

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

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PLÉIADES FOLLOW-ON VERY HIGH RESOLUTION OPTICAL EARTH OBSERVATION SYSTEM
PREPARATION ACTIVITIES : OTOS PROGRAM OVERVIEW**Abstract**

After the successful launch of the two Pléiades satellites in 2011 and 2012, France, under the leadership of the French Space Agency (CNES), is now preparing the future generation of very high resolution optical Earth observation systems. Within the frame of a demonstrator program, named OTOS, many new technological developments will be raised to a higher TRL level, typically 5 to 6. The aim is to prepare the next generation of very compact and low cost satellites, suitable for small launchers, and able to deliver daily a large quantity of very high resolution images (more than 700 000 km² of 0.3 m nadir resolution data per day). Those satellites could be ready for launch around the year 2020.

The OTOS demonstration program is focusing on various complementary domains:

- Next generation space telescopes using adaptive optics, allowing an ultra-light big diameter primary mirror and very compact optical design,
- 2 Gbps X band telemetry chains including VCM (Variable Coding Modulation) modulators and new antenna pointing mechanisms,
- new very high efficiency CCD sensors,
- new multispectral CMOS sensors,
- new compressor/memory chains including increased efficiency quality driven compression algorithms.

This paper will give an overview of these technological demonstrators and their status of achievement and validation.