

RADARSAT-2, For Broad-Area Disaster Management For Floods

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When there is a flood of a magnitude to affect a significant area, there is an urgent need to identify major changes that have an impact on the people and infrastructure on the ground. Satellite imagery acquired immediately after the event provides updated views of how the landscape has changed and the extent of damage to critical infrastructure such as buildings, roads, and airports. These images can be compared with satellite imagery taken before the event to help identify areas that have been hit hardest by the disaster, determine passable routes for aid workers, as well as safe areas suitable for establishing aid camps to provide medical support and shelter. The use of Digital Elevation Models (DEMs) and Ortho Rectified Radar Images (ORRIs) further provides critical information on the disaster area.

For regions like Southeast Asia, the regular influence of cloud cover makes synthetic aperture radar (SAR) satellites an ideal choice for providing rapid response in emergency situations.

RADARSAT-2 is an advanced commercial C-band SAR satellite, that offers wide image swath widths, enabling it to cover large areas faster than other aerial or satellite options. RADARSAT-2's ability to collect imagery independent of darkness or inclement atmospheric conditions is a valuable support during times of emergency to supplement airborne and ground resources for local and regional damage assessment.

This paper will present the use of DEMs for hydrological modeling and landslide risk analysis, ORRIs for accurate feature identification, and broad-area flood monitoring services that determine the extent and location of flooding during storms enable effective flood hazard management at national scales, with capabilities that are specific to the requirements of users in Southeast Asia.

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