

## **OVERVIEW OF ADVANCED LAND OBSERVING SATELLITE-2 (ALOS-2) MISSION**

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### **ABSTRACT:**

JAXA has been operating the Advanced Land Observing Satellite (ALOS) "Daichi" since January 2006. The PALSAR onboard ALOS is the L-band Synthetic Aperture Radar (SAR) to observe large area by electronic beam steering with active phased array antenna (APAA) technology, and has the full-polarimetric measurement capability first in the world. The L-band microwave can penetrate leaves and grasses to measure the ground directly. By this unique characteristic, PALSAR has been used for monitoring the world forest, the polar ice and the crustal movements and so on. Especially PALSAR has contributed to domestic and international disaster management activities by its interferometry capability (INSAR) with high coherence. ALOS has completed nominal three years mission life and continues to work. "ALOS-2" is the satellite carrying an L-band SAR succeeding to PALSAR.

JAXA had completed the Preliminary Design Review of the ALOS-2 satellite and ground system in March, 2010 and scheduled the launch in 2013.

Compared to the PALSAR onboard ALOS, higher spatial resolution, better NESZ (Noise Equivalent Sigma Zero) and better S/A (Signal to Ambiguity ratio) are required for the new L-band SAR onboard ALOS-2. In order to meet these requirements, we introduced several changes such as maximum bandwidth allocation for L-band SAR, spotlight mode with Active Phased Array Antenna, high power efficiency device, chirp modulation technique and dual beam system. In addition, very accurate orbit control (less than 500 m orbital tube) and short repeat-pass orbit (14 days) will give higher coherence of Interferometry.

This paper introduces the mission and major specification of ALOS-2 satellite and L-band SAR.