気象庁
Japan Meteorological Agency

# WMO RA II 2018 Survey on the Use of Satellite Data

RA II WIGOS Project
to Develop Support for NMHSs
in Satellite Data, Products and Training

The 5th Meetings of the Coordinating Group
21 October 2017, Vladivostok Russia

# Objectives

- **Work Plan 2017-2020 (excerpts)**
  - To facilitate the timely provision of satellite-related information by satellite operator to NMHSs in RA II including developing countries via the project web page, newsletters, user's conference, etc., aligning with VLab activities to optimize assistance to NMHSs in RA II and coordinating training activities on use of satellite data/products;
  - To identify requirements and current and planned utilization capabilities of NMHSs in RA II regarding data and products of Earth observation satellites including new generation geostationary meteorological satellites in support of their weather services, including forecasts and warnings, providing a gap analysis in which the capabilities are matched against the requirements so as to develop an action plan to close the gap;

# History of User Survey

2012

- RA II Survey
- WMO Survey
- 2nd Meeting of the Coordinating Group
  - "Action: The Co-coordinators to make the plan of the next questionnaire taking into account for the WMO SP questionnaire in order to avoid for them to be performed in the same time frame. ", Final Report , October 2012

2016

- WMO Survey

2017

- CGMS-45 WGIV (Coordination Group for Meteorological Satellites)
  - "JMA/KMA to coordinate a regional user survey in RA II/V based on the WMO 2016 global survey (CGMS-45 WMO-WP-15) in collaboration with BOM and WMO, taking into consideration the communication satellite broadcast systems available in the regions.", A45.01, June 2017

2018

- RA II (if possible, II/V) User Survey (Planned)

# Summary of the Prior User Surveys

- RA II Survey 2012
  - cf.  RA II Pilot Project Newsletter Vol. 3 No. 2, April 2012
  - 20 out of 35 members in RA II responded to the questionnaire.
  - Digital data disseminated via satellites and digital data obtained from the internet were the most popular mechanism of data reception, and it was recognized that analogue data obtained from the internet was also the popular mechanism.
  - There was a strong need for the data from Research and Development and other environmental satellites, especially TRMM. Data from NPP was also requested. A stronger product processing capability is needed.
  - Required but not available parameters were ranked by popularity. Precipitation rate ranked as the clear No. 1.
  - Monitoring dust and Ocean current were getting an interest from RA II Members.
  - A large scale of training, the support of E-learning in satellite meteorology by WMO and the regular training were required.
- WMO Survey 2016
  - cf. 3.1 b) Results from the WMO 2016 Survey

# RA II Survey 2012 (excerpts)

Table 7 – Most important parameters for each application area

| Ranking | Previous WMO Ranking (All Region) | Most important of the available parameters | Nowcasting & VSRF | Synoptic meteorology | Global and regional NWP data assimilation | Aeronautical meteorology | Marine meteorology and oceanography | Agricultural meteorology | Hydrology | Atmospheric chemistry | Climatology and climate change | Environmental applications | Disaster monitoring and Security | Research applications | Public Weather Services (PWS) | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 1 | Cloud imagery | 8 | 9 | 1 | 4 | 2 | 1 | 3 | 0 | 0 | 0 | 4 | 4 | 9 | 45 |
| **2** | 2 | Cloud cover | 8 | 7 | 0 | 5 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 1 | 2 | 27 |
| **3** | 4 | Cloud type | 5 | 7 | 0 | 6 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 23 |
| **4** | | Dust | 4 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 4 | 1 | 4 | 20 |
| **5** | 5 | Cloud Top Temperature | 3 | 6 | 0 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 2 | 19 |
| **6** | 6 | Sea surface temperature | 0 | 1 | 0 | 1 | 7 | 0 | 0 | 0 | 3 | 1 | 0 | 3 | 0 | 16 |
| **7** | 11 | Cloud top height | 3 | 3 | 0 | 4 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 14 |
| **8** | 3 | Precipitation rate | 2 | 1 | 0 | 3 | 0 | 0 | 2 | 1 | 0 | 0 | 1 | 0 | 3 | 13 |
| **9** | 16= | Precipitation index | 3 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 9 |



cf. RA II Pilot Project Newsletter Vol. 3 No. 2, April 2012

# RA II Survey 2012 (excerpts)

Table 8. Required but not available parameters

| Ranking | Previous WMO Ranking (All Region) | Most required but not available parameters | Nowcasting & VSRF | Synoptic meteorology | Global and regional NWP data assimilation | Aeronautical meteorology | Marine meteorology and oceanography | Agricultural meteorology | Hydrology | Atmospheric chemistry | Climatology and climate change | Environmental applications | Disaster monitoring and Security | Research applications | Public Weather Services (PWS) | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 1 | Precipitation rate | 7 | 3 | 1 | 3 | 0 | 1 | 8 | 0 | 1 | 0 | 3 | 0 | 6 | 33 |
| **2** | 2 | Lightning detection | 2 | 1 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 13 |
| **3** | 12 | Cloud water profile | 3 | 2 | 2 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 12 |
| **3** | | Ocean currents | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 12 |
| **5** | 7 | Atmospheric Instability Index | 5 | 3 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 11 |
| **6** | 15= | Vegetation Type | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 10 |
| **6** | 3 | Wind profile | 2 | 3 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 |
| **8** | 8 | Rain profile | 1 | 1 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 8 |
| **8** | 4 | Soil moisture | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 8 |
| **10** | 10= | Ozone profile | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 1 | 7 |

cf. RA II Pilot Project Newsletter Vol. 3 No. 2, April 2012

# RA II 2018 Survey

- The results of the prior WMO/RA II surveys will be used as baseline for the RA II 2018 survey as much as possible.

- The RA II 2018 survey will be coordinated in collaboration with RA V and WMO.

# RA II 2018 Survey: Schedule (Draft)

The co-coordinators:

- to draft the questionnaire (2017/Q4);
- to send the draft questionnaire to the coordinating group and get feedback (2018/Q1);
- to conduct the questionnaire to RA II (if possible, II/V) members (2018/Q2);
- to summarize the result of the questionnaire (2018/Q3-Q4).

# Thank you!