

The COSMO-SkyMed program: VHR modes in the first and second generation

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Abstract

The COSMO-SkyMed system has been developed with a special focus on the very high resolution performances, in order to accomplish the tasks of its dual use. Thanks to its 400 Mhz bandwidth, the 4 satellites are able to acquire very high resolution images over a large range of incidence angles (20-60°), while still maintaining a large scene size (the 1-m resolution Spotlight-2 mode is covering a 10x10 Km frame). In 2016 a new Spotlight-2A submetric imaging mode has been developed and implemented, taking advantage of the increased performance in azimuth that the steering acquisition technique allows if compared the sliding technique.

COSMO Second Generation is the follow-on mission that will guarantee continuity to the COSMO-SkyMed system, with even increased performances. Starting from the 1100 Mhz bandwidth that the new satellites will have, the civilian users will have access to 3 VHR submetric Spotlight modes.

All these imaging modes are monitored and calibrated continuously every month by the COSMO program, using specific corner reflectors and uniform low signal areas.

Keywords - Innovative instrument concepts