EARTH OBSERVATION SYMPOSIUM (B1)
Future Earth Observation Systems (2)

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PLEIADES: A NEW SUB METRIC EARTH OBSERVATION SYSTEM

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 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. Their great agility enables: 1) a daily access all over the world, which is a critical need for defence and civil security applications, and 2) an high coverage capacity necessary for cartography applications.

Moreover, to meet the needs for detailed mapping, especially in urban areas and to complement aerial photography, Pleiades will offer instantaneous stereoscopic acquisition and the capability to cover large areas by acquiring collateral stripes in the same path.

As Pleiades is a dual system, there are two ways to access to the system: " Cooperating defenses have a direct access for a limited number of high priority requests to the satellites and the capabilities to receive and process the data on dedicated sites. " For the others users, the responsibility of tasking the Pleiades satellites, data reception, processing, archiving and distribution is given to a Civilian Operator.

Spot Image was chosen after an European Call for Tender. According to a Service Public Delegation Spot Image will have to serve the institutional users of the cooperating countries. Specific conditions are foreseen for GMES applications.

The first Pleiades satellite was successfully launched on December 16th 2011 from the Europe's spaceport in Kourou, French Guyana. The calibration phase began immediately with very promising pictures and the commissioning ended successfully beginning of March 2012.

During a one year Thematic Commissioning Phase CNES will provide with Pleiades images the institutional users who worked on developing new products or methodologies initially based on expected images characteristics. More than 50 studies will be led in order to assess Pleiades performances in a wide range of domains such as cartography, coastal areas management, forestry, response to crisis, etc.

The second satellite will be launched in November 2012 and so the full constellation will be operational beginning of 2013.

This paper will describe the system, the way it will be operated and the first thematic results.