



**HELIOPHYSICS EXPLORERS PROGRAM
2019 MEDIUM-CLASS EXPLORER (MIDEX)**

**PHASE A CONCEPT STUDY
QUESTIONS & ANSWERS**

Updated

~~November 30, 2020~~

~~December 14, 2020~~

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March 17, 2021

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Please submit your Questions to Dr. Moses, Mr. Florance, and Dr. Wu by email at:

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We will work to develop Answers your Questions, and post those Answers to this document. Please check back for the latest version, as you may not be notified that your Question has been answered.

Q&As 1, 2, and 3 posted 30 November 2020.

Q&As 4, 5, 6, 7, 8, 9, 10, and 11 posted 14 December 2020.

Q&A 12 posted 17 February 2021

Q&A 12 amended, and Q&As 13 and 14 posted 17 March 2021

Q1: Will NASA consider shifting the AO LRD (NLT February 2026) to ensure that all missions have sufficient time to make a baseline launch date after absorbing delays from COVID-19 and other factors?

A1: To accommodate delays from COVID-19 and other factors, the AO LRD is extended to NLT October 2026, and the second LRD is extended to NLT December 2028.

Q2: Does the new evaluation Factor C-7, Ground systems, include science ground-based observatories or only operations?

A2: The new evaluation Factor C-7, Ground systems, is created for TMC evaluation of the CSR as defined in the MIDEX *Guidelines and Criteria for the Phase A Concept Study* document. A science ground-based observatory should be treated as a science instrument, and described appropriately in Section E, Science Implementation, of the CSR.

Q3: For the later Launch Readiness Date (LRD), should the 2 year interim period be considered an extended Phase A or an extended Phase B? Is the cost cap for the later LRD higher than the \$250M FY2019 provided in the AO?

A3: Requirement CS-112 of the *MIDEX Guidelines and Criteria for the Phase A Concept Study* document states that the 2 year delay in the LRD is assumed to be “an extended Phase B.” Additional cost impacts due to the later LRD are outside the AO cost cap, but must be justified in the CSR.

Q4: Should the Concept Study Report present detailed Design Reference Missions for both the revised AO Launch Readiness Date (LRD) of NLT October 2026, as well as the second, later LRD of NLT December 2028?

A4: The Concept Study Report should present a detailed Design Reference Mission for the preferred LRD. In addition, Requirement CS-113 of the *MIDEX Guidelines and Criteria for the Phase A Concept Study* document states that the proposer, “shall describe the impact of both LRDs.” Furthermore, “[p]roposers are encouraged to make the assumptions needed to minimize the impact to the mission should the non-preferred launch date be chosen by NASA; such assumptions should be noted in the discussion.”

Q5: If the use of NASA-provided communication or navigation services is proposed, is a Letter of Commitment required in all cases, or just in cases in which the mission requires capabilities beyond what is described in the SCaN MOCS document?

A5: Requirement CS-79 of the *MIDEX Guidelines and Criteria for the Phase A Concept Study* document states that, “If the use of NASA-provided communication or navigation services is proposed, this appendix shall include an associated letter of commitment.”

Q6: The Mission Operations and Communication Services document in the Program Library states that, "NASA missions that use standard services will not be charged by SCaN for recurring cost for aperture or per-minute fees." Should these costs be included in the mission cost calculations and the CSR for evaluation?

A6: Requirement 32 of the MIDEX Announcement of Opportunity states that, "If use of NASA's network services is proposed, costs for services, as described in the *NASA's Mission Operations and Communications Services* document, including the cost of any development but excluding DSN Aperture Fees, shall be included in the PI-Managed Mission Cost and the

proposal's cost plan. Cost estimates for DSN Aperture Fees shall be included in the proposal but not in any cost table.”

Q7: Does Requirement CS-30 of the *Guidelines and Criteria for the Phase A Concept Study* document provided in the Program Library apply to missions in a highly elliptical Earth orbit such as a lunar resonant (TESS-like) orbit?

A7: No; Requirement CS-30 of the MIDEX *Guidelines and Criteria for the Phase A Concept Study* document only applies “for missions whose Phase E operations are beyond Earth orbit.”

Q8: What is a sufficient level of detail that should be provided to facilitate cost assessment of elements in the Master Equipment List (MEL)?

A8: As described in Requirements 68, B-64, and B-65 of the MIDEX AO, and Requirement CS-113 of the MIDEX *Guidelines and Criteria for the Phase A Concept Study* document, all spacecraft system element components and individual instrument element components in the MEL shall be summarized to support validation of proposed mass estimates, power estimates, contingencies, design heritage, and cost. Where necessary, details of these components in the MEL should be provided at a level of detail comparable to that of the electronic boards described in the paragraphs following Requirement CS-113.

If the Evaluation Panel assesses that the level of detail is not sufficient, this will be communicated before the Site Visit, and the Concept Study Team will be given an opportunity to respond. Please note that the time available for this post-CSR submission communication is restricted, so a thorough and complete MEL should be provided with the CSR.

Q9: Does Appendix L.20, Space Systems Protection, of the MIDEX *Guidelines and Criteria for the Phase A Concept Study* document apply to spacecraft possessing only a minimal propulsion system capability?

A9: Yes; the February 1, 2019 guidance from the NASA Associate Administrator directs that all newly started or newly solicited robotic spacecraft protect their command uplink through the use of encryption that is compliant with Level 1 of the Federal Information Processing Standard (FIPS) 140-2. This requirement does not apply, however for (1) hosted instrument payloads; (2) Class C or D spacecraft lacking propulsion subsystems; and (3) spacecraft that will operate more than two million kilometers (“deep space”) from the Earth. This guidance therefore applies to any Class C or D spacecraft with any propulsion subsystem capability.

Q10: Should CSRs containing export-controlled material (ITAR or EAR) be submitted with the export-controlled material redacted?

A10: In accordance with the AO Section 5.8.3 and Requirement CS-6, complete CSRs with any export-controlled material (ITAR or EAR) redacted should be submitted, in addition to separate, redacted versions of any files with the export-controlled material marked appropriately.

At the proposer’s discretion, a second unredacted CSR that includes any export-controlled material may be submitted. The CSR must be clearly labeled as containing export-controlled material, a table of export-controlled material locations in the CSR provided, and the export-controlled material contained therein must also be clearly marked.

Q11: Does every named person in the CSR requires a personal letter of commitment, excluding collaborators, or just major or critical participants?

A11: In accordance with the AO Section 5.8.1 and Requirement CS-79, letters of commitment are required from all: (i) organizations offering contributions of goods and/or services (collaborators excepted); (ii) major or critical participants in the mission; and (iii) Proposal Team members. Per AO Section 5.8.2, “The Proposal Team is defined to include, but not be limited to, all named Key Management Team members, all Co-Is, and all collaborators.” All individuals listed as Proposal Team members are expected to have a significant and unique role in the investigation.

Q12: The CSR Guidelines does not specify the exact incentive provided for Technology Demonstration Opportunities (TDOs). Can you provide the exact dollar amount of the incentive?

A12: The incentive value for each TDO is capped at \$5M FY19, and as stated in the AO, costs up to the incentive value of TDO(s) will not count against the PI-Managed Mission Cost (PIMMC) and will be ~~added to the Adjusted AO Cost Cap to be~~ included in the Enhanced PIMMC, up to \$5M FY19 per TDO. **[Edits in bold italics made on 17 Mar 2021]**

Q13: The Heliophysics 2019 MIDEX AO says, “Estimated NASA Center Management and Operations (CM&O) overhead costs must also be included within the PI-Managed Mission Cost...” Please confirm that CM&O does not need to be included in items that are not within the PIMMC such as Student Collaborations (SCs), TDOs, and SEOs.

A13: The CM&O costs related to incentives for SCs and TDOs and all costs for SEOs would be outside of the PIMMC but need to be included as part of the Enhanced PIMMC (E-PIMMC).

Q14: Please provide clarification as to when CSR Appendix L.4, Phase B Contract Implementation Data, is required to be provided to NASA.

A14: CSR Appendix L.4, Phase B Contract Implementation Data, may be included in the CSR submitted by July 7, 2021 if ready at that time. Alternatively, CSR Appendix L.4 may be deferred to and submitted on the date of the concept study team's Site Visit, as described in the *Guidelines and Criteria for the Phase A Concept Study* document.