

M7 plenary debrief - upcoming MDR (Sep 2023)

Peter Falkner & Martin Linder

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MDR = Mission Definition Review

The review has the following general objectives:

1. To confirm the phase 0 definition of the Mission and Payload is sufficient to move into the Industrial and Payload Phase A,
2. To **confirm** the definition of the Mission Requirements is sufficient for Industrial and Payload Phase A.

Detailed Review Objectives

1. The feasibility and suitability of the present mission design (spacecraft, P/L, ground segment and launcher), including the correct identification of design drivers and trade-offs for the Industrial and Payload Studies
2. The adequacy and maturity of mission requirements for the Phase A and the flow-down from the Science Requirements Document
3. The adequacy of the planned payload activities foreseen by the instrument providers for Phase A in support to ESA Phase A activities and maturation of the payload design
4. The adequacy of identified technology developments/breadboarding activities and associated proposed TDAs
5. The preliminary definition of interfaces/responsibilities with the instruments and international partners (if any)

Success Criteria:

1. The Review Board concludes whether the review objectives are achieved,
2. No technical or programmatic showstoppers preventing the start of Phase A are identified.

- The ESA study team will provide the review documentation to the Board in advance of the MDR meeting. The study team will also prepare the presentations given by them during the Board meeting.
- Each M7 Board and ESA study team convene at its own board meeting.
The Board Meeting (half day):
 - presentations from the study team and a session of Q&As
 - the Board takes a decision on the readiness and defines eventual actions to proceed into Phase A.
 - The Study team shall discuss and answer directly as far as possible all the issues raised during the board meeting and take actions, when needed.
 - Representatives of the proposing team are invited to join remotely
- The defined actions and the general conclusion of each Board are reported in the Board MoMs/Report (one per mission).
- If needed, the close-out of the actions is documented into a specific close-out report (one per mission) that will be prepared by the ESA study team.

1. CDF Study report or IFP Summary handouts (whichever available at the time of MDR) plus amendments
2. Mission Requirements Document
2. Payload Definition Document
3. Science Requirements Document
4. Presentation on the evolution of the Science case in Phase 0

Each M7 study team shall prepare and deliver following presentations (time indicative) for the Board meeting:

1. Definition and status of Requirements (SCIRD, MRD, etc.) – main requirements 20 min
2. Summary of Payload Design – 30 min
3. Summary of Mission Design (this shall include Master Schedule, identified risks, identified technology developments) - 30 min
4. Evolution of the Science case in Phase 0 – 10 min (lead proposer)]

Additionally, the P/L teams will present:

5. P/L Phase A Management/Workplan/Technologies/Breadboarding activities - 20 min (lead proposer)

Payload Contributions

SCI-C will inform the Member States about any evolutions in the payload contributions based on the existing support letters and iterate directly where needed.

- No new support letters are required
- PDD's (or equivalent docs) will be distributed in Sept to the MS
 - Includes instrument description(s)
 - Detailed product tree with responsibility scheme (e.g. telescope -> mirror(s), support structure, refocussing mech., optical bench, baffle, ...)
 - Breadboarding/technology activities required for Phase A (ESA and national funded)
- Minor payload contributions can be left open for Phase A
- Prior to Phase A Kick-Off, ESA will convene a M7 NPMC meeting (together for all shortlisted M7) to discuss MS contributions and critical payload pre-development activities to be funded by ESA

- **MDR (technical/programmatic):**
 - 19/09 Theseus (am), Haydn (pm)
 - 20/09 M-Matisse (am)
 - 26/09 Plasma Observatory (am), CALICO (pm)