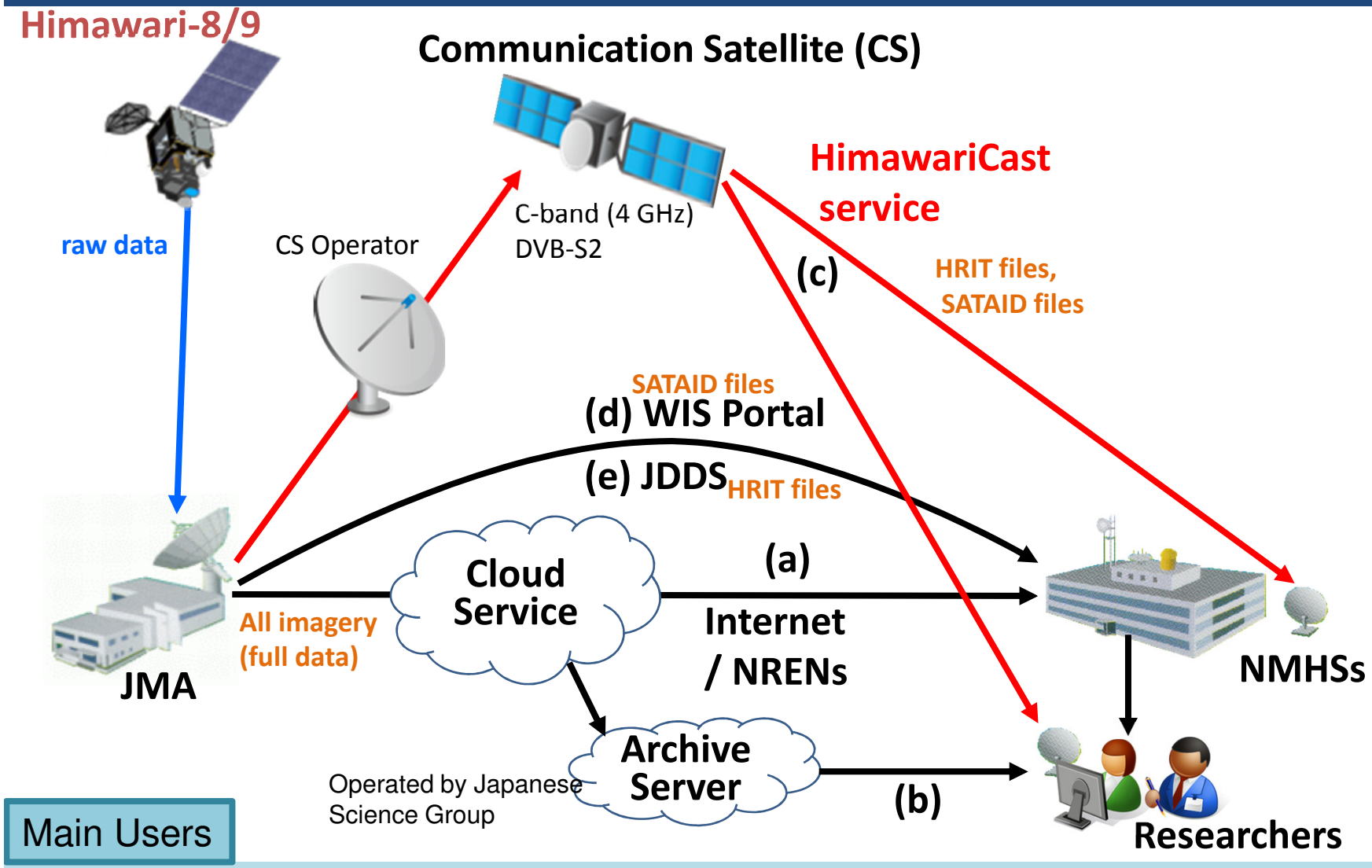
Introduction of the HimawariCast service

Japan Meteorological Agency

Australian VLab Centre of Excellence Regional Focus Group meeting, 2 Sep. 2014

Data Distribution/Dissemination Plan

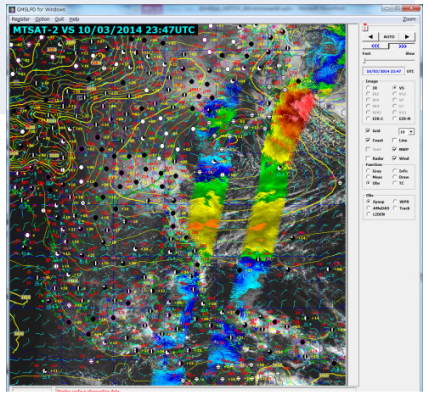


Main Users

(a) <u>Cloud Service</u>: NMHSs (1 agency / nation)
(b) <u>Archive Server</u>: Universities and Researchers
(c) <u>HimawariCast</u>: Every users
(d) WIS Portal and (e) JDDS: NMHSs

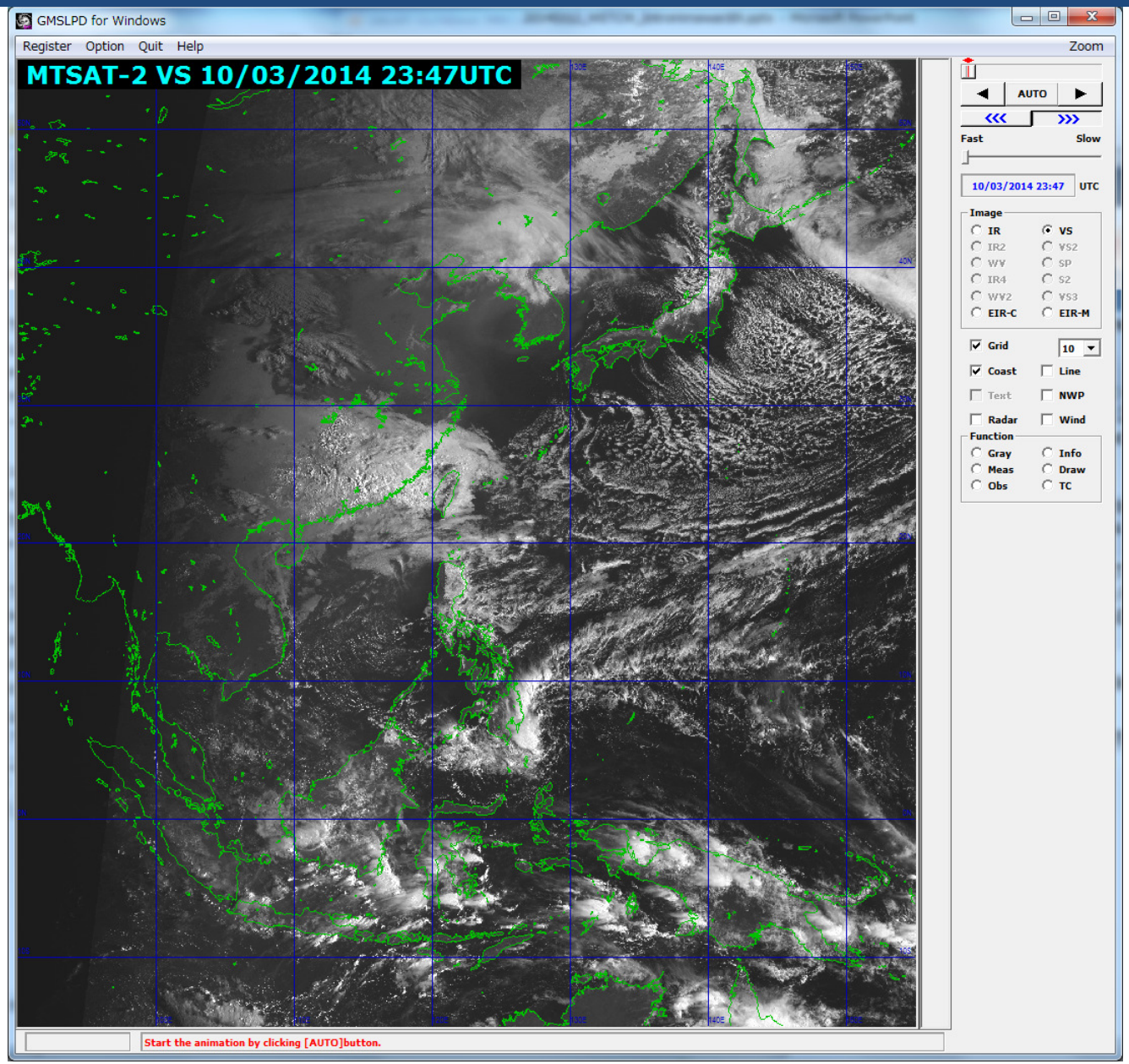
HimawariCast: Dataset

Data type	Format	Notes
Himawari imagery (full disk)	**HRIT files** **LRIT files** • **Divided into 10 segments and compressed using bzip2** • **Compatible with the MTSAT HRIT/LRIT services**	- **Interval: 10 minutes** **MTSAT-2 observation schedule followed while MTSAT-2 is in operation** - **HRIT: 5 bands (VIS: 1 km, IR1-4: 4 km)** - **LRIT: 4 bands (VIS, IR1, IR3, IR4: 5 km)** - **Approx. 40 GB / day for storage**
NWP products (GPV)	SATAID format • Compressed using bzip2	- JMA Global Spectral Model (GSM) products (48-hour forecast, 1.25-degrees resolution) - Interval: 6 hours - Approx. 40 MB / day for storage
In-situ observations (SYNOP, TEMP, SHIP)	SATAID format • Archived using tar and compressed using bzip2	- Observational data for East Asia and Western Pacific regions - Interval: 30 minutes - Approx. 5 MB / day for storage
ASCAT ocean surface wind (EUMETSAT)		- Observational data from EUMETSAT's Metop polar-orbiting satellites - Interval: 30 minutes - Approx. 10 MB / day for storage



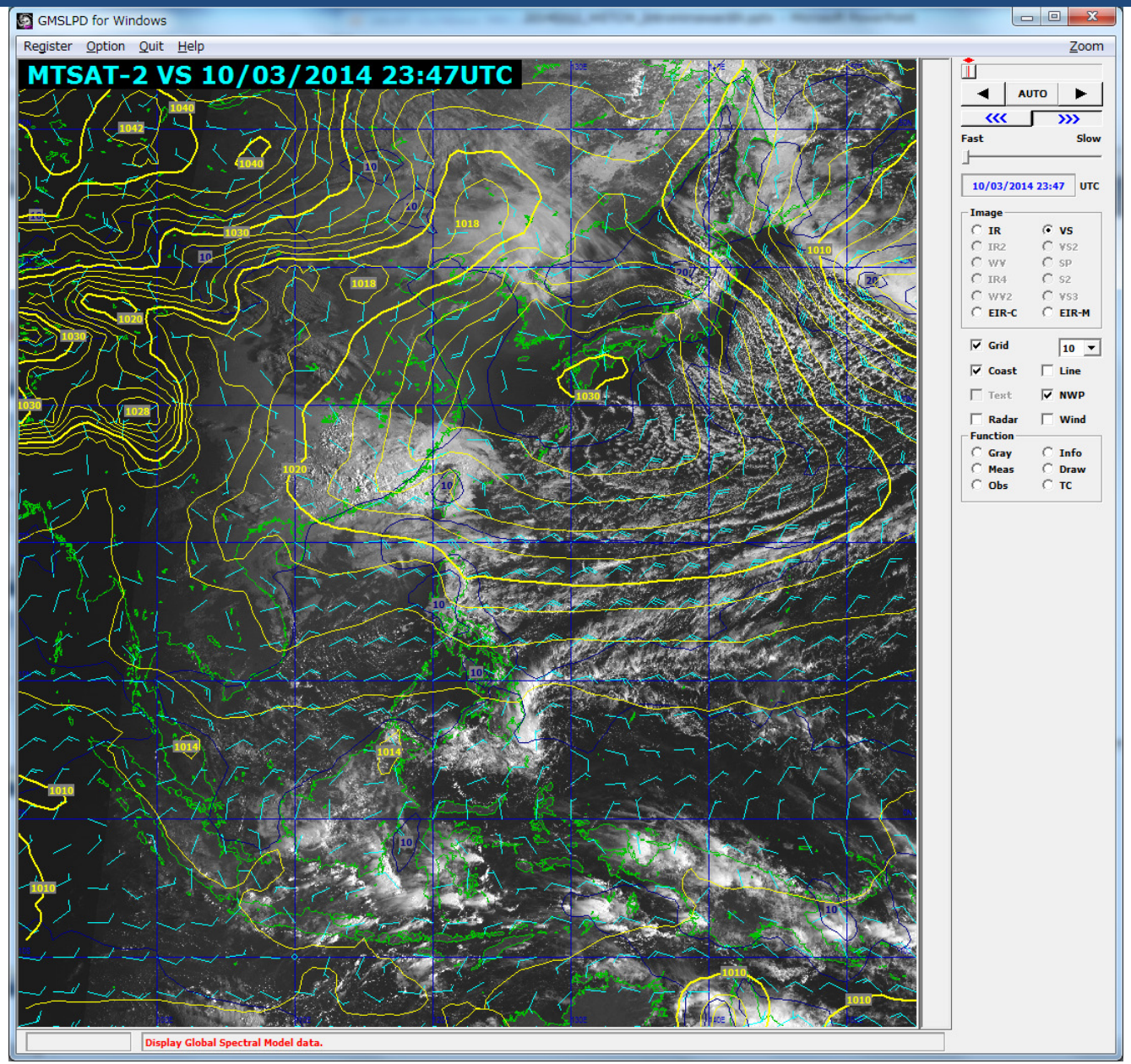
- Data in SATAID format will be disseminated for NMHSs using SATAID application.
- With SATAID application, you can overlay GPV, SYNOP, etc. on satellite imagery.

SATAID Application



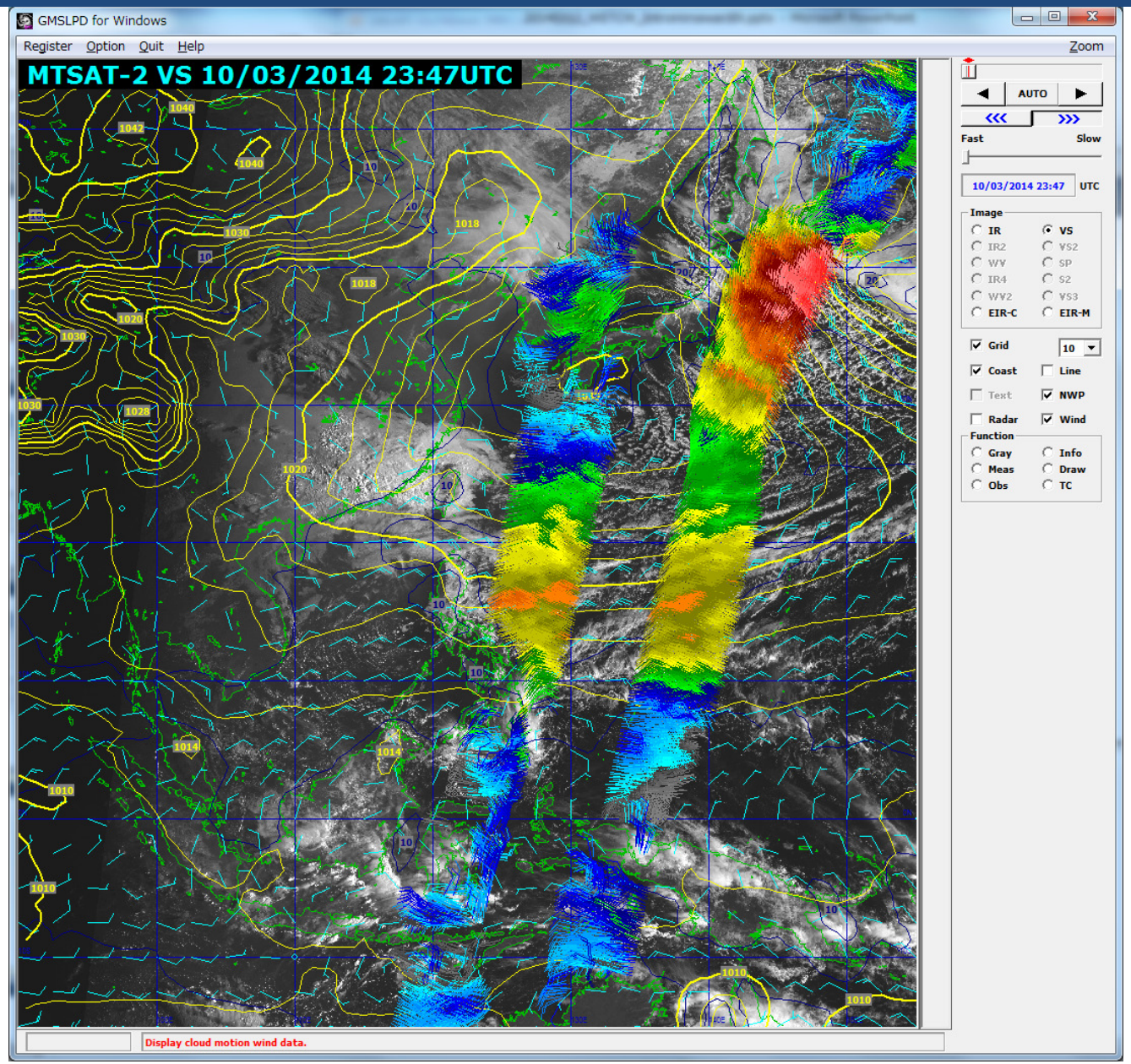
Satellite imagery

SATAID Application



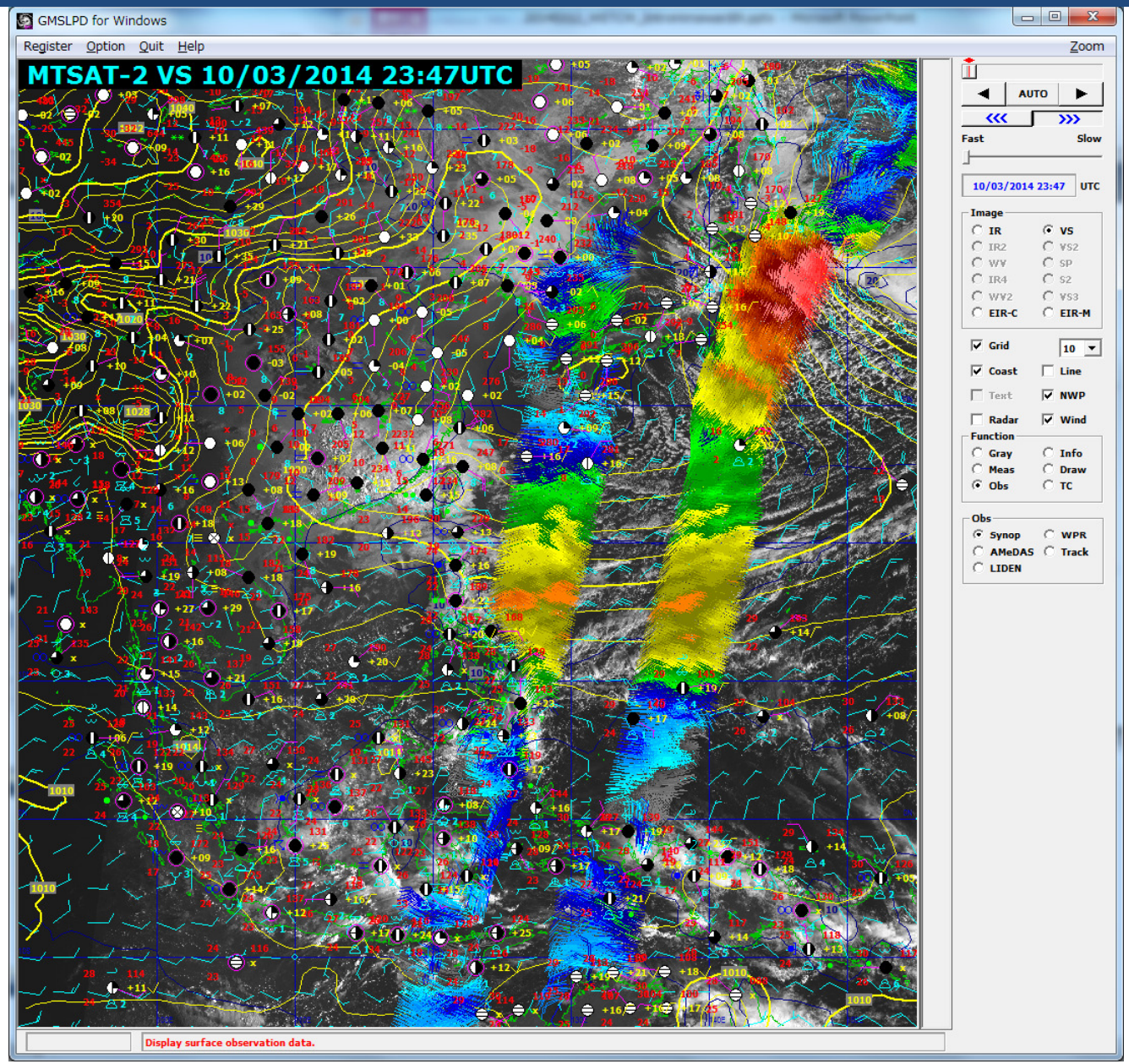
Satellite imagery + NWP GPV

SATAID Application



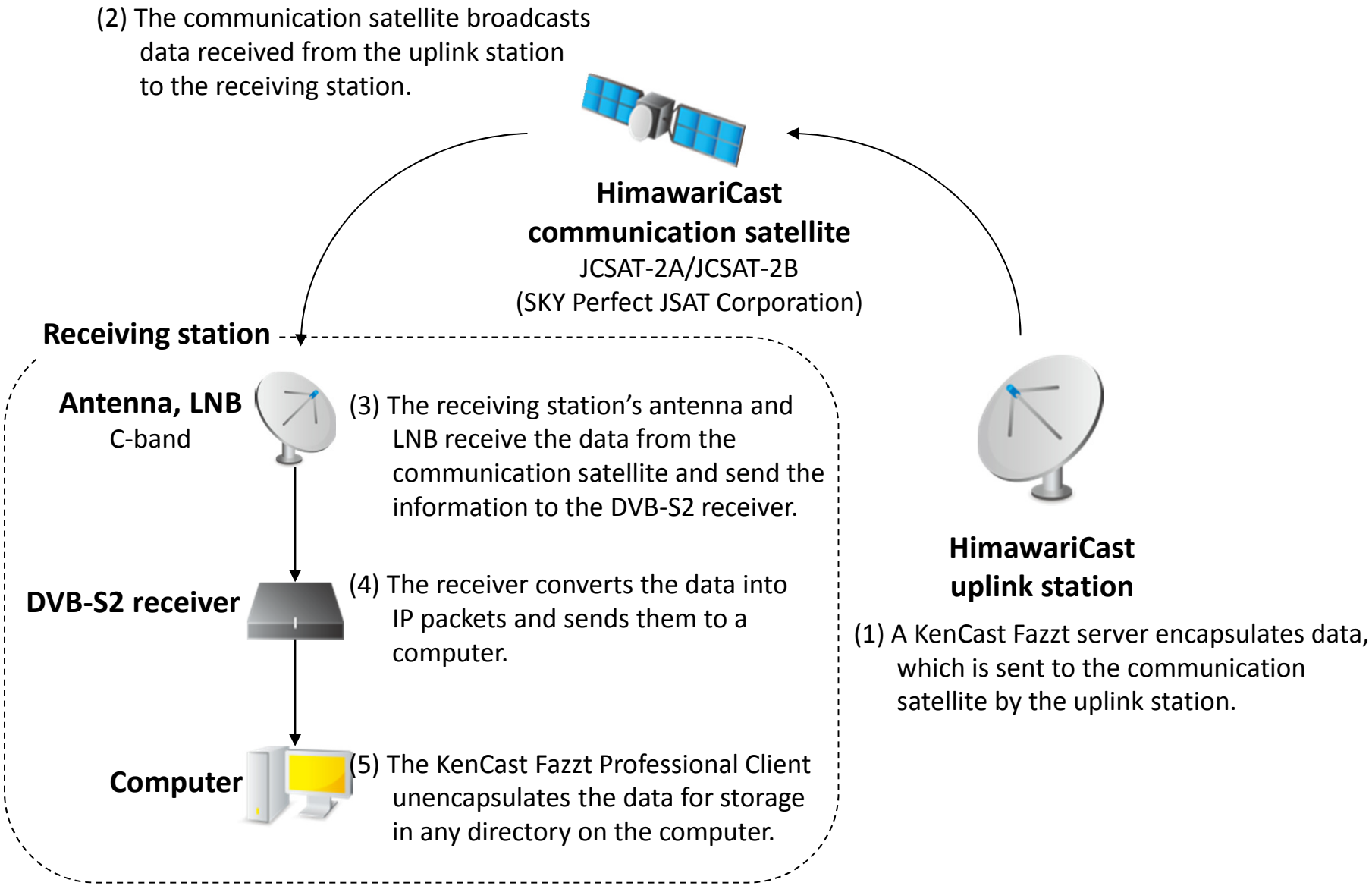
Satellite imagery + NWP GPV + ASCAT

SATAID Application



Satellite imagery + NWP GPV + ASCAT + SYNOP, SHIP, TEMP

HimawariCast: System Structure



HimawariCast: Satellites and Configuration

- Communication satellite: **JCSAT-2A** (154 degrees East)
  followed by **JCSAT-2B** in Q4 of 2015

Receiver, Low Noise Block Converter (LNB):

- Type: DVB-S2
- Modulation: QPSK
- FEC: 3/5
- Roll-off factor: 0.2
- Symbol rate: 2,586.148 ksps
- Frequency: C-band (3.96 – 4.20 GHz) Same frequency will be used by JCSAT-2A and 2B.
- Polarization: Linear (**JCSAT-2A**: Vertical, **JCSAT-2B**: Horizontal)

JCSAT-2A users need to shift the polarization angles of their LNBs by 90 degrees in order to receive JCSAT-2B.

Computer:

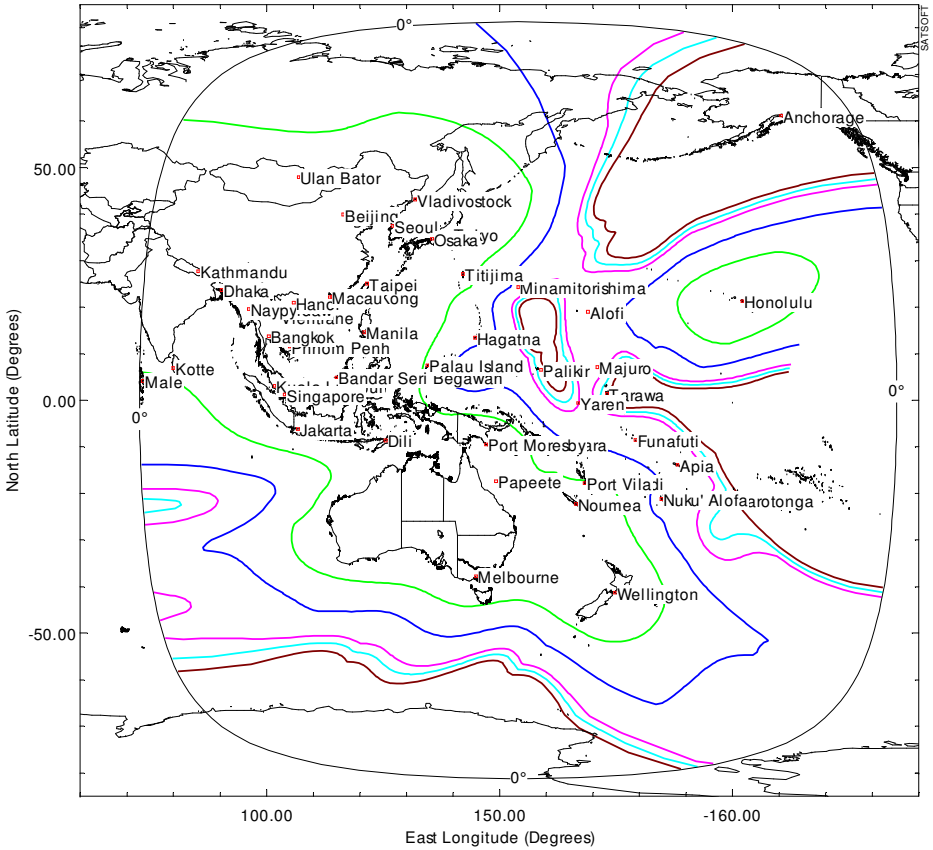
- Datacasting client software: KenCast Fazzt Professional Client

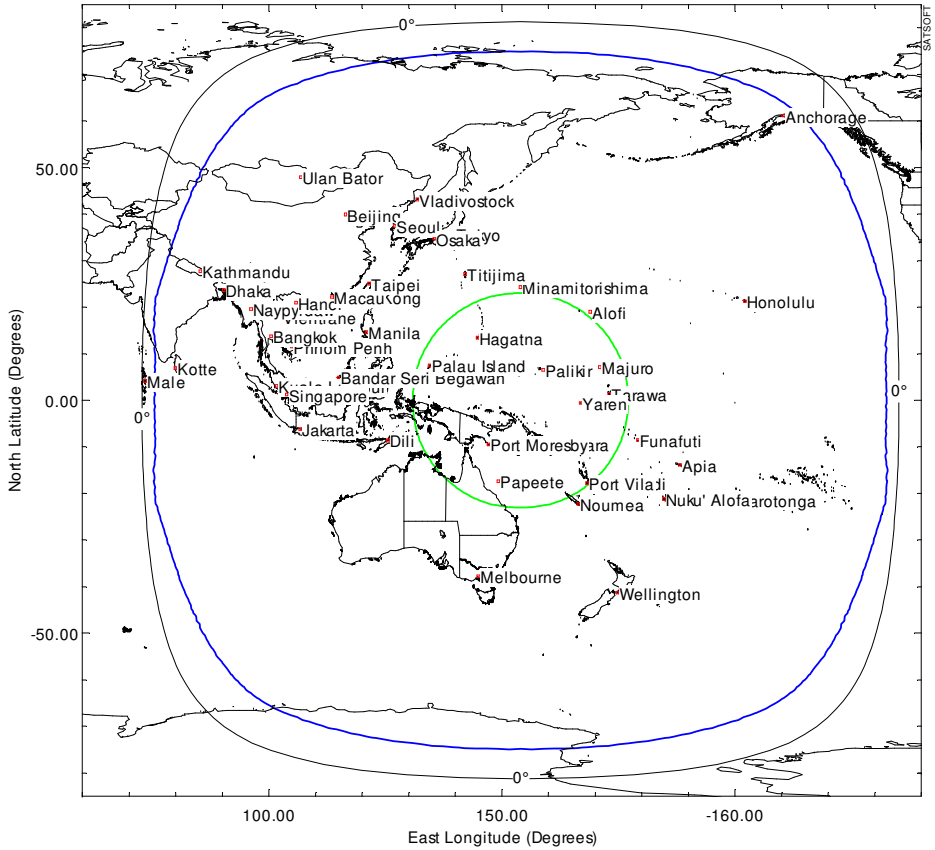
http://www.kencast.com/

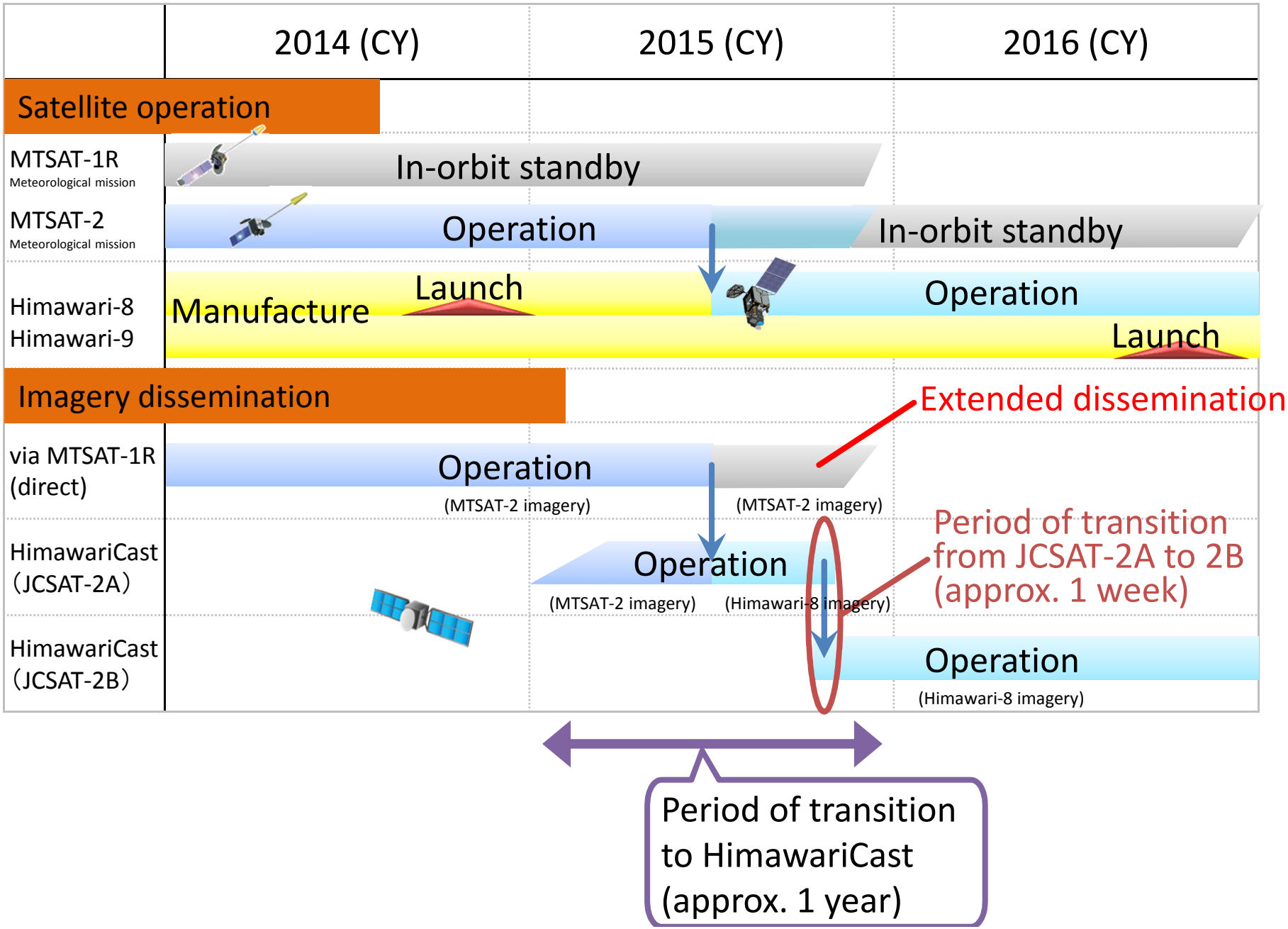
HimawariCast: Antenna size

The contours for JCSAT-2B might be different from real ones.

JCSAT-2A → **JCSAT-2B**





- 1.8 mΦ (16.5 dB/K)
- 2.4 mΦ (19.6 dB/K)
- 3.8 mΦ (23.0 dB/K)
- 4.5 mΦ (24.8 dB/K)
- 5.0 mΦ (26.0 dB/K)

HimawariCast: Transition schedule