



Building resilience applying space technology

Disaster Risk Management to realize efficiently with Satellites



Hazard

Earthquake Tsunami Land Slide Cyclone Storm Surge Flood Drought Volcano Wild Fire Tornado Heat Wave Cold Wave Avalanche

Solution Purpose

Prevention & Mitigation Preparedness Response Recovery

Solution Theme

Risk Assessment Information & Communication Technology Evaluation

Technology Subject

Risk Monitoring Information Gathering Information Analysis & Judgement Information Communication Information Platform Post Disaster Evaluation

Advantages

- Improving DRM capability, mitigating disaster damages and vulnerability
- Lowering cost for developing ground DRM infrastructure
- Education and capacity development regarding advanced technologies (space technology) in the country

Solution Illustrated



Background

Emerging and developing countries remain highly vulnerable to disaster risks, concerning the fact that they have to maintain wide national territories with high disaster risks, but have not sufficiently developed ground infrastructure for disaster risk management (DRM). Space technologies such as satellite remote sensing (RS), satellite communication (SatCom), and global navigation satellite system (GPS/GNSS) have great potential to strengthening DRM capacities as they can effectively monitor and manage wide territories with comparatively low price. Japan has been trying to apply these technologies for other countries as well based on the experiences and technologies in the past major disasters.

Exposition of the Solution

MRI supports strengthening the resilience by applying space technology at national/regional level by:

(1) Feasibility study, designing & developing, demonstrating, strategy making, and calculating benefits of disaster management system applying space technology: satellite remote sensing (e.g. hazard/risk mapping), satellite communication (e.g. emergency communication), global navigation satellite system (e.g. search & rescue, monitoring earthquake & tsunami and volcanoes), other geospatial technology (e.g. GIS, in-situ sensor, simulation&modeling), and the integrated solutions (e.g. early warning, disaster information system).

(2) Supporting countries to acquire external funding such as ODA, formulating international cooperation projects.

Achievements of Examples

- Making strategy and calculating benefits of applying space technology for building resilience in ASEAN region
- Formulating ODA project: e.g. applying space technology for improving flood warning system in Asian countries
- Supporting operation of international cooperation mechanism by space agencies to provide satellite imagery in response to natural disasters
- Feasibility study, designing & developing, demonstrating disaster management system (both terrestrial and maritime) applying space technology in Japan

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