

Satellite User Readiness Navigator (SATURN)

<http://www.wmo-sat.info/satellite-user-readiness/>

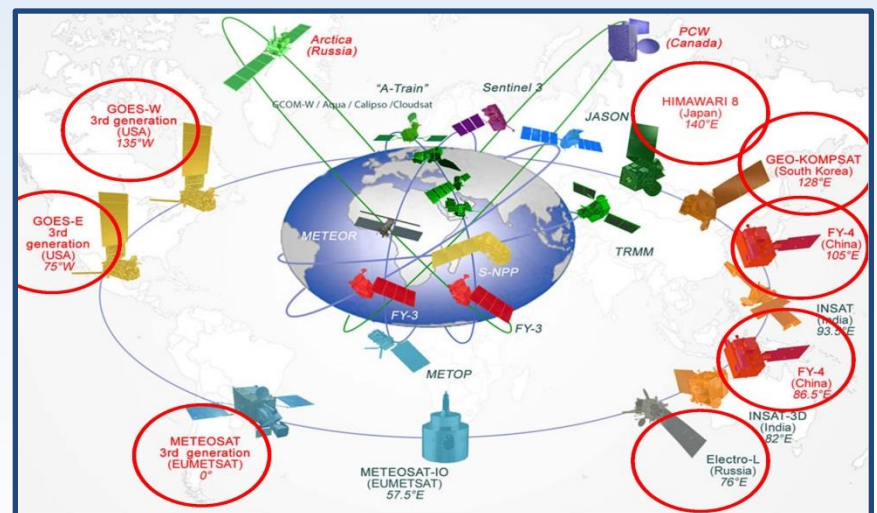
PREPARING FOR THE NEXT GENERATION OF METEOROLOGICAL SATELLITES

- Satellites are widely used by WMO Members in support of weather, climate, water applications

The 2015-2020 generation of meteorological satellites provides:

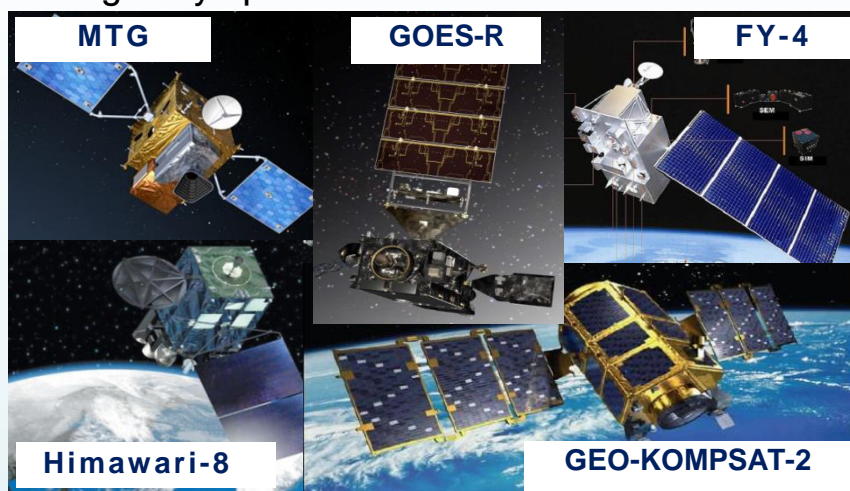
- Unprecedented capabilities for key meteorological applications such as nowcasting, as well as challenges for both satellite operators and users

NEXT-GENERATION GEOSTATIONARY SATELLITES CONSTELLATION



SATURN CONCEPT

- SATURN is an online portal with information on:
 - Upcoming geostationary satellite systems and instruments
 - Planned products, datasets, data distribution methods
 - Test and proxy data, software tools
 - Training material
- Developed by satellite operators and WMO
- To be extended to polar-orbiting satellites
- Regularly updated



EXAMPLE OF SATURN CONTENT

Himawari-8/9: Specification of Observation

Channel	Central Wavelength [μm]	Spatial Resolution	Notes
1	0.43 - 0.48	1 km	RGB
2	0.50 - 0.52	1 km	Composited
3	0.63 - 0.66	0.5 km	True Color Image
4	0.85 - 0.87	1 km	
5	1.60 - 1.62	2 km	
6	2.25 - 2.27	2 km	
7	3.74 - 3.96	2 km	
8	6.06 - 6.43	2 km	Water Vapor
9	6.89 - 7.01	2 km	
10	7.26 - 7.43	2 km	
11	8.44 - 8.76	2 km	SO ₂
12	9.54 - 9.72	2 km	O ₃
13	10.3 - 10.6	2 km	Atmospheric Windows
14	11.1 - 11.3	2 km	
15	12.2 - 12.5	2 km	
16	13.2 - 13.4	2 km	CO ₂

Number of Bands: 5 → 16

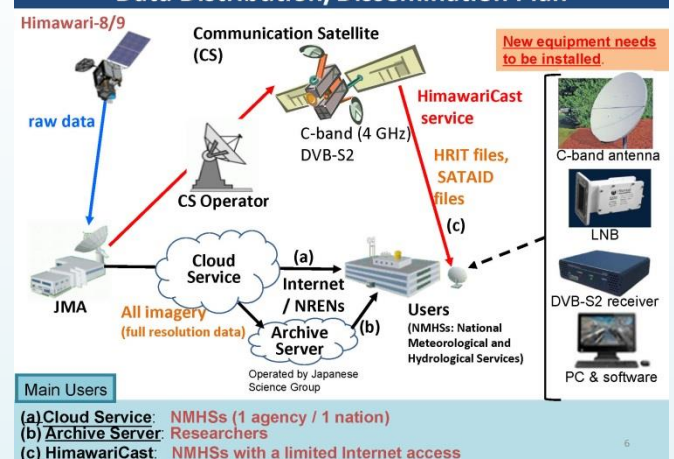
Interval: 30/60 min. → 10 min.

Full disk: Interval: 10 minutes (6 times per day)

Regional: Japan (Interval: 2.5 minutes (4 times in 10 minutes), Dimension: EW x NS: 2000 x 1000 km x 2)

Region: Typhoon (Interval: 2.5 minutes (4 times in 10 minutes), Dimension: EW x NS: 1000 x 1000 km)

Data Distribution/Dissemination Plan



Source: JMA

CAPABILITIES OF NEXT GENERATION GEOSTATIONARY SATELLITES

- Higher sampling rate, higher spatial resolution, more spectral channels
- Leading to more accurate and timely forecasts, and improved application support
- Data rates increase drastically, by factors of 10-100

REFERENCE USER READINESS PROJECT: MILESTONES PRIOR TO LAUNCH

Users	Satellite operators
Budget planning, R&D	Operation plans & schedules
Data reception & handling	Instrument characterization
Data processing & visualization	Data access specifications
Training and capacity building	Test data and tools; Software
Contributions to cal/val	User dialogue channels