

EARTH OBSERVATION SYMPOSIUM (B1)
Enhancing Earth Observations Through Space Radar (6)

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ENABLING TECHNOLOGIES FOR THIRD-GENERATION SPACEBORNE SAR SENSOR

Abstract

The current state shows synthetic aperture radar (SAR) with multimode and multipolarization capability and high performance in terms of image quality (e.g. COSMO-SkyMed, SPOTLIGHT: 1m resolution @ 10 km swath). A second generation of sensors (2009-2017) will include, among the main characteristics: the high resolution (sub-meter), the possibility of bistatic acquisition, the ability to identify moving targets (ATI / MTI).

A next generation of sensors (2017), while maintaining the capacity already developed in previous generations, should include the possibility of:

- multifrequency operations, - Flexibility (i.e. simultaneous acquisitions in different modes) - ECCM capabilities using beam forming / nulling, - On-board processing

These capabilities must necessarily be associated to a reduction of mass, volume and power consumption thus implying a larger integration and new technologies.