

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

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EVOLUTION OF SENTINEL ASIA - THE ASIA PACIFIC REGIONAL SATELLITES IN RESPONSE
TO NATURAL DISASTERS

Abstract

From the study of “Annual Disaster Statistical Review 2016-the numbers and trends,” Asia, including Eastern, South-Eastern, and Southern Asia, ranks top of the world in terms of occurrence, total deaths, total (population) affected, and economic damages of natural disasters in the year of 2016. The statistics not only shows the needs of Sentinel Asia, which is an initiative utilizing space borne remote sensing and information communication technologies among space and disaster management agencies to reduce disaster risks; but also demonstrates the urgency to improve the system operations in efficiency and effectiveness.

Sentinel Asia was proposed under the Asia-Pacific Regional Space Agency Forum (APRSAF) and has been in operation since 2006. It currently has 102 member organizations including 87 agencies from 26 countries/regions and 15 international organizations. Japan Aerospace Exploration Agency (JAXA) has been serving as the secretariat and acting the lead of space community, and Asian Disaster Reduction Center (ADRC) the lead of disaster management community. As of today, satellites contributed by India, Japan, Singapore, S. Korea, Taiwan, Thailand, United Arab Emirates, and Vietnam constitute the Sentinel Asia Constellation. Stepwise evolvement had been taken: Step 1, implementation of the backbone Sentinel Asia data dissemination system and associated nodes-Data Provider Node and Data Analysis Node; Step 2: expansion of the dissemination backbone with satellite communication systems; Step 3: establishment of a comprehensive disaster management support system in the region. As it is evolving, activities will be extended to mitigation/preparedness and recovery phases, working groups had been formed in scenarios of wildfires, floods, glacier lake outburst floods, and tsunamis.

Currently, the steering committee is discussing a 10-years strategic plan. The initiative contributes to design a machine-to-machine system to meet the needs of the members and to improve the effective use of data and space based technology for disaster risk reduction (DRR). Recent developments focus on the improvement of end-users website system and a platform for observation data automatic analysis. There are five main challenges introduced: I) Satellite Data Provision and Systems; II) Value Added Product; III) End-user Enhancement; IV) Step-3 Activities (complete DRR cycle and related working groups); V) Communication, Collaboration and Cooperation, which are potential input based on members requirements.

In this session, evolvement of the Sentinel Asia cooperation will be presented as a means of experience exchange with similar platforms such as International Disaster Charter, Copernicus emergency services, and others.