

# WMO 2016 Survey on the Use of Satellite Data

World Meteorological Organization (WMO)  
Space Programme

8<sup>th</sup> Regional Association I (RA-I) Dissemination Expert Group (RAIDEG) meeting

Geneva, Switzerland

1-2 November 2017



**WMO OMM**

World Meteorological Organization

Organisation météorologique mondiale

# Outline

- Motivation
- The Survey
- Regional Distribution of Responses
- GEO: Region-specific Analysis
  - RA I: GEO Data Access and Processing
  - RA I: GEO Visualization Tools and Training Needs
  - RA I: Next-generation GEO satellites – Readiness Level
- LEO: Region-specific Analysis
  - RA I: LEO Data Access, Data Processing and Training Needs
  - RA I: Next-generation LEO satellites – Readiness Level
- Conclusions

# Motivation

- WMO carries out a global user survey every 4 years.
- Users worldwide need to prepare for new-generation satellites – gaps and issues?
- Need a dialogue between users and satellite operators.
- Satellite data are increasing in importance (nowcasting, NWP, marine services, climate monitoring, etc.)

# The Survey

- Online questionnaire, developed by WMO CBS IPET-SUP
- Four languages (E, F, S, R)
- Three major topics:
  - accessing and using geostationary satellite data,
  - accessing and using low-Earth orbiting satellite data,
  - satellite applications and training

# The Survey: RAI

March-May 2016















215 responses globally

**56** from RAI from 36 Members  
and territories

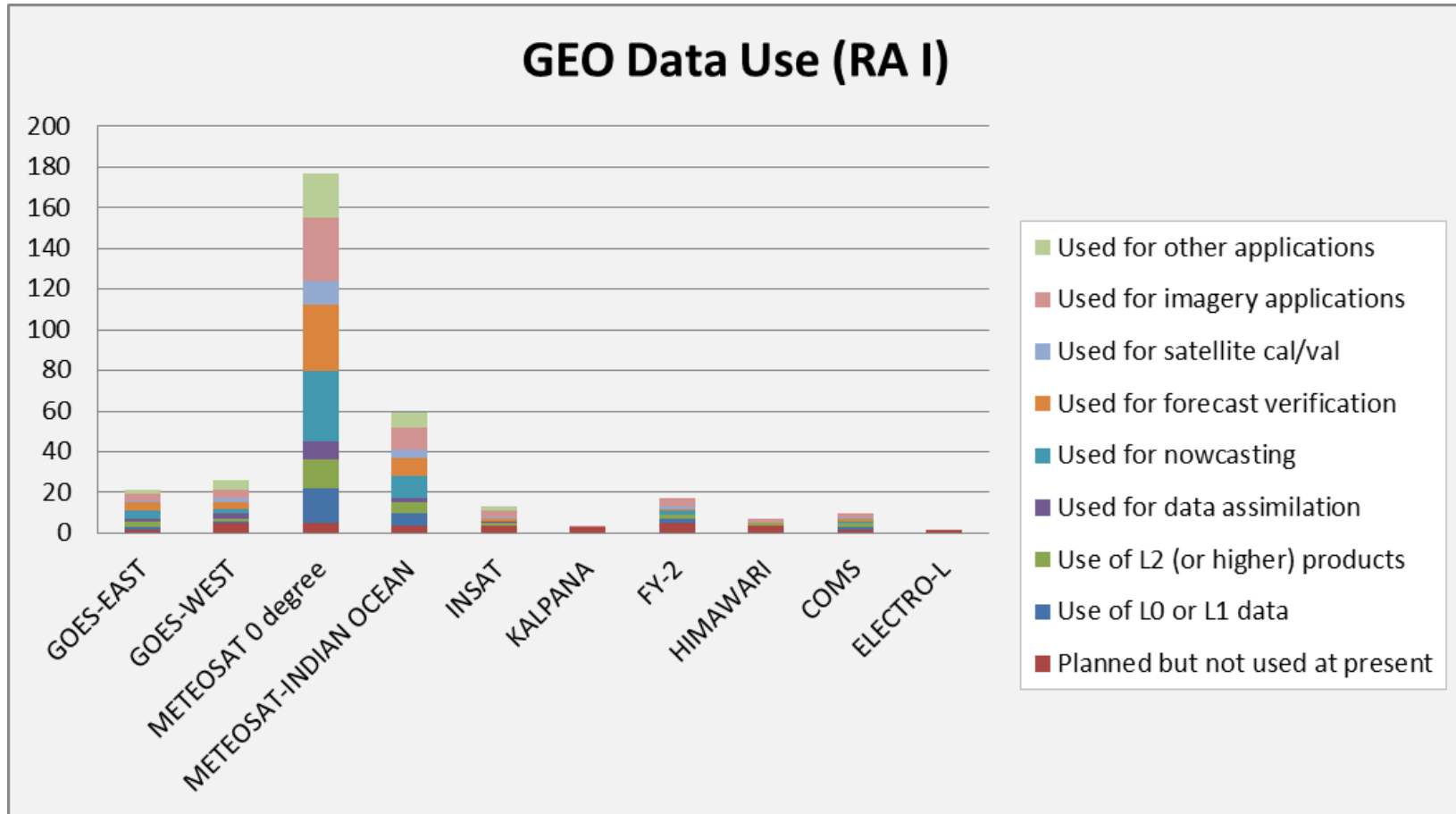
88% of responses came from  
NHMSs or other operational  
governmental agencies.

Angola
Benin
Cabo Verde
Central African Republic
Congo
Côte d'Ivoire
Egypt
Ethiopia
Gabon
Gambia
Ghana
Guinea
Guinea-Bissau
Kenya
Lesotho
Liberia
Libya
Malawi
Mali
Mauritius
Niger
Nigeria
Rwanda
Sao Tome and Principe
Senegal
Seychelles
Sierra Leone
Somalia
South Africa
South Sudan
Tanzania
Tunisia
Uganda
Zimbabwe

# The Survey: Regional Distribution of Responses

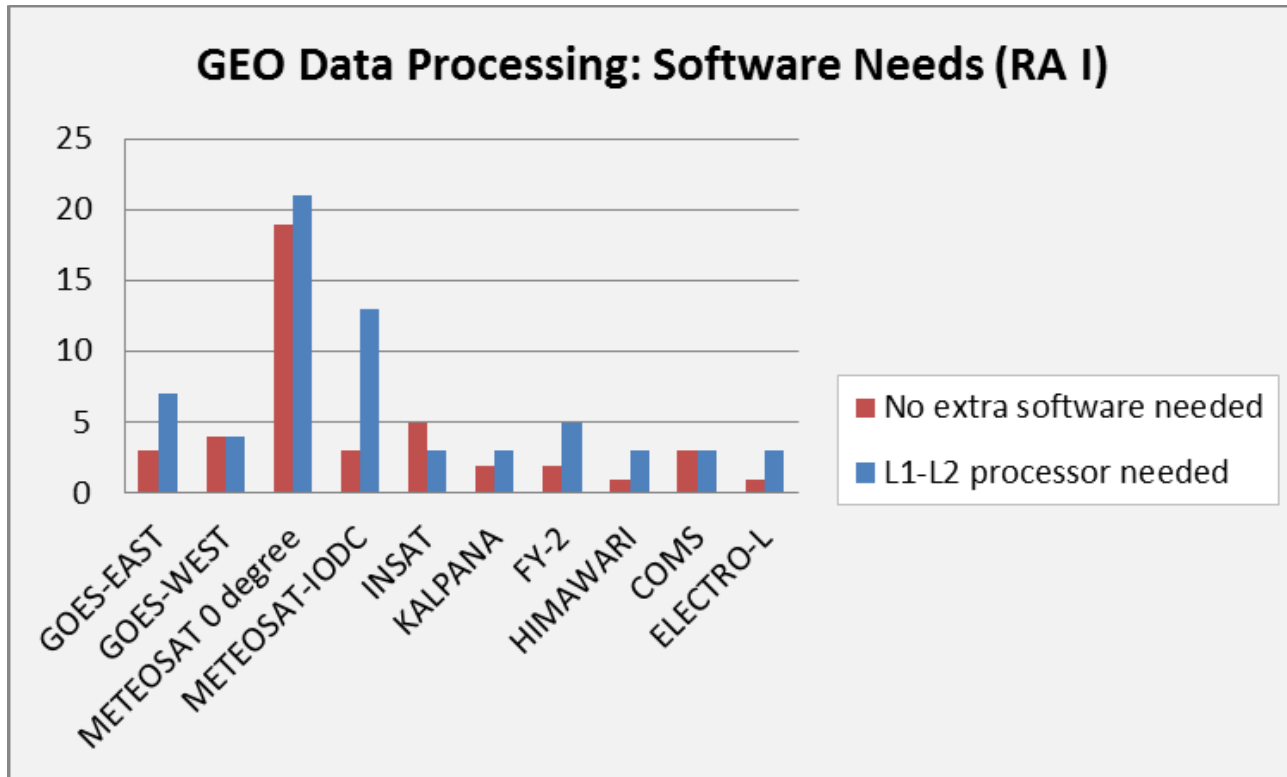
WMO Region	Number of Members	Number of Members with at least one response (rate in %)	Total number of responses	Comparison to 2012 Survey
I (Africa)	57	36 (63%) 	56 	17 (30%)   37
II (Asia)	35	16 (45%) 	38 	19 (54%)   34
III (S America)	13	8 (62%) 	21 	5 (38%)   14
IV (N&C America &C)	27	12 (44%) 	40 	8 (31%)   44
V (SW Pacific)	23	6 (26%) 	10 	12 (55%)   17
VI (Europe)	50	28 (56%) 	50 	34 (68%)   72
All	191	106 (55%) 	215 	95 (50%)   218

# RA I: GEO Data Use



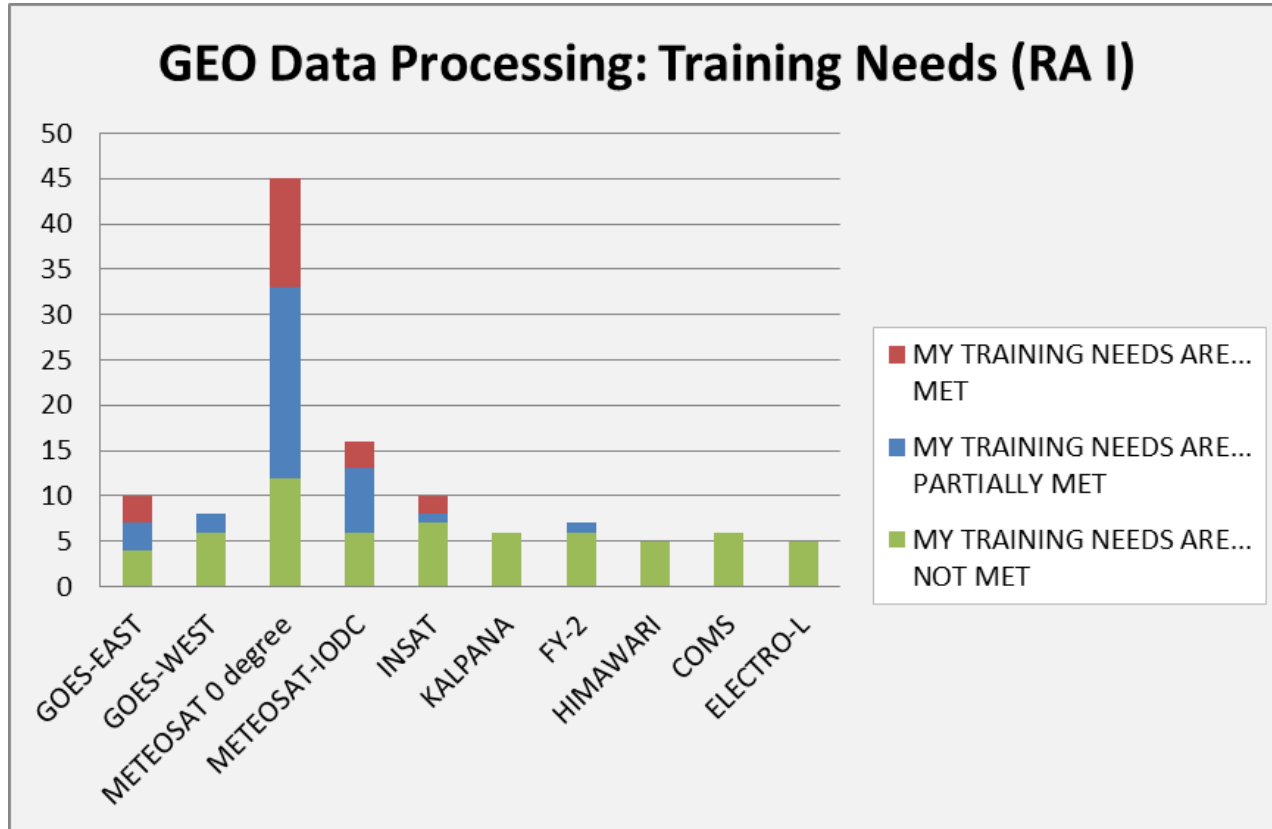
# RA I: GEO Data Access and Processing

- Access to METEOSAT data good
- User comments include:
  - No attempts to process data ourselves
  - Need attachment to EUMETSAT SAFs



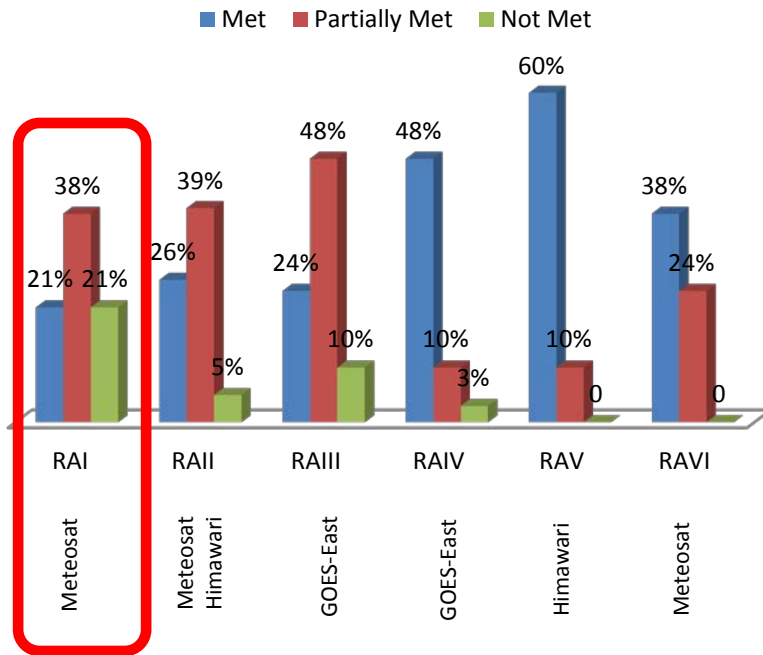


# RA I: GEO Data – Training Needs

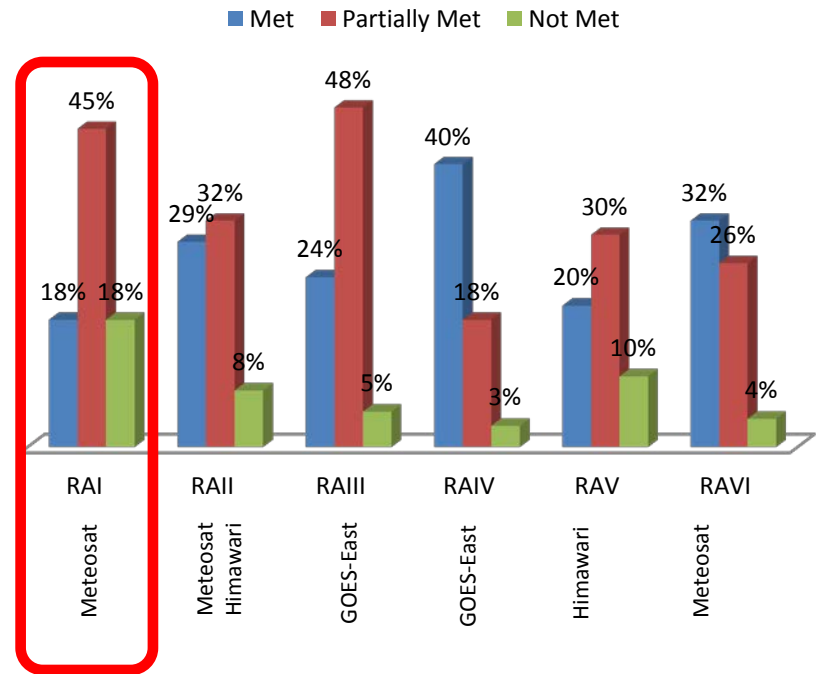


# RA I: GEO Data Processing - Regional Analysis

## Training Needs

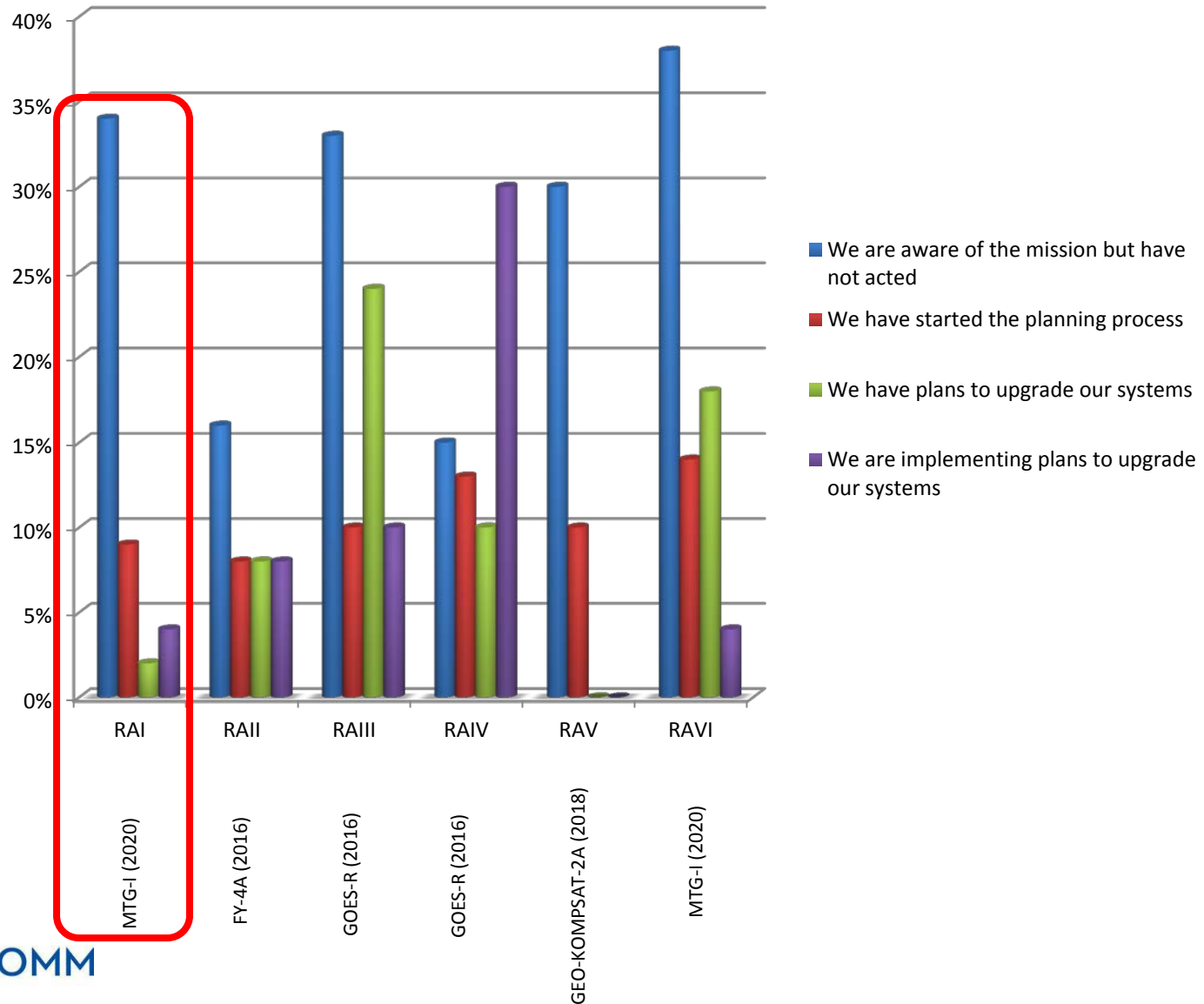


## Visualization Tools



- Unmet needs require attention
- Needs for training and visualization tools are partially met

# RA I: Next-generation GEO - Readiness Level Regional Analysis

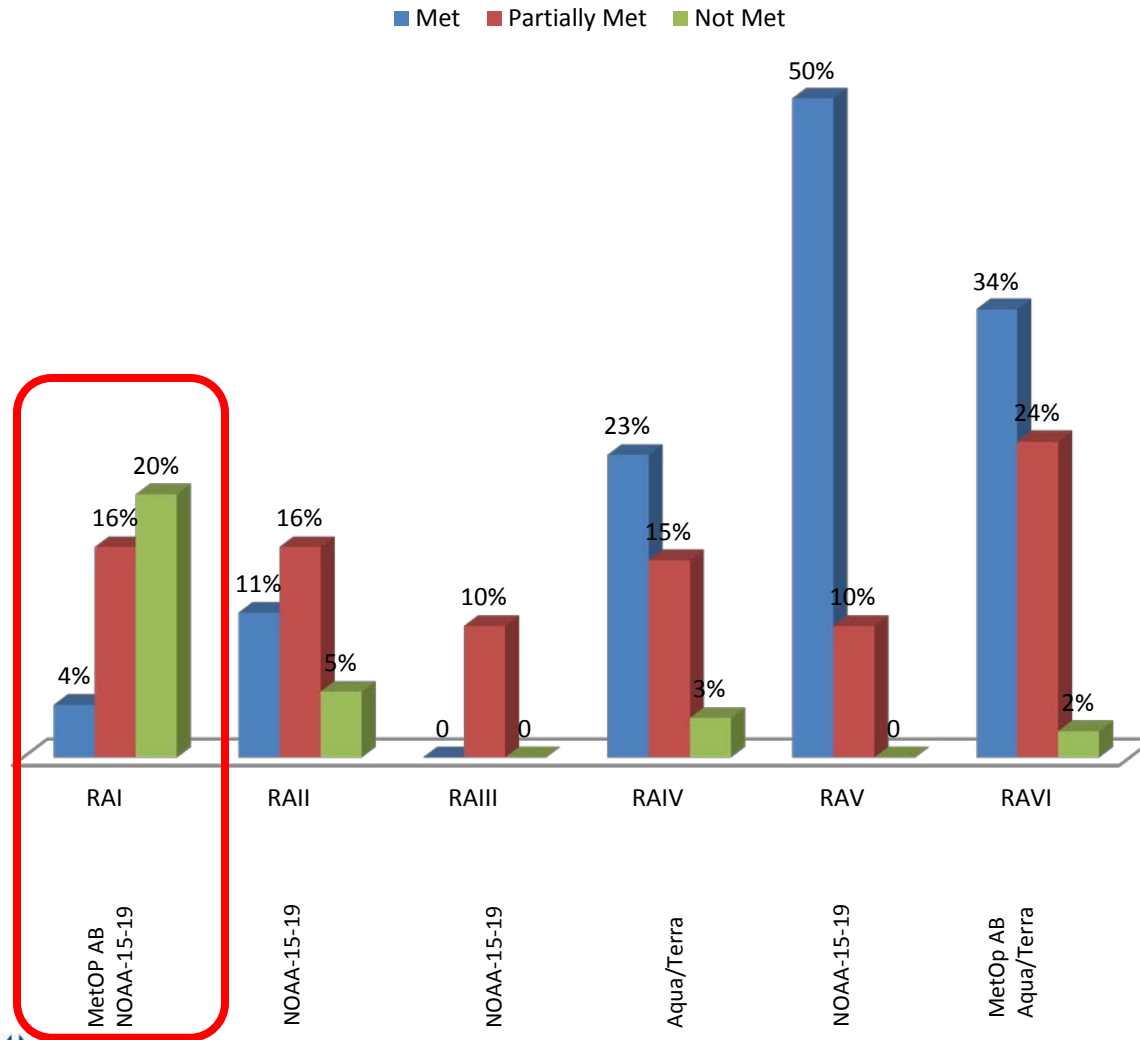


# RAI: LEO Data Access and Processing

- No issues with access (for those who do access);
- Some needs for pre-processing packages (Metop, POES) and related training

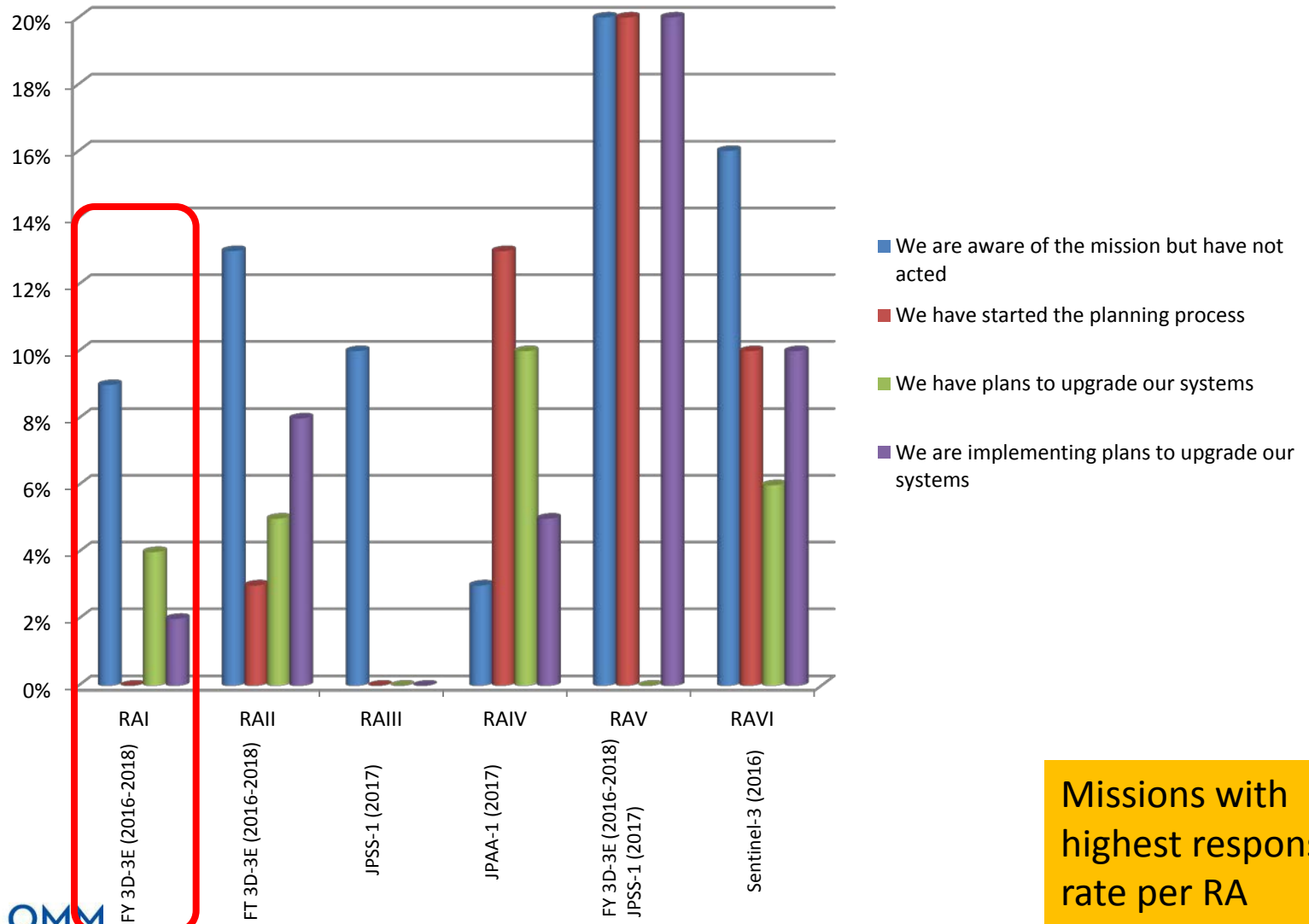
SOFTWARE NEEDS					
Answer Options	No extra software needed	L0-L1 processor needed	L1-L2 processor needed	Both L0-L1 & L1-L2 needed	Response Count
<b>METOP A-B</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>7</b>	<b>12</b>
GCOM-W1	2	0	0	2	4
S-NPP	1	0	0	2	3
<b>NOAA 15-19</b>	<b>5</b>	<b>1</b>	<b>1</b>	<b>5</b>	<b>12</b>
DMSP F16-F19	1	0	0	3	4
FY 3A-3C	2	0	0	3	5
Meteor-M	2	0	0	2	4
Oceansat	1	0	0	2	3
Landsat	2	1	0	4	7
AQUA/TERRA	1	0	1	3	5
Cloudsat/Calipso	2	0	0	2	4
Windsat/Coriolis	2	0	0	2	4
AURA	1	0	0	2	3
SPOT	1	0	2	4	7
GOSAT	2	0	0	2	4
CBERS	1	0	0	2	3
JASON	1	0	0	4	5
GPM/TRMM	1	0	0	3	4
Megha-Tropiques	1	0	0	2	3
HY	1	0	0	2	3
COSMIC	1	0	0	2	3
TerraSAR-X	1	0	0	2	3
TanDEM-X	1	0	0	2	3
GRACE	1	0	0	2	3
SENTINEL-1	1	0	0	4	5
SENTINEL-2	1	0	1	2	4
OCO-2	1	0	0	2	3

# RA I: LEO Data Processing – Training Needs Regional Analysis



Missions with highest response rate per RA

# RA I: Next-generation LEO - Readiness Level Regional Analysis



Missions with highest response rate per RA

# Conclusion

- Good response rate in RA I
- GEO data processing and related training needs require attention
- Transition to MTG-I slowly starting
- Preparation to FY-3D/E under way by some Members



**World  
Meteorological  
Organization**

Weather • Climate • Water

# Thank you for your attention

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