

EARTH OBSERVATION SYMPOSIUM (B1)
International Cooperation in Earth Observation Missions (1)

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TAIWAN'S FORMOSAT SATELLITES IN RESPONSES TO ASIA PACIFIC REGIONAL DISASTERS
WITH SENTINEL ASIA

Abstract

Taiwan is located in a unique geographic location in western Pacific, it is also situated in the boundary zone between Eurasia and Philippine Sea Plates. Therefore it has been frequently afflicted by natural disasters such as typhoons and floods, landslides, and earthquakes. However, over the past few decades, its diligent people created over US\$20,930 of gross domestic product (GDP) per capita, which makes it ranked 14th in the Global Competitiveness Index 2015 by World Economic Forum. Taiwan has devoted significant resources to mitigating natural disasters and developing sustainable disaster management.

In 2004, National Space Organization (NSPO) launched its first high resolution Earth observation satellite Formosat-2. With its featured daily revisit capability, it has contributed significantly by providing imagery for the global community especially in disaster and environment monitoring. In 2010, Formosat-2 joined in the Sentinel Asia initiative as an action to align with its commitments and frameworks in the endeavors to building and strengthen a disaster resilient community in the Asia-Pacific region. Sentinel Asia initiative has been operating since 2006 as an international cooperation platform under the Asia-Pacific Regional Space Agency Forum (APRSF).

Sentinel Asia currently has 80 member organizations from 25 countries or regions and 15 international organizations. Earth observation satellites from Japan, India, Taiwan, Singapore, Thailand and S. Korea constitute Sentinel Asia constellation as of today. Activities include emergency observation response, data provision, analysis, sharing and capacity building. As it is evolving, activities will be extended to mitigation/preparedness and recovery phases, working groups had been formed in scenarios of wildfire, flood, mountain glacier, tsunami and drought. Members agreed to adopt the plan to involve end-users by joint drive with not only government level but community level. In the meantime, Sentinel Asia will collaborate with international organizations such as Asian Development Bank to conduct Success Story to solve the region's critical issues.

In this paper, authors wish to present NSPO's Earth observation satellite programs, including Formosat-2 and its follow-on Formosat-5, targeted to launch in 2015, and the cooperation with Sentinel Asia. A recent Sentinel Asia Success Story of JAXA and NSPO collaboration by utilizing SAR (ALOS-2) and optical (Formosat-2) data for disaster mitigation/preparedness and recovery phases will also be showcased. It is envisioned that, Taiwan's institutions in ocean, typhoon and flood, and ICT research could actively participate in the Sentinel Asia collaboration to share experiences and conduct joint projects under this cooperation framework.