

EARTH OBSERVATION SYMPOSIUM (B1)
Future Earth Observation Systems (2)Author: Mr. Marc BERNARD
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Centre National d'Etudes Spatiales (CNES), FrancePLEIADES AND SPOT 6 AND 7: AN INNOVATIVE 4-SATELLITE CONSTELLATION FOR A
BETTER SERVICE**Abstract**

On the one hand, the French Space Agency (CNES) launched on December 16th 2011, the first of its new optical satellite, namely Pléiades 1. Pléiades 1 now provides image products at a 50 cm resolution over very large coverage, from 20km x 20km up to 100km x 100km within a single pass (ie from the same orbit). Also, Pleiades' agility allows collecting multi-angle stereo images of the same area at one time, up to a dozen or more images, opening the way to innovative applications such as mobile monitoring or others. Pléiades 2, a twin to the first one, is planned to be launched on November 2012.

On the other hand, SPOT 6 and SPOT 7, to be launched in August 2012 and in 2013, will cruise on the same orbit as the Pléiades. SPOT 6 and 7 will inherit the 60km swath from the SPOT series, while improving product GSD down to 1.5m. This combination of four powerful sensors flying on the same orbit will provide a maximized synergy to serve the users: the overall system will provide a better-than-one-day revisit time, which is key for a number of applications (not all of them related with emergency).

The paper will first remind the basic characteristics of Pléiades and SPOT 6, and then switch to the results of the commissioning phases and early exploitation stages of both sensors, specifically focusing on:

- Agility of the sensors and accessibility: proven performances ; technology used to overcome the numerous challenges ; impacts on customer service.
- 3D extraction from Pléiades data: accuracy results, impact on urban planning and monitoring applications. A specific focus will be made on 3D processing using video-like / multi-viewing acquisitions up to... 12 images of the same area collected during the same pass.
- new applications / innovations brought by the combined systems.

Finally, we would also detail the very special price list and dissemination facilities that apply to the 50cm Pléiades data for non-profit activities (a specific requirement from the French govt, owner of Pléiades), and openly call the scientific community to freely evaluate the potential benefits of Pleiades and SPOT 6 sensors, through pilot projects.