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EARTH OBSERVATION SYMPOSIUM (B1)
Future Earth Observation Systems (2)

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A PERSPECTIVE ON TAIWAN'S EARTH OBSERVATION MISSIONS

Abstract

FORMOSAT-5 is a follow-on earth observation mission of FORMOSAT-2 developed by National Space Organization (NSPO) in Taiwan. FORMOSAT-5 will carry a CMOS-based Remote Sensing Instrument (RSI) with ground resolutions of 2-meter in panchromatic band and 4-meter in multi-spectrum bands with functionality and performance similar to FORMOSAT-2. Due to the tremendous usages of daily revisit capability of FORMOSAT-2, FORMOSAT-5 is designed to a higher temporal resolution with revisit cycle of 2-day in sun-synchronous orbit. With the unique feature of high temporal resolution, Taiwan's earth observation missions become one of the significant contributors to the global satellite image user's community, especially in the applications of environmental monitoring and nature disaster relief.

In this paper, the perspectives on developing Taiwan's earth observation missions are presented in terms of mission design, system performance, and users' needs. Unlike the developing trend of the international commercial imaging satellites, the design concept of FORMOSAT-5 system is more emphasizing on pursuing the higher temporal resolution instead of the higher ground resolution. According to the lessons learned from FORMOSAT-2 operations, a feature of agility is being designed allows taking images along the geographical coast or longitudinal direction to enhance the image time resolution for a designated area. Constellation concept of the follow-on earth observation missions at NSPO can also complement the drawbacks of global coverage and uniform ground resolution among the high temporal resolution satellites is elaborated as well.