

2023 Earth System Explorers (ESE)

ESE AO Questions & Answers

Change Log		
ESE Final AO		
Revision	Date	Description of Changes
08	05/19/2023	Added Q&A 1F-5F
09	06/02/2023	Added Q&A 6F-22F
10	06/15/2023	Added Q&A 23F
11	06/27/2023	Added Q&A 24F
12	07/21/2023	Added Q&A 25F
13	08/02/2023	Added Q&A 26F
ESE Draft AO		
01	01/23/2023	Added Q&A 1 – 5
02	01/26/2023	Added Q&A 6 - 11
03	02/15/2023	Added Q&A 12-24
04	02/28/2023	Added Q&A 25-30
05	03/16/2023	Added Q&A 31-33
06	03/24/2023	Added Q&A 34-35, Amended Q&A 11
07	05/12/2023	Amended Q&A 18

ESE Final AO Q&As

- Q-1F** **Section 4.3.4 of the ESE AO states “Proposers must not assume that NASA can or will accommodate proposals whose requested funding profile differs significantly from the Earth System Explorers Program's planning budget for this AO.” What is an acceptable funding profile? What flexibility exists within the planning budget for this AO for adjusting the funding profile to accommodate proposed expenditure plans?**
- A-1F** Please note that Section 4.3.4 of the ESE AO states that the Earth System Explorers Program's planning budget can accommodate a selection with a typical space mission funding profile over a nominal 4-5 year development period and that proposers should propose a funding profile consistent with the selection, down-selection, and launch readiness or delivery readiness dates in Section 3 of the ESE AO. However, this section also states that proposers should propose a funding profile that is appropriate for their investigation and that a final funding profile for each selected or down-selected investigation will be negotiated.
- Q-2F** **May a subset of long lead components be procured in Phase A, using Phase A funds, if there is significant cost benefit or risk reduction? Can contracts be established in Phase A, using Phase A funds, for delivery in a subsequent phase?**
- A-2F** Proposers selected for Phase A Concept Studies may use the Phase A funds as they deem more appropriate to the proposed investigation. Please note that Requirement 71 of the ESE AO states “Proposals shall state and justify the budget profile by year, especially any significant proposed spending before KDP-C (Confirmation).”
- Q-3F** **The list of items deferred to Step-2 found in page 2 of the ESE AO shows that the Risk Management Approach has been deferred. However, Requirement 58 seems to require the Risk Management Approach. Please clarify.**
- A-3F** Section 5.3.6 of the ESE AO does not require a Risk Management Approach; however, it does require proposals to define the project risks and project resiliency considering these risks in the form of a Table. This section also requires a description of proposed descopes, savings of resources by implementing descopes, and decision milestones for implementing descopes in the form of a Table.

Q-4F May personal portrait photographs appear elsewhere in the proposal other than resumes, such as the Fact Sheet or the Management Section?

A-4F No, NASA strives to eliminate any potential subjective biases during the evaluation process.

Q-5F Requirement 103 of the ESE AO states “Proposals shall propose missions with a Launch Readiness Date (LRD) of no later than April 2030. The impact of switching to an LRD of no later than April 2032 shall be discussed in Appendix J.4.” May a proposal target an LRD of no later than April 2032 as the baseline?

A-5F No. Proposals are required to propose missions with a Launch Readiness Date (LRD) of no later than April 2030. Nevertheless, the Appendix J.4 discussion of the impact of switching to a no later than April 2032 LRD that must include science, cost, schedule, launch vehicle, and any other significant impacts, may describe advantages as well as disadvantages.

Q-6F The “Earth System Explorers Medium Explorers (MIDEX) 2023 Announcement of Opportunity (AO) Launch Services Information Summary” document assumes a 47-inch Launch Vehicle (LV) separation system. Will the Launch Services Program (LSP) provide an adapter cone to other standard interface diameters, or are missions required to use a 47-inch LV separation system?

A-6F The mass of a standard 47-inch adapter is accounted for in the launch vehicle performance. Other interfaces are available – some may be standard services, while others may require non-standard services at additional cost against the PI-Managed Mission Cost. The implications to available performance will be based on the mass differences between the standard service 47-inch adapter and whichever interface is required by the spacecraft. No adapter cone will be provided as a standard service. If one is needed then the selected mission must provide it or it would be a non-standard service. For more detailed information, please contact the LSP point of contact: James Hall, Phone: 321-867-6218, Email: james.l.hall@nasa.gov.

Q-7F May we have a 2-page appendix for Societal Applications?

A-7F No.

- Q-8F** **Section 4.6.4 of the ESE AO states that an investigation, to which Conjunction Assessment Risk Analysis (CARA) requirements are applicable, will have to budget costs under the PI-Managed Mission Cost in the Concept Study Report to establish a working interface between the Flight Operations Team and the CARA team. CARA has been deferred to Step 2. Does the Step 1 proposal need to explicitly state that these costs have been included in the PI-Managed Mission Cost? Where would these cost be included?**
- A-8F** Yes. Requirement 75 of the ESE AO states “Proposals shall account for expected resources needed to meet the requirements that have been deferred to Step-2.” Proposers should include this cost where it is most appropriate for the proposed project.
- Q-9F** **Question: The AO in Appendix B Section J.11 calls for “no document formatting” for the Master Equipment List (MEL). This leads to the following sub-questions:**
- 1. Can the Microsoft Excel version of the MEL include formulas?**
 - 2. Can the Microsoft Excel version of the MEL include variation in font sizes, bolding, and shading of rows, as done in the MEL Template provided in the Program Library?**
 - 3. Can the numerical fields in the Microsoft Excel version of the MEL (number of units, mass, power, contingency percentage) be formatted as text?**
 - 4. Can the Appendix J.11 version of the MEL, included with the main proposal file in Adobe Portable Document Format (PDF), use a different formatting than that applied to the Microsoft Excel file?**
- A-9F** The intent of the “no document formatting” is twofold: reduce the workload to develop proposals; and ensure the Microsoft Excel version of the MEL is a numerically usable version of the Adobe PDF copy. This leads to the following answers for the sub-questions:
1. Yes. Formulas are not required but are acceptable within the Microsoft Excel version of the MEL.
 2. Yes. Formatting similar to the one provided in the MEL Template is preferred.
 3. No. Numerical fields (number of units, mass, power, contingency percentage) must have a number format in Microsoft Excel.
 4. No. The PDF version must be a copy of the Microsoft Excel version.

Q-10F Section 5.2.6 of the ESE AO states “proposers must include NEPA cost and schedule needs into their estimates”; however, this section also states “NEPA compliance costs are considered ESE Program costs, so do not need to be included in the PI-Managed Mission Cost” We would like to ask NASA to please clarify.

A-10F Please note that Section 5.2.6 of the ESE AO also states “The proposed mission will only be responsible for providing portions of the document required to meet this milestone; NASA, DOE, and their contractors will produce the majority of the document.” Proposers must plan and budget the necessary activities for “providing portions of the document required”.

Q-11F What supporting information may proposers provide for commercial products and services that may not be reflected in the Cost Analysis Data Requirement (CADRe) reports?

A-11F Proposers are permitted to provide vendor quotes. These quotes must be included in Appendix J 2. Please note that part of Requirement B-51 states “The proposer shall not include in these Appendices material required in the page-limited sections in the body of the proposal. Any additional information not specifically required in a given appendix will not be considered by the evaluation panel and may result in reduced ratings during the evaluation process or, in some cases, could lead to rejection of the proposal without review.”

Q-12F The foreword of the ESE AO states “Proposed investigations will be evaluated, selected, and down-selected through a two-step competitive process. However, if warranted by the evaluation process, NASA reserves the right to select through a single step.” Are the requirements different for a proposal to be considered for a single step selection?

A-12F No. The ESE AO provides the requirements, constraints, and guidelines to which proposals must comply and the criteria for proposal evaluation. Proposed investigations will be evaluated, selected, and down-selected through a two-step competitive process. Please note that Section 1.1 the ESE AO also states “Proposers must recognize that NASA would only make a single step selection if the proposal(s) were especially compelling.”

- Q-13F** **If a new Major Weakness is identified by one of the evaluation panels after the Potential Major Weaknesses (PMW) Clarification Responses are delivered, will the proposal team be given additional opportunities to respond to new PMWs?**
- A-13F On the Step 1 evaluation of a two-step competitive process, proposing teams will have one opportunity to provide PMW clarification responses. There will not be additional opportunities for clarifications.
- Q-14F** **Is Hydrazine propellant loading a standard launch service?**
- A-14F Hydrazine loading support is a non-standard service and will drive additional cost. Many spacecraft teams bring their own fueling teams, and LSP will provide the “support services” such as SCAPE suits, breathing air, and weight scale. If they do not bring their own team, we can contract with COMET or Astrotech for the full fueling service.
- Q-15F** **The Earth System Explorers (ESE) Program Office (PO) is located at the NASA Goddard Space Flight Center (GSFC). Is ESE PO involved in selection? Would NASA GSFC have a competitive advantage when proposing to ESE solicitations?**
- A-15F The ESE PO plays no role in the AO process; specifically, it plays no role in defining the scientific scope of the AO, writing the AO, evaluating proposals, or selecting proposals. The NASA Science Mission Directorate (SMD) has established functional and organizational firewalls between the ESE PO and those parts of NASA GSFC that might participate in proposals. These firewalls ensure that personnel identified as supporting the ESE PO and the AO process will protect all nonpublic information from all proposers, including those at NASA GSFC and will be free of financial and other conflicts of interest with proposers.
- Q-16F** **What is the page limit for the Diversity and Inclusion Plan? What are the criteria for the evaluation the Diversity and Inclusion Plan?**
- A-16F The page limit for Diversity and Inclusion Plan is five. Please refer to Factor B-6 of the ESE AO for the Diversity and Inclusion Plan evaluation criteria.

- Q-17F When will the documents “Afternoon Constellation Operations Coordination Plan” and “Afternoon Constellation Contingency Procedures” be available in the Program Library?**
- A-17F These documents will not be provided as they no longer reflect the current status of the existing orbital constellations and therefore are not applicable to ESE proposals. Please note that the purpose of Section 5.2.9 is to make proposers aware that the constellation members may levy additional requirements on a selected mission planning to fly in the constellation. This section also requires that proposals for missions that need to fly in an existing orbital constellation acknowledge that there may be additional requirements and demonstrate that the requirements will be accommodated if selected.
- Q-18F Where in the proposal may vendor quotes be included?**
- A-18F Vendor quotes must be included in Appendix J 2. Please note that part of Requirement B-51 states “The proposer shall not include in these Appendices material required in the page-limited sections in the body of the proposal. Any additional information not specifically required in a given appendix will not be considered by the evaluation panel and may result in reduced ratings during the evaluation process or, in some cases, could lead to rejection of the proposal without review.”
- Q-19F If the investigation team or intent to propose changes after the NOI is submitted, should the proposing team inform NASA?**
- A-19F Yes. The NASA Science Mission Directorate (SMD) requests that proposers communicate any changes to the investigation team or intent to propose, between NOI and proposal submission, to the Earth System Explorers Program Scientist, Dr. Thorsten Markus at Thorsten.markus@nasa.gov.
- Q-20F Is Factor A1 of the ESE AO evaluated against the Baseline Science Investigation or Threshold Science Investigation?**
- A-20F Section 7.2.2 of the ESE AO states “Factors A-1 through A-3 are evaluated for the Baseline Science Investigation assuming it is implemented as proposed and achieves technical success.” Factor A-4 of the ESE AO states “This factor includes the scientific value of the Threshold Science Investigation using the standards in the first factor of this section and whether that value is sufficient to justify the proposed cost of the project.”

- Q-21F** **Is the adjectival summary rating finalized by the evaluation team, the categorization committee, the steering committee, or some other way?**
- A-21F The adjectival ratings as described in Section 7.2.1 of the ESE AO are assigned by the Evaluation Panel. The roles of the Categorization and Steering committees are discussed in Section 7.1.2 of the ESE AO.
- Q-22F** **The ESE AO provides No Later Than” (NLT) launch dates. Is there a “No Earlier Than” (NET) launch date?**
- A-22F There are only NLT launch date requirements; there is no requirement for NET launch dates.
- Q-23F** **Requirement B-42 of the ESE AO states “The proposed time commitment to the investigation of each named Key Management Team member and of each Key Management Team member not named shall be provided in a table in months per year by project phase.” Please clarify.**
- A-23F This table is required to show the proposed level of effort by phase for each Key Management Team member.
- Q-24F** **Requirement B-4, page B-4 of the Final AO states that “2 extra pages are allotted for each additional separate, non-identical science instrument in the Science Section (Sections D and E); two extra pages are allotted for each additional separate, non-identical flight element in in the Mission Implementation and Management Sections (Sections F and G)”. Please clarify the intent of this requirement.**
- A-24F The phrase ‘each additional’ is defined to indicate any extra instrument and/or flight system entity of a separate, non-identical nature that is being proposed beyond the initially defined instrument and/or flight system entity (respectively) within the proposal.
- Q-25F** **Collaborating with a Federally Funded Research and Development Center (FFRDC) that requires government agreement to obtain Government Furnished Capabilities necessitates a different arrangement to a traditional subcontract. Will the evaluation panel penalize such an arrangement?**

A-25F No. The evaluation team assesses the plans to implement the proposed arrangement. Investigation teams should propose the arrangements that are best suited for the proposed investigations. For information, requirements, and evaluation criteria associated with partnerships please refer to the ESE AO, e.g., Sections 4.2.1, 5.3.4, 5.8.1, 7.2.4, Section G of Appendix B.

Q-26F Section 7.1.1 of the ESE AO states “..., before finalizing the evaluation, NASA will request clarification on specific, Potential Major Weaknesses (PMWs) in the Scientific Merit of the Proposed Investigation (see Section 7.2.2), Scientific Implementation Merit and Feasibility of the Proposed Investigation (see Section 7.2.3) and the TMC Feasibility of the Proposed Mission Implementation (see Section 7.2.4) that have been identified in the proposal.” Will the date that NASA is sending the PMWs to proposers be provided in advance?

A-26F Yes. An email containing the specific date that NASA is providing the PMWs will be sent to PIs at least 4 weeks in advance. This email will also have instructions and requirements applicable to the submission of the PMWs Clarification Responses.

ESE Draft AO Q&As

Q-1 Can science teams have more than one Deputy Principal Investigator?

A-1 Investigation Teams are free to propose the team composition that they deem most appropriate to complete the investigation as proposed. Please note that every team member must have a role that is necessary for the investigation and the necessity of that role must be justified.

Q-2 For an ESE investigation with a significant international contribution, can a second Deputy Principal Investigator be a non-U.S. person?

A-2 The appellation for a major Co-I from a non-US institution is Co-investigator/Institutional PI.

Q-3 In Requirement 39 of the draft ESE AO the word “demonstrate” implies additional explanation on the adequate resources for compliance with NASA-STD-1006A other than just showing that this effort is accounted for in cost, schedule, technical accommodation, etc. Is this the intent?

A-3 The intent is that the proposer shows that this effort is accounted for in cost, schedule, and technical accommodation when planning. Justifications and details are not necessary at this stage.

Q-4 Are the costs of recurring NASA Space Communications and Navigation (SCaN) Near Space Network (NSN) per-minute/per-pass and/or Deep Space Network (DSN) aperture fees a reduction to the Adjusted AO Cost Cap for ESE proposals?

A-4 Yes. The information in Section 5.2.5 will be updated in the final AO.

Q-5 How should the “numerated” reference list in Requirement B-69 be referenced in the proposal?

A-5 The list in the appendix must be enumerated; however, there is no AO requirement for the format of the references in the body of the proposal.

Q-6 The provided Science Traceability Matrix (STM) example (Table B1) in the draft ESE AO does not include Applications. Can Applications be included in the STM?

A-6 Yes. Investigation teams should feel free to modify the provided STM template to include Applications.

Q-7 Appendix J.11 of the draft ESE AO requires the Master Equipment List (MEL) to be included in the proposal; however, the Proposal Structure and Page Limits table in Appendix B states that the MEL page count is “None, spreadsheet only in augmented submission”. Please clarify.

A-7 The MEL will be required in the form of a table generated with Microsoft Excel in Appendix J.11 of the proposal and the Microsoft Excel file of the MEL will be required to be submitted with the augmented submission. Please note that a Microsoft Excel template of the MEL is available for download in the Program Library. The final ESE AO will be updated.

Q-8 Will the Earth System Explorer Medium Explorers (MIDEX) 2023 Announcement of Opportunity Launch Services Information Summary be updated with the final AO release?

A-8 The current version of the Earth System Explorer Medium Explorers (MIDEX) 2023 Announcement of Opportunity Launch Services Information Summary is available in the Program Library. Proposers are encouraged to check the Program Library often for potential updates.

Q-9 Will the “description of approach for acquiring and returning critical event data, including clear identification of procurement and costing for supplemental resources” as stated in the draft ESE AO Requirement B35 be required in Step 1?

A-9 No, the “description of approach for acquiring and returning critical event data, including clear identification of procurement and costing for supplemental resources” is being deferred until Step 2. The final AO will reflect this update.

- Q-10** The draft ESE AO states that the “Risk management/descope approach” is deferred to Step 2; however, Requirements 24, 56, and B-44 indicate that risk management should be addressed in the proposal and is part of the evaluation Factor C-4. Requirement 57 also refers to the risk management approach. Please clarify.
- A-10** The risk management approach discussion has been deferred to Step 2 as stated in page 2 of the draft ESE AO. A description of the risk management approach will not be required in the body of the proposal and therefore will not be part of the Step 1 evaluation. However, a Table defining the project risks will be required in the proposal as stated in Requirement 56 and B-44 and will be evaluated. A table of descopes will be required as stated in Requirement 57. Requirements 24, 56, 57 and B-44 will be updated in the final ESE AO to clarify what is required.
- Q-11** Section 7.4.6 of the draft ESE AO states, “Per NPR 7120.5F, at the end of Phase B, NASA will conduct an independent review of the investigation's readiness to proceed. This review must be completed before the project will be authorized to spend more than 25% of the agreed to Phase A/B fraction of the PI-Managed Mission Cost.” Please clarify.
- A-11** ~~Requirement 67 of the draft ESE AO states “No more than 25% of the PI-Managed Mission Cost shall be incurred prior to KDP C (Confirmation).” The language in Section 7.4.6 will be reconciled with Requirement 67 in the final ESE AO. Requirement 67 in the draft ESE AO that states “No more than 25% of the PI-Managed Mission Cost shall be incurred prior to KDP C ” will no longer apply. Please see the final ESE AO for changes [3/24/2023]~~
- Q-12** Section 5.8.4 of the draft ESE AO states: “If a proposer chooses to submit a classified appendix regarding heritage, the requirements on content, format, and length are the same as, but independent from, those for the unclassified appendix regarding heritage included in the proposal”. However, the table for “Proposal Structure and Page Limits” specifies 10 pages for classified materials and also specifies that the page count for Appendix J.12 is “less pages allocated to Classified Materials.” Please clarify.
- A-12** Section 5.8.4 of the draft ESE AO is correct. The table of “Proposal Structure and Page Limits” will be updated for the final ESE AO.

Q-13 Is NASA considering increasing the page counts for the final ESE AO?

A-13 NASA is not planning to increase the page count for ESE proposals at this time. The page count for Sections D-E and Sections F-G will remain the same. However, please be aware that an additional 2 pages each additional non-identical instrument and 2 pages each additional non-identical flight element are allowed.

Q-14 When will the Earth System Explorers (ESE) Mission Assurance Requirements (MAR) document be posted in the Program Library?

A-14 The current version of the Earth System Explorers (ESE) Mission Assurance Requirements (MAR) will be posted in the Program Library when available. For ESE, a new Program office has been established and the supporting documents are being developed and provided as quickly as possible. Proposers are encouraged to check the Program Library often for potential updates.

Q-15 Section 4.1.2 of the draft ESE AO states “The Earth System Explorers safety, reliability, and quality assurance requirements document, available in the Program Library, will apply to investigations that are selected for Phase A concept studies. Selected investigations that reside at institutions that have NASA-approved safety and mission assurance (S&MA) programs may use their own appropriate institutional practices in lieu of the guidelines and requirements in this document.” However, Requirement 37 states “No deviations from the requirements in the Earth System Explorers (ESE) Mission Assurance Requirements (MAR) document and in Appendix C of NPR 8705.4A for the payload class specified in Section 4.1.4 shall be proposed”. Please clarify.

A-15 Missions are expected to "meet the requirements for safety, reliability, and mission assurance in the Earth System Explorers (ESE) Mission Assurance Requirements (MAR) – Class C document." Also, tailoring below the ESE MAR shall not be proposed. However, proposals shall indicate any expected deviations from the recommended requirements, including using NASA approved institutional practices which meet the minimum requirements of the ESE MAR. The final ESE AO will be updated to address the inconsistency in the draft ESE AO.

Q-16 Appendix J.4 has been deleted in the draft ESE AO. Where in the proposal should proposers include the table of non-US participants as requested by Requirement 86?

A-16 Proposers should include the table of non-US participants as requested by Requirement 86 in Appendix J.5. The table of non-U.S. participation will not count against the page limit for Appendix J.5.

Q-17 Factor C.4 of the draft ESE AO states: "Also evaluated under this factor are the proposed project and schedule management tools to be used on the project." Will this be evaluated in Step 1?

A-17 No, the project and schedule management tools will not be assessed by the panel in Step 1. This language will be deleted for the final ESE AO.

Q-18 Does Section 5.2.11 Project Protection Plan of the draft ESE AO apply to investigations proposing spacecraft with no propulsion?

A-18 Yes, it does apply. ESE projects have now been determined to be Category 2 projects (per NPR 7120.5) with Class C payloads (per NPR 8705.4). Because of this change, investigations no longer fall under the suggested tailoring provided in NASA-STD-1006A for Category 3/Class C missions. The document "Frequently Asked Questions for Protecting SMD Spaceborne Assets, May 13, 2020" found in the Program Library under "NASA and Federal Documents" has been superseded by the release of NASA-STD-1006A and will be removed. Please see the Program Library under "NASA and Federal Documents" for the document "Frequently Asked Questions for Protecting SMD Spaceborne Assets, May 13, 2020." The second FAQ in the document states: "The requirement for command uplink encryption applies to missions with the following exceptions, however, all missions should ensure the integrity of their command link....

- ~~Class C or D spacecraft without a propulsion subsystem~~

~~.....Even missions falling under these exceptions should consider whether adding encryption would be prudent. While ensuring command integrity may not include encryption, there should, at a minimum, be a level of authentication included. For hosted payloads, in particular, these projects should maintain command authority up to the point where the commands are handed over to the host. All exceptions are subject to change at the discretion of senior leadership or if new threats arise."~~ **[Amended 12 May 2023]**

Q-19 Requirement B-6 in the AO requires a Microsoft Project Schedule file but Requirement B-41 calls for only a table of dates. Which is required?

A-19 Only a table of dates is required as described in Requirement B-41. Requirement B-6 will be amended accordingly in the final AO.

Q-20 Why did Attachment 1 of the ESE MIDEX 2023 AO Launch Services Information Summary not present the scenarios for all the available Launch Vehicles?

A-20 The ESE MIDEX 2023 AO Launch Services Information Summary (found in the Program Library) shows representative performance capabilities. At the appropriate time following mission selection, NASA Launch Services Program (LSP) will competitively select a launch service provider and award a launch service for the mission based on customer requirements. Due to the volatility of the launch services market, NASA cannot ensure which launch vehicles will be available at the time of the launch vehicle procurement. Accordingly, proposers are required to plan for compatibility with the enveloping launch vehicle characteristics and capabilities provided in the ESE MIDEX 2023 AO Launch Services Information Summary. Additional questions should be directed to the NASA LSP point of contact identified in the ESE MIDEX 2023 AO Launch Services Information Summary.

Q-21 What is the specific evaluation criteria weight (in percentage) of the applications dimension of a proposed investigation?

A-21 The application dimension of a proposed investigation will be evaluated within the 40% of Scientific Merit of the Proposed Investigation and the 30% Scientific Implementation Merit and Feasibility of the Proposed Investigation. No specific weights are assigned to either Research or Applications.

Q-22 The AO solicits complete spaceflight missions only. Can calibration, validation, verification efforts use in-situ or aircraft measurements?

A-22 Yes. It is up to the proposers to include a comprehensive calibration/validation plan in their proposals. The form or method of the cal/val efforts is not

prescribed and is expected to be different depending on mission concept and observable.

Q-23 Table 3.2 of the Decadal Survey lays out Earth Science/Applications Objectives with, for some, explicit accuracy, uncertainty, or coverage goals. Do those need to be fully met to be compliant with the AO?

A-23 The Decadal Survey provides guidelines for future missions. The numbers in Table. 3.2 are not binding and describe ideal goals. The overall Scientific Merit of each proposal will be evaluated.

Q-24 Where should letters of commitment be included in the proposal?

A-24 Letters of commitment must be included in Appendix J.2. Letters of commitment signed by an institutional official will be required from organizations offering contributions of goods and/or services on a no-exchange-of-funds basis, from the NASA network provider if Requirement 32 in the draft AO is applicable, and from all major partners in the proposal regardless of source of funding. The final AO will reflect this update.

Q-25 Requirement B-24 requires the identification of the appropriate NASA archive. This is inconsistent with the last paragraph on page 34 that says that NASA will assign the data center in phase B and that proposals should not be tailored to one specific DAAC. Please clarify.

A-25 Requirement B-24 has been modified, the DAAC will be assigned by NASA as explained in the main body of the AO.

Q-26 Section D lists 2 pages for the Science Enhancement Options, although they are deferred to Step-2. Are these 2 pages available in Step 1?

A-26 No.

Q-27 Will Appendix J.6 for Planetary Protection be required for ESE?

A-27 No, Planetary Protection is not required for ESE.

Q-28 How will the Bridge Phase work?

A-28 The draft ESE AO states "Each Phase A contract will be modified to include a priced option for a Bridge Phase, to be exercised upon investigations down-selected to proceed into Phase B. The five-month Bridge Phase period will be used to begin the negotiation of the remaining phases of the contract with the successful PI down-selected following Phase A."

Q-29 Should charges for phases B-F proposal work be included in the Phase A value and how will work be continued uninterrupted under the contract?

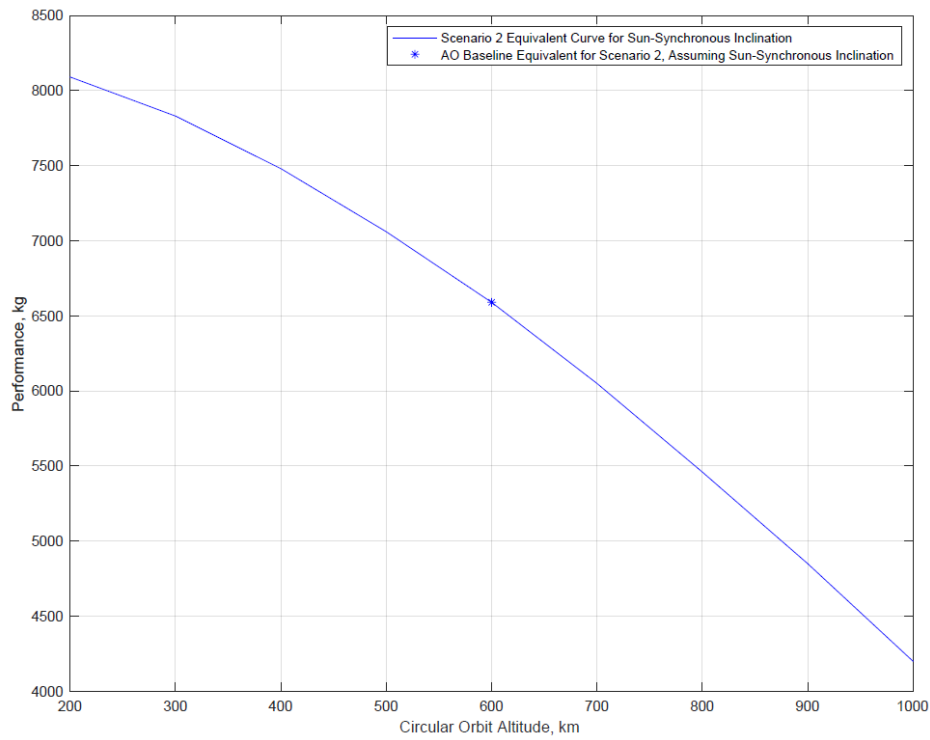
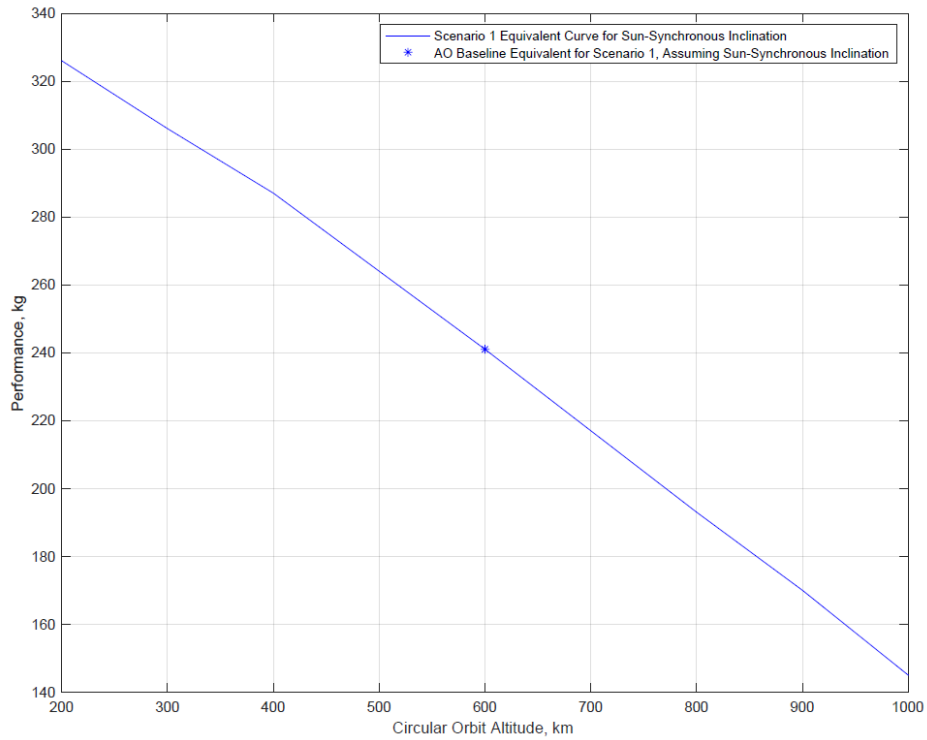
A-29 The draft ESE AO states "Each Phase A contract will be modified to include a priced option for a Bridge Phase, to be exercised upon investigations down-selected to proceed into Phase B. The Bridge Phase option will allow work to be continued uninterrupted under the contract after a Step-2 down-selection decision is made. The Bridge Phase is intended to cover a five-month period of Phase B effort to provide program continuity while negotiations are completed to modify the contract to include Phases B, C/D, and E/F. The Bridge Phase option will be exercised only on the contract for the mission(s) chosen during the Step-2 down-selection process to continue beyond the Phase A concept study. Additional phases will be added to the contract after each Phase has been approved through the program review process. The five-month Bridge Phase period will be used to begin the negotiation of the remaining phases of the contract with the successful PI down-selected following Phase A."

Q-30 Is there some flexibility for the proposed launch dates?

A-30 The LRDs for this AO have changed because of budgetary constraints. All proposals will be required to propose missions with an LRD of calendar year 2031. The second launch window will be calendar year 2033. A discussion of the impact of delaying to the second launch window will be required.

Q-31 Are sun-synchronous orbits available for each scenario and if so, can those curves be provided?

A-31 Yes.



- Q-32 What is the Project Category and Payload Class for ESE projects?**
- A-32 Earth System Explorers projects selected from this AO have been determined to be Category 2 projects (per NPR 7120.5) with Class C payloads (per NPR 8705.4). The final AO will be updated to reflect this change.
- Q-33 Are multiple launch opportunities available to ESE investigations that wish to propose constellations?**
- A-33 Multiple launch opportunities are not available. However, multi-spacecraft constellations are permitted under this AO, so long as they remain within the envelope of a single launch vehicle.
- Q-34 Requirement 83 of the Draft ESE AO states, “Foreign contributions to science instruments should not exceed approximately one-third (1/3) of the science payload. Proposals shall include a discussion of the scale of the internationally-contributed instruments, how the proposed contribution is consistent with SMD’s policy that the contribution does not exceed approximately one-third of the science payload, and how the programmatic risks associated with the contribution will be handled.” How is the one-third of the science payload calculated?**
- A-34 The language stated Requirement 83 of the Draft ESE AO will be updated in the final ESE AO: The size and nature of contributions will be considered during the selection process. For size, NASA expects contributions to be a minority of the project element costs, with the total value of all contributions not exceeding 1/3 of the PIMMC. Within that constraint, it is further expected that contributions to lower-level project elements will be of a similar scale, for example with contributions to the science team being no more than approximately 1/3 of the PI-managed cost of WBS 4, and contributions to the instrument complement being no more than approximately 1/3 of the PI-managed cost of WBS 5. Regardless of the scale of non-SMD contributions, NASA considers potential over-reliance on contributions to be a programmatic factor in selection along with those discussed in Section 7.3.

Q-35 Section 5.2.5 of the draft ESE AO states “NASA intends to transition all space missions to the use of Ka-band for science data return”; however, there is no requirement associated with Ka-band usage. Are proposals to account for the transition to Ka-band in the development cost under the PIMMC? Can you provide the date and costs?

A-35 Investigation teams must propose the approach for science data return that is most appropriate to accomplish the objectives of the proposed investigation. Nevertheless, proposed investigations are highly encouraged to baseline the use of Ka-band for science data return, unless it is inappropriate. The proposal does not have to include any costs of transition to Ka-band after selection.