

# Data dissemination and distribution of Himawari-8/9 and their recent updates

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Himawari-9

Himawari-8



# Himawari-8/9 Data Distribution Services

- HimawariCloud
- HimawariCast
- JMA Data Dissemination System (JDDS)
  - Variety of meteorological data (e.g. Satellite imagery and High-resolution Cloud Analysis Information) to NMHSs
- Distribution service for R & D and education
  - Data archived and redistributed via cooperative institutes
- Distribution service to private sectors
  - Data for the private sectors are distributed via the Japan Meteorological Business Support Center
- Online satellite imagery
  - New contents were provided to facilitate scrolling and zooming

# Himawari-8/9 Data Dissemination

Himawari-8/9

raw data

Communication Satellite (CS)

HimawariCast  
service

HRIT files,  
SATAID files

CS Operator

All imagery  
(full data)

HimawariCloud  
service



C-band antenna



LNB



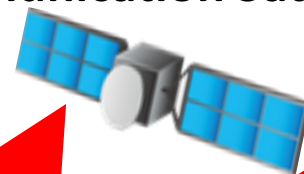
DVB-S2 receiver



PC & software



JMA



NMHSs



Users

# Himawari Users



## HimawariCast Receiving Systems

33 users



## HimawariCloud accounts

23 users

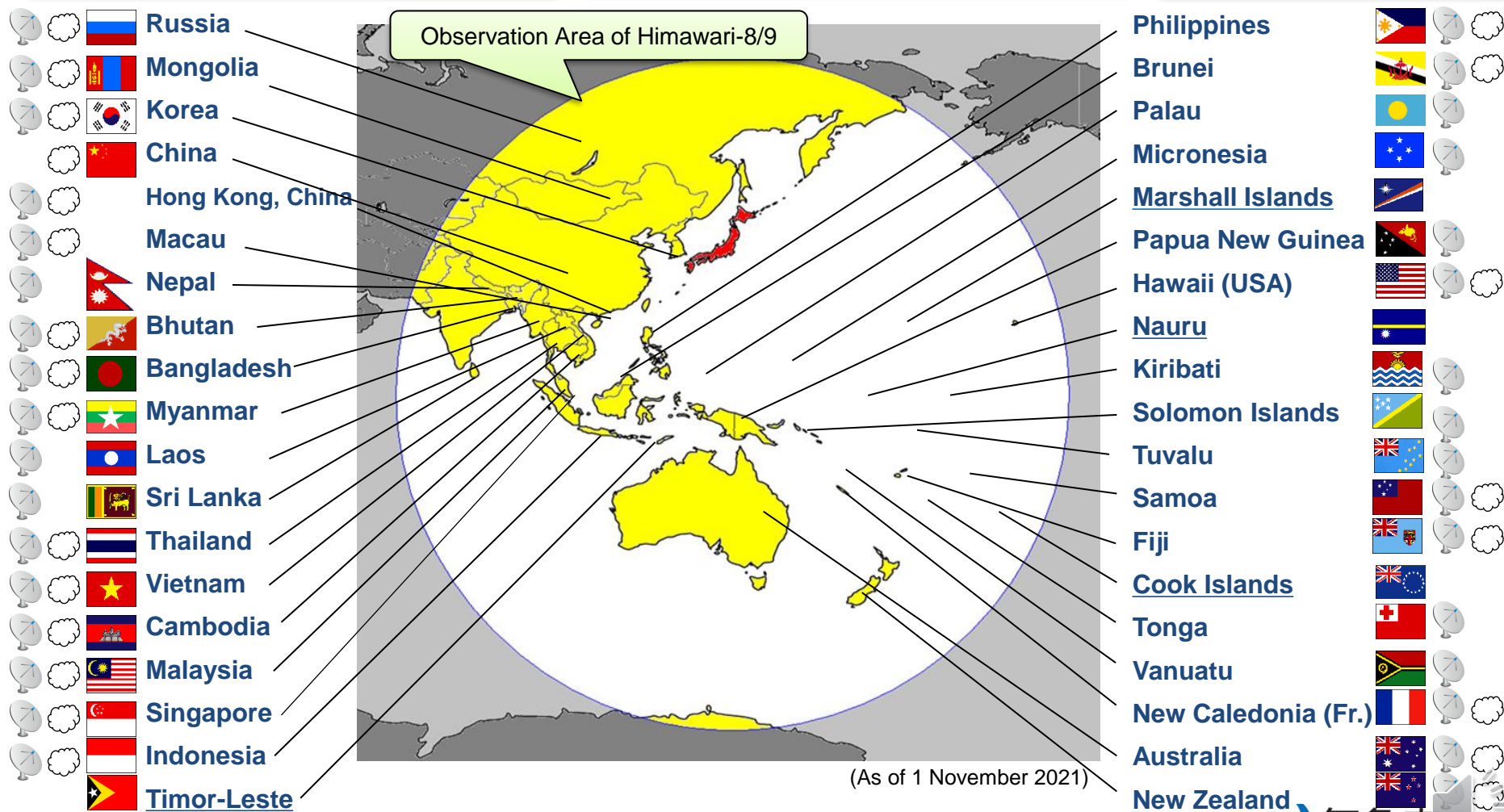
(In addition to these, EUMETSAT have accounts.)



## Web service covers

42 areas

(including Timor-Leste, Nauru, Marshall Islands and Cook Islands)



(As of 1 November 2021)

- HpFP

- JMA is working to implement L2 connection and HpFP (High-performance and Flexible Protocol) in addition to the current HTTP(S)
- HpFP was developed by the National Institute of Information and Communications Technology (NICT) based on the User Datagram Protocol
  - <http://hfpf.nict.go.jp/en/>
- HpFp enables high throughput even with high latency and packet loss

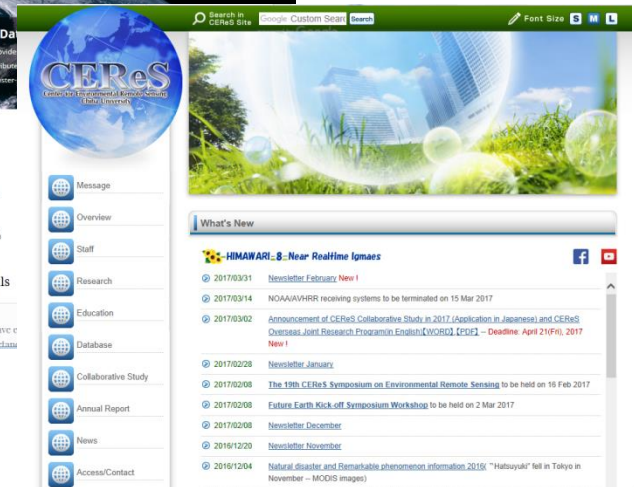
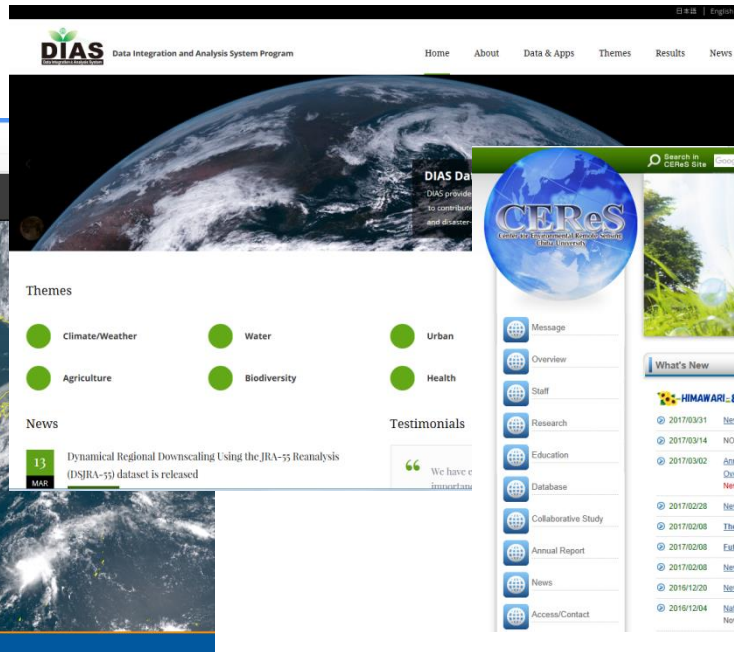
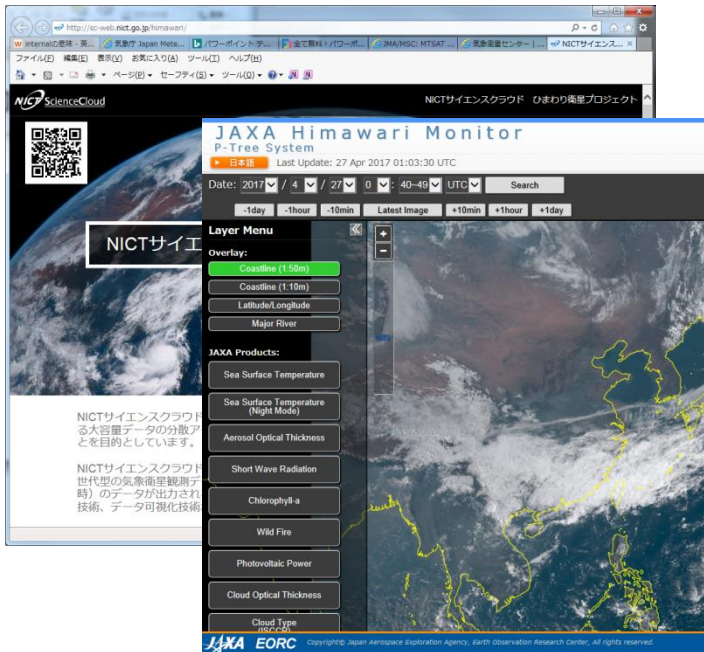
# Data Distribution Services by Cooperation Institutes

- Himawari-8 data are being redistributed to foreign and domestic R&D users by the following Japanese scientific institutes.
  - NICT\* (via Science Cloud)
  - JAXA\*\* (via Himawari Monitor)
  - University of Tokyo (via DIAS; Data Integration and Analysis System)
  - Chiba University CEReS\*\*\*

\* National Institute of information and Communications Technology

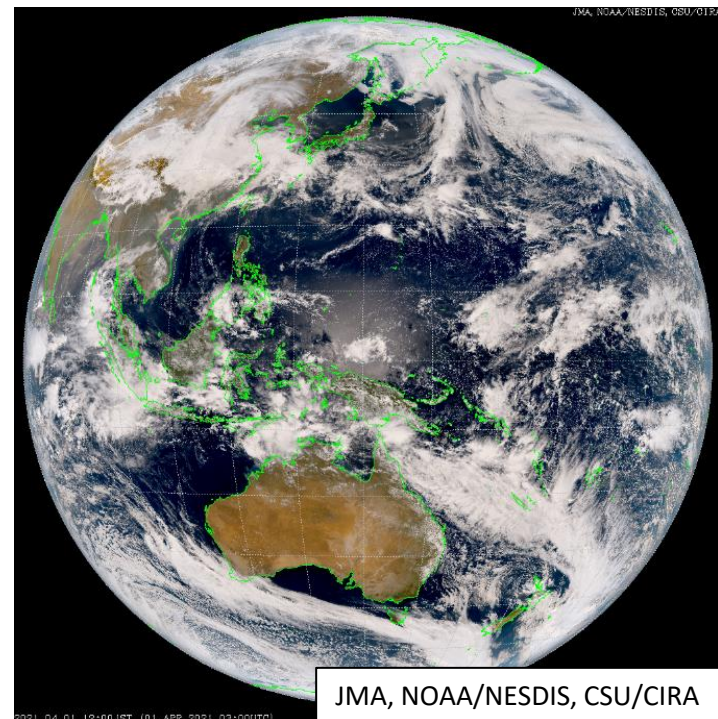
\*\* Japan Aerospace Exploration Agency

\*\*\* Center for Environmental Remote Sensing



# JMA Online Satellite Imagery Update

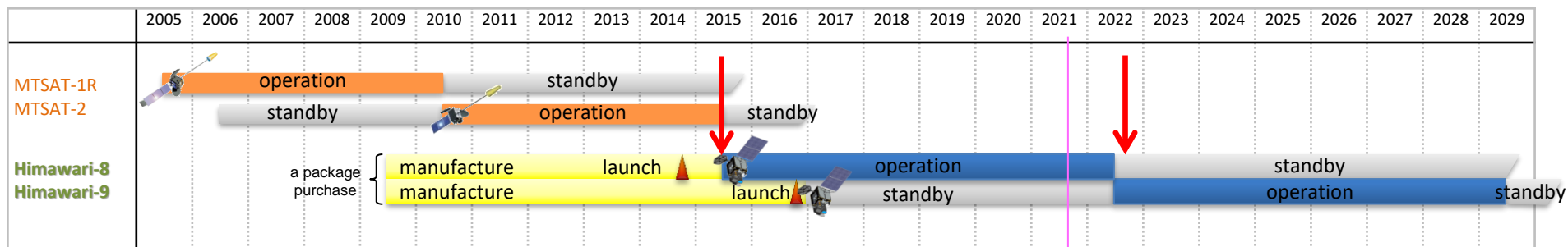
- JMA updated its online satellite imagery content on 24 February 2021.
  - Facilitate scrolling and zooming
  - New imagery (True-color reproduction imagery)



<https://www.jma.go.jp/bosai/map.html#contents=himawari&lang=en>

# Switch over to Himawari-9

- JMA is now planning the switch over from Himawari-8 to -9 around Q3-4 in JFY2022.
- Switch over from Himawari-8 to Himawari-9 will be almost seamless, with no change in data format or data dissemination system.
- Their parallel observation and data distribution are also under consideration.





# Conclusion

- JMA generally distributes Himawari-8/9 data via its HimawariCast and HimawariCloud systems
- HpFP is investigated to be implemented into HimawariCloud
- In February 2021, JMA improved its online satellite imagery
- JMA plans seamless switch over to Himawari-9 in late JFY2022