

# Sentinel-3 Mission Status



**Peter Regner (ESA) – IOCCG-20-Paris, France, 3-5 March 2015**

## ◆ Payload readiness

- **SRAL PFM\*** instrument integrated on the satellite. FM2 already delivered. No open issues.
- **MWR PFM** integrated on the satellite. FM2 already delivered; No open issues. Swap of instruments in July 2015.
- **SLSTR PFM** integrated on the platform; functional testing performed, without major issues. FM2 tests on-going; swap of instrument in June 2015.
- **OLCI PFM** fully characterised and integrated on the platform; FM2 under assembly, swap of instrument in July 2015

## ◆ Platform readiness

- Sentinel-3A AIT activities are continuing nominally.
- Mechanical Qualification Tests completed → very good results.
- Qualification & Acceptance Review in July 2015.

\* PFM ProtoFlight Model

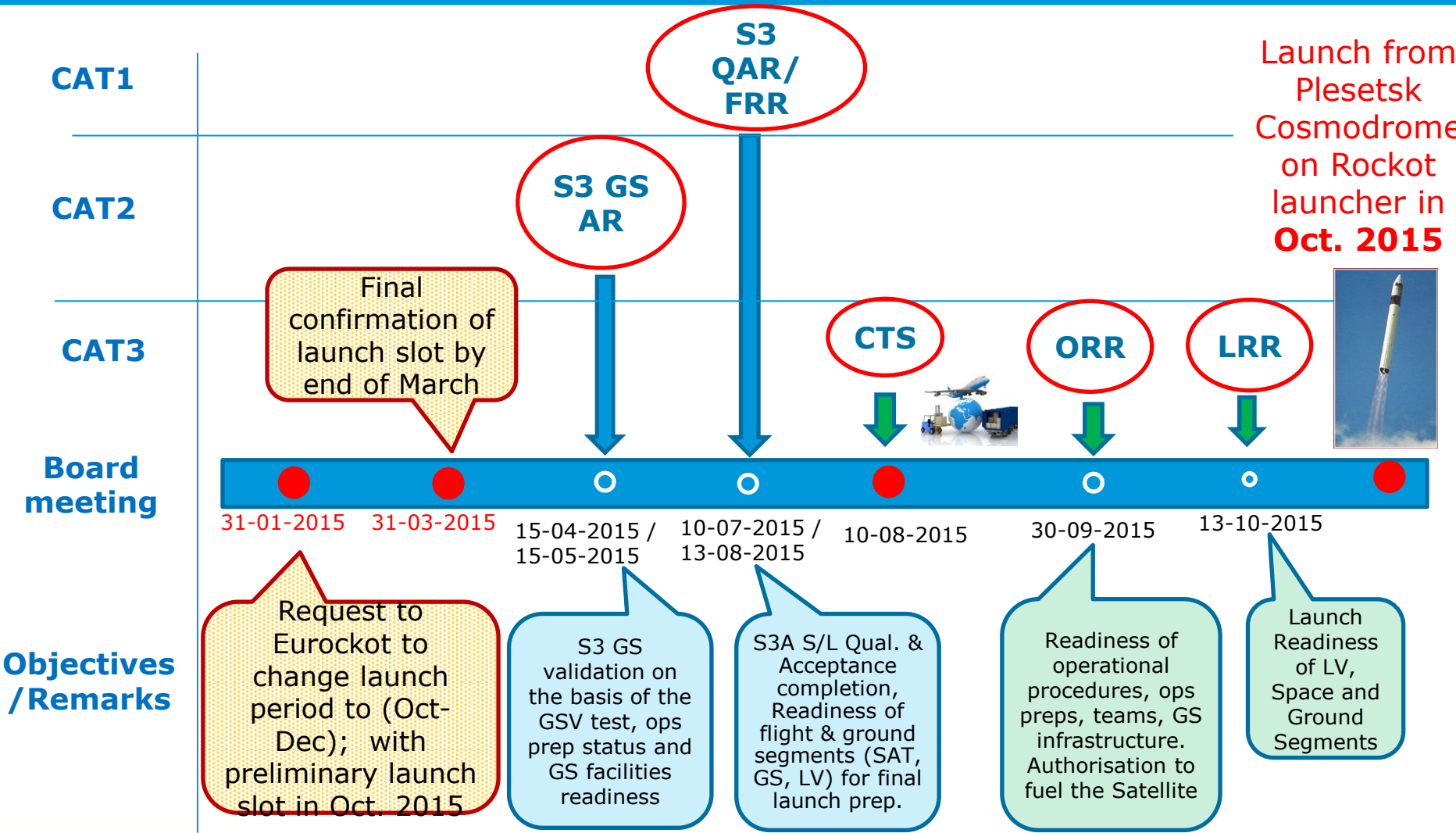


**Sentinel-3A in TAS Cannes test facilities (Dec 2014)**

# Sentinel-3A Reviews



Launch from Plesetsk Cosmodrome on Rocket launcher in **Oct. 2015**



## ◆ S-3B Platform

- Assembly Integration and Testing (AIT) proceeding nominally

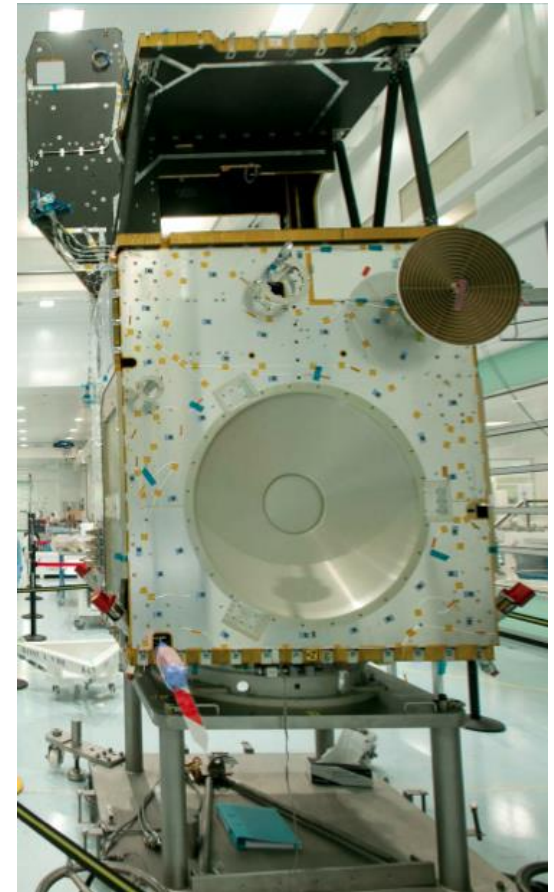
## ◆ Payload

- **SRAL** being integrated into the satellite
- **MWR** delivered to TAS and being integrated
- **OLCI** instrument ready in December 2014
- **SLSTR** start of PFM refurbishment no earlier than May 2015

## ◆ Launch

- S-3B Final Acceptance Review is predicted at Q1 2017  
➔ **earliest Launch date of end Q2 2017**,  
depending on the availability of launch windows

ITT process for placement of procurement contracts for the C & D units of the S-3 satellite expected to be completed by 1<sup>st</sup> half 2015



**Sentinel-3B in TAS Cannes ready for AIT (Credit: TAS)**



EU-ESA and EU-EUMETSAT agreements signed, providing full coverage for S-3 mission operations costs.

All Sentinel-3 Core Ground Segment facilities are established.

On-site qualification and acceptance activities scheduled for April up to July 2015.

Similar system set-up as for the Sentinel-1 Ground Segment (launched 3 April 2014).

## ❑ X-Band Station Svalbard

- Data downlink, NRT & offline data processing

## ❑ Processing and Archiving Centres (PACs)

- systematic non-time-critical data processing
- reprocessing following algorithm & calibration parameter upgrades
  - CLS for SRAL
  - DLR for OLCI (land)
  - ACRI for SLSTR and S-3 synergy products

❑ **EUMETSAT's marine centre** acts as PAC for marine products

❑ **Mission Performance Centre** (led by ACRI):

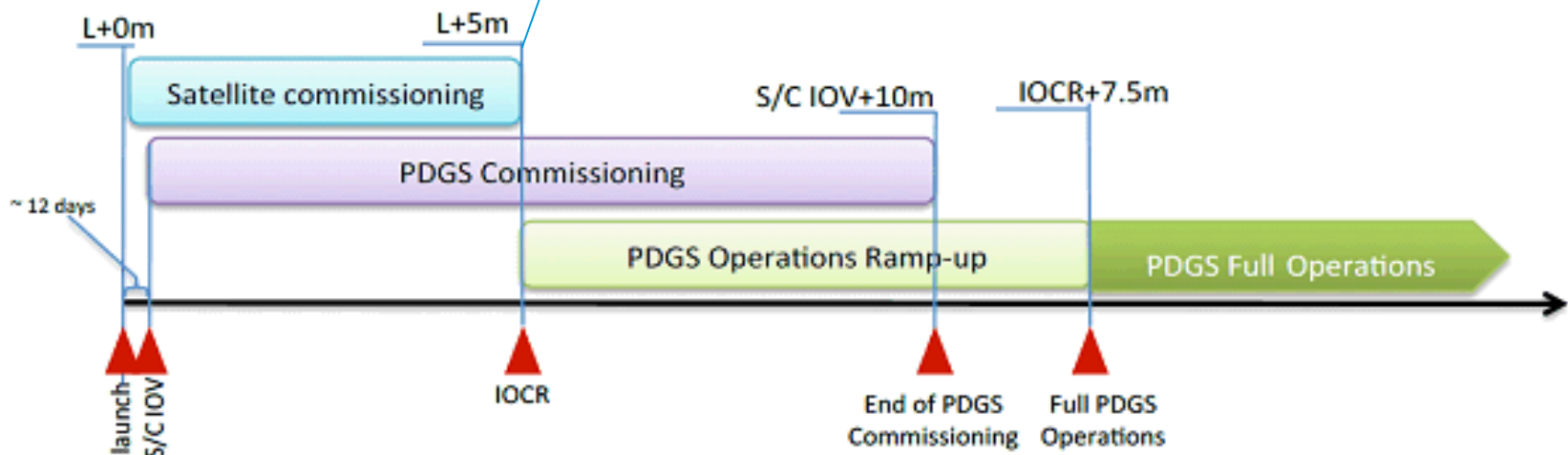
- Operational quality control and mission performance monitoring

- ❑ Commissioning phase preparations on-going
- ❑ Payload- and GS-commissioning plans finalised
- ❑ S-3 Cal/Val plan endorsed by the S3 Mission Advisory Group (11/12 Dec 2014)

- Satellite In Orbit Verification
- Verification of satellite operability & instrument performance
- Limited L0/L1 data for Cal/Val
- PGDGS Commissioning

## In Orbit Commissioning Review (not before March/April 2016)

- Satellite and payload stable and functional
- Operations gradually ramped up to full capacity
- Routine Cal/Val activities commence coordinated by the Mission Performance Framework (MPC, ESLs, S3VT, ESRIN, EUMETSAT)



123 participants; dedicated OC subgroup (63 scientists)  
representing 47 projects

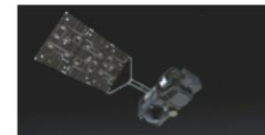
### ❑ Objective

- Inform the teams about mission wide aspects
- Review the plans and activities of the S3VT
- Seek feedback how to assure Fiducial Reference Measurements

i.e. state of the art in-situ validation measurements,  
standardized, adherent to protocols, with traceable calibration  
and complete uncertainty budget.

### ❑ Recommendations

- Update bio-optical protocols for AOPs and IOPs
- Establish a long-term in-situ instrument calibration service to support the S3VT activities
- Perform field measurement „Round Robin“ intercalibration
- Need for several operational buoys for VC in open ocean
- Community processor for field radiometric measurements
- Coordination of activities with the IOCCG and its WGs



- ❑ Governed by the Copernicus Data and Information Access Policy
- ❑ Free & open access to Sentinel data during the Copernicus operational phase
- ❑ Same data access mechanism as successfully implemented for Sentinel-1

OPEN AND FREE



Rolling archive for discovery and downloading of Sentinel core products



EU funded Copernicus backbone system incl. Eumetsat's integrated EUMETCAST dissemination system

COMING SOON




Rolling archive for Sentinel core products and access to off-line archived data for international partners





Mirror sites managed by 3rd parties (nat. Space Agencies in Europe & outside the EU) via specific agreements

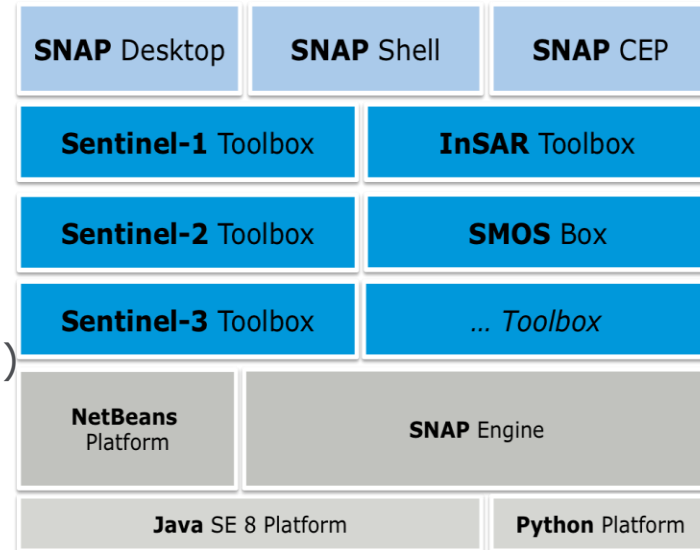
Sentinel Data Access Overview - Sentinel Online

 <https://sentinel.esa.int/web/sentinel/sentinel-data-access>



## SNAP SentiNEl Application Platform

- ◆ Coordinated development of S1/S2/S3 toolboxes
  - Based on heritage from BEAM and NEST
  - Common base platform, common set of modules
  - Interoperability between toolboxes (Sentinel, others)
- ◆ Public release of S1/S2/S3 Toolboxes Sept. 2014
- ◆ V2.0 (May 2015) based on 
- ◆ V6.0 (June 2016) facilitate entry into **Cloud Processing Services**
- ◆ Publicly available source code repositories 
  - GitHub social coding (<https://github.com/senbox-org/>)
  - JIRA issue tracking system (<https://senbox.atlassian.net/>)
  - Confluence wiki (<https://senbox.atlassian.net/wiki/>)

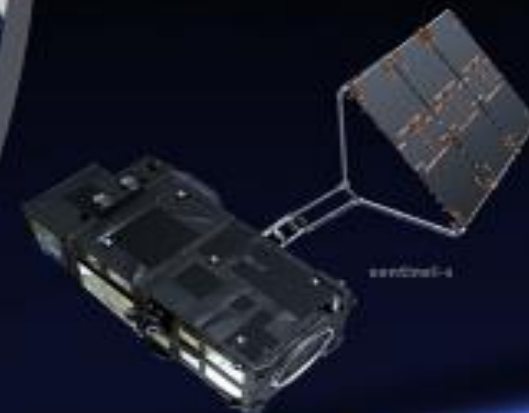


- Downloads
<b>Windows 64-bit</b> <a href="#">S3TBX 1.0 win64 installer.exe</a>
<b>Windows 32-bit</b> <a href="#">S3TBX 1.0 win32 installer.exe</a>
<b>Unix</b> <a href="#">S3TBX 1.0 unix installer.sh</a>
<b>Mac OS X</b> <a href="#">S3TBX 1.0 mac installer.dmg</a>

<https://earth.esa.int/web/sentinel-tbx/home>

A satellite view of Earth showing the Mediterranean region, with a color scale from blue to red representing different data values.

→ SENTINEL-3  
FOR SCIENCE WORKSHOP



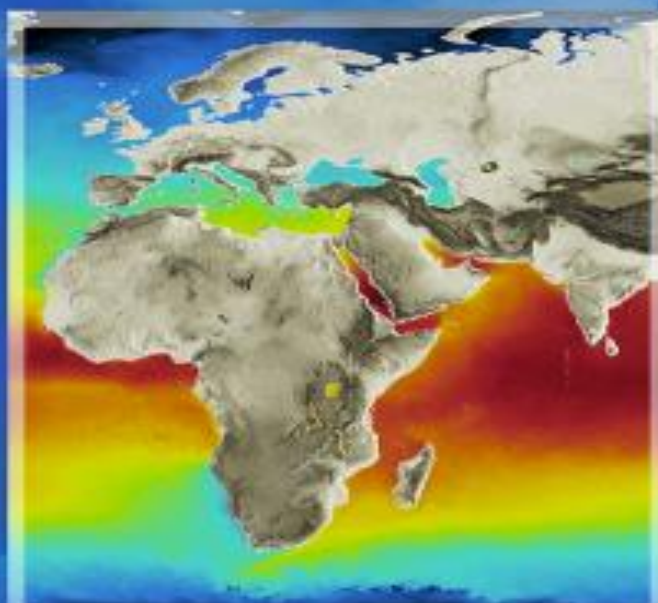
European Space Agency

2-5 June 2015, Venice, Italy

<http://seom.esa.int/S3forScience2015/>

#### DEADLINES

Abstract Submission opening	1 September 2014
Abstract Submission closing	31 January 2015
Notification of Acceptance	16 March 2015
Issue of Preliminary Programme	16 March 2015
Opening of Registration	6 April 2015
Issue of Final Programme	at the workshop
Submission of Full Paper	at the workshop
Workshop dates	3-5 June 2015



ITTs in preparation - Contracts to be awarded **in 2014/2015** (total of 6.8 M€) :

SEOM Call	Subject	Cost	ITT Status
<b>S1-4SCI Ocean</b>	* TOPS mode & Polarisation in C-band (wide swath wind, wave, and current retrieval)	0.5 M€	in preparation Q3 2014
<b>S1-4SCI Land</b>	* Land Cover & Vegetation * Snow & Land Ice	1.0 M€	in preparation Q4 2014
<b>S2-4SCI Land</b>	* Vegetation Indices * Classification * Clouds * Atmospheric. Correction * Red edge	1.5 M€	in preparation Q3 2014
<b>S3-4SCI SAR Altimetry</b>	* Coastal * Hydro * Land * Altimetry-Echo	1.0 M€	in preparation Q3 2014
<b>S3-4SCI Land</b>	* Surface-Atmosphere retrievals * Fire * LST	1.0 M€	in preparation Q4 2014
<b>S3-4SCI Ocean Color</b>	* Carbon Pools in the Ocean * Integrated PAR * Extreme Case2 Waters	0.8 M€	issue date in July 2014
<b>SY-4SCI Synergy</b>	* S1-S2 Land cover & agricultural mapping products * S2-S3 New type of Vegetation products * S5P-S3 Phytoplankton Functional Types (PFTs) * S1-2-3 Ocean virtual laboratory	1.0 M€	ITT out. Proposal by end June. Activities to start before summer
<b>Total</b>		<b>6.8 M€</b>	

- ❑ S-3A platform & instrument integration and testing on track.
- ❑ Current S-3A launch date: October 2015.
- ❑ S-3B integration started. Expected launch date: end Q2 2017.
- ❑ Preparations for S-3A commissioning phase on-going; preparation of cal/val activities progressing.
- ❑ All ground segment facilities established and under testing.
- ❑ Same data access principles as for Sentinel-1.
- ❑ First release of scientific user Toolbox available.
- ❑ Funding for the mission operations cost secured. Respective agreements signed with the EU.

- Copernicus Programme: [copernicus.eu](http://copernicus.eu)
- Data access: [copernicusdata.esa.int](http://copernicusdata.esa.int)
- Sentinel Online: [sentinel.esa.int](http://sentinel.esa.int)