

## **New Trends for an Advanced Permanent Imager for Ocean and Costal Observation**

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### **ABSTRACT**

GeoOCAPI is a preliminary study for an **O**cean **C**olour mission performed from Geo orbit spacecraft by an **A**dvanced **P**ermanent **I**mager . This Mission is dedicated to the observation of bio physical parameter of the ocean and the costal zone in a full Earth disk. A first study was performed by CNES to define the main mission parameter in 2008/2009. Then the OCAPI mission was presented as a potential candidate for ESA Earth Explorer 8 mission in June 2010 but not selected. This paper presents the results obtained in the frame of a new pre-phase A called GeoOCAPI . This study performed by the CNES with the support of Astrium and Thales Alenia Space have analysed the system architecture (instrument, satellite and ground segment) for two different scenarii as identified by the CNES.

The requirement of the scenario A is the coverage of all the Earth disk areas with air mass < 4 in less than 1 hour, at the spatial resolution (GSD) of 250m and the baseline of 16 spectral narrow bands. For the scenario B, the GSD is 100 m, with the same spectral bands and the coverage was assumed limited to coasts The 1 h revisit time for the full set of coastal areas was confirmed during the study as a very important design goal.

For all scenarios, the imaging operations are done only during local day (typically between 6:00 and 18:00 local hour). The local night can then be used for other operations such as calibrations. It is assumed that land areas can be discarded. In addition of this "routine mode", the possibility of an alert mode was to consider (quicker revisit on limited area). This was not directly addressed during the study but the proposed baseline with image acquisition by slots in step and stare mode is obviously favourable for an alert mode. At any time, an acquisition cycle can be shortened by reducing the number of slots allowing a short revisit period on any given restricted area..

The target launch date is year 2018 for scenario A, and 2020 for scenario B.

### **KEY WORDS**

Geostationary Satellite design, Imager instrument, Near Real Time observation, High resolution , Ocean Color, Coastal