

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

Author: Mr. Fabrizio Pirondini
Deimos Imaging, Spain

Mr. Salem Humaid Al Marri
Mohammed Bin Rashid Space Centre (MBRSC), United Arab Emirates

THE DUBAISAT-2/DEIMOS-2 CONSTELLATION: PUBLIC-PRIVATE COOPERATION BETWEEN
EMIRATES AND SPAIN

Abstract

The Emirates Institution for Advanced Science and Technology (EIAST) was established by the Dubai Government in 2006 with the goal of promoting a culture of advanced scientific research and technology innovation in Dubai and the UAE, and enhancing technology innovation and scientific skills among UAE nationals. EIAST launched in November 2013 the DubaiSat-2, its second Earth Observation satellite, and the first to provide VHR multispectral imagery. The satellite has successfully completed its in-orbit commissioning and it is now fully operational. Elecnor Deimos is a private Spanish company, part of the Elecnor industrial group, which owns and operates Deimos-1, the first Spanish Earth Observation satellite, launched in 2009. Elecnor Deimos will launch in Q2 2014 its second satellite, Deimos-2, a very-high resolution, agile satellite capable of providing 4-bands multispectral imagery. The whole end-to-end Deimos-2 system has been designed to provide a cost-effective and highly responsive service to cope with the increasing need of fast access to VHR imagery. The two satellites, with a mass of 300 kg each, were developed in cooperation with SATREC-i (South Korea), and are based on the SpaceEye-1 platform. The two satellites have an identical payload, and produce 75-cm resolution pan-sharpened imagery across a 12-km swath. Together, they have a combined collection capacity of more than 300,000 sqkm per day. EIAST and Elecnor Deimos have set up a unique, trans-national public-private partnership to operate the two satellites as a constellation, jointly commercialize the imagery of both satellites, and interchange technical and operational information to increase the efficiency of both systems. The operations of the constellation are based on three ground stations: Al Khawaneej (Dubai), Puertollano (Spain) and Svalbard (Norway), which assure at least a contact per orbit with each satellite. The constellation functionalities of the ground segment were developed by EIAST and Elecnor Deimos in cooperation, in order to provide a product which is exactly the same, independently of which satellite acquired the image. This paper describes the main features of the Dubaisat-2 and Deimos-2 systems, their combined use in constellation, and the products and services jointly offered to public and private customers worldwide. Moreover, it describes the cooperation agreement between EIAST and Elecnor Deimos, and provides an update of the operational status of both missions at the time of writing.