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PLÉIADES: RESPONSIVENESS, FLEXIBILITY, REACTIVITY

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Abstract. By the end of 2011, Astrium GEO-Information Services launched Pléiades 1, the first of two identical optic imaging satellites that will be operated on a phased orbit. This satellite system, designed by the French Space Ager CNES, based upon French Defense specifications, will provide 50-cm products in record time. The overall aim of this paper is to describe the benefits of the innovative features of Pléiades 1 and its operations, so as to assess their combination potential in emergency situations, crisis recovery, regular monitoring or large area mapping. Specific care will be brought to describe the reactivity enabled by the system.

Based on real-life examples, the paper will lead the analysis on the two main components of the system.

On the one hand, the space segment will be presented through the following characteristics: revisit capacity, agile acquisition capacity and acquisition scenarios (target, single-pass mosaics, stereo, tristereo, linear monitoring, persistent surveillance).

On the other hand, the flexibility of the ground segment will be assessed. The benefits of multiple tasking plans per direct tasking capacity, automated processing and on-line ordering and delivering will be illustrated, tested and qualified for applications requiring a high level of responsiveness and reactivity.

The presentation will end with a summary of the benefits of the space segment features and the flexibility of the ground segment, fine-tuned to answer both military and civilian / commercial needs. The analysis will be extended in the perspective of the second Pléiades' launch, highlighting the advantages of having two satellites operating on a phased orbit, affording a daily revisit anywhere on Earth, with very high resolution.

