

# IASI-NG PROGRAM STATUS

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IASI CONFERENCE 2024

December 02 > 06 2024  
NANCY

# IASI-NG CNES PROGRAM

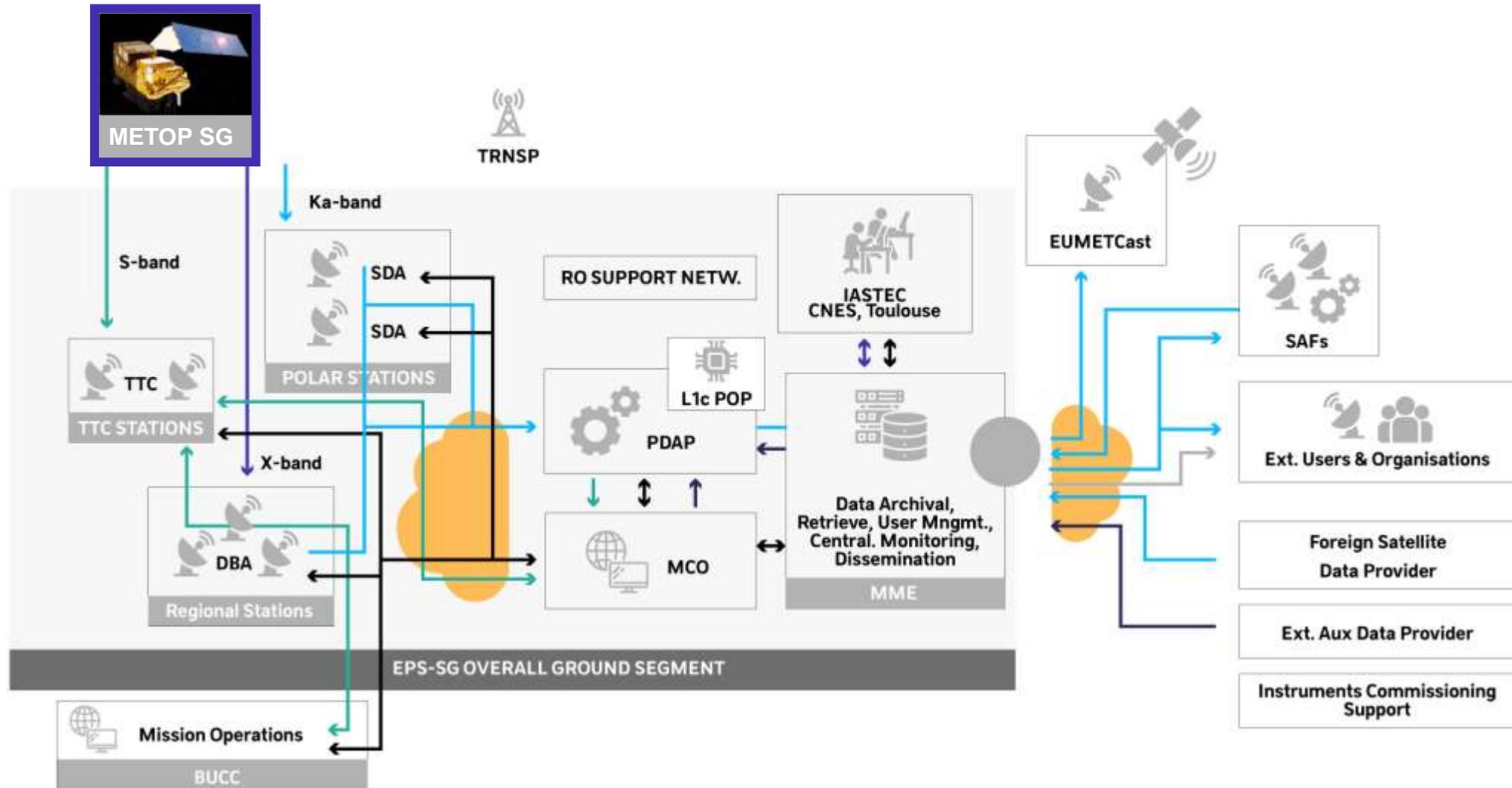
- **3 infrared sounder instruments** (Dynamic Fourier Transform Interferometer) to be flown on the series of **Metop-SG A** Satellites (2025-2032-2039)
- **Level 1 Operational Processor:** processing instrument data up to Calibrated Infrared Atmospheric Spectra
- **Technical Expertise Center (IASTEC):** Cal/Val activities and performances monitoring in orbit

**Cooperation with EUMETSAT** in the frame of EUMETSAT“Polar System Second Generation



# IASI-NG IN EPS-SG

IASI-NG INSTRUMENT ON BOARD METOP SG A SATELLITES



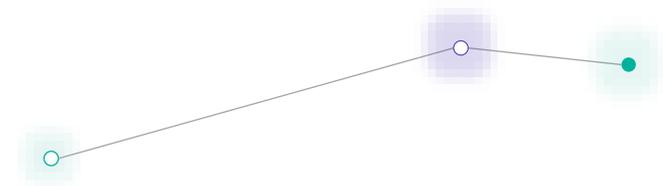
# IASI-NG INSTRUMENT PERFORMANCES AND CONCEPT

- Significant performances improvement : factor 2 on spectral and radiometric performances compared to IASI 1<sup>st</sup> generation
- Allowed by innovative instrumental concept proposed by Airbus Defense and Space : Mertz Interferometer
- First implementation in space of a Mertz Interferometer



# IASI-NG INSTRUMENT CURRENT STATUS

- IASI-NG Proto-Flight Model (PFM) was integrated and tested in 2022 but an issue affecting the B4 band data was found
- PFM was nevertheless delivered and mounted on the Metop SG A1 Satellite in fall 2022 to give priority to qualification campaign tests at Satellite level
- After successful thermal and mechanical qualification at Satellite level in 2023, PFM instrument was dismounted for B4 issue investigation



**IASI-NG**



METOP SG-A1 ON SHAKER  
(courtesy of AIRBUS)



METOP SG-A1 IN FRONT OF TV CHAMBER  
(courtesy of AIRBUS)

# IASI-NG INSTRUMENT CURRENT STATUS

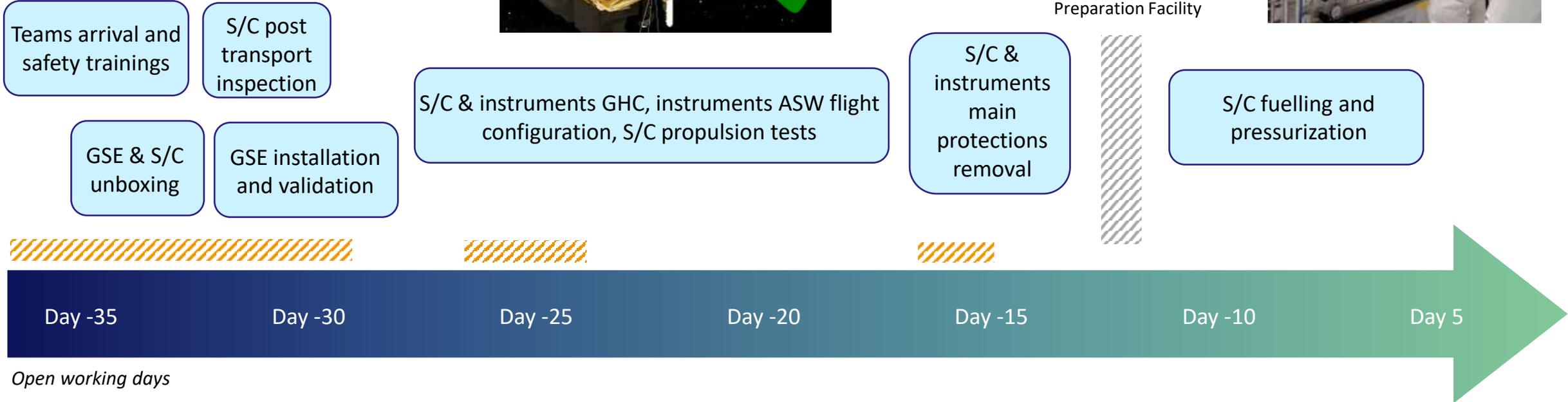
- Integration and tests were performed on FM2 instrument In 2023/2024 : no B4 band issue on FM2 Instrument !
- IASI-NG is back on MetOp SG A 1
  - ✓ Handover and integration of FM2 performed in September 2024
  - ✓ FM2 will be the first IASI-NG instrument to fly
- Functional and ElectroMagnetic Compatibility tests performed successfully in October/November 2024
- Remaining activities:
  - System Satellite Validation Test to validate Flight Operation procedures in January 2025
  - Participation to the Launch campaign in summer 2025



IASI-NG MOUNTING ON METOP-SGA1  
(courtesy of AIRBUS)

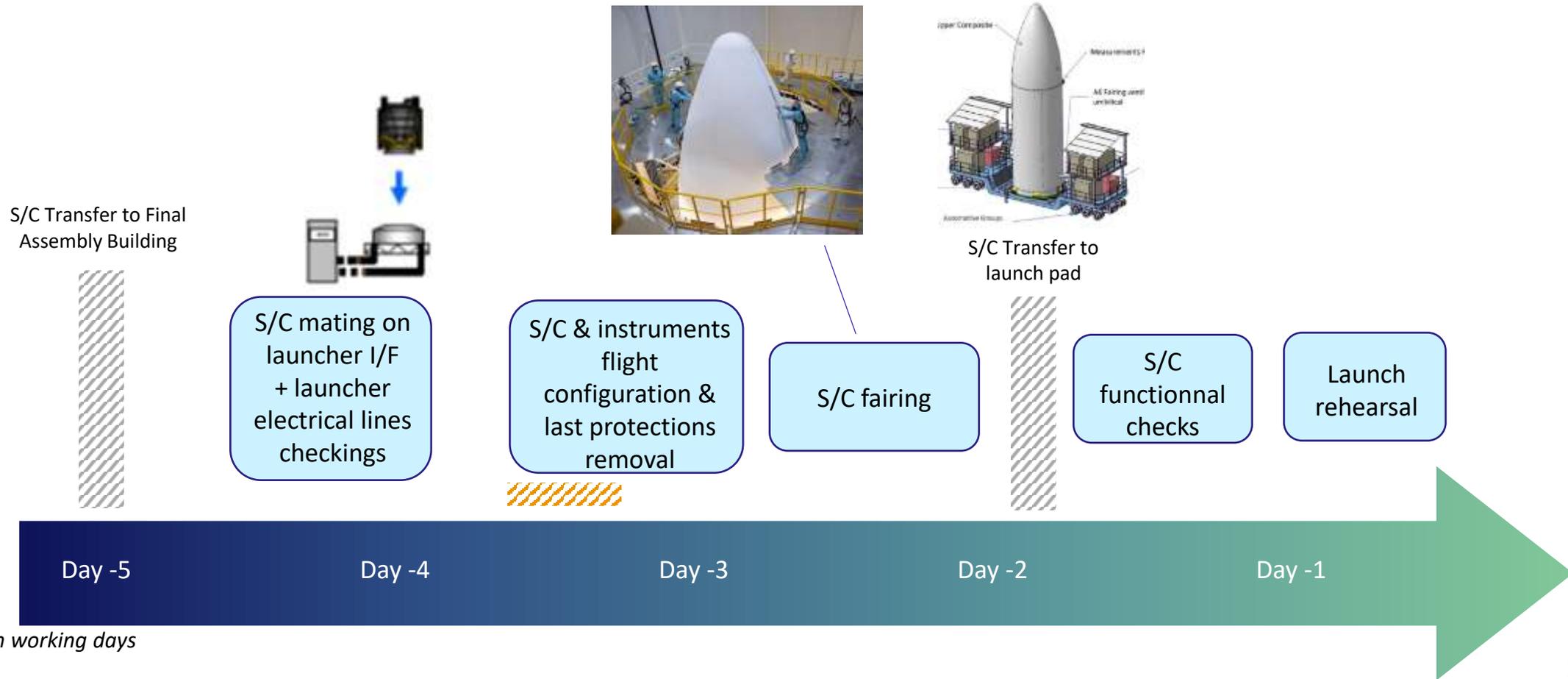
# Metop-SG LAUNCH CAMPAIGN OVERVIEW

## PART 1 (POS) – Standalone satellite operations phase (#5 weeks)



# Metop-SG LAUNCH CAMPAIGN OVERVIEW

## PART 2 (POC) – Combined (satellite and launcher) operations phase



# IASI-NG INSTRUMENT CURRENT STATUS



PFM INSTRUMENT IN INVESTIGATION CONFIGURATION (LEFT)  
AND FM2 INSTRUMENT (RIGHT) (COURTESY OF AIRBUS)



CRYOSTAT FM3 IN FRONT OF F-OGSE (COURTESY OF AIRBUS)

- **PFM Status :**

- ✓ B4 anomaly investigation was performed allowing to progress on the root cause analysis (detector) and phenomenon description and mitigation.
- ✓ Baseline to deliver again PFM in 2025

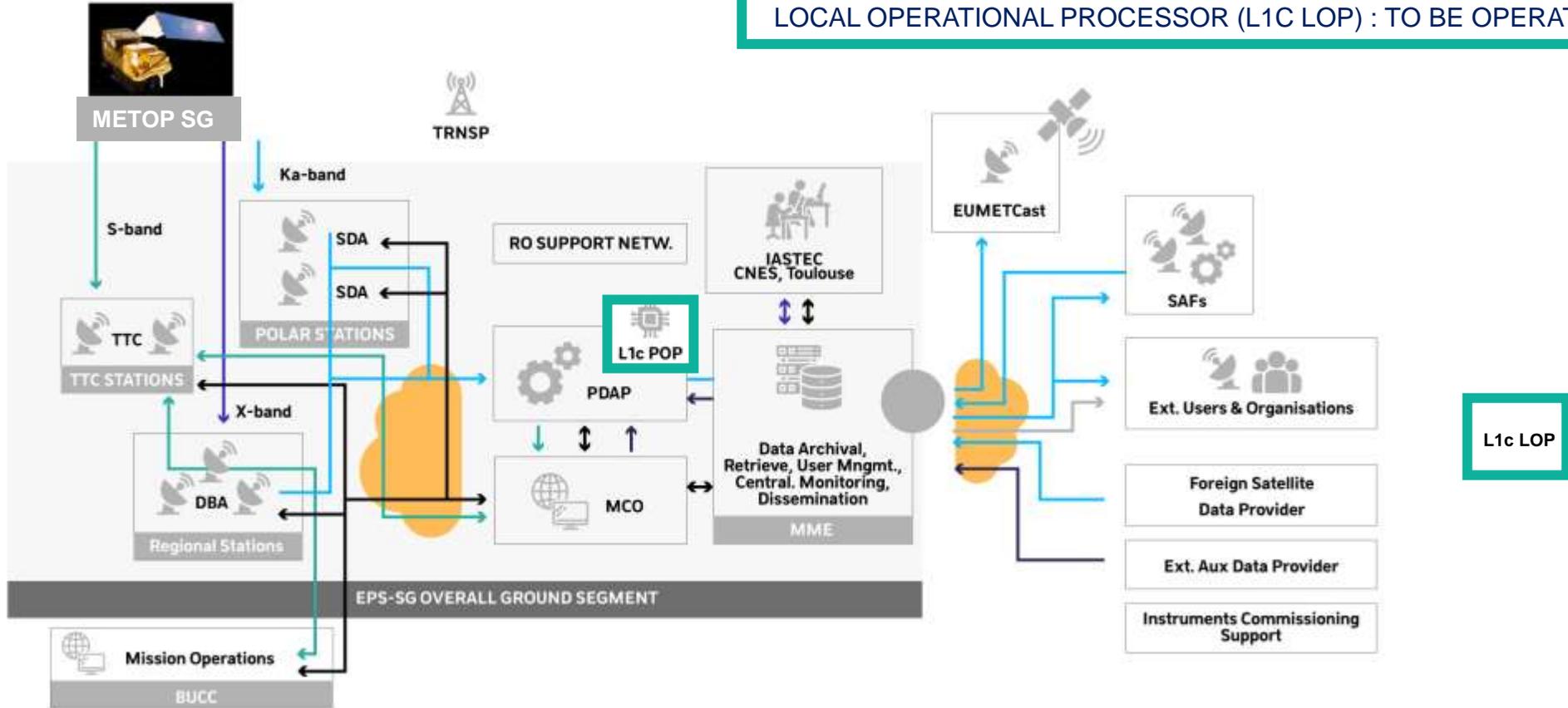
- **FM3 status :**

- ✓ AIT progressing with sub system completed
- ✓ Instrument AIT started recently
- ✓ Objective to deliver FM3 In S1 2026

# IASI-NG IN EPS SG

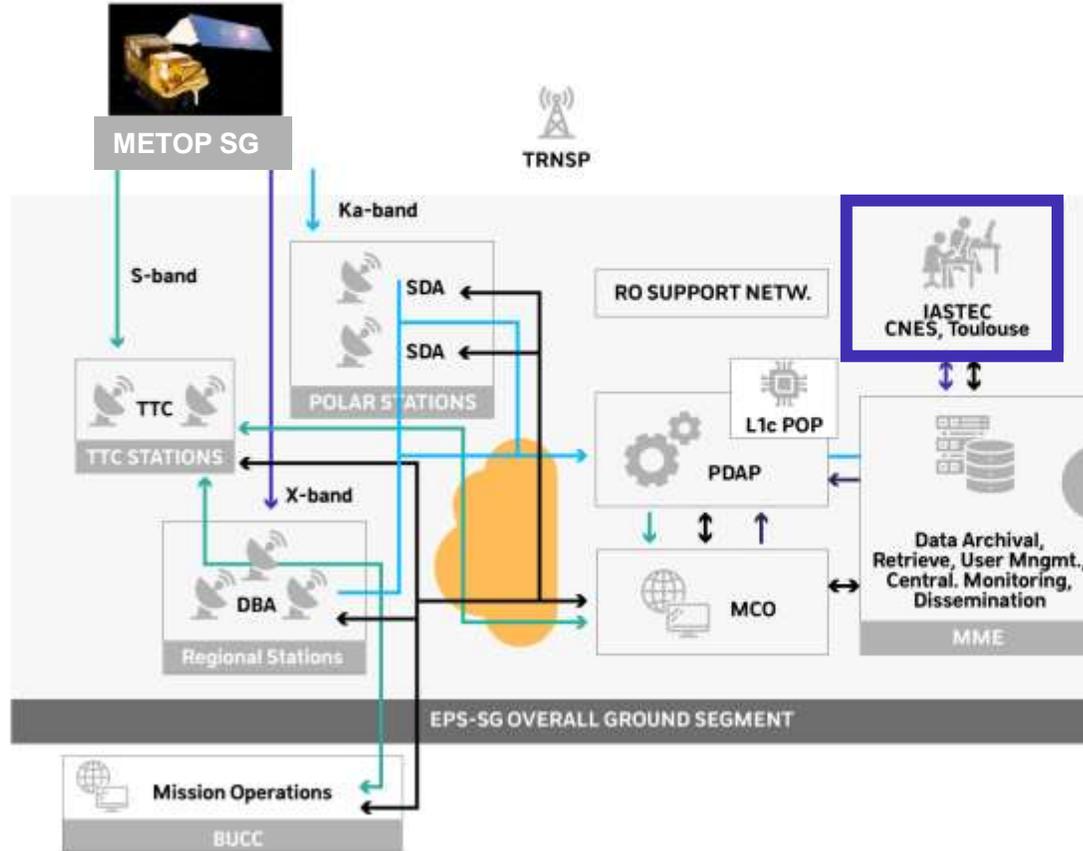
L1C PRODUCTS OPERATIONAL PROCESSOR : TO PROCESS GLOBAL MISSION DATA TO BE OPERATED BY EUMETSAT

LOCAL OPERATIONAL PROCESSOR (L1C LOP) : TO BE OPERATED BY LOCAL USERS

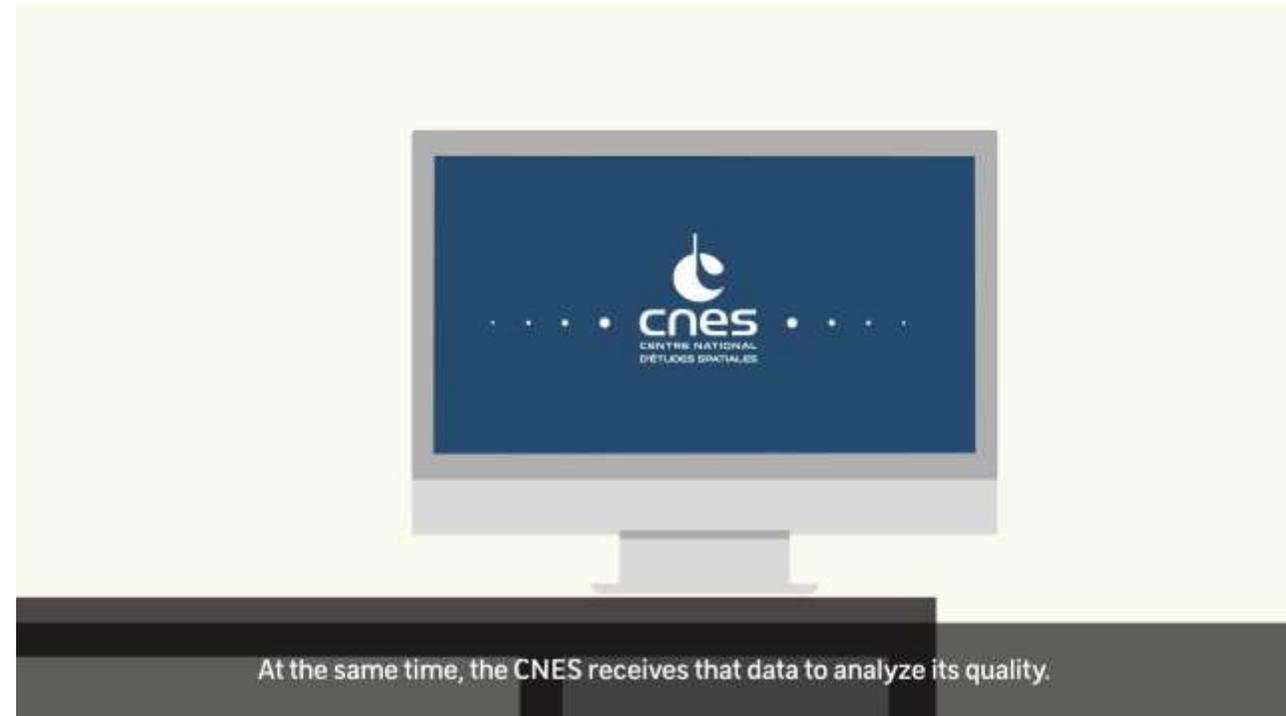


- L1C processor's Version with complete processing algorithms provided and tested by EUMETSAT in 2024
- **L1C processor's Version for commissioning phase under development for delivery in 2025**
  - L1C TOP in Temporary Ground Segment to perform the Cal/Val and then L1C POP in the PDAP for Routine Operation

# IASI-NG IN EPS SG

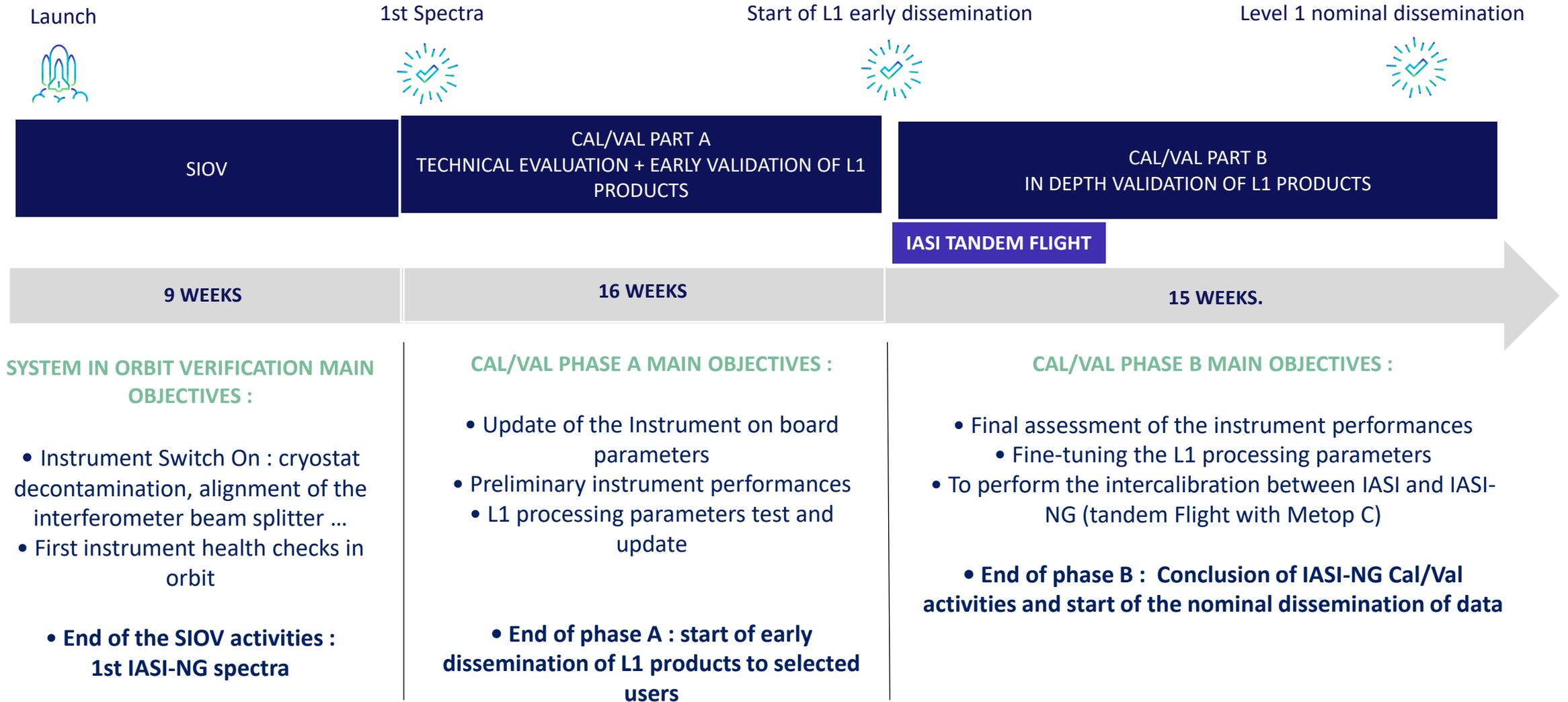


IASTEC : IASI-NG EXPERTISE CENTER TO PERFORM COMMISSIONING AND SUPPORT NOMINAL OPERATION



- Under final development : first version with basic framework and some Cal/Val expertise tools delivered in 2024
- Version for commissioning phase expected in T1 2025 for performing the SIOV rehearsal and Cal Val Operational Procedures Validation in T2 2025

# SIOV/CALVAL GLOBAL OVERVIEW



# 2025 OVERVIEW

Metop SG A  
FAR



EPS SG LORR



Launch



1st Spectra



SATELLITE FLIGHT ACCEPTANCE  
REVIEW

EPS SG SYSTEM VALIDATION AND  
OPERATION READINESS

LAUNCH CAMPAIGN

SYSTEM IN ORBIT VERIFICATION

CAL/VAL...

JAN

FEB

MARCH

APRIL

MAY

JUNE

JULY

AUG

SEPT

OCT

NOV

DEC

# NOMINAL OPERATION AND DATA DISSEMINATION EXPECTED SOON





**THANK YOU FOR  
YOUR ATTENTION**

