

PLATO Ground Segment - A high level description

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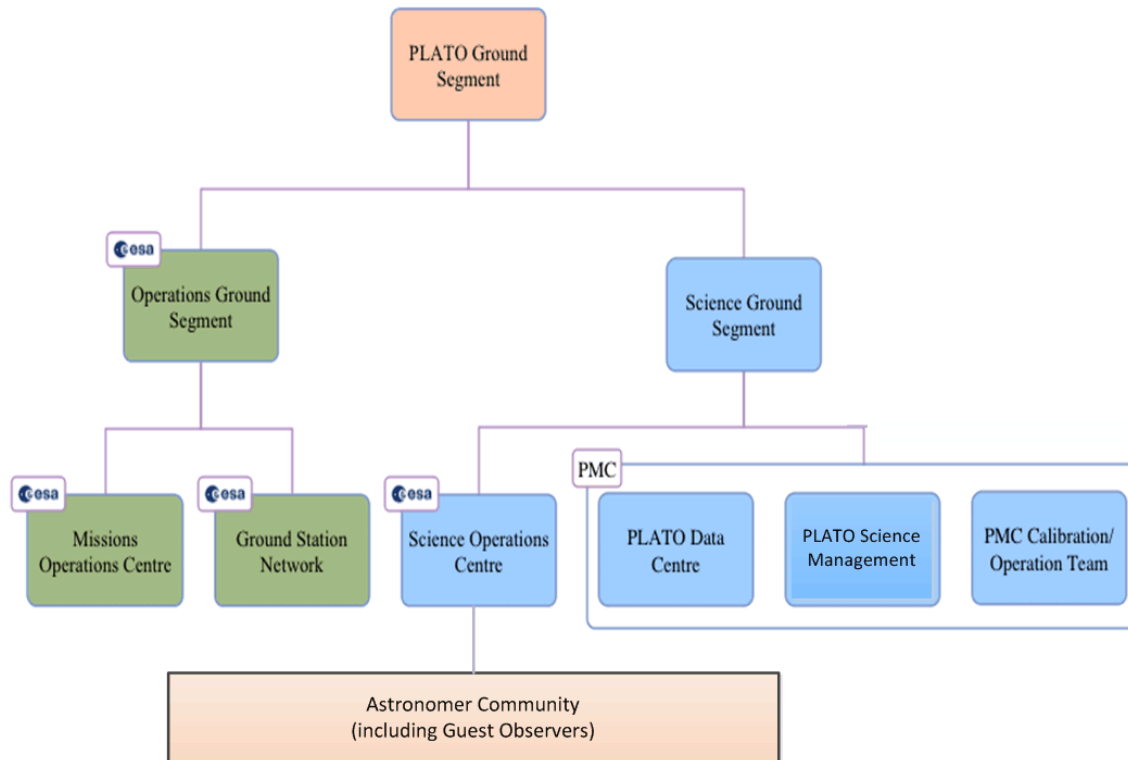
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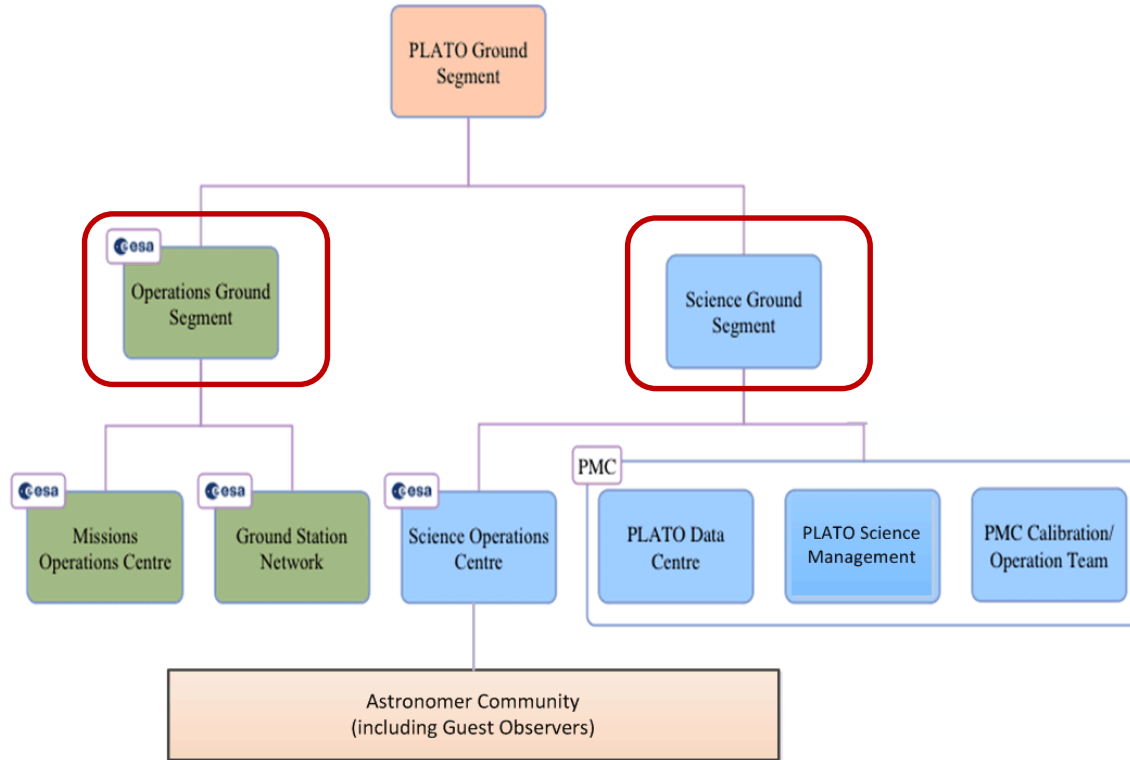


PLATO Ground Segment



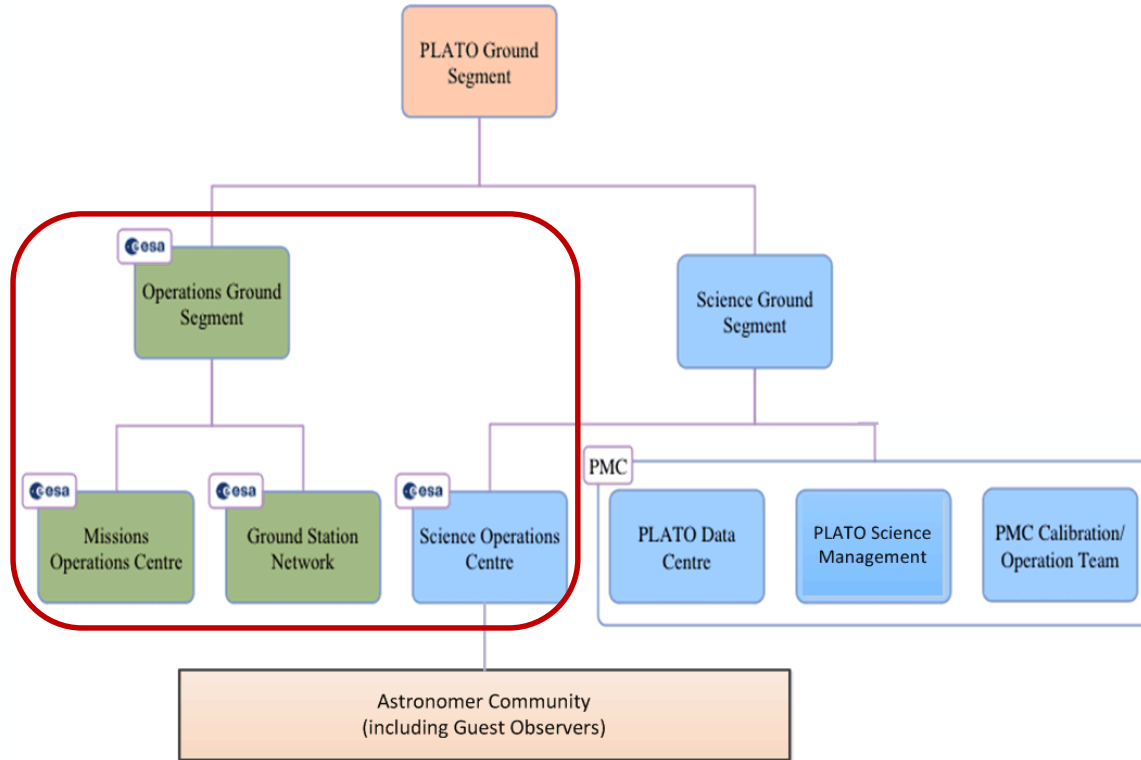


PLATO Ground Segment - Operations & Science Segments



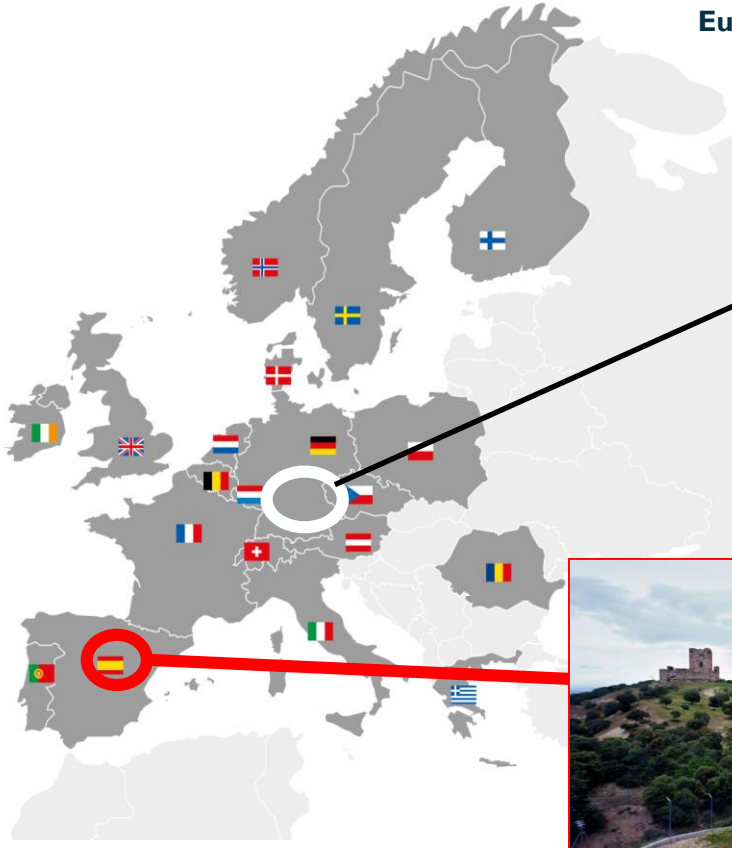


PLATO Ground Segment - ESA contribution





PLATO Ground Segment - ESA centres involved



European Space Operations Centre (ESOC)

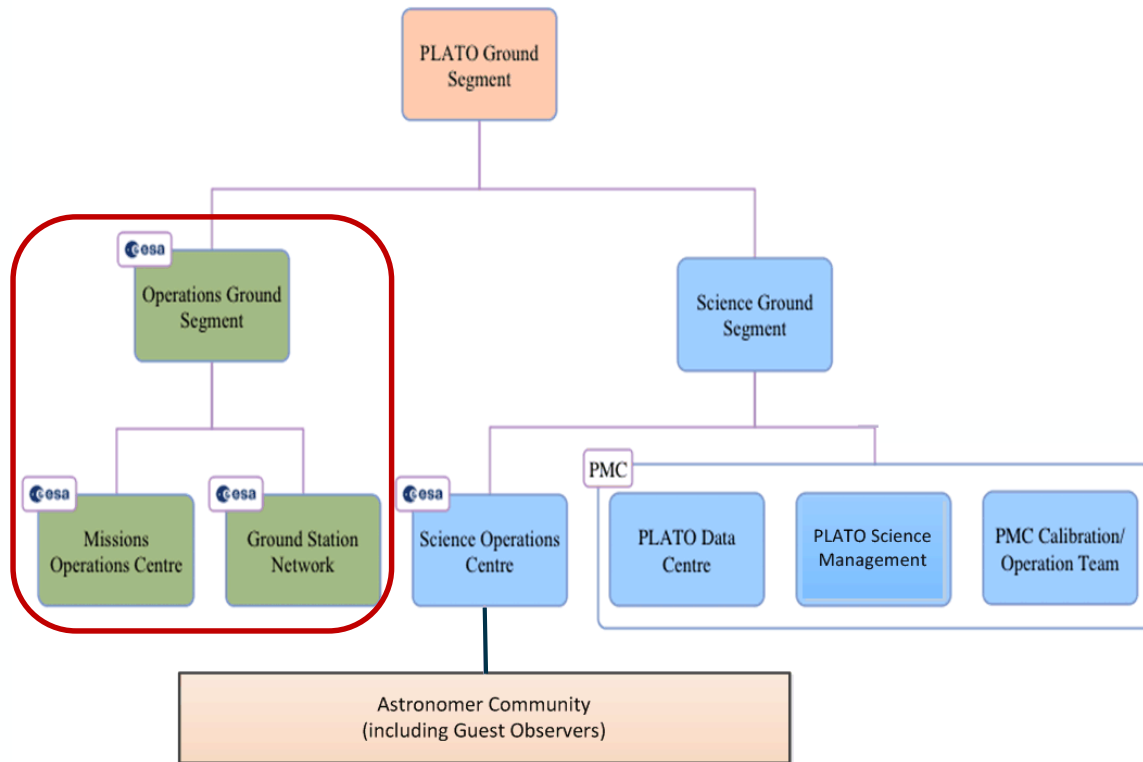


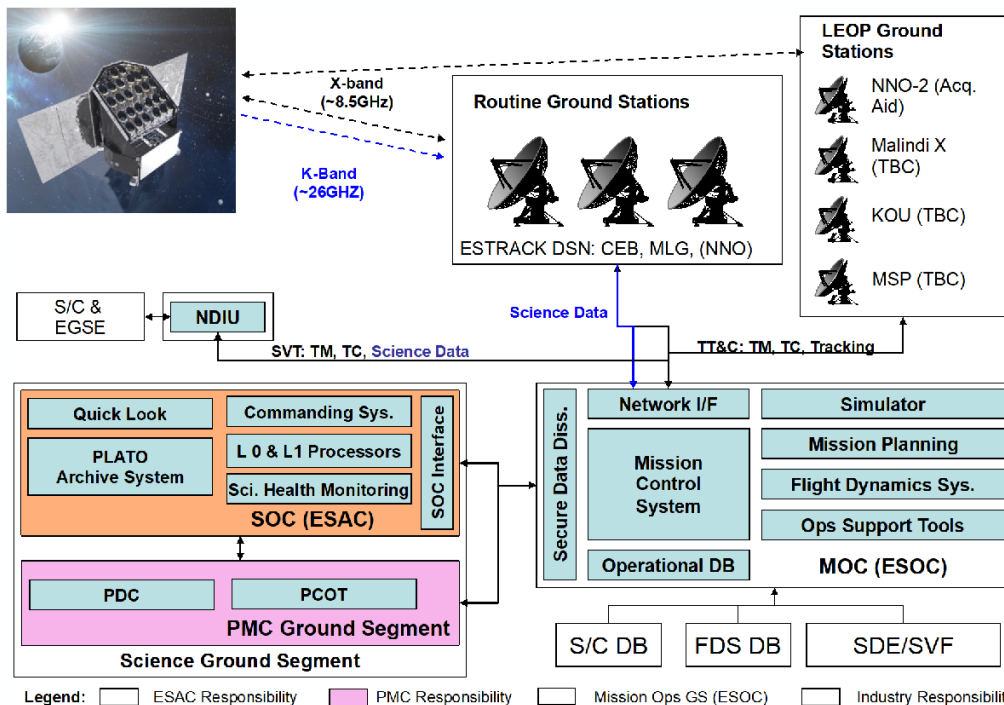
European Space Astronomy Centre (ESAC)





PLATO Operations Ground Segment



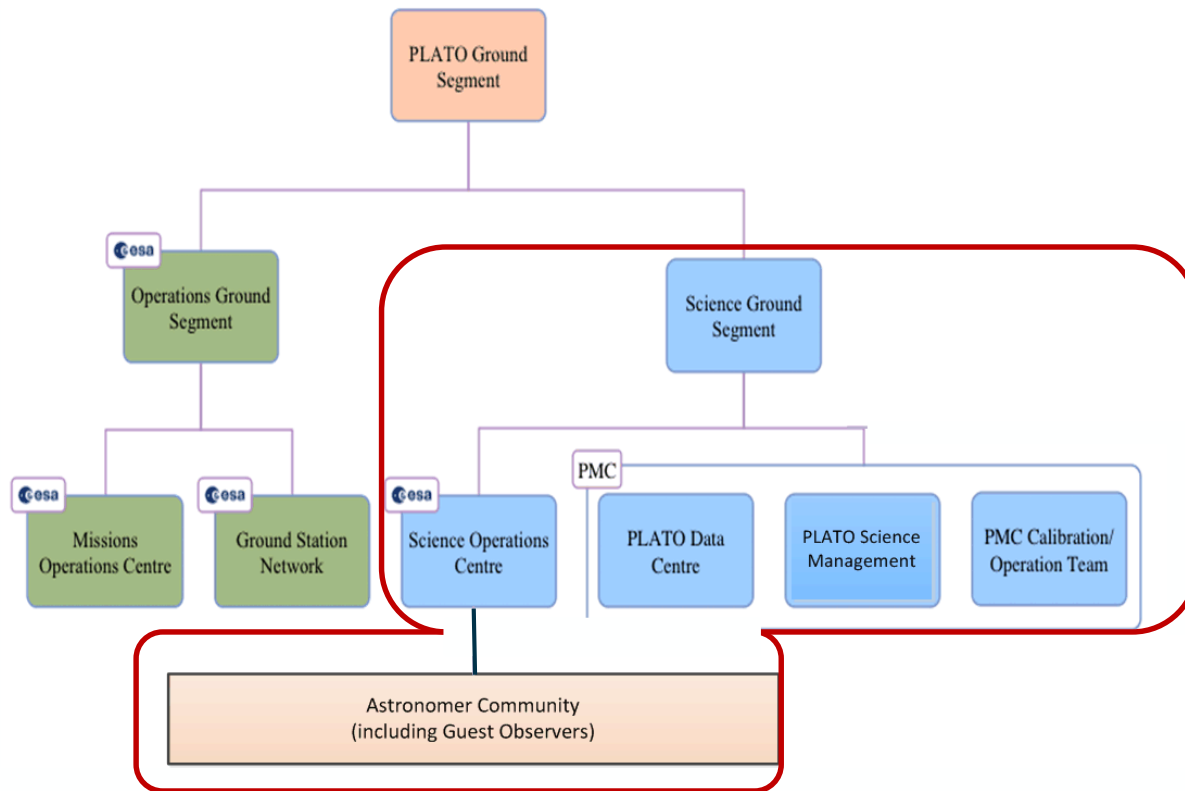


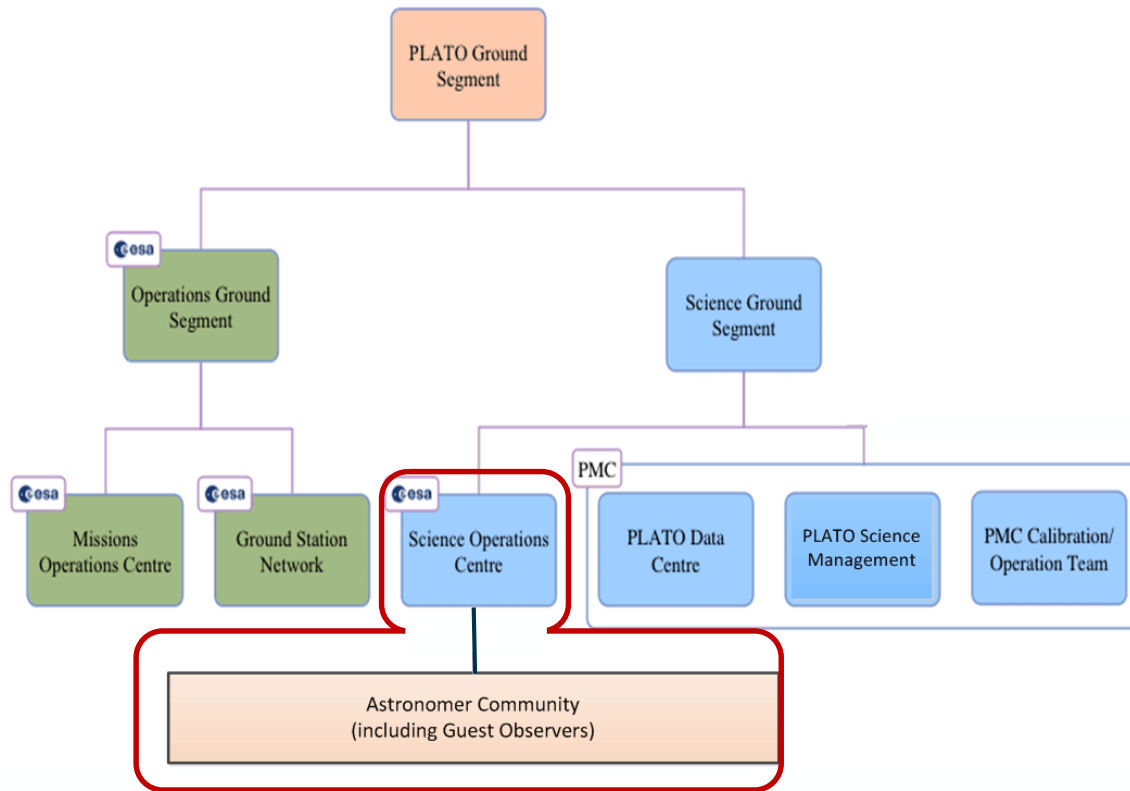
Summary of main tasks :

- Performing uplink of the satellite and payload telecommands and receiving telemetry.
- Monitoring the spacecraft health and safety.
- Monitoring the payload safety and reacting to contingencies and anomalies according to procedures provided by the PMC (PCOT), in collaboration with the SOC.
- Performing mission planning of spacecraft activities.



PLATO Science Ground Segment



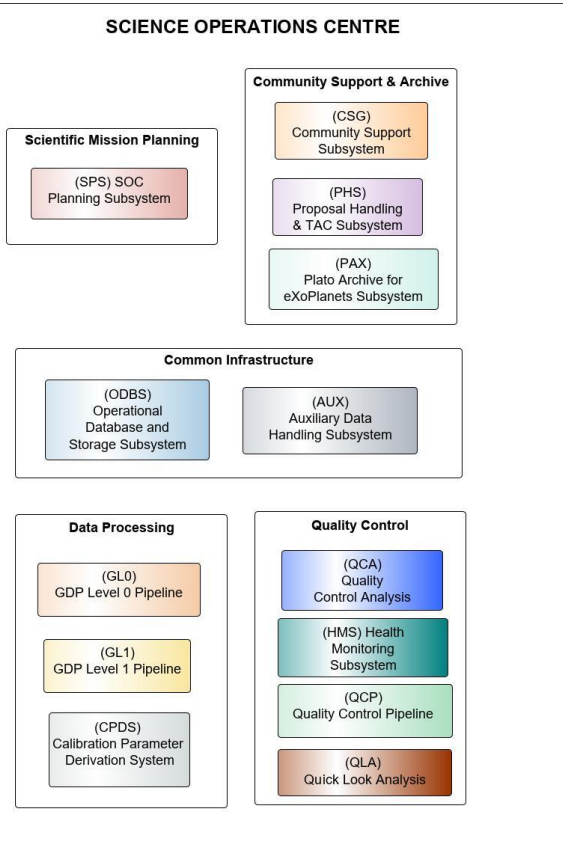




The PLATO Science Operations Centre - High level tasks



SCIENCE OPERATIONS CENTRE



- **Scientific Mission Planning**

- Planning of scientific, calibration and engineering observations and the construction of optimised schedules.

- **Community Support & PLATO Science Archive**

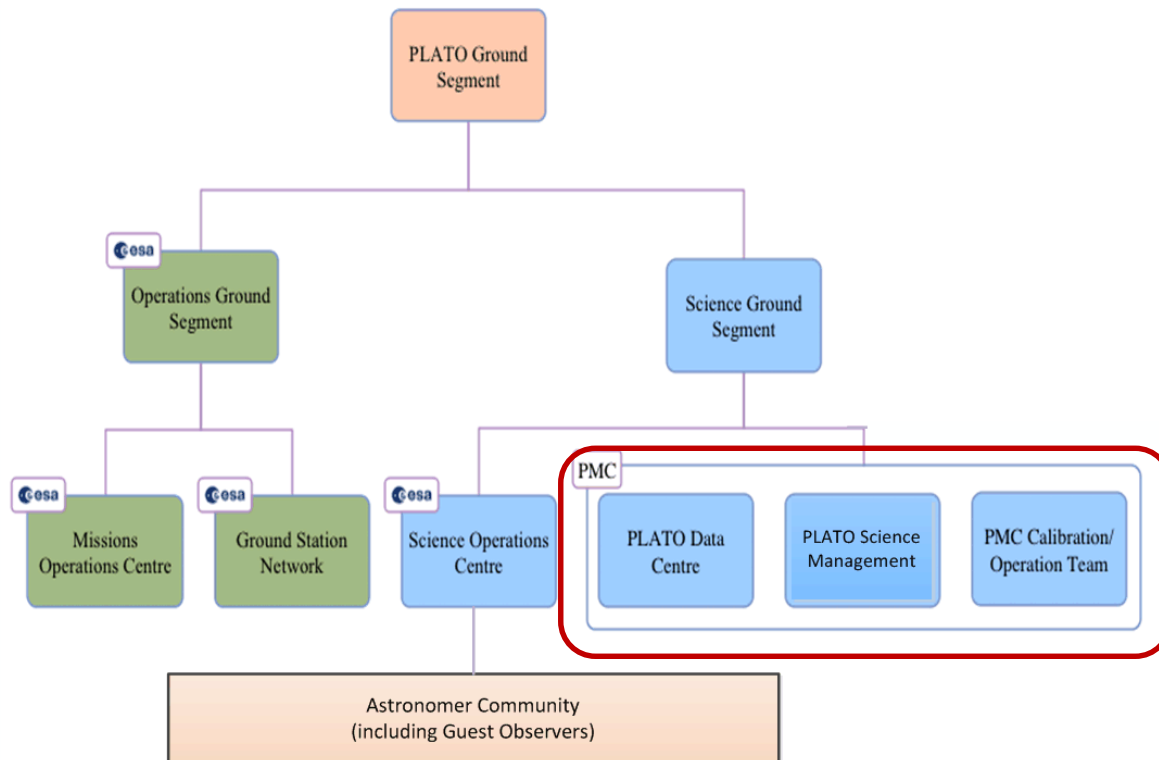
- Supporting the issuing of Guest observer calls for proposals, in cooperation with the PMC.
- Providing support to the scientific user community and to the Time Allocation Committee
- Developing and operating the PLATO Science Archive to make the data products and scientific results of the mission available to the community.
- Making data processing tools available to the community, with the support of the PMC.

- **Data Processing**

- Developing the Level-0 pipeline.
- Generating, validating, archiving and distributing Level-0 and Level-1 products.
- Performing quality control of Level-0 and Level-1 products.

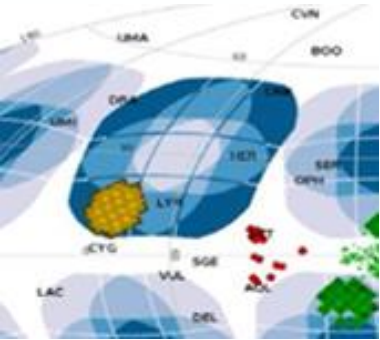
Contact: Laurence O'Rourke







PLATO Science Management (PSM)



PLATO Science Management includes over 450 members in 27 countries.

Responsibilities include:

- Define specifications for Level 2 and Level 3 data processing
- Define specifications for the PIC
- Scientific validation of Level 2 and Level 3 data processing pipelines
- Scientific validation of data products

Contacts: Don Pollacco and David Brown (Warwick)



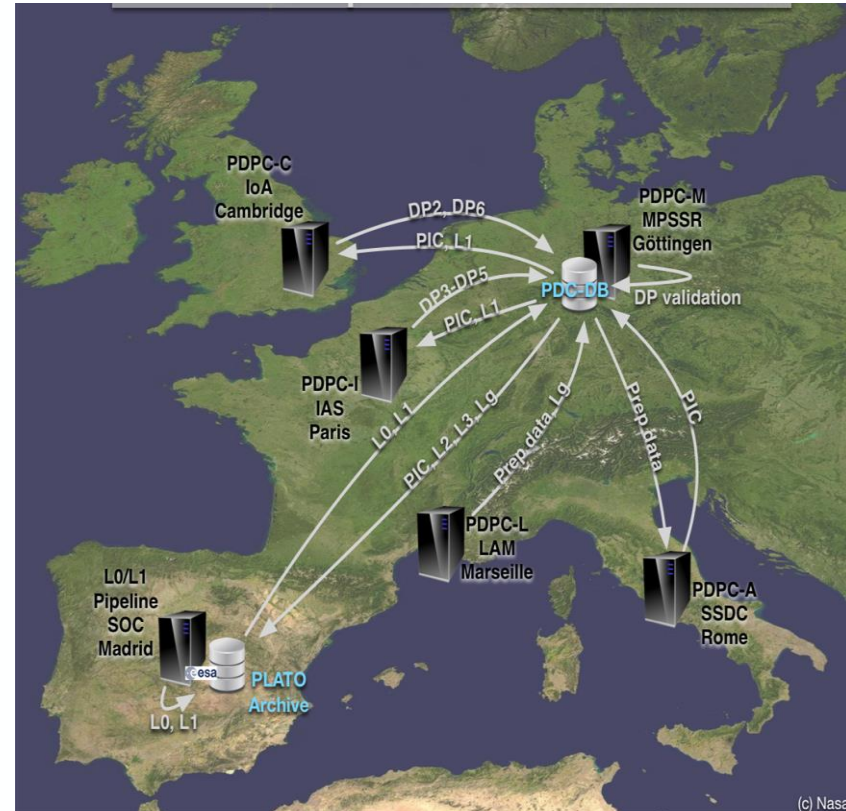


PLATO Data Center (PDC)



Responsibilities include:

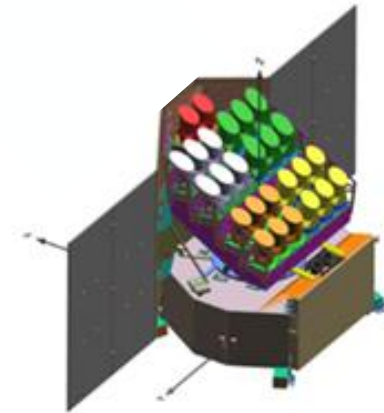
- WP31: PDC-DB, System Architecture and Management
- WP32: Algorithms for onboard and L1 processing
- WP33: Implementation of L1 software
- WP34: Input Catalog
- WP35: Preparatory & FU Database
- WP36: Exoplanet Analysis System
- WP37: Stellar Analysis System
- WP38: Data Analysis Support Tools





PCOT is part of the PMC system team and coordinates the support for calibration and operation activities. Some of the main responsibilities with direct impact on data quality are:

- Monitor instrument health
- Provide payload operational procedures and command sequences
- Input for operations and for scientific mission planning
- Provide updated payload performance parameters
- Support the SOC in providing optimized onboard software parameters
- Provide all information relevant to scientific data calibration (including calibration plans and calibration results, and calibration algorithms and data for archiving), second-level quality control (on calibrated data).



Contact: César Martin (DLR Berlin)



Main milestones in the Ground Segment development



Ground Segment Reviews

- Ground Segment Requirements Review – early 2022
- Ground Segment Design Review – late 2023
- Ground Segment Implementation Review – late 2025
- Ground Segment Readiness Review – late 2026

Building up the ground segment through testing

- Start of interface testing between the different ground segment centres: mid-2024
- Ground Segment System testing – early 2025
- Two Joint Satellite/Ground Segment Tests in 2025/2026

Call for proposals: March 2026

Launch: December 2026

Start of the Routine science phase: March/April 2027

The main focus of activities for the last two years

