

2023 EARTH SYSTEMS EXPLORERS (ESE)

CONCEPT STUDY REPORTS (CSRs)

STEP 2

QUESTIONS & ANSWERS

Change Log		
Revision	Date	Description of Changes
01	08/09/2024	Added Q&A 1-2
02	09/06/2024	Added Q&A 3-5
03	09/26/2024	Added Q&A 6
04	10/11/2024	Added Q&A 7-8
05	10/25/2024	Added Q&A 9-14
06	11/14/2024	Added Q&A 15-17
07	01/22/2025	Added Q&A 18
08	01/28/2025	Added Q&A 19-22
09	03/13/2025	Added Q&A 23-24
10	05/02/2025	Added Q&A 25
11	05/16/2025	Added Q&A 26

Please check back regularly for the latest updates to this document, as Questions and Answers (Q&As) updates may not be announced.

ESE Concept Study Report (CSR) Q&As

Q-1 Should NPR 8079.1 ‘*NASA Spacecraft Conjunction Analysis and Collision Avoidance for Space Environment Protection*’ replace NPR 8715.6 ‘*NASA Procedural Requirements for Limiting Orbital Debris and Evaluating the Meteoroid and Orbital Debris Environments*’ in Section L.9 of the Criteria and Requirements (C&R) document, given that NPR 8079.1 has superseded NPR 8715.6 as the current governing document (per CARA)?

A-1 Section 1.1. of the ESE AO states “Additional documents are provided in the Program Library (<https://explorers.larc.nasa.gov/2023ESE/programlibrary.html>). In order to provide a consistent basis for proposals and evaluations, documents in the Program Library will be the versions used for evaluations even when superseded elsewhere.” This statement applies throughout the two steps of the competitive process. Therefore, the NPR 8715.6 document that is referenced in the Announcement of Opportunity (AO) and C&R will remain in effect. The ESE Program Office may negotiate any change in requirements with the down-selected mission team(s).

Q-2 Is there financial guidance for the Science Enhancement Options (SEOs)?

A-2 The expectation is that the budget for any SEOs (if proposed) will be no more than 5% - 10% of the mission total science budget.

Q-3 What is the targeted timeline for CSR evaluation milestones?

A-3 With a CSR deadline of April 17, 2025, targeted times with impact on proposing teams are:

- Sites visits: second half of July, first half of August
- HQ visits: late September/early October
- Selection: early November, Phase B Bridge option is exercised soon after

Q-4 Given the delay in the ESE CSR deadline, will the Launch Readiness Dates (LRDs) remain as written in the AO?

A-4 Yes, the LRDs will remain the same.

Q-5 Do HQ Program Managers help with the formulation of the Level 1 requirements?

A-5 Since the ESE mission concept studies are in the Phase A competitive process, NASA HQ Program Managers do not help with the formulation of the Level 1 requirements.

Q-6 Will NASA be updating the Launch Readiness Dates (LRD) for the ESE missions selected to perform Phase A Concept Studies?

A-6 Yes. The LRD for the first mission has been updated to NLT Q4/FY2030, i.e. September 30, 2030. The LRD for the second mission remains unchanged (NLT April 2032). This updated date

will be reflected in an amendment to the ESE *Criteria and Requirements for the Phase A Concept Study* document.

Q-7 Is the National Oceanic and Atmospheric Administration (NOAA) Operational Enhancement Opportunity (OEO) part of the CSR evaluation?

A-7 No, the OEO is a separate document to be uploaded to Box and will not be part of the CSR evaluation as long as it is clearly separable from the Baseline Science Investigation and Threshold Science Investigation. After downselection, the OEOs of the selected proposals will be sent to NOAA for their assessment and funding decision.

Q-8 Some code is considered sensitive and proprietary. What are open source code expectations for these types of code?

A-8 NASA Science Mission Directorate policy document SPD-41a: *Scientific Information Policy for the Science Mission Directorate* does not require all code to be open. There are several reasons code may not be open and this can include security, International Traffic in Arms Regulations (ITAR), export control, or other intellectual property IP considerations. The Open Science and Data Management Plan should identify the reasons that the code might not become available and the Software Management Plan for the mission should document those reasons in further detail. Making some of the code available is highly encouraged, assuming there are no security, ITAR, or export control concerns with that portion of the code.

Q-9 How should the proposer include Step-1 Scientific Merit (Form A) Potential Major Weakness (PMW) clarification responses in the Step-2 CSR submission?

A-9 Any updates from the Step-1 Form A PMW clarification responses must be incorporated within (i.e., interspersed throughout) the Science Investigation section. Step 1 Form A PMW clarifications shall be incorporated appropriately throughout Section D of the CSR and identify that they were provided in Step-1 (i.e., not new changes in Step-2). This includes PMW clarifications that have changed or been superseded by Phase A study results. Rationale for why the clarification has been changed or superseded must be provided. The text of the Step 1 Form A PMW clarifications must be identified using different methods from any new Step 2 Phase A changes. The proposer can color code text, highlight using a specific color, highlight in bold, column mark, or use any combination to identify the PMW clarification responses. An identification key must be provided. If the Step 1 Form A PMW clarification response affects any of the science objectives it must be included in the change matrix described in C&R Requirement CS-20.

Q-10 Is it permissible to include each original PMW or a brief PMW summary for reference in the Step-2 CSR submission?

A-10 Only Form A PMW clarifications need to be included in the CSR (see section D of the C&R). It is not necessary nor preferred to include each original PMW or a brief summary of each original PMW.

Q-11 What are the expectations for the CSR Appendix L.23 Launch Services Interface Requirements Document (LSIRD)? Is this the same as the document that is generated and authored by Kennedy Space Center Launch Services Program (KSC LSP) for the purpose of launch vehicle procurement during Phase B?

A-11 The appendix requested in Appendix L.23 is not the official LSIRD that is associated with launch vehicle procurement. It is an appendix to the CSR that is required for discussing the launch services and launch vehicle compatibility, as specified in Requirement CS-35 of the C&R document. The title of Appendix L.23 was inadvertently specified as 'Launch Service Interface Requirements Document' but will be renamed to 'Launch Services and Launch Vehicle Compatibility' in a forthcoming revision of the C&R document.

Q-12 Both Section F.2 and Appendix L.23 request information on Launch Services and Launch Vehicle Compatibility and identify Requirement CS-35 as the pertinent requirement. What information must be included in each?

A-12 Section F.2 and Appendix L.23 together must address the information requested in Requirement CS-35 and the information to be reviewed by the NASA/Launch Services Program (NASA/LSP) in Attachment 3 of the Launch Services Information Summary (LSIS) found in the Program Library. The proposer must decide how this information is to be presented. Please note that Appendix L.23 is page unlimited which can provide the opportunity for more complete discussions and more legible figures when needed.

Q-13 Are there any updates to the Scenarios based on the current list of Launch Vehicles (LVs) available under the NASA Launch Services II (NLS II) contract?

A-13 Yes, Scenario 3 has been updated in the "Earth System Explorer Medium Explorers (MIDEX) 2023 Announcement of Opportunity Launch Services Information Summary" found in the Program Library. Figure 3 has been updated to depict a new performance capability to Sun-Synchronous Orbit. Figure 6 has also been updated to depict the new Payload Fairing (PLF) static envelope. Furthermore, all LV enveloping environments for Scenario 3 have been updated accordingly.

Q-14 Are there any updates to the Scenarios' enveloping environments based on updated data from the LVs?

A-14 Yes, the enveloping equivalent sine environment for Scenario 2 (Figure 8) has been updated based on updated LV data acquired by the NASA/Launch Services Program (NASA/LSP). These changes are reflected in the latest version of the Earth System Explorer Medium Explorers (MIDEX) 2023 Announcement of Opportunity Launch Services Information Summary" found in the Program Library.

Q-15 A requirement for a draft Mission Assurance Implementation Plan (MAIP) is stated in the C&R document (Section L.22), although the ESE Mission Assurance Requirements (MAR) document posted in the Program Library only requires a compliance matrix. Is a draft MAIP required?

A-15 A draft MAIP is not required with the CSR. Per the ESE MAR document, a compliance matrix is all that is required for the CSR. The language specifically requiring a draft MAIP was inadvertently included in the C&R document and reference to a draft MAIP will be removed in a forthcoming revision of the C&R. *Please see Q&A 16 for further details regarding the required compliance matrix.*

Q-16 What guidance is available for the content and format of the required compliance matrix?

A-16 As a result of removing the language requiring a draft MAIP on the forthcoming revised C&R document (see Q&A 15), *Study Teams should note that a new requirement will be generated within the revised C&R document* requiring a compliance matrix (per the ESE MAR) to be included in the CSR. The compliance matrix Excel-based template, provided by the ESE Program Office, is intended to help proposers better conform to compliance matrix expectations and requirements.

Q-17 How should Science Team member time commitments that are partially funded by the PIMMC and partially funded by institutional salary (e.g. professorial salary) be represented in the Table requested as part of C&R Requirement CS-28? Also, C&R requirement CS-28 states “and the funding source (NASA or contributed) for each science team member shall be noted”; however, the columns enumerated for the table do not include a column for funding. How does NASA expect the funding to be represented in this table?

A-17 Science Team member time commitments that are partially funded by the PIMMC and partially funded by other non-SMD sources must be included in the CSR and stated independently, both in the Table requested as part of C&R Requirement CS-28 and also in Cost Tables 4a and 4b (templates in Program Library) as stated in Requirement CS-81. Please note that the non-SMD funding is considered a contribution. Each team member’s time commitment to the investigation will be evaluated. The Study Team may choose how to present this information, including the funding source, in the Table requested by C&R Requirement CS-28.

Q-18 Given the January 20, 2025 White House Executive Order (EO) “Ending Radical and Wasteful Government DEI Programs and Preferencing”, what is the impact on any requirements associated with Diversity, Equity and Inclusion (DEI), and Diversity, Equity, Inclusion, and Accessibility (DEIA) for the Earth System Explorers (ESE) Concept Study Report (CSR)?

A-18 As a result of this EO, all CSR requirements that are associated with or otherwise linked to DEI/DEIA mandates, policies, programs, preferences, and activities are effectively terminated and will no longer apply. A revision to the ESE Criteria & Requirements (C&R) document will be forthcoming.

Q-19 The Center Engineering, Safety, and Operations (CESO) burden rate per “equivalent head” has changed from \$52K in FY 2024 dollars in the ESE AO to \$26K in FY 2026 dollars as reflected in the Draft 2025 Astrophysics Small Explorer AO released on January

13, 2025. Should the new rate be used for costs being proposed in Concept Study Reports (CSRs) under development for ESE Step 2?

A-19 No. CSRs being developed as part of the ESE Step-2 competition must use the \$52K in FY 2024 dollars CESO burden rate per “equivalent head” stated in the ESE AO. The updated CESO burden rate will be applied to the down-selected ESE investigations as applicable. An additional two-page appendix will be requested as part of the CSRs (Appendix 29) for Study Teams to address how the reduced burden rate would have affected key trades performed during Phase A as well as describing any potential benefits to the project from the reduced burden.

Q-20: For the National Oceanic and Atmospheric Administration (NOAA) Operational Enhancement Opportunity (OEO), should or can a NOAA scientist lead that effort?

A-20: No, the OEO should be led by the PI.

Q-21: For the Letters of Commitment (CS-96), international partners often cannot make any binding commitments. Furthermore, it may be difficult to assign an exact dollar amount to some contributions. Can you provide any further guidance on this matter?

A-21: The Letter of Commitment should state what exactly will be contributed in terms of goods and services. For labor, the contribution may be expressed in WYEs. It is understood that the commitment is made in good faith and that funding situations may change.

Q-22: What aspects of the Step 1 proposal reviews will be available to the Step 2 reviewers? Specifically, will the Step-2 reviewers see the Section D reviews that Study Teams received in Step-1, and will scientists from the previous Step-1 panel determine whether the science objectives have changed from the original proposal?

A-22: The Step-2 evaluation process is independent from that of Step-1. Step-2 evaluators are only provided the CSRs and SQLs responses and are not provided the proposals or any evaluation material developed in the Step-1 process.

Regarding the science objectives, the expectation is that these have not changed, thus by default, Form A criteria will not be evaluated. However, the Program Scientist will determine whether a re-evaluation of Form A is needed. Page 7f of *Criteria and Requirements for a Phase A Concept Study* states “The ESE Program Scientist will determine whether any issues that may have emerged in the course of the Concept Study have resulted in significant changes to the science objectives or other aspects of the proposed Baseline and Threshold Science Investigations (see Requirement CS-20 in PART II of this document) in such a manner as to have impacted the basis for the evaluation of the scientific merit of the investigation as determined by the peer review panel for the Step-1 proposal...”).

Q-23: Section L.5. of the ESE Criteria & Requirements (C&R) document states “Demonstrate allocation of sufficient resources (cost, schedule, workforce, computational) for archiving as well as for preliminary analysis of the data by the Project Investigation Team, publication of the results in refereed scientific journals, as well as for the development of any new algorithms, software, or other tools.” However, Section 4.4.1 of the ESE AO states “NASA data archives have budgets to support core activities, including the basic ingestion and review of new data.” Are investigation teams responsible for archiving cost?

A-23: ESE investigations are responsible for the cost of the investigation team efforts associated with archiving data. NASA’s Earth Observing System Data and Information System (EOSDIS) Distributed Active Archive Centers (DAACs) core activities including the basic ingestion, review of new data, archival, and distribution are performed at no cost to the investigations. The appropriate DAAC will be assigned by NASA.
Please also see: <https://www.earthdata.nasa.gov/engage/submit-data/level-service-model>

Q-24: Are Center Engineering, Safety, and Operations (CESO) costs to be included in the PI-Managed Cost (PIMMC) or can they be deducted from the cost cap which would be outside of the 25% reserve requirement?

A-24: CESO cost should be included in the PIMMC. The ESE AO states: “*Estimated NASA Center Engineering, Safety, and Operations (CESO) overhead costs for the Baseline Science Mission must also be included within the PI-Managed Mission Cost, to enable a level playing field for all proposers..... As per Agency policy, this rate must be applied as a “cost per equivalent head” to all Civil Servant Full-Time Equivalents (FTEs) plus on or near-site contractor Work-Year Equivalents (WYEs) associated with the proposal. The estimated FTEs and WYEs per Fiscal Year, and the resulting CESO burden, must be identified in a separate table within the budget justification section of the proposal.*” Because the underlying manpower estimate has uncertainty associated with it, reserves are required for this estimated cost.

Q-25 During the Concept Study Kick-off, NASA stated that opportunities would be provided for the ESE Phase A Concept Study Teams to respond to Significant Weaknesses, Questions, and Requests for Information Lists (SQRLs) generated during the ESE Step 2 Concept Study evaluation. For planning purposes, when are the ESE Phase A Concept Study Teams expected to deliver to NASA the pre-Site Visit written responses to the SQRLs?

A-25 The pre-Site Visit SQRLs will be provided to the ESE Phase A Concept Study Teams seven days before the Site Visit with early written responses required within five days. Supporting information regarding the evaluation process will be provided in the Evaluation Plan and in an email to the PIs well in advance of the site visits.

Q-26 Do the Federal Acquisition Regulation (FAR) subparts 52.219-8, 52.226-2 and 52.219-9, cited in Section 5.5.1 “Small Business Participation” of the ESE AO, remain applicable?

A-26 Yes, the FAR subparts 52.219-8, 52.226-2 and 52.219-9 remain applicable.