

EARTH OBSERVATION SYMPOSIUM (B1)
Earth Observation Applications and Economic Benefits (5)

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PLEIADES USERS THEMATIC COMMISSIONING : EARTH OBSERVATION APPLICATIONS
FROM OPTICAL CONSTELLATION

Abstract

The Pleiades program is a dual program developed in cooperation between the space agencies of France, Sweden, Belgium, Spain and Austria. It has been designed to provide high resolution optical data for the benefits of civilian and defence users in term of operational capacity, rapid access and protection of defence interests. The space component is composed of a constellation of two "small satellites" (mass of one ton) offering a spatial resolution at nadir of 0.7 m and a field of view of 20 km.

The great agility of Pleiades satellites enables a daily access all over the world, which is a critical need for defence and civil security applications, and an high coverage capacity necessary for cartography applications.

The first Pleiades satellite was successfully launched on December 17th 2011 from the Europe's spaceport in Kourou, French Guyana, while the second satellite was launched on December 2nd 2012.

Beside the Pleiades system developments, an extended accompaniment program has been operating by CNES since 2003, to prepare, accompany and promote the future exploitation of the Pleiades images. The objectives of this program are: - to assess the thematic capability of the Pleiades system to produce the various services required by end-users for distinct thematics (defence, risks, cartography, hydrology, forestry, agriculture ...) - to develop efficient tools to facilitate image information extraction by end-users.

The last phase of the program is devoted to User Thematic Commissioning (UTC). It started in March 2012, after the In-flight Commissioning Phase of the first Pleiades satellite was completed.

The most promising studies since 2006 are being assessed with Pleiades imagery, in the eight domains of interest (defence, risks, cartography, hydrology, forestry, agriculture, sea and coastline, geology). Several key issues such as response to crisis, urban planning, human pressure on coastlines, watershed cartography, forest management are thoroughly studied. About 50 geographical sites related to almost 100 thematic studies have been selected. More than 500 Pleiades acquisitions have been requested by users. Of course, geographic sites with major disasters or specific events not predictable will be covered so that Risks and Humanitarian activities can be performed during this period. The UTC has a two years duration and a specific seminar will be held in March 2014 to present the results of this large panel of public sector driven studies. This paper will present the first main results obtained in the Pleiades UTC phase for different domains.