

Hosting of AOMSUC-15
in Indonesia

WMO Development of
Competency in Weather
Forecasting course to
support the Early Warnings
for All initiative

Training on GHG monitoring
and analysis

Trainings



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4. CLOSURE

- BMKG Indonesia has actively involved in the VLab activities, AOMSUC community program in the form of participation and presenting in RFG, identify the list of case studies for conceptual models, conducting training and other satellite capacity development programs.
- Being appointed as the new Center of Excellence, BMKG commits to strengthen the collaboration with other Centers such as BoM/JMA/KMA/NOAA Vlab CoEs and Satellite Operators, as well as WMO RTC Philippines to foster RA-V capacity development program



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THANK YOU