GLOBAL SURVEY ON THE USE OF SATELLITE DATA-2022: RA II AND RA V

Joint RA II - RA V Coordination Meeting
(18 November 2022)

Chang LIU, WMO Space Programme

WMO OMM
World Meteorological Organization
Organisation météorologique mondiale
Global Survey on Satellite Data Utilization – 2022 Overview

Period

May 11th
July 31st
November 30th

Language
- ARABIC
- CHINESE
- ENGLISH
- FRENCH
- RUSSIAN
- SPANISH

Online Form – SurveyMonkey Tool
https://www.surveymonkey.com/r/5TB9SDJ
PERSONAL INFORMATION

- As an individual: 66%
- On behalf of my organization: 3%
- On behalf of the PR: 1%
- Research / Academic institution: 24%
- Regional / International organization: 6%
- Other operational governmental agency: 1%
- National Meteorological / Hydrological Service: 3%
- Other (ex. private company)

- RA II: 53 answers
- RA V: 17 answers
- TOTAL: 180 answers

Number of responses:

2022 | 2016
---|---
RA II | 17 | 29
RA V | 10 | 7

Number of countries:

2022 | 2016
---|---
RA II | 13 | 0
RA V | 8 | 7

Map showing the distribution of responses by country.
GLOBAL SURVEY: Regional SDR Groups

Q: Are you aware of the WMO Coordination Group on Satellite Data Requirements in your region?

44% Yes
- RA II
  - Answered 54
  - Skipped 1

50% Yes
- RA V
  - Answered 14
  - Skipped 1

More information on Regional SDR Groups:

Regional Activities | World Meteorological Organization (wmo.int)
OVERVIEW
PERSONAL INFORMATION
7 QUESTIONS

USE OF GEO DATA
9 QUESTIONS

USE OF LEO DATA
7 QUESTIONS

DATA APPLICATIONS AND TRAINING NEEDS
6 QUESTIONS
Use of GEO Data

Q. Please indicate your use of the following GEO data

Imagery data

Space Weather data

FY-4 sounding data

Lightning data

Answered 66
Skipped 4
Q. Please indicate the access mechanisms for GEO data and indicate how satisfied you are with these mechanisms. If an option is not used or not applicable, please leave it blank.
GEO Data --- Access Mechanisms

Q. Please indicate the access mechanisms for GEO data and indicate how satisfied you are with these mechanisms.
Q. Please indicate the degree of challenges you experience with access, processing and visualizing GEOSTATIONARY data, the extent to which your training needs are met. If an option is not used or not applicable, please leave it blank.
Use of LEO Data

Q. Please indicate the use of the following LEO satellite data (Sorted by used)

Q. Please specify the instruments you use from the following multi-purpose LEO satellites

The lists of instruments are available via the links to the dedicated pages of the WMO OSCAR database.

If an option is not used or not applicable, please leave it blank.
LEO Data --- Access Mechanisms

Please indicate your data access mechanisms for LOW-EARTH ORBIT satellite data and indicate how satisfied you are with these mechanisms. If an option is not used or not applicable, please leave it blank.
Q. Please indicate your data access mechanisms for LOW-EARTH ORBIT satellite data and indicate how satisfied you are with these mechanisms. If an option is not used or not applicable, please leave it blank.
Use of GEO & LEO Satellite Data

Q. Please indicate the frequency of utilization of the following GEO & LEO information

GEOSTATIONARY information
- Individual Bands (VIS, IR): 67%
- RGBs: 62%
- Derived Products: 61%

LOW-EARTH-ORBIT information
- Individual Bands (VIS, IR): 49%
- RGBs: 48%
- Derived Products: 58%

Answered GEO: 68
Answered LEO: 60
Skipped GEO: 2
Skipped LEO: 10
✓ Commercial meteorological and environmental satellites

Q. Do you use data from commercial meteorological and environmental satellites to address your needs? If an option is not used or not applicable, please leave it blank.

[Bar chart showing usage frequency of various satellites for commercial data]

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Use of data for various application areas

Q. Please state your use of satellite data for each application area in terms of whether it is used or not used and indicate if there is a need for people working in each application area to receive training in the use of satellite data.
Q. Please state your use of satellite data for each application area in terms of whether it is essential or not essential to your application, and indicate if there is a need for people working in each application area to receive training in the use of satellite data.

**Satellite Data Importance & Need for Training**

- **Satellite Data Importance**
  - Essential
  - Valuable
  - Nice to have
  - Not needed

- **Need for Training**
  - Needed and delivered
  - Needed, but not delivered
  - Not needed

- **Applications**
  - Nowcasting & Very Short-Range Forecasting
  - Synoptic Meteorology
  - NWP
  - Climate
  - Marine Meteorology and Oceanography
  - Research applications
  - Aeronautical Meteorology
  - Agricultural Meteorology
  - Space Weather
  - Air Quality
  - Cryosphere
  - Urban Management

- **Results**
  - Answered 61
  - Skipped 9
  - 20
Satellite Data Importance & Need for Training

- Essential & Valuable
- Needed and delivered
- Needed, but not delivered

Answered: 56
Skipped: 14
Training needs

Q. Please indicate your training needs and your training status for the following areas

- Preparation and effective utilization of new generation satellites
- Physical basis of remote sensing
- Satellite derived products utilization and interpretation
- Satellite RGBs utilization and interpretation
- Satellite data processing and visualization
- Access to satellite data and products
- Operation and maintenance of satellite data reception equipment

[Bar chart showing training needs and status for GEO and LEO]
Q. Please specify what would help you improve your services for each application area with respect to utilization of satellite data and products. If an option is not used or not applicable, please leave it blank.
Training Resources

Q. Please state your level of awareness of the following distance-learning resources and other information sources. State whether you use these resources for staying abreast of new developments in satellite systems and applications.

Level of Awareness for the distance-learning resources

Resource Utilization

*Answered: 56
*Skipped: 14*
1. Disseminate widely information on the different sources of satellite data and the methods to access this data. Make available a website where we can access the data easily, and documentation.

2. It is hoped that WMO will take the lead to set up international large-scale scientific projects, promote exchanges between different satellite providers or users, and explore faster cooperation and exchange modes in terms of easy data access and graphic visualization.

3. To have dynamic, analyzed data for better decision making. The simplification of data is much easier for stakeholders in its usage and in dynamic decision making.

4. To learn more about weather, air, water, soil, atmosphere, earth plate and volcano activities, and Nowcasting and satellite training.
GEO is more widely used than LEO (incl. judging by the number of skipped questions for LEO-related data). Himawari and FY satellite data are more widely used in the region. There is a lot of interest in using FY-4A sounding data (slide 7). Commercial data are not frequently used in the region. However, some users utilize this data for special events (slide 17).

Most users access satellite data via the Internet for both GEO and LEO data (slides 8 & 13).

About 20% of users reported that they do not use LEO satellite data at all (slide 17).

Most of the priority application areas are well covered by corresponding training. Training is reported to be still needed for Climate, Hydrology, NWP (slide 20).

Training is also required in Air quality, Cryosphere and Urban Management (slide 21).

Preparation and effective utilization of new generation satellites is singled out as an area where further training is needed. Additionally, training in Physical basis of remote sensing, satellite derived products utilization and interpretation, satellite data processing and visualization is required by users (slide 22).

Users are not aware of the learning resources available online for the Region (slide 24).

**Action proposed:** to raise awareness of users in RA II & V about the learning resources available online.
Thank you
Merci

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