

DOCUMENT

PLATO Payload Experiment Interface Document - Part B (EID-B)

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ACRONYMS AND DEFINITIONS

Definitions

For the purpose of this document, the following definitions are applicable:

- **Telescope:** unit which includes the barrel, optics, support structure, the dedicated baffle (if mounted) and the dedicated thermal hardware
- **Detection subsystem:** FPA + FEE + related interface harness
- **Camera:** sub-assembly which includes the telescope and detection subsystem
- **Data Processing System (DPS):** DPU, fast DPU, ICU, and software
- **Instrument:** one full functional chain including a camera, and all the electronics and software associated to the camera (one DPU, ICU and the AEU) and internal harness up to the interface with the SVM.
- **Payload:** the full set of Instruments
- **Payload Module (PLM):** the full set of Instruments, optical bench, supporting structures and the hardware thermal control. Note: the Sunshield is not part of the PLM

Therefore, the spacecraft shall be considered as constituted by the SVM, PLM and Sunshield.

For the purpose of this document the term “**Contractor**” refers to the system Prime Contractor responsible for all industrial activities mentioned in this Interface Document. The term “PLATO Payload Mission Consortium”, hereafter the **Consortium**, refers to the entity responsible for elements of the Payload that are provided as Customer Furnished Equipment (CFE) and the related activities.

Acronyms

ABCL	As Built Configuration List
AEU	Ancillary Electronics Unit
AIT	Assembly Integration Test
AIV	Assembly, Integration and Verification
AO	Announcement of Opportunity
AOCS	Attitude and Orbit Control System
ASW	Application Software
BB	Bread Board
CAD	Computer-Aided Design
CCD	Charge Coupled Device
CFE	Customer Furnished Equipment
CIDL	Configuration Item Data Lists
CLK	Clock
CNES	Centre National d'Études Spatiales
DP	Data Product
DPS	Data Processing System
DPU	Data Processing Unit
DS	Detection System
EEPROM	Electrically Erasable Programmable Read-Only Memory
EGSE	Electrical Ground Support Equipment
EM	Electromagnetic



ESA	European Space Agency
ESD	Electro Static Discharge
ESTEC	European Space Research & Technology Centre
FEE	Front End Electronics
FEM	Finite Element Model
FM	Flight Model
FITS	Flexible Image Transport System
FoV	Field of View
FPA	Focal Plane Assembly
GS	Ground Station
GSE	Ground Support Equipment
I/F	Interface
ICU	Instrument Control Unit
ITT	Invitation To Tender for Industry
LLI	Long Lead Item
LoS	Line of Sight
MEU	Main Electronics Unit
MGSE	Mechanical Ground Support Equipment
MLI	Multi Layer Insulation
MOC	Mission Operation Centre
MS	Microsoft
OB	Optical bench
OGSE	Optical Ground Support Equipment
P/L	Payload
PDAAS	Plato Data Acquisition and Analysis System
PDC	PLATO ground Data Centre
PFM	Proto Flight Models
PI	Principal Investigator
PICD-A	Payload Interface Control Document (Part A)
PICD-B	Payload Interface Control Document (Part B)
PID	Proportional–Integral–Derivative (controller)
PLATO	PLAnetary Transits and Oscillations
PLM	Payload Module
PPLC	PLATO PayLoad Consortium
ppm	part per million
PSF	Point Spread Function
QM	Qualification Model
ROM	Rough Order of Magnitude
SRE-PA	Advanced Studies and Technology Preparation Division
SOC	Science Operation Centre
SM	Spare Model
SMM	Structural Mathematical Model
STM	Structural Thermal Model
SVM	Service Module
SWT	Science Working Team
TBC	To Be Confirmed
TBD	To Be Determined/Defined
TC	Tele Command
TM	Telemetry
TMM	Thermal Mathematical Model
UFOV	Unobstructed Field Of View
w/o	without



1. INTRODUCTION

To be filled by Plato consortium



2. SCOPE OF THE DOCUMENT

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3. KEY PERSONNEL AND DOCUMENT ARCHITECTURE

3.1 Personnel

3.1.1 ESA Personnel (N/A)

3.1.2 Consortium Personnel

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3.1.3 Contractor Personnel (N/A)

3.2 Document Concept and Architecture

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4. SCIENTIFIC REQUIREMENTS

4.1 Scientific objectives

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4.2 Scientific Performance

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4.2.6 Non-photonic noise

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4.2.7 Colour information

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5. MISSION DESCRIPTION (N/A TO THE CONSORTIUM)

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As per EID-A

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7.9 Lifetime Requirements

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7.10 Maintainability and Fault Tolerance

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7.11 Connectors Allocation

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8. ENVIRONMENT REQUIREMENTS

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8.3 Micrometeorite Environment

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8.8 Stray-light

To be filled by Plato consortium



9. OPERATIONAL REQUIREMENTS

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9.2 Mission Operations

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9.3 Science Ground segment

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9.4 Mission products

To be filled by Plato consortium



10. PAYLOAD BUDGETS

10.1 Instruments power budget

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10.2 Instruments mass budget

To be filled by Plato consortium

10.3 ICU telemetry budget

To be filled by Plato consortium

11. PAYLOAD VERIFICATION

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11.2 Model Philosophy

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11.2.2 Physical models

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11.2.3 Simulators

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11.7.1 SGSE and EGSE

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11.7.2 Optical Ground Support Equipment

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11.7.3 Mechanical Ground Support Equipment

To be filled by Plato consortium



12. SATELLITE LEVEL AIT

To be filled by Plato consortium



13. PRODUCT ASSURANCE PLAN

To be filled by Plato consortium



14. MANAGEMENT PLAN

14.1 Consortium Organisation

14.1.1 Global consortium organization

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14.1.2 PLATO Payload Consortium organization

To be filled by Plato consortium

14.1.3 Consortium Council

To be filled by Plato consortium

14.1.4 PLATO Consortium organigram

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14.3 ESA responsibilities (N/A)

14.3.1 ESA PLATO Study Team (N/A)

14.4 Contractor responsibilities (N/A)



14.5 Planning, Meetings, and Reviews

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14.5.2 Meetings and Reviews

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14.6 Configuration Management

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14.6.2 Configuration requirements

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15.2.2 Instrument Models

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15.2.3 Input for the stray-light analysis

To be filled by Plato consortium

15.2.4 On-Board Software

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15.4 Deliverables from ESA to the Consortium

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15.5 Deliverables from ESA to the Contractor

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15.6 Review Data Package

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16. DOCUMENTS

16.1 Applicable Documents

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16.2 Reference Documents

To be filled by Plato consortium

16.3 ECSS Applicable Standards

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