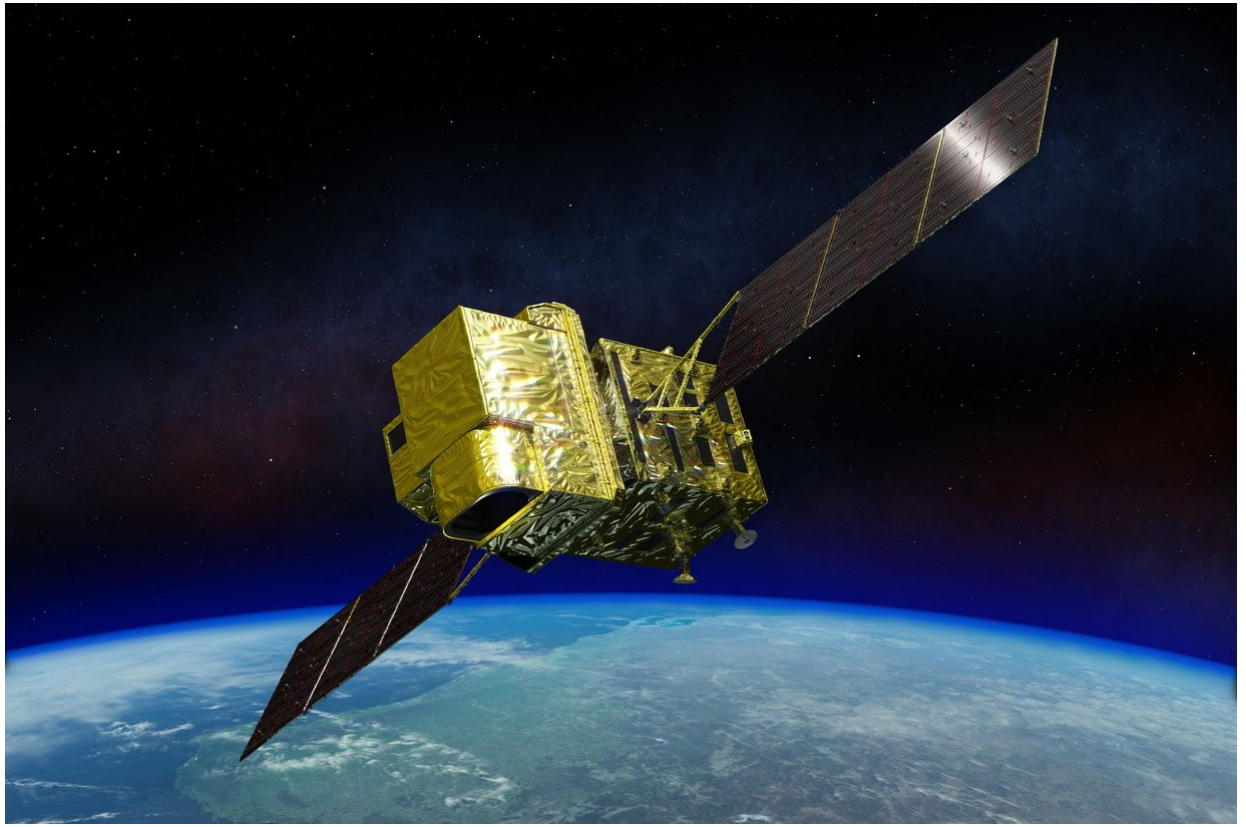
Advanced Land Observing Satellite (ALOS-3) Update

- Mission overview and current status -



WATARAI, Hidenori

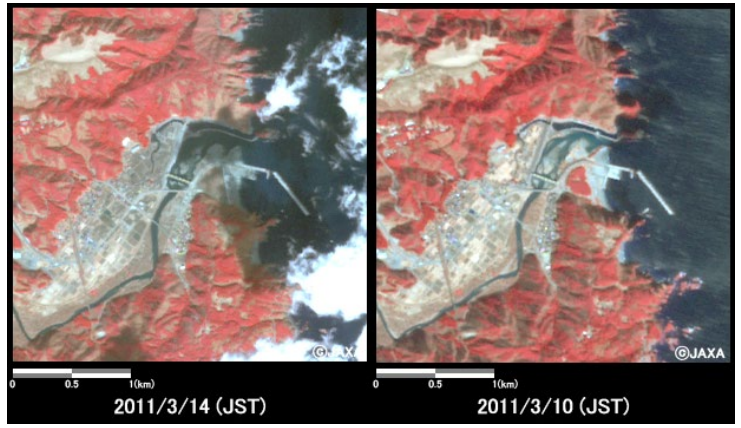
JAXA ALOS-3 Project Team

Mission Objectives of ALOS-3

ALOS-3 is an optical satellite for the successor to ALOS (2006-2011)

- ALOS-3 has capability of high GSD (0.8 m) and large field of view (> 70 km) simultaneously.
- ALOS-3 image data contributes to
  - Disaster monitoring and prevention
  - Maintenance and update of the high accuracy geospatial information.
- Incorporate the activities of private companies to meet the diverse social needs for high quality optical images.

Observation example of the Great East Japan Earthquake



Update the map of isolated island

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Specifications

Items		Specifications
Orbit	Type	Sun-synchronous sub-recurrent
	Altitude	669 km at the equator
	Local Sun Time	10:30 am +/- 15 minutes at the descending node
	Revisit	35 days (Sub-cycle 3 days)
Mission Instrument		Wide-swath and high-resolution optical imager (WISH)
Bands	Panchromatic (Pa)	0.8m GSD, 70km swath @ nadir , 0.52 – 0.76μm
	Multi band (Mu)	3.2m GSD, 70km swath @ nadir Band1 0.40 – 0.45 μm, Band2 0.45 – 0.50μm, Band3 0.52 – 0.60μm Band4 0.61 – 0.69 μm, Band5 0.69 – 0.74μm, Bnad6 0.76 – 0.89μm
Quantization		11 bit / pixel
Mission data rate		Approx. 4 Gbps (after onboard data compression: 1/4 (Pa) and 1/3 (Mu))
Mission data downlink		- Direct Transmission: Ka and X-band via. the Optical Data Relay Satellite
Mass		Approx. 3 tons at launch
Size		5 m × 16 m × 3.6 m on orbit
Duty		10 min / path
Design life time		Over 7 years

ALOS-3
In-orbit
configuration

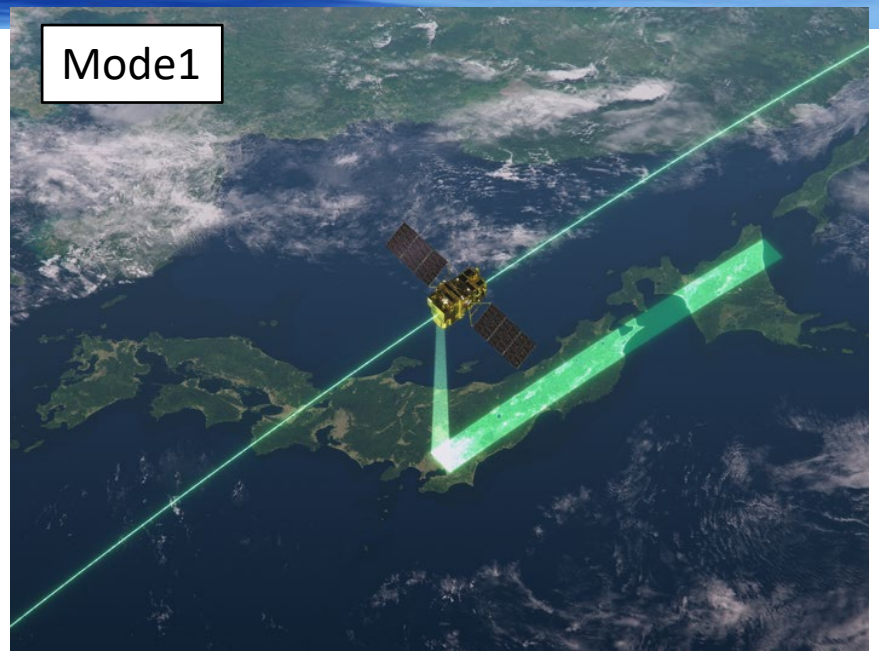
Wide-swath and high-resolution optical imager (WISH)

Additions, changes and improvements from ALOS are shown in red.

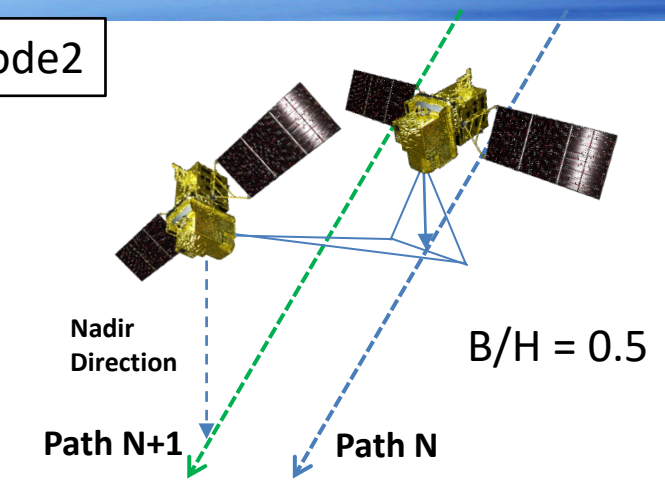
Observation Modes of ALOS-3

Modes	
1	**Strip-map observation**
2	**Stereoscopic observation**
3	**Point observation**
4	**Observation direction changing**
5	**Wide-area observation**

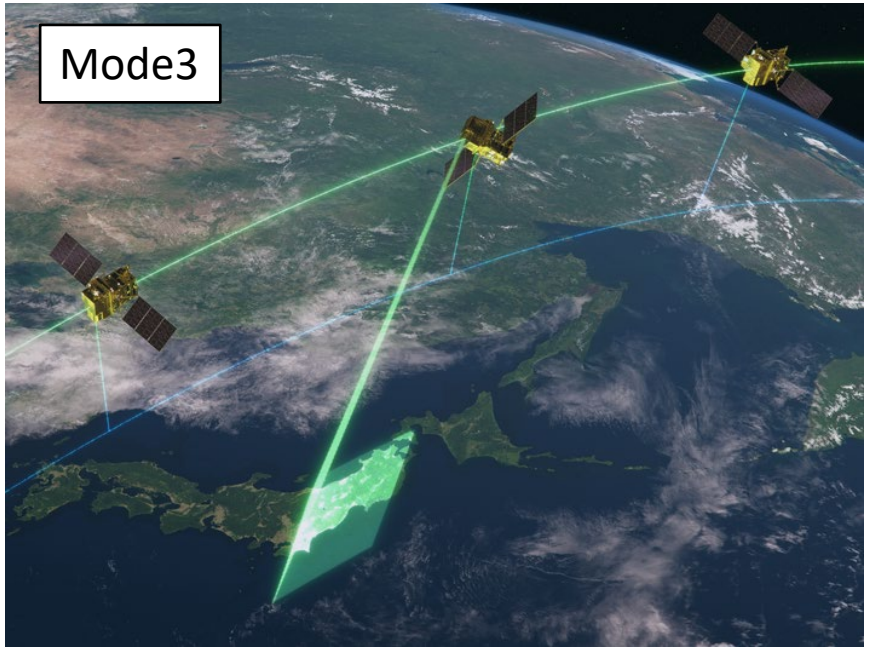
Modes 3 to 5 are for emergency observation only.

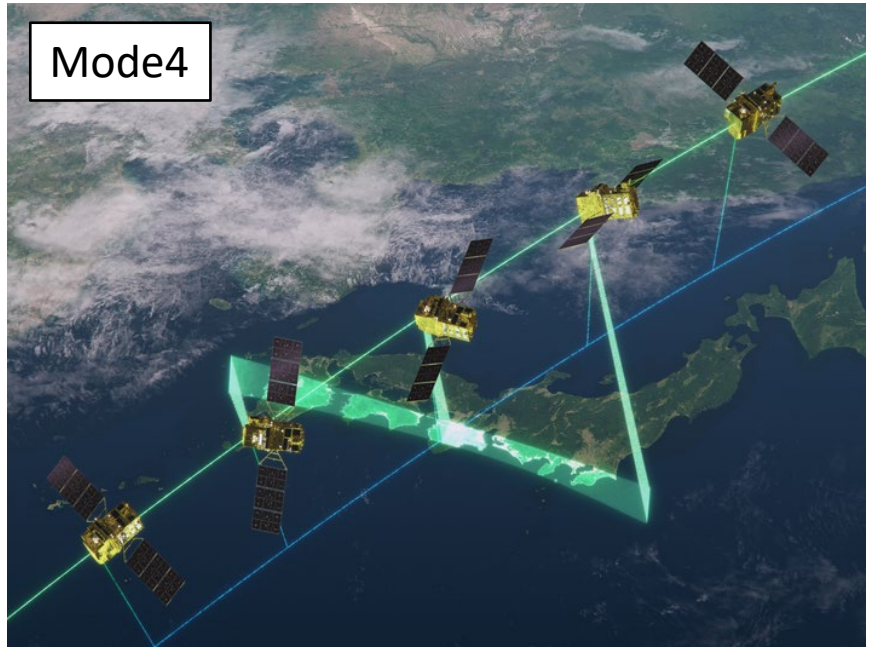


Mode2

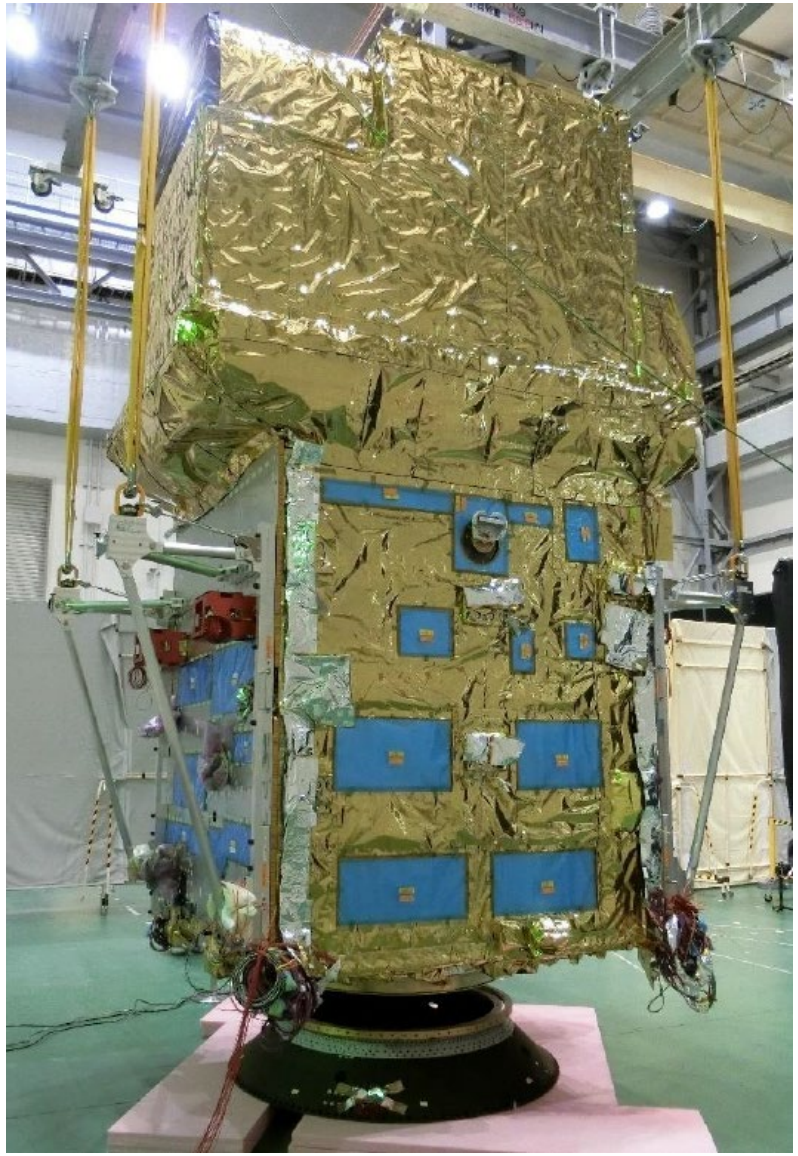


Roll and backward pitch pointing from the next path (3 days later = sub-cycle) to obtain stereoscopic images of the target area.





Current Development Status

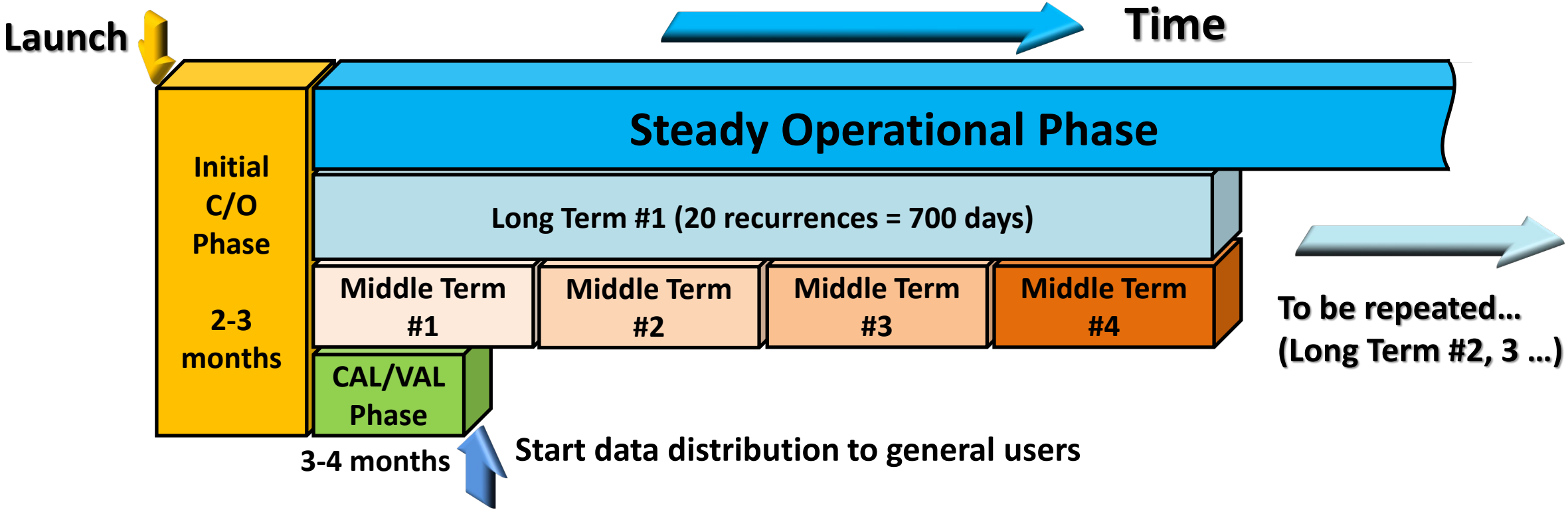


- The final Test of ALOS-3 satellite system is now underway.
- The launch of ALOS-3 is currently scheduled in FY 2021.

← The snapshot of the ALOS-3 proto-flight model under the PFT.

Schedule after launch and "Basic Observation Plan"

■ Schedule overview after launch



■ Basic Observation Scenario

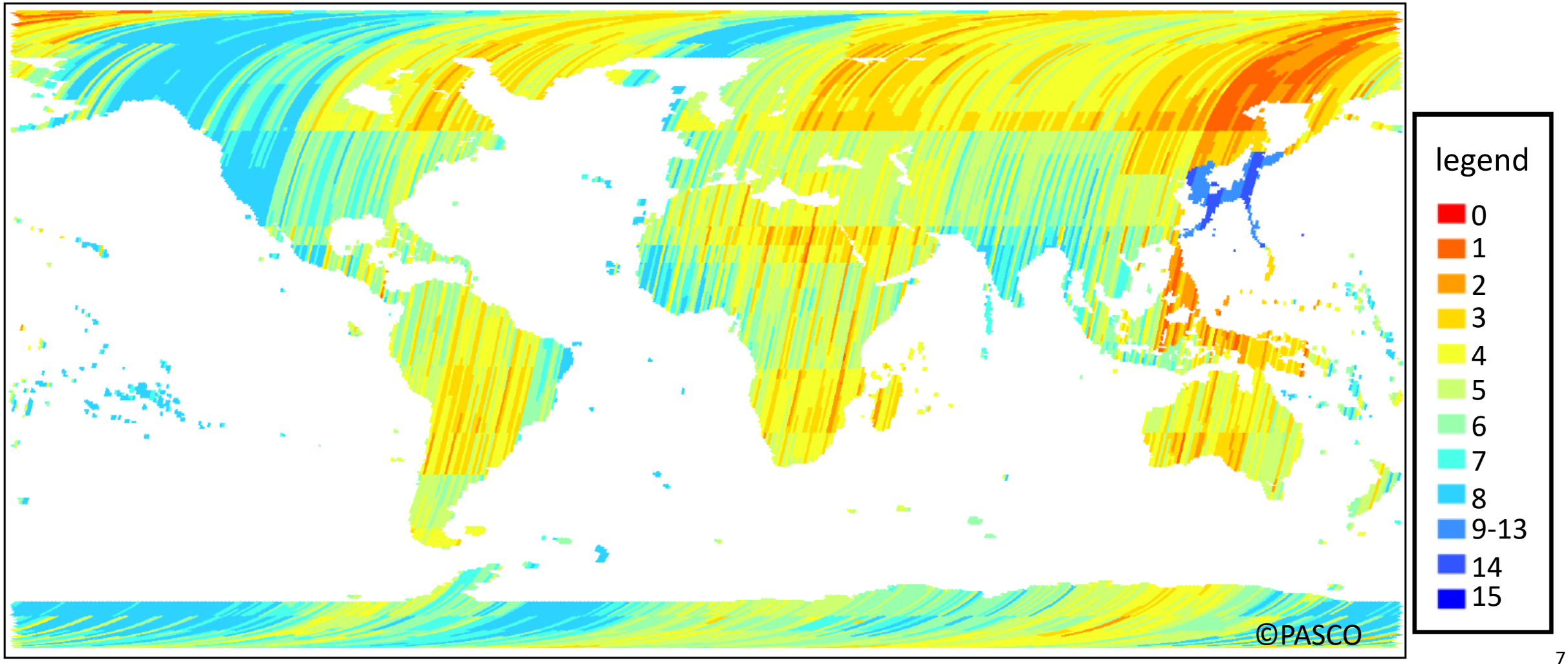
In normal times, ALOS-3 is dedicated to acquiring, maintaining, and updating the "Base-map images"*.

**Definition of Base-map images : GSD < 1.0m, Cloud coverage < 20%*

- *Japan land area (including isolated islands) within 3 years after launch*
- *Global land area (without Polar region) within 5 years after launch*

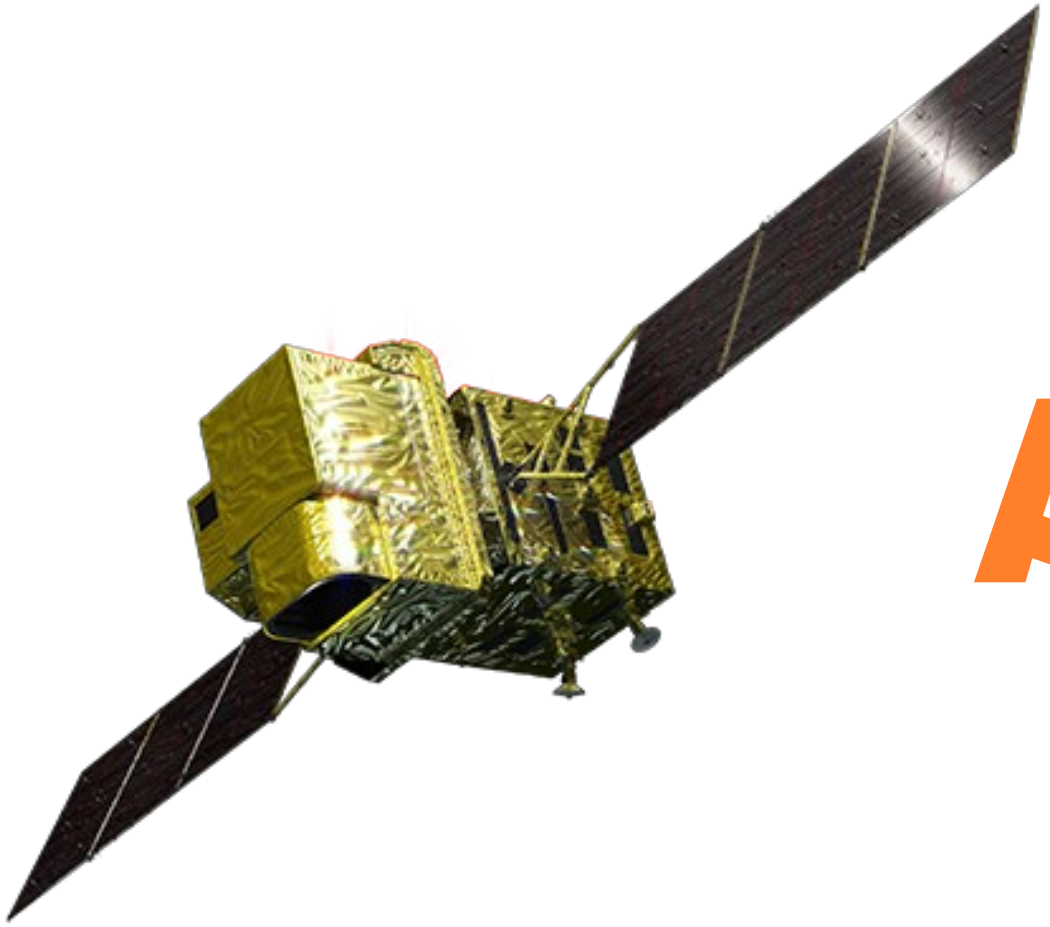
“Basic Observation Plan” Simulation

Simulation result for “Long-term #1” (First 20 recurrences in the steady operational phase).
It is expected that the Japanese area can be observed 13 - 14 times in each “Long-term” period.



Summary

- The Final test of ALOS-3 satellite system is underway.
- ALOS-3 launch is scheduled to FY 2021.



Thank you for your attention