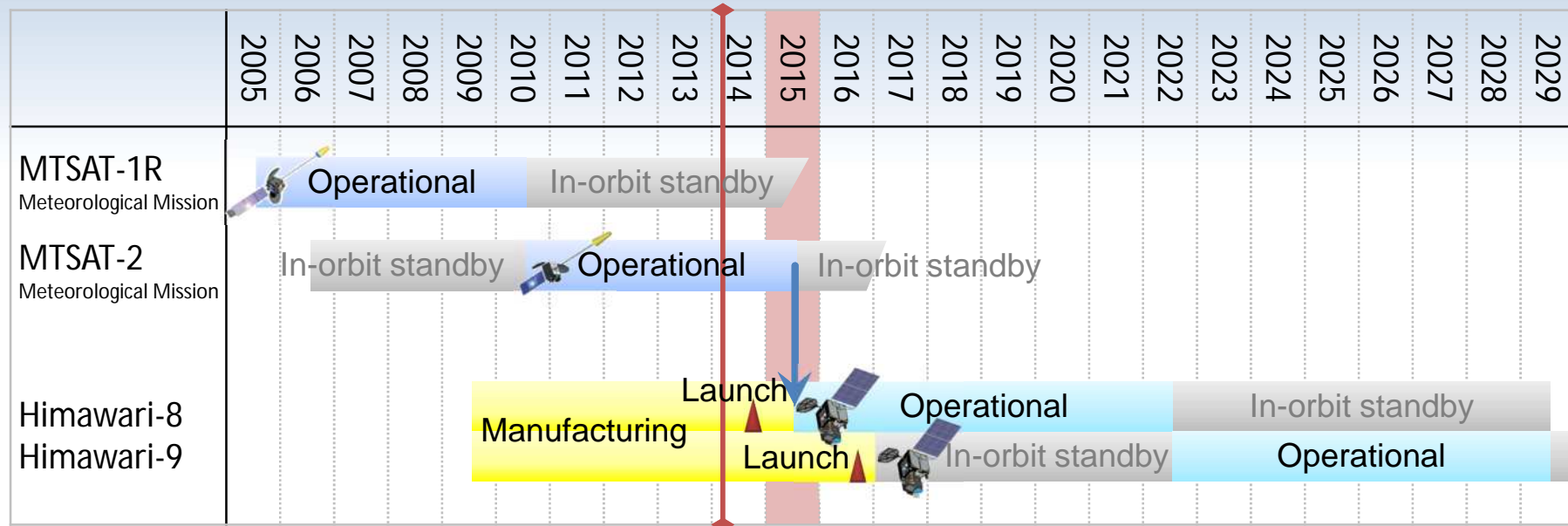




# Introduction to the JMA's next generation meteorological satellite, Himawari-8/9



# Transition of Operational Satellites

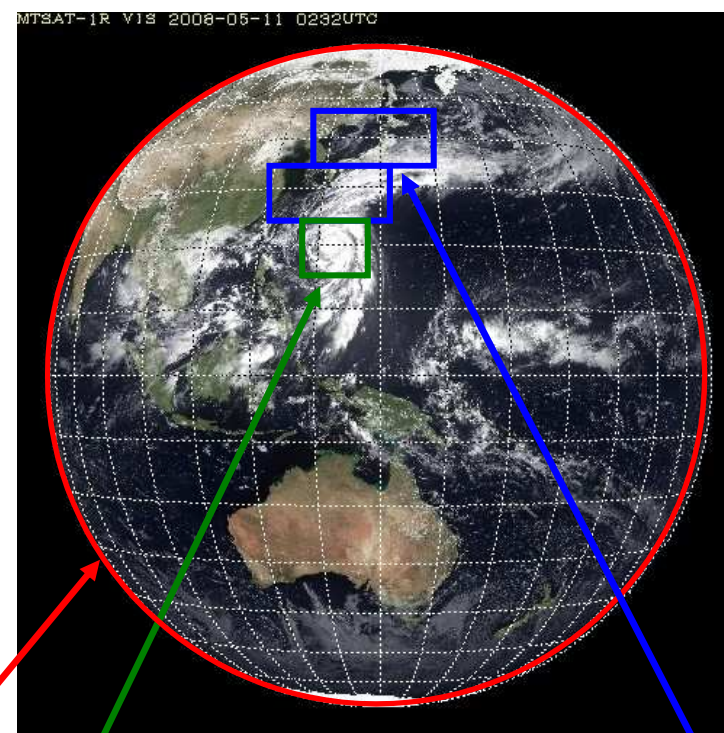


- JMA plans to launch **Himawari-8** in 2014 and begin its operation in 2015.
- The launch of **Himawari-9** for in-orbit standby is scheduled in 2016.
- **Himawari-8/9** will be in operation around 140 degrees East covering the East Asia and Western Pacific regions for 15 years.

# Himawari-8/9: Specification of Observation

## Channels of the Advanced Himawari Imager (AHI)

Channel	Central Wavelength [μm]	Spatial Resolution	
1	0.43 – 0.48	1 km	RGB Composite True Color Image
2	0.50 – 0.52	1 km	
3	0.63 – 0.66	0.5 km	
4	0.85 – 0.87	1 km	Water Vapor
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	SO <sub>2</sub>
9	6.89 – 7.01	2 km	
10	7.26 – 7.43	2 km	O <sub>3</sub>
11	8.44 – 8.76	2 km	
12	9.54 – 9.72	2 km	Atmospheric Windows
13	10.3 – 10.6	2 km	
14	11.1 – 11.3	2 km	
15	12.2 – 12.5	2 km	
16	13.2 – 13.4	2 km	CO <sub>2</sub>



**Full disk**  
Interval: **10 minutes** (6 times per hour)

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

**Target area**  
Interval: **2.5 minutes** (4 times in 10 minutes)  
Dimension: EW x NS: 1000 x 1000 km

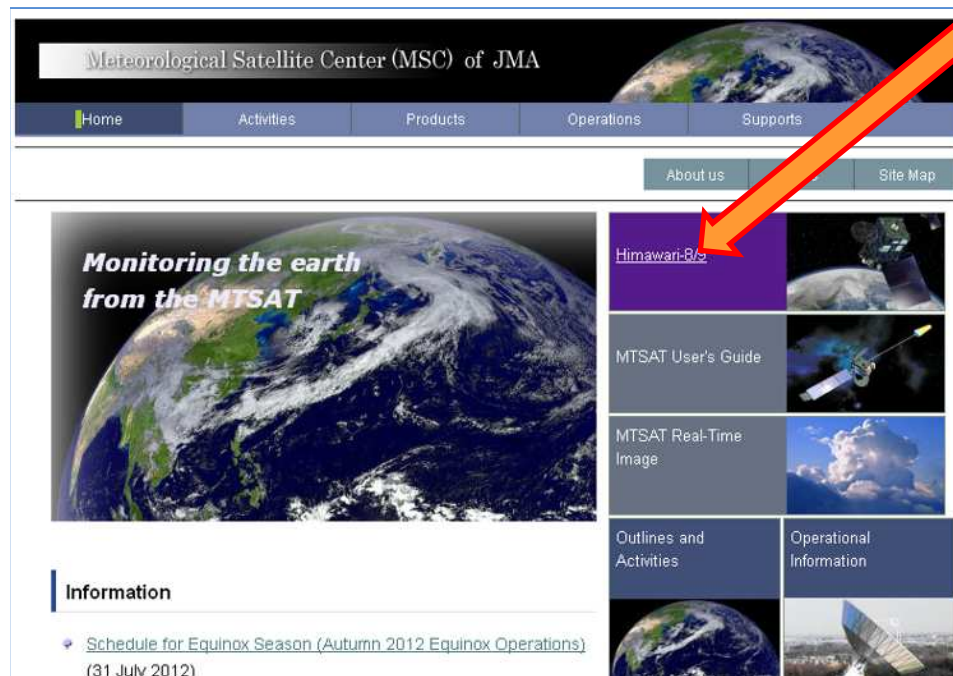
**Number of Channels: 5 ➡ 16**

**Interval: 30/60 min. ➡ 10min.**



# MSC Web Page for Himawari-8/9 Information

MSC website top page  
<http://mscweb.kishou.go.jp/>



Meteorological Satellite Center (MSC) of JMA

Home

Activities

Products

Operations

Supports

Current position: Home > Himawari-8/9

Himawari-8/9

Introduction

Spacecraft

Imager (AHI)

The Japan Meteorological Agency (JMA) has operated the GMS and MTSAT series of satellites at around 140 degrees east to cover the East Asia and Western Pacific regions since 1977, and makes related contributions to the WMO's World Weather Watch (WWW) Programme. As a follow-on to the MTSAT series, the Agency plans to operate next-generation satellites called Himawari-8 and Himawari-9 (*himawari* means "sunflower" in Japanese).

Overview of satellite observations

The functions and specifications are notably improved from those of the on-board imager of MTSAT, and enable better nowcasting, improved numerical weather prediction accuracy and enhanced environmental monitoring.

Enhancement of the observation function of Himawari-8/9 as compared to that of MTSAT-1R/2

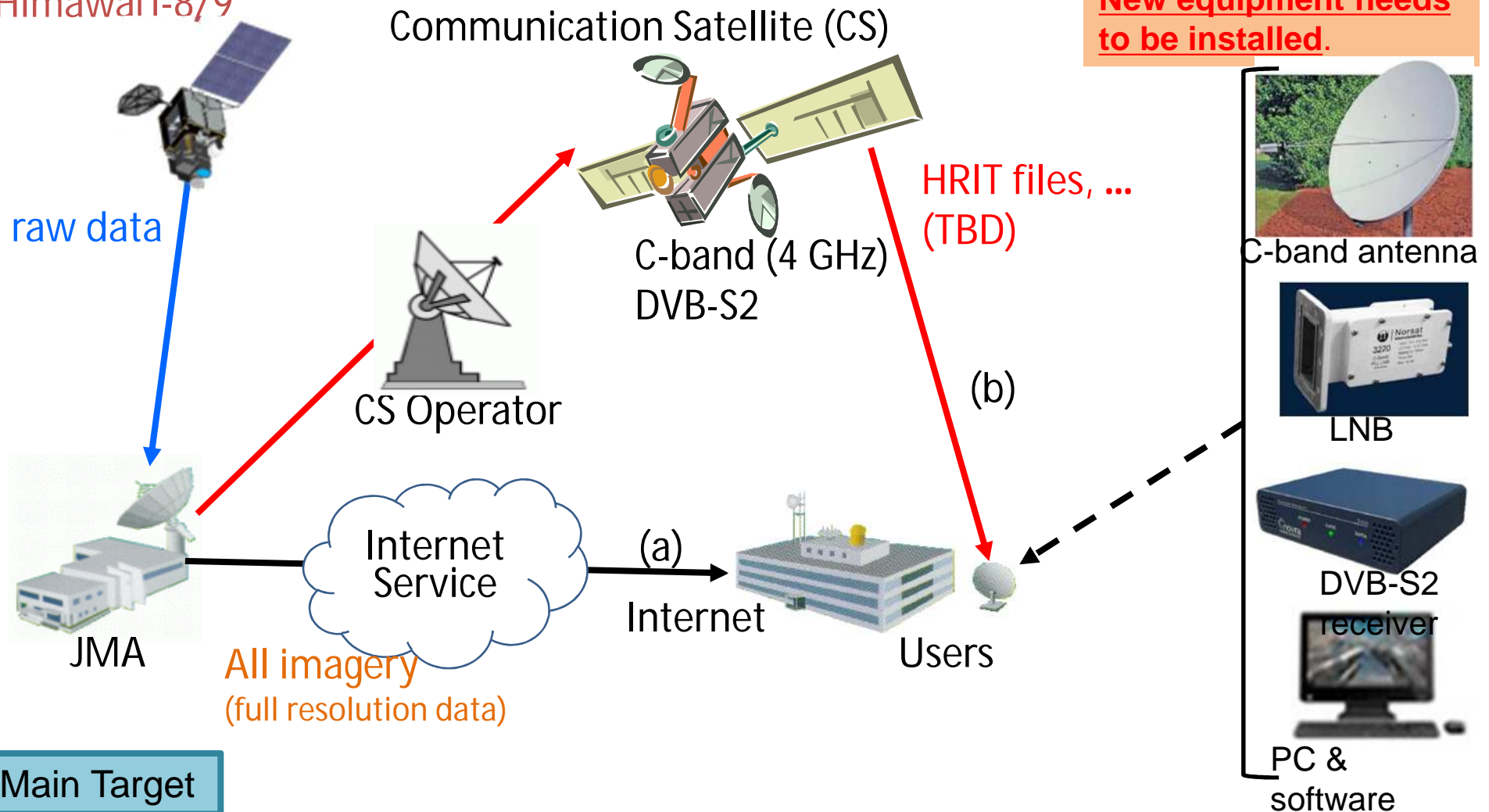
Higher spatial resolutions		More frequent observations		More spectral bands	
MTSAT-1R/2	Himawari-8/9	MTSAT-1R/2	Himawari-8/9	MTSAT-1R/2	Himawari-8/9
VIS 1km IR 4km	VIS 0.5 - 1km IR 2km	Full disk observation with 10-minute intervals 30 min.	Full disk observation with 10-minute intervals 10 min. 10 min. 10 min.	1 band (black/white image)	3 bands (color image)
		Small-sector observation Every 2.5 minute around Japan	Small-sector observation Every 2.5 minute around Japan	N/A	3 bands
				4 bands	10 bands
				5 bands	16 bands

Details of AHI

# Himawari-8/9: Data Distribution/Dissemination

Himawari-8/9

**New equipment needs to be installed.**

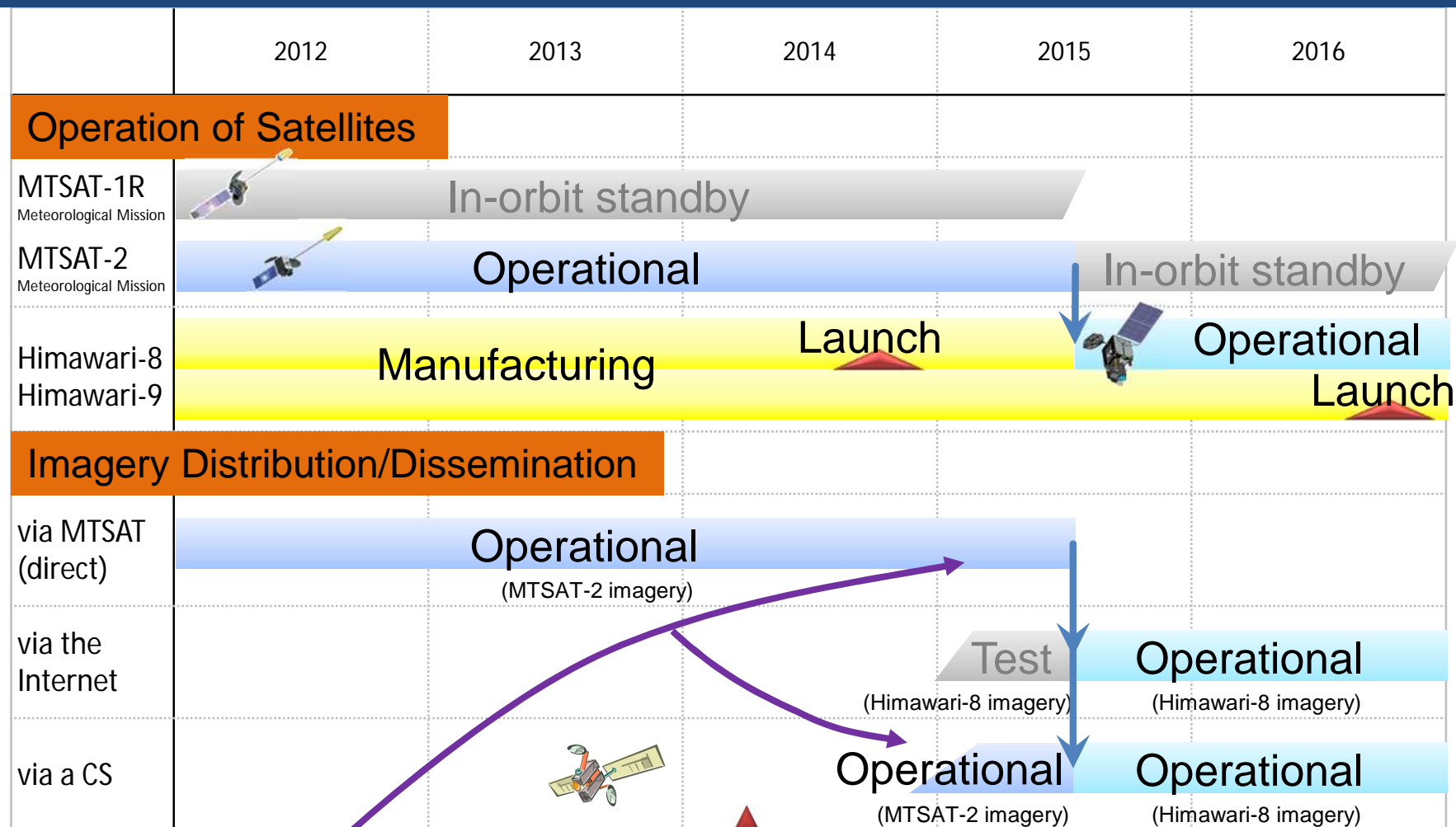


**Main Target**

**(a) Internet Service:** National Meteorological and Hydrological Services (NMHSs)  
**(b) CS:** NMHSs with limited Internet connection

**You can freely re-distribute/re-disseminate both data you receive.**


# Schedule of Distribution/Dissemination



JMA will announce the details of CS (to be fixed in May 2014) and its receiving equipment in the spring of 2014.

- Parallel dissemination is planned to ensure users' smooth transition to receive imagery via a CS.

# Internet service



Format	Observation Area	Note
<b>Himawari Standard Data</b>	Full Disk Target Area	<ul style="list-style-type: none"> <li>- Full Disk: Every 10 minutes</li> <li>- Target Area: Every 2.5 minutes</li> <li>- 16 bands</li> <li>- The finest spatial resolution data</li> </ul>
Portable Network Graphics (PNG)	Full Disk Target Area	<ul style="list-style-type: none"> <li>- True-color images compositing 3 visible bands</li> <li>- Full Disk: Every 10 minutes</li> <li>- Target Area: Every 2.5 minutes</li> <li>- Same spatial resolution as Himawari Standard Data</li> </ul>
Network Common Data Form (NetCDF)	Target Area	<ul style="list-style-type: none"> <li>- Every 2.5 minutes</li> <li>- 16 bands</li> <li>- Same spatial resolution as Himawari Standard Data</li> </ul>
HRIT files	Full Disk	<ul style="list-style-type: none"> <li>- Compatible format as current MTSAT series' HRIT service</li> <li>- Every 10 minutes</li> <li>- 5 bands (VIS: 1 band, IR: 4 bands)</li> <li>- Coarser spatial resolution than Himawari Standard Data</li> </ul>

Tentative data set to be distributed via the Internet service.

- Basically one download per one nation
- Registration for account is required
- No special equipment is needed but high-speed Internet connection is required

# CS dissemination



**Tentative!**

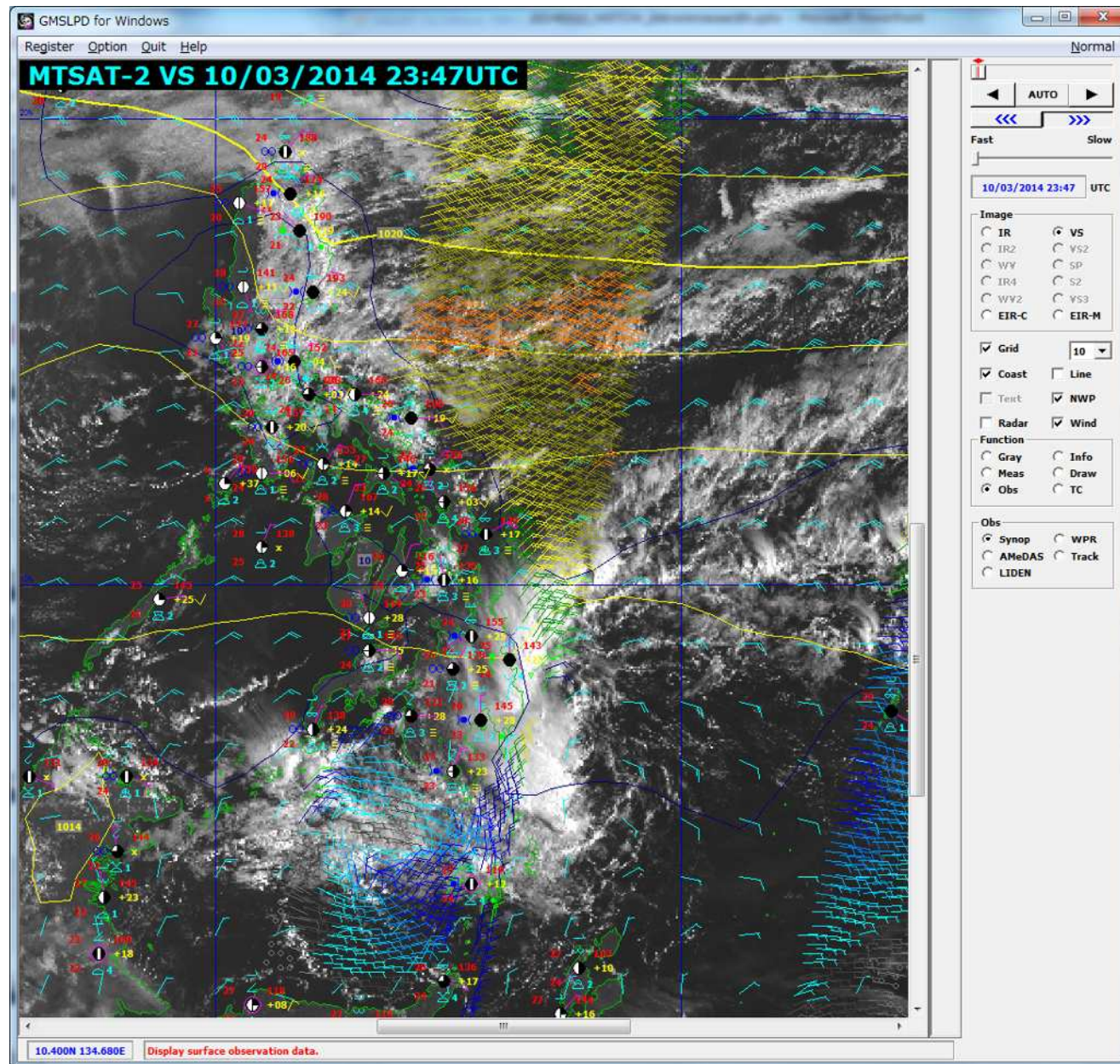
Data type	Format	Note
<b>Himawari-8/9 Imagery</b>	HRIT files LRIT files	- Similar to current MTSAT series' HRIT and LRIT services - Every 10 minutes - HRIT: 5 bands (VIS: 1 band, IR: 4 bands) - LRIT: 3 bands (VIS: 1 band, IR: 2 bands)
Numerical Weather Prediction Products (GPV)	SATAID format	- Products of JMA's Global Spectrum Model (GSM) - Every 6 hours
In-situ Observations (Surface stations, ships, radiosondes)	SATAID format	- Collected observation data from the East Asia and Western Pacific regions
ASCAT Ocean Surface Wind (EUMETSAT)	SATAID format	- Originally provided by EUMETSAT Ocean and Sea Ice Satellite Application Facility (OSI SAF), and converted into SATAID format by JMA

Tentative data set to be disseminated via a communication satellite.

- No registration required
- Some equipment and receiving software are required



# Sample screenshots of SATAID



## Contact point for Distribution/Dissemination

Yasushi Izumikawa (Mr)

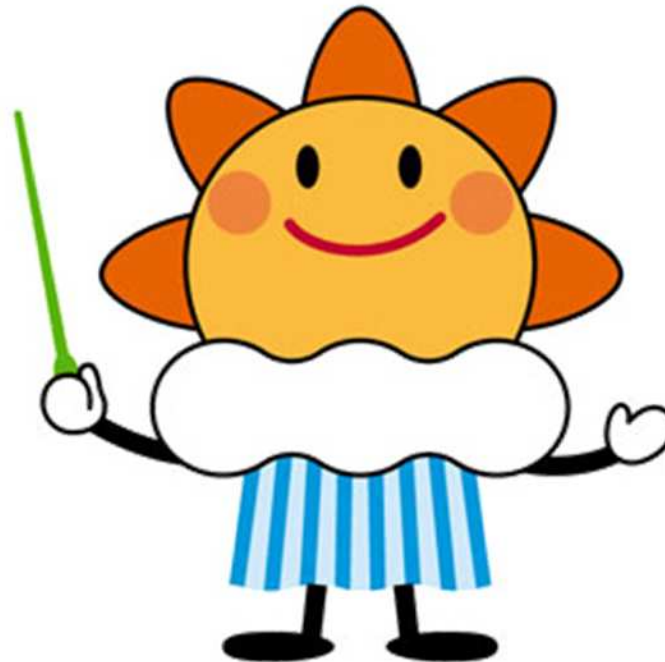
[E-mail: metsat@met.kishou.go.jp](mailto:metsat@met.kishou.go.jp)

Phone: +81-3-3201-8677

FAX: +81-3-3217-1036



Thank You for your attention.



# Main feature of Himawari Standard Data/HRIT

Himawari Standard Data (full set of Himawari-8/9 data)	HRIT (light set of Himawari-8/9 data)
From Internet service	From Communication satellite dissemination, Internet service
There is no standard viewer. User must prepare their own processing module for operation.	There are some viewers for HRIT data.
Recommended for product developers	Recommended for weather forecasters