

CEOS WGCV Meeting 30th Sept.- 2nd Oct. 2014, College Park, US

CNES WGCV-38 Report

Focus on future missions

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Summary

Earth Observation in CNES
mission in development or in phase A

- ***Oceanography***
 - ◆ *Jason 3*
 - ◆ *SWOT*
 - ◆ *CFOSAT*
- ***Atmospheric sounding***
 - ◆ *IASI NG*
 - ◆ *MERLIN*
 - ◆ *MicroCarb*
- ***Imagery***
 - ◆ *OTOS*
 - ◆ *Venµs*

JASON 3

- Mission

- ◆ Altimetry over oceans – continuity of Jason 1&2 missions

- In cooperation with NASA/Eumetsat/NOAA

- ◆ CNES delivers a Proteus Platform (same as Jason 1&2)

- Status

- ◆ Ground testing at satellite level

- Launch date: 31th March 2015

CNES participation to Jason CS program through a partnership with ESA (5 partners)

SWOT

● Mission

- ◆ SWOT=Surface Water and Ocean Topography (interferometric altimetry)
- ◆ Continuity of altimetry missions over open oceans with higher resolution and coastal studies
- ◆ Hydrology: water height of lakes & large rivers

● Cooperation with NASA

- ◆ CNES delivers the platform, part of the payload and of the ground segment
- ◆ Participation of UKSA (to be signed)

● Instrument

- ◆ Ka-band Radar Interferometer

● Status

- ◆ phase B – Industry contract for the platform has been settled

● Launch date: 2020

CFOSAT

● Mission

- ✦ CFOSAT=Chinese/French Oceanic SATellite
- ✦ Waves and ocean surface wind monitoring

● Cooperation with China

- ✦ CNES delivers the SWIM instrument and its ground segment

● Instruments

- ✦ SWIM (Surface Waves Investigation and Monitoring): Ku band radar
- ✦ SCAT – wind scaterometer

● Status

- ✦ phase D – Test of the satellite/payload interfaces

● Launch date: mid 2018

IASI NG

● Mission

- ◆ IASI=Infrared Atmospheric Sounding Interferometer
- ◆ Continuity of IASI(s) mission on-board Eumetsat METOP satellites
- ◆ Atmospheric sounding at higher resolution for meteo and atmospheric chemistry

● Cooperation with Eumetsat

- ◆ CNES in charge of the development of the 3 instruments to be delivered to Eum.
- ◆ Partnership with UKSA and NSC

● Instrument: Fabry-Perrot interferometer

● Status

- ◆ phase B
 - » Kick off of the industrial contract for the instrument: beginning 2014
 - » System Requirement Review is on-going

● Launch date: 2021

MERLIN

- Mission

- ◆ Methane column measurement with a LIDAR

- Cooperation with DLR

- ◆ CNES delivers the platform and part of the ground segment
- ◆ Waiting for the final DLR decision in mid 2015

- Instrument

- ◆ Integrated Path Differential Absorption (IPDA) Lidar

- Status

- ◆ phase B – Industry contract for the platform has been settled

- Launch date: Dec. 2019

MicroCarb

- Mission

- ◆ Surface carbon flux measurement on-board a microsatellite

- Cooperation to be defined

- ◆ Several possibilities as complete satellite or passenger instrument
- ◆ In competition with ESA Carbonsat program much ambitious...

- Instrument

- ◆ high resolution atmospheric sounder in narrow bands (interferometer)

- Status

- ◆ phase A completed

- Launch date: could be 2019

OTOS

- Mission

- ✦ Continuity of Pleiades mission
- ✦ Agility and very high resolution (30 cm)

- Dual system

- ✦ Based on the Pleiades success story...

- Status

- ✦ phase A on-going
 - » Concept still in definition (several options)
 - » Pre-development of critical items (detector, active gyros, telescope, compression card...)

- Launch date: 2022

VEN μ S

- Mission

- ◆ Preparation of Sentinel 2 mission... (?!)

- Cooperation with Israël

- ◆ CNES provides the camera (ELOP) and the processing ground segment

- Instrument

- ◆ high resolution camera (5 m) in the VNIR (12 spectral bands)

- Status

- ◆ phase D
 - » Camera delivery: end of Oct. 2014
 - » Stray light correction algorithm in validation phase

- Launch date: Jan. 2016 (with OPSAT)