**Suggested Topics:** Special Sessions (Satellite Programs) or New Generation Sensors and Applications

A New X-band SAR Satellite Mission Analysis for Taiwan

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**ABSTRACT:** Taiwan often suffers significant disasters (i.e., mud/land slide, flooding, etc.) from monsoons and typhoons which bring along heavy precipitation in addition to the earthquake disasters. In spite of daily revisit of Formosat-2, the operation in Taiwan cannot obtain the needed imagery data during the monsoons and typhoons, unfortunately. A small satellite Synthetic Aperture Radar (SAR) mission was defined in 2009 and it has been analyzed for a few years for seeking a payload development solution. A C-band SAR satellite payload for disasters management has thus been successfully defined in 2013 by flying the satellite in a mission architecture familiar to the satellites operators of NSPO. After surveying more information from users and key technologies feasibility, A new X-band SAR satellite mission was re-proposed. The mission objectives have been scoped in two main categories and these objectives are to provide 1) Disasters Management (DM) operations support in Taiwan, and 2) Earth Observations (EO) by providing routine land and near sea surface targets assessment with imaging swaths of about 30 km and about 90 km for the 1-m for SpotLight mode, 3-m resolution for StripMap mode and 12-m resolution for ScanSAR mode, respectively. Thanks to the daily revisit orbit spirit inherited from Formosat-2, the new SAR satellite will take the advantage of the simple operation for stacked InSAR applications.

**Preference between oral and poster presentation:** Poster