JMA's VLab activity report

Sep 2012 – Dec 2013

Yasushi Izumikawa (Japan Meteorological Agency)

7th VLab Management Group meeting, St Petersburg, Russia, 24 July 2014

Contents of JMA's presentation

- Most important achievements
  - 1. Facilitate the Himawari-8/9 readiness activities
    - 1-A Enrich the Himawari-8/9 information on website
    - 1-B Conduct MTSAT-1R's rapid scan over the RAV area
  - 2. Provide lecturers to support the VLab training events
- Main challenges
  - 3. Developing HimawariCast contents for LDC countries
- Future plans

Most important achievements

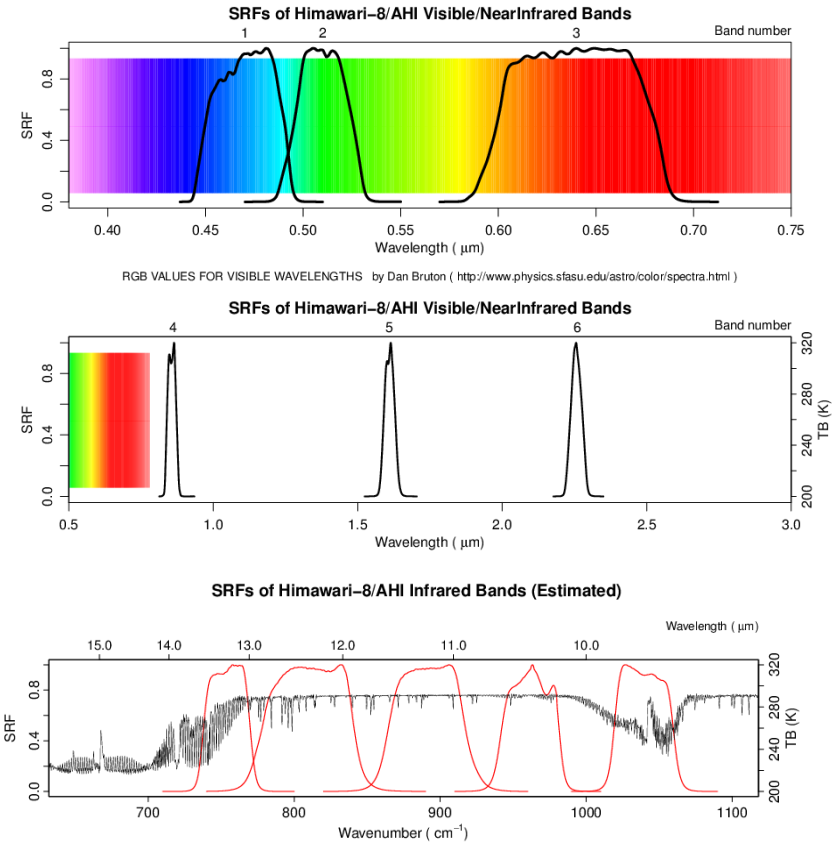
1. Facilitate the Himawari-8/9 readiness activities

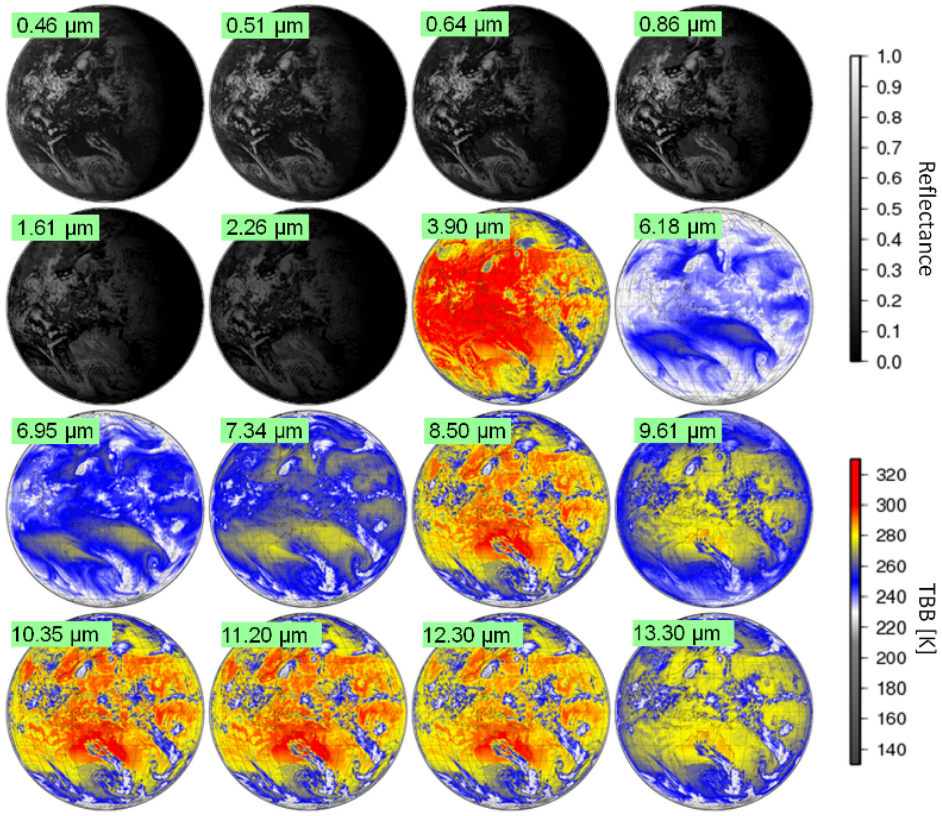
1-A Enrich the Himawari-8/9 information on website

- Provide Spectral Response Function (SRF) and Advanced Himawari Imager (AHI) proxy data (for researchers)
- Provide necessary materials for handling Himawari Standard Data (for operational user)
  - Document, Sample data, Sample dump tool
- Provide detailed transition plan from MTSAT-2 to Himawari-8 (for operational user)

AHI SRF and Proxy data

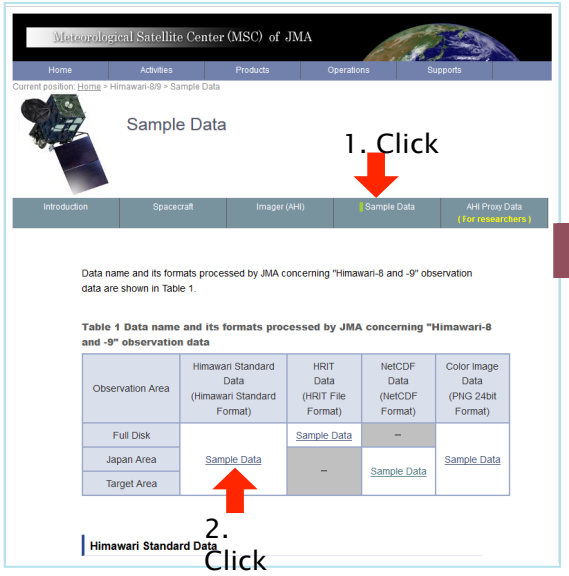
- http://mscweb.kishou.go.jp/himawari89/space_segment/spsg_ahi.html

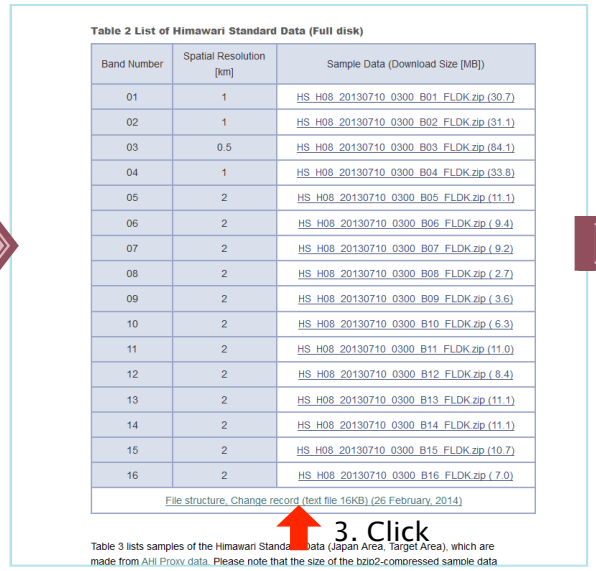


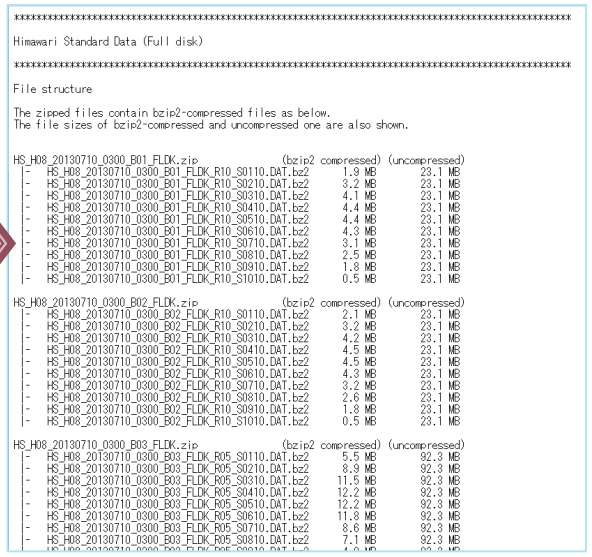


Himawari Standard Data related materials

- http://mscweb.kishou.go.jp/himawari89/space_segment/spsg_sample.html

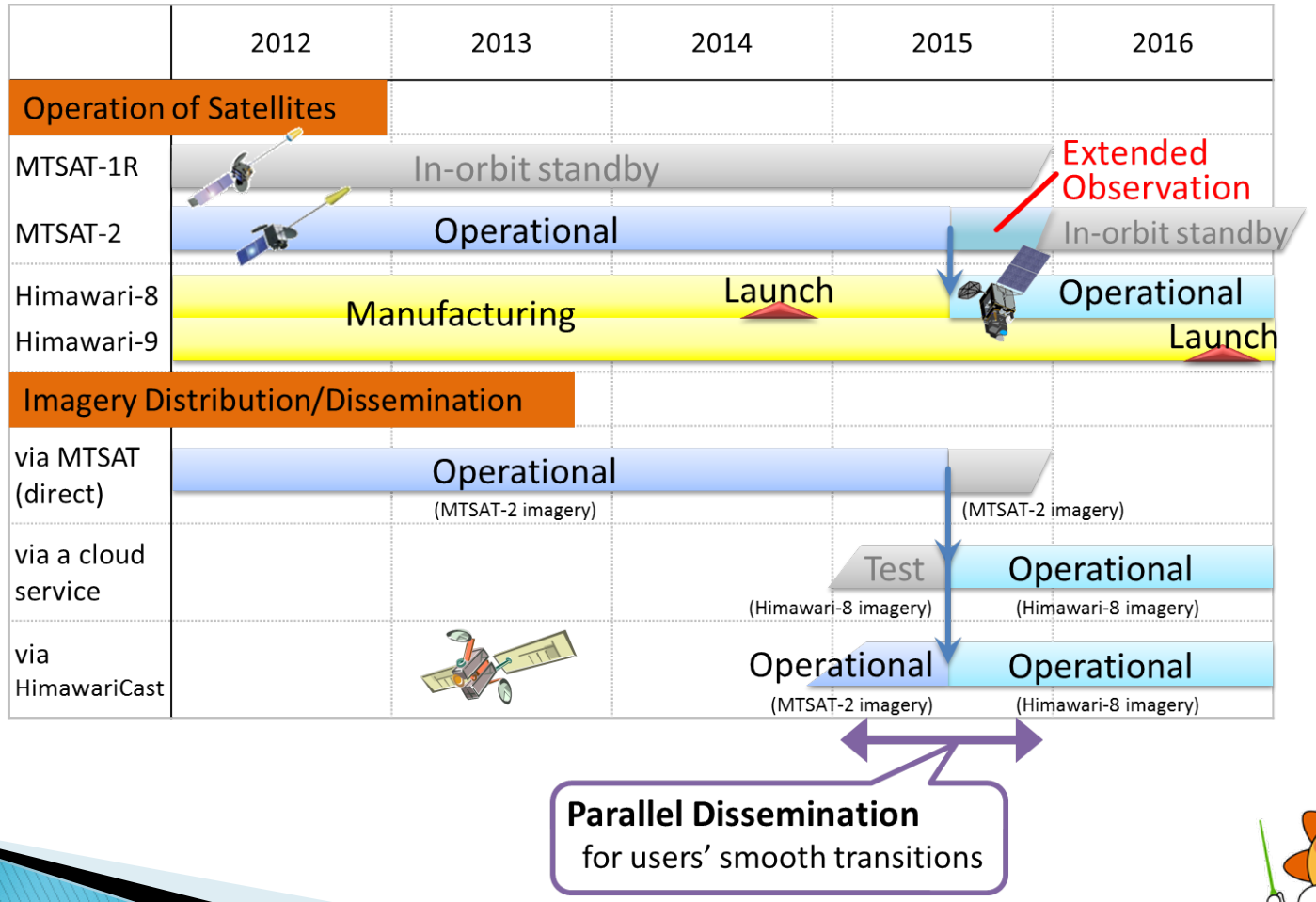






Transition plan from MTSAT-2 to Himawari-8

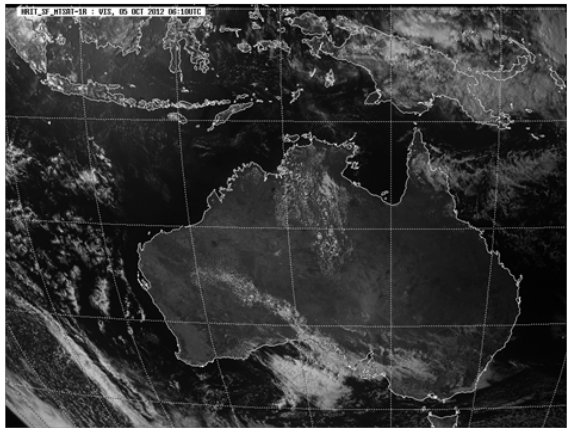
- http://mscweb.kishou.go.jp/himawari89/index.html



1. Facilitate the Himawari-8/9 readiness activities

1-B Conduct MTSAT-1R's rapid scan over the RAV area

Special Observations by the backup satellite, MTSAT-1R



JMA supported the HIWC Study field campaign by conducting **MTSAT-1R rapid scan observation**.

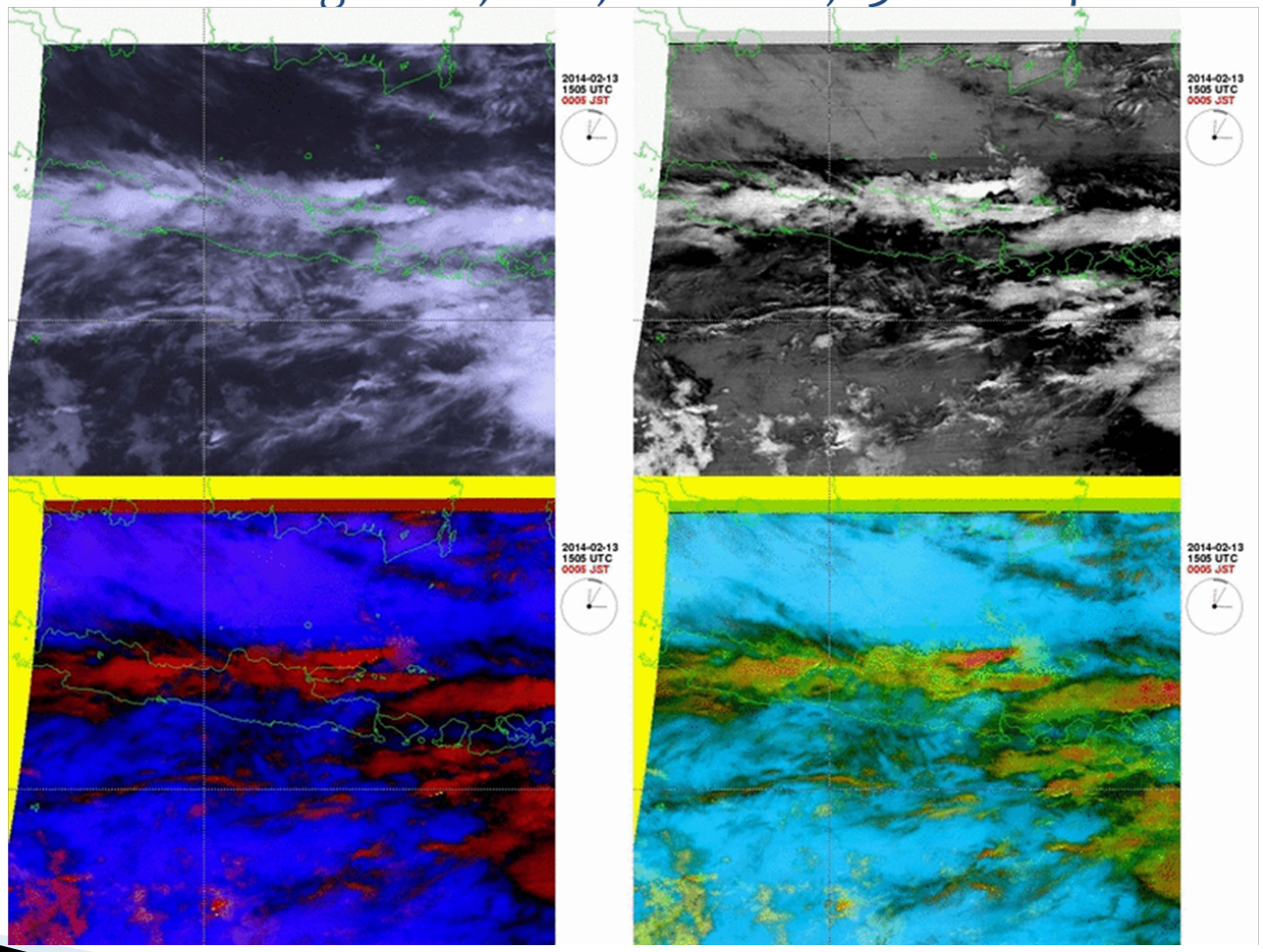
Period: January – March 2014
Interval: 10 minutes
Area: around Australia

Special observation for HIWC campaign enabled **RA V users** to study **how to apply 10-minute interval data to their daily operation in advance of the Himawari-8's operation**. It strongly helped users in preparation for the new data.

On the occasion of **Kelud volcano eruption**, information derived from MTSAT-1R rapid scan observation was of great help to Indonesian people.

Kelud volcano eruption

Gunung Kelud, Java, Indonesia, 13 Feb 2014



2. Provide lecturers to support the VLab training events

- 1 remote lecturer to the WMO-KMA RAII pilot project VLab high profile training event (4-6 October 2012)
- 2 remote lecturers to the AuBoM VLab training event "Science week" (24-26 July 2013)
- 1 lecturer to the AuBoM regional training workshop on preparation for advanced meteorological imagers (7-8 October 2013)

Main challenges

3. Developing HimawariCast contents for LDC countries

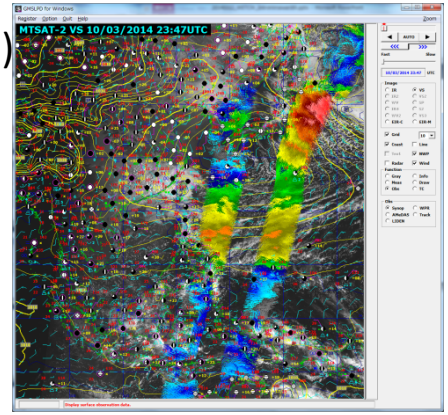
- JMA plans to distribute all observation data via the Internet, while to disseminate a primary set of data via the Communication Satellite (HimawariCast).
- Thus main target of HimawariCast service is the people who live in areas in which the Internet connection is poor. Such area is likely equivalent to LDC countries.
- To provide monitoring and analyzing the satellite imagery environment to these LDC countries, JMA's self developing software "SATAID" is best suitable tool, because SATAID already has been freely distributed for a long time and also JMA had conducted many training courses using SATAID.
- JMA tries to develop the HimawariCast contents not only satellite imagery but also related weather information such as NWP GPV, SYNOP, ASCAT data each of those can be overlaid in SATAID.

Tentative dataset of the HimawariCast service

Data type	Format	Notes
Himawari-8/9 imagery (Full Disk)	HRIT files LRIT files	- Compatible with current MTSAT HRIT and LRIT services - Every 10 minutes, 41 GB / day - HRIT: 5 bands; LRIT: 4 bands - Coarser spatial resolution than HSD
NWP Products (GPV)	SATAID format	- JMA Global Model (GSM) products - Every 6 hours, 40 MB / day
In-situ Observations (surface, ship, upper)	SATAID format	- Observation data collected from the East Asia and Western Pacific regions - 5 MB / day
ASCAT Ocean Surface Wind	SATAID format	- Originally provided by the EUMETSAT OSI SAF and converted into SATAID format by JMA - 5 MB / day

Features

- With SATAID application, you can overlay GPV, SYNOP, etc. on satellite imagery.
  (SATAID is widely used by NMHSs in the East Asia and Western Pacific regions.)
- JMA will prepare a set of software which converts HRIT files into SATAID format.



Notes

- Receiving and processing system is required.

Tentative dataset of the Internet cloud service

Format	Observation Area	Notes
Himawari Standard Data (HSD)	Full disk Target area	– Full disk: every 10 minutes, 182 GB / day – Target area: every 2.5 minutes, 6 GB / day – 16 bands – Finest-spatial-resolution data
PNG	Full disk Target area	– True-color images (composites of 3 visible bands) – Full disk: every 10 minutes, 21 GB / day – Target area: every 2.5 minutes, 1 GB / day – Same spatial resolution as HSD
NetCDF	Target area	– Every 2.5 minutes, 22 GB / day – 16 bands – Same spatial resolution as HSD

Features

- NMHS can get data using HTTP 1.1 client such as Web browser or Wget.
- NMHS can select data necessary for its operation.
  (HSD is created separately for each band, and divided into 10 segments.)

16 bands x 10 segments = 160 files / 10 minutes

Notes

- Basically one download per one nation.
- Account registration is required.
- High speed Internet access (25 Mbps) is required to download all HSD.

Future plans

Future plans

- Provide further information on the web for users
- Provide lecturer to the “Science week” and the AOMSUC-5
  - Plan to provide two lecturers on this year’s AuBoM VLab training event “Science week”
  - JMA willingly coordinate with CMA & KMA to conduct the training event preceded to AOMSUC-5.
- Convene training event in conjunction with the AOMSUC-6 to be held in Japan
  - Latest outcomes of Himawari-8 observation will certainly be one of main topics. Data access
- Closely coordinate with AuBoM through monthly RFG meeting

Thank you!