

EARTH OBSERVATION SYMPOSIUM (B1)
International Cooperation in Earth Observation Missions (1)

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TERRASAR-PAZ CONSTELLATION: COLLABORATION, INNOVATION AND A BLUE PRINT FOR
THE FUTURE.

Abstract

TerraSAR-X radar technology is credited to be one of the most accurate radar sensors being utilized for innovative applications. Extending this success, this paper presents a soon to be launched constellation of TerraSAR-X like X band SAR sensors. The injection of the PAZ satellite (owned and operated by Hisdesat S.A. of Spain) at roughly 98 into TerraSAR-X and TanDEM-X orbit (operated by Airbus Defence and Space/Infoterra GmbH) in October 2014 shall bring a unique radar constellation to the commercial market. On-top of the traditional constellation benefits (like faster revisit, reliability and improved response time), this programme demonstrates a novel approach to coordinate international space missions for all stakeholder benefits. The Earth observation industry is set to see a lot of first-time nations and young private initiatives in near future. This anticipated trend in the EO industry would lead to a lot of available but inaccessible satellite capacity leading in turn to dissatisfied end-users. This collaboration approach offers a solution to combine satellite capacities and give homogeneous data access to end-user groups like civilian institutions in anticipated first-time nations. For industrial players, this collaboration demonstrates how “unexpected” synergies and “similar” objectives in independently planned space missions can bring down investments, reduce risks and give them an edge over competitors. Anticipating the near future, this collaboration has a potential to become a blueprint for international EO programmes. We present the constellation programmatic framework and economic rationale to pursue the presented collaboration. For end-users benefit, the constellation Concept of Operations (CONOPS) including co-ordinated mission planning, harmonized products, harmonized priority schemes, Multimission Direct Access Service concepts shall also be detailed. The significant improvement of stand-alone TerraSAR-X mission’s interferometric revisit and global data access achieved through this unique radar constellation shall also be discussed.