

COSMO-SkyMed Mission Status: three out of four satellites in orbit

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Abstract

In 2007 and 2008 ASI (Agenzia Spaziale Italiana/Italian Space Agency) launched three out of four X-band SAR satellites of the COSMO-SkyMed (CONstellation of small Satellites for Mediterranean basin Observation) Mission, making available to the users a unique SAR constellation dedicated to the Earth Observation.

The constellation will be completed with the launch of the fourth satellite in the first half of 2010.

The first and second COSMO-SkyMed satellites are in the operational phase while the third one is completing its commissioning phase.

The results coming from the utilisation of COSMO-SkyMed 1 and 2, after the first year of life, reveal an excellent performance of the X-band SAR and the importance of a fast response time in several applications as risk and emergency management (for example: China's earthquake, Myanmar and Haiti flood), ice monitoring (reduction of the glaciers, Wilkins Ice Shelf disintegration), multi-temporal acquisition for agriculture monitoring, ship detection, interferometry, landslides monitoring, maritime surveillance and security, rapid mapping.

COSMO-SkyMed 1 and 2 are currently providing products with a maximum revisit time of 37 hours (in routine mode) and making available the generation of products with a de-correlation time of 8 days (two consecutive acquisitions with the same geometric conditions).

Now COSMO-SkyMed 3 brings a step forward, since the satellite is positioned in the so-called "one-day interferometry configuration", allowing the constellation to detect interferometric acquisitions with a de-correlation time equal to one day and to improve the number of data take acquisitions (minimising the acquisition conflicts).

COSMO-SkyMed 4 will assure the best revisit time performance of the constellation equal to 12 hours and it will improve the acquisition capability up to 1800 images per day.