

EARTH OBSERVATION SYMPOSIUM (B1)  
Dual Use Earth Observation (6)

Author: Dr. Manfredi Porfilio  
Italian Space Agency (ASI), Italy, manfredi\_porfilio@hotmail.com

Dr. Francesco Caltagirone  
Agenzia Spaziale Italiana (ASI), Italy, francesco.caltagirone@asi.it

Dr. Giuseppe Francesco De Luca  
Italian Space Agency (ASI), Italy, giuseppefrancesco.deluca@asi.it

Mr. Fabio Covello  
Agenzia Spaziale Italiana (ASI), Italy, fabio.covello@asi.it

Mrs. Claudia A. M. Fiorentino  
Italian Space Agency (ASI), Italy, manfredi.porfilio@asi.it

Mr. Davide Di Domizio  
Italian Ministry of Defense, Italy, davide.didomizio@am.difesa.it

Dr. Andrea Gallon  
Thales Alenia Space Italia, Italy, andrea.gallon@thalesaleniaspace.com

## COSMO-SKYMED SECONDA GENERAZIONE DEVELOPMENT STATUS AND PROSPECTS

**Abstract**

COSMO-SkyMed is the most important Italian space programme. The system, fully deployed since 2010, is one of the most advanced in the field of Earth Observation by means of Synthetic Aperture Radar. COSMO-SkyMed Seconda Generazione (CSG) has been conceived, according to the requirements stated by Italian Space Agency and Italian Ministry of Defence, at the twofold need of ensuring operational continuity to the currently operating “first generation” constellation, while achieving a generational step ahead in terms of functionality and performances.

In order to ensure such a continuity, the new CSG satellites will be ready for operations timely to replace the previous generation satellites whenever they are being progressively phased out at the end of their lifetime, starting from 2015 onward.

In the current days, the CSG programme is concluding the phase B, while some phase C activities already started in the past months: this non-standard development approach was chosen in order to come with a very tight schedule.

The CSG constellation aims at improving the quality of the imaging service, providing the End Users with new / enhanced capabilities in terms of higher number of images and increased image quality (i.e. larger swath, and finer resolution [spatial and radiometric]) with respect to COSMO-SkyMed (first generation), along with additional capabilities (e.g. full polarimetric SAR acquisition mode) and a greater operative versatility in programming and sharing the system resources among different typologies of Users that request images of different characteristics.

The paper will delineate the key concepts of the CSG system in terms of service improvement, relation with COSMO-SkyMed and performances.

Furthermore, this paper shows the key aspects for the CSG development strategy to implement these improvements within the time constraint and minimizing the impact on CSK services.