



2016 Heliophysics Small Explorer (SMEX) & Mission of Opportunity (MO) Solicitations

Pre-Proposal Conference

Overview of the Evaluation, Categorization and Selection Process

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August 15, 2016



Solicitation Components



NASA Announcement of Opportunity (AO)

NNH16ZDA0050

Heliophysics
Small Explorers
(H-SMEX)

NNH12ZDA0060

Stand Alone Missions Of
Opportunity Notice #2
(SALMON-2)

Program Element
Appendix Q (PEA-Q):
Heliophysics Explorers Mission
Of Opportunity

Small Complete
Missions (SCM)

Partner Missions of
Opportunity (PMO)

1. ISS
2. Hosted Payload
3. CubeSat

- Sub-orbital Class
1. Balloon
 2. Suborbital Reusable Launch Vehicle

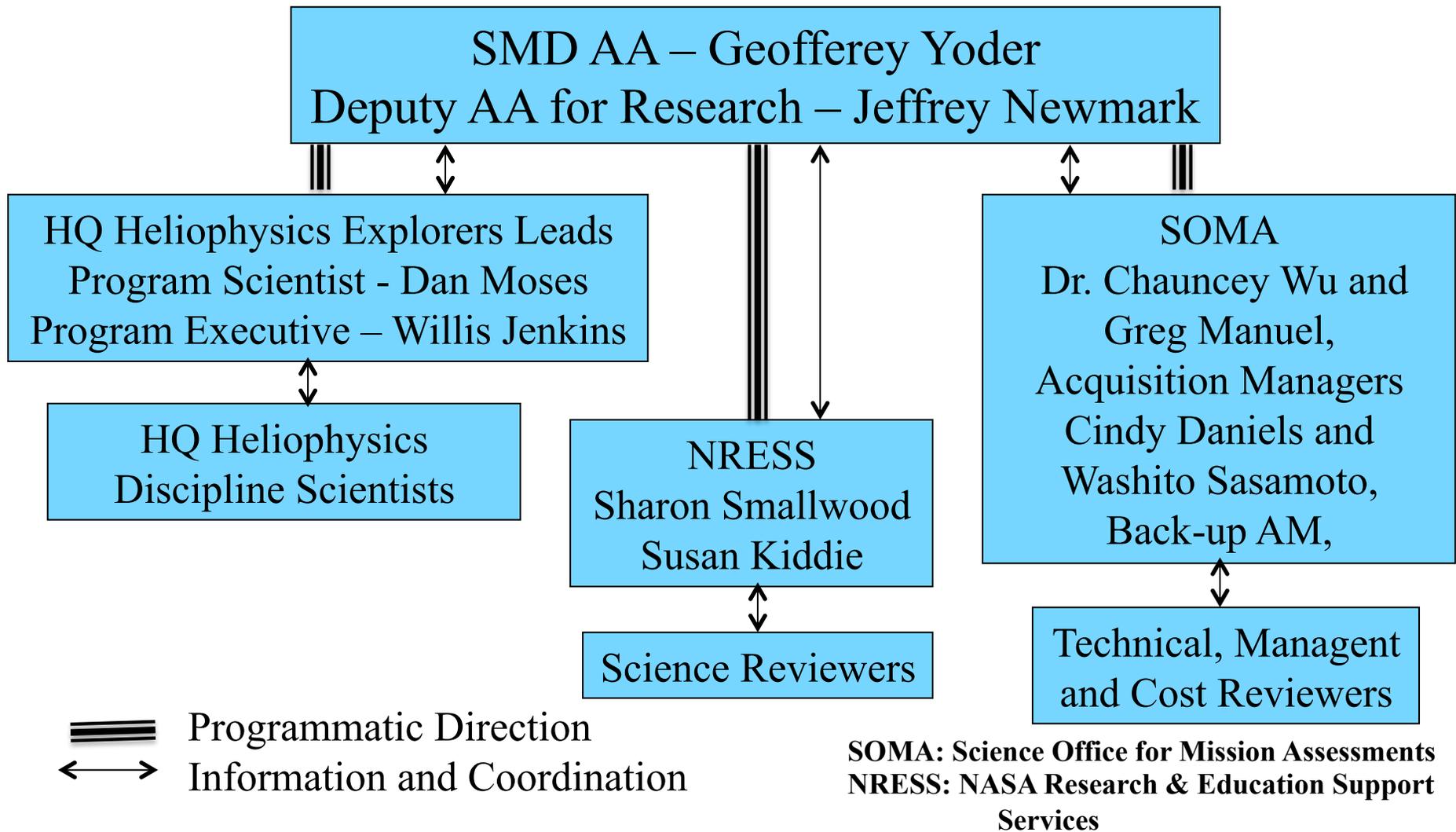
NASA Research Announcement (NRA)

ROSES-16
Appendix B.10

Heliophysics US
Participating Investigator
(H-USPI)



2016 Heliophysics Explorer Team





Science Office for Mission Assessments Background

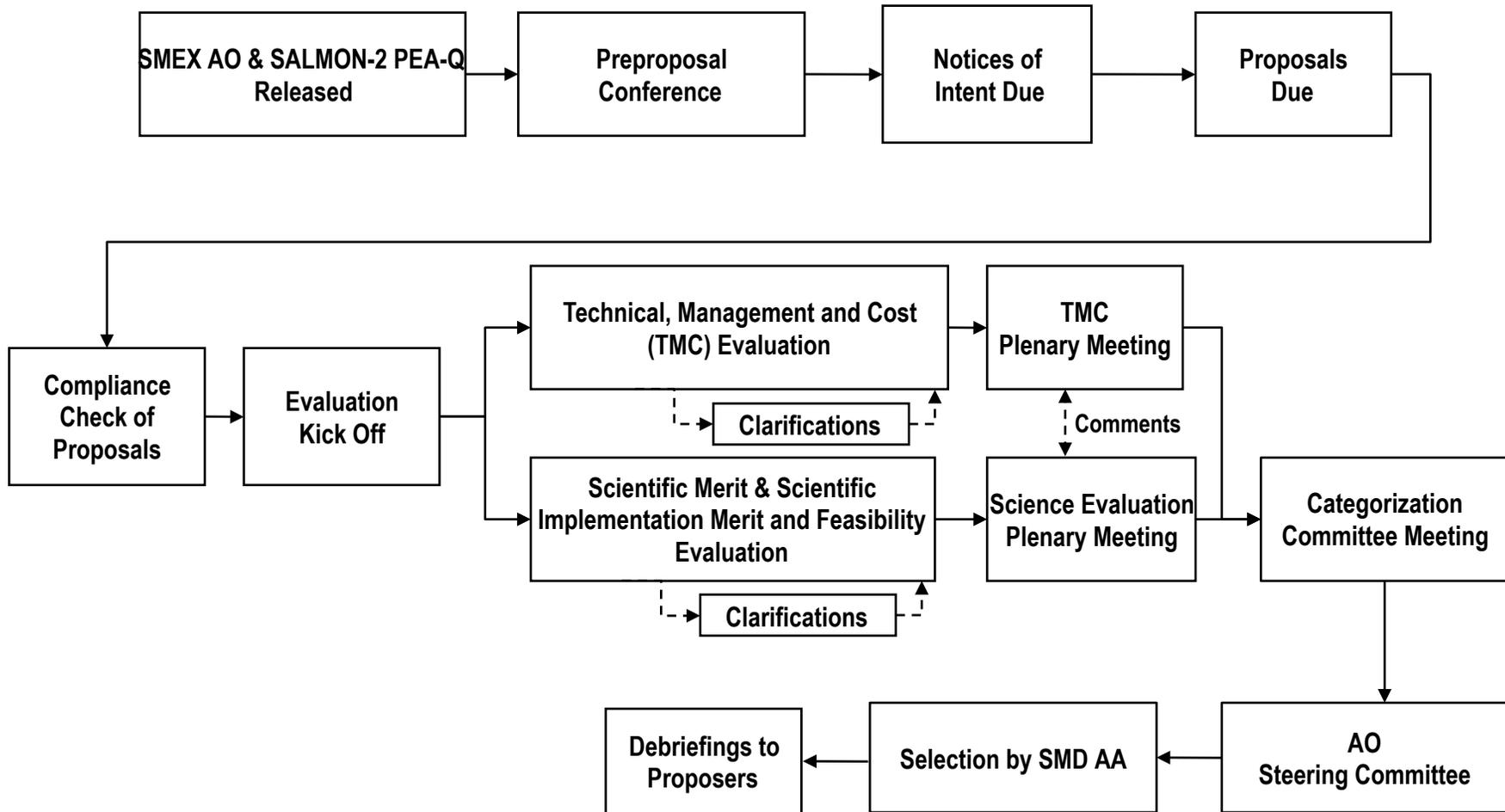


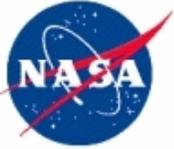
SOMA

- The NASA Science Mission Directorate (SMD) Science Office for Mission Assessments (SOMA) was established in 1996 to support the Discovery and Explorer Programs, the office now supports also the New Frontiers, Mars Scout, Earth System Science Pathfinder (ESSP), and others.
- The TMC process is a standard process used by SOMA to support all SMD evaluations. Lessons learned from each evaluation are incorporated into the process for continuous improvement.



Evaluation, Categorization, and Selection Process





Heliophysics SMEX Requirements



- **2016 Heliophysics SMEX AO is based on the SMD Standard AO template.**
- **Requirements** are identified, numbered, and specific.
 - There are 97 requirements in the 2016 H-SMEX AO main body
 - When Sections do not levy requirements they do not have numbered requirements.
- **Evaluation Factors** are identified, numbered, and specific.
 - 4 for Science Merit
 - 5 for Scientific Implementation Merit and Feasibility (6 if SEO is included)
 - 5 for Technical, Management, and Cost (TMC) Feasibility
- Appendix B has numbered requirements on **Proposal Preparation**
 - There are 65 specific requirements for the format and content of Step1 proposals [more altogether as some Appendix B requirements have more than one part]



Heliophysics MO Requirements



- **2016 MO PEA-Q is an appendix to the SALMON-2 AO.**
 - Two documents with requirements
- **Requirements are as given in SALMON-2, as amended by PEA-Q.**
 - Although the SALMON-2 is not yet based on the standard AO template, the intent has been to standardize the two solicitations such that requirements are the same for the SMEX AO and MO PEA-Q.
- **Evaluation Factors** are identified, numbered, and specific.
 - 4 for Science Merit
 - 5 for Scientific Implementation Merit and Feasibility (6 if SEO is included)
 - 5 for Technical, Management, and Cost (TMC) Feasibility
- SALMON-2 Appendix B has requirements on **Proposal Preparation**, and are amended by PEA-Q



Heliophysics MO PEA-Q



In the event of an apparent conflict between the guidelines in the PEA-Q and SALMON-2, the order of precedence is:

1. the PEA-Q,
2. then the SALMON-2 AO,
3. then SALMON-2 Appendix B,
4. then SALMON-2 Appendix A.



Evaluation, Categorization, and Selection Process



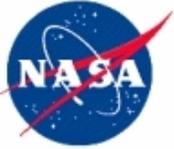
- The 2016 Heliophysics SMEX and MO investigations will be evaluated and selected through a two-step competitive process.
- Step 1 is the solicitation, submission, evaluation, and selection of proposals prepared in response to this AO.
- As the outcome of Step 1, NASA intends to fund up to two Step-1 H-SMEX proposals and one or more H-MO proposals to proceed to a Phase A concept study and submit Concept Study Reports to NASA.
- Step 2 is the preparation, submission, evaluation, and continuation decision (downselection) of the Concept Study Reports.
- As the outcome of Step 2, NASA intends to select one SMEX investigation and one or more MO investigations to proceed into Phase B and subsequent mission phases.



Evaluation, Categorization, and Selection Process



- All proposals will be initially screened to determine their compliance to requirements and constraints of the applicable AO
- Compliant proposals will be evaluated against the criteria specified in Section 7.2 of the SMEX AO and SALMON-2 AO by panels of individuals who are peers of the proposers.
- H-SMEX and H-MO Proposals will be evaluated by more than one panel (e.g., a science panel and a technical/management/cost panel); the panels evaluate proposals against different criteria.
- These panels may be augmented through the solicitation of non-panel (mail in) reviews, which the panels have the right to accept in whole or in part, or to reject.
- During the evaluation and selection process, NASA may request clarification of specific points in a proposal.
- Before finalizing the evaluation of the feasibility of the mission implementation, NASA will request clarification on all potential major weaknesses in the feasibility of mission implementation that have been identified in the proposal.



Evaluation



Evaluation Criteria



1. Science Merit of the Proposed Investigation
2. Science Implementation Merit and Feasibility of the Proposed Investigation
3. TMC Feasibility of the Proposed Mission Implementation, Including Cost Risk

Weighting:

Criterion #1 is weighted \approx 40%;

Criteria #2 and #3 are weighted \approx 30% each.



Evaluation Criteria



The numbering of the sections stating evaluation criteria is the same for both the H-SMEX AO and the SALMON-2 AO

1. Science Merit evaluation criteria are stated in the AO Sections 7.2.2
2. Science Implementation evaluation criteria are stated in the AO Sections 7.2.3
3. TMC evaluation criteria are stated in the AO Sections 7.2.4:

Note: The 2016 Heliophysics Explorer Mission of Opportunity (MO) solicitation is Program Element Appendix (PEA) Q to the SALMON-2 AO.

Those proposing to the Heliophysics MO must read both the SALMON-2 AO and the Heliophysics MO PEA Q carefully, and proposals must comply with the requirements, constraints, and guidelines contained within both of these documents.



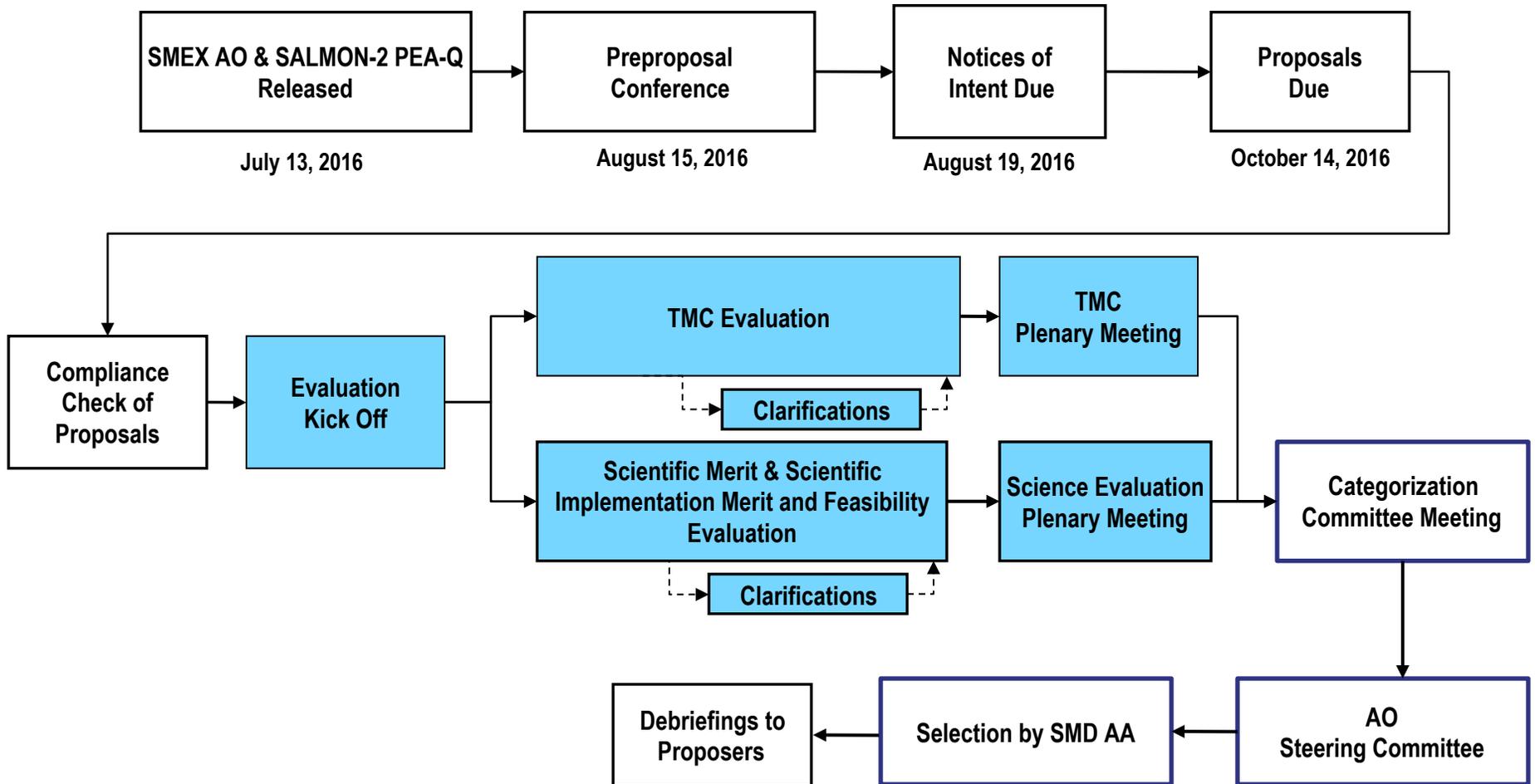
Student Collaboration



- Proposals may define a Student Collaboration (SC) that is a separate part of the proposed investigation; see Requirements 49 and 50 in the 2016 Heliophysics SMEX AO Section 5.5.3.
- Per the 2016 Heliophysics SMEX AO section 7.2.3, Student Collaboration proposals, if any, will be evaluated only for the impact they have on science implementation feasibility to the extent that they are not separable; student collaboration proposals will not be penalized in Step 1 for any inherent higher cost, schedule, or technical risk, as long as the student collaboration is shown to be clearly separable from the implementation of the Baseline Mission. The intrinsic merit of student collaborations will not be evaluated at this time.



Proposal Evaluation Flow





Evaluation Clarifications



- **NASA will request clarification of Potential Major Weaknesses (PMWs) that have been identified by the evaluation panels**

1. TMC Feasibility of the Proposed Mission/Investigation Implementation and
2. Scientific Implementation Merit and Investigation Feasibility .

- **The form of the clarifications is strictly limited to a few types of responses:**

1. Identification of the locations in the proposal (page(s), section(s), line(s)) where the potential major weakness is addressed
2. Noting that the potential major weakness is not addressed in the proposal.
3. Stating that the potential major weakness is invalidated by information that is common knowledge and is therefore not included in the proposal.
4. Stating that the analysis leading to the potential major weakness is incorrect and identifying a place in the proposal where data supporting a correct analysis may be found.
5. Stating that a typographical error appears in the proposal and that the correct data is available elsewhere inside or outside of the proposal.

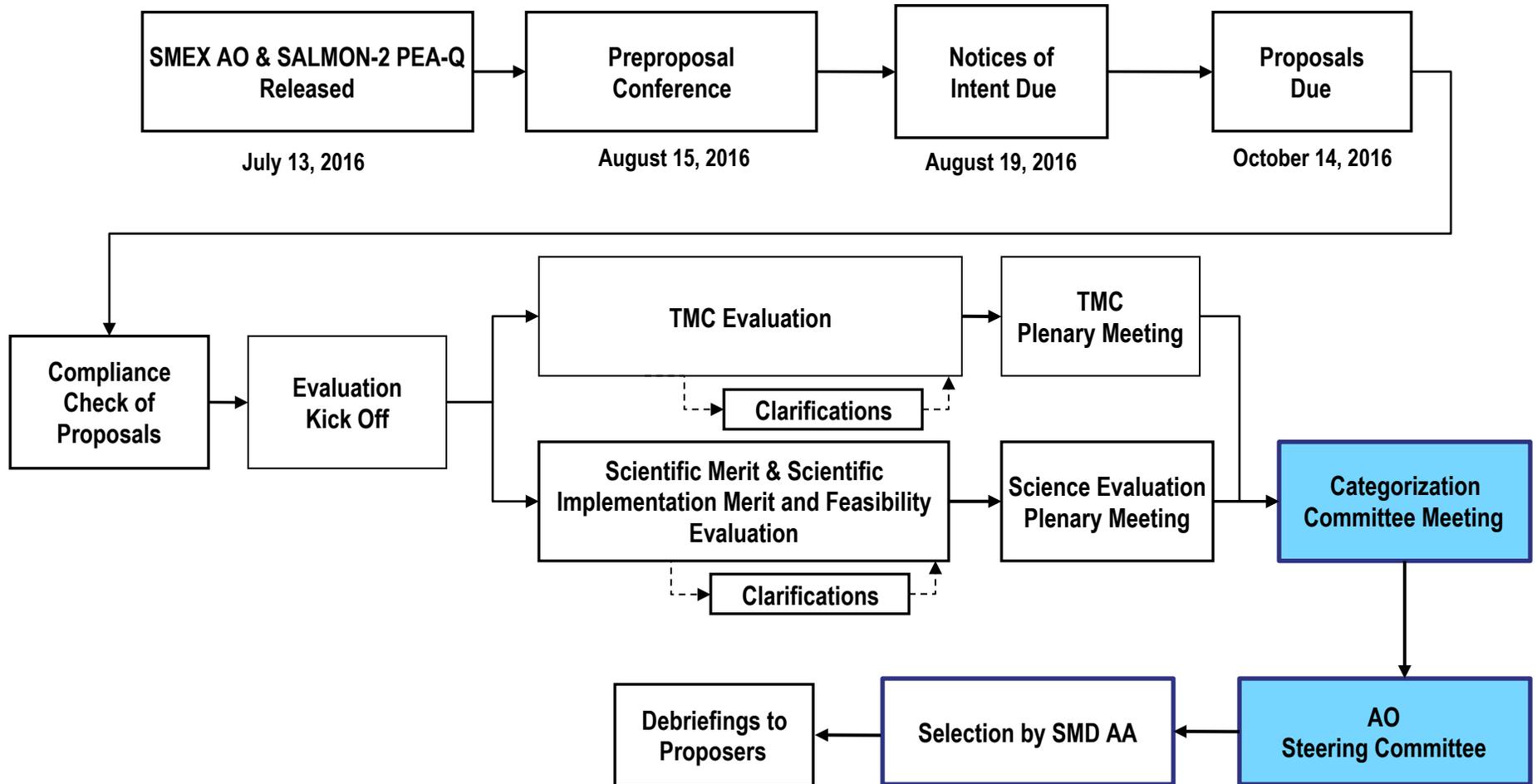
The PI will be given at least 24 hours to respond to the request for clarification. Any response that goes beyond a clarification will be deleted and will not be shown to the evaluation panel.



Categoryzation



Evaluation, Categorization, and Selection Process





Categorization



Upon completion of the evaluations, the results will be presented to the Categorization Committee, an *ad hoc* subcommittee of the SMD AO Steering Committee composed solely of Civil Servants and appointed by the SMD Associate Administrator.

This committee will consider the peer review results and, based on the evaluations, will categorize each proposal according to procedures required by NFS 1872.403-1(e). The categories are defined as:

- Category I. Well-conceived and scientifically and technically sound investigations pertinent to the goals of the program and the AO's objectives and offered by a competent investigator from an institution capable of supplying the necessary support to ensure that any essential flight hardware or other support can be delivered on time and data that can be properly reduced, analyzed, interpreted, and published in a reasonable time. Investigations in Category I are recommended for acceptance and normally will be displaced only by other Category I investigations.



Categorization (2)



- Category II. Well-conceived and scientifically or technically sound investigations which are recommended for acceptance, but at a lower priority than Category I.
- Category III. Scientifically or technically sound investigations, which require further development. Category III investigations may be funded for development and may be reconsidered at a later time for the same or other opportunities.
- Category IV. Proposed investigations which are recommended for rejection for the particular opportunity under consideration, whatever the reason.



Evaluation Process Conclusion



- Once Categorization has been completed, the Evaluation is considered complete unless questioned by a subsequent Steering Committee review.
- The AO Steering Committee will conduct an independent assessment of the Evaluation and Categorization processes regarding their compliance to established policies and practices, as well as the completeness, self-consistency, and adequacy of all supporting materials.



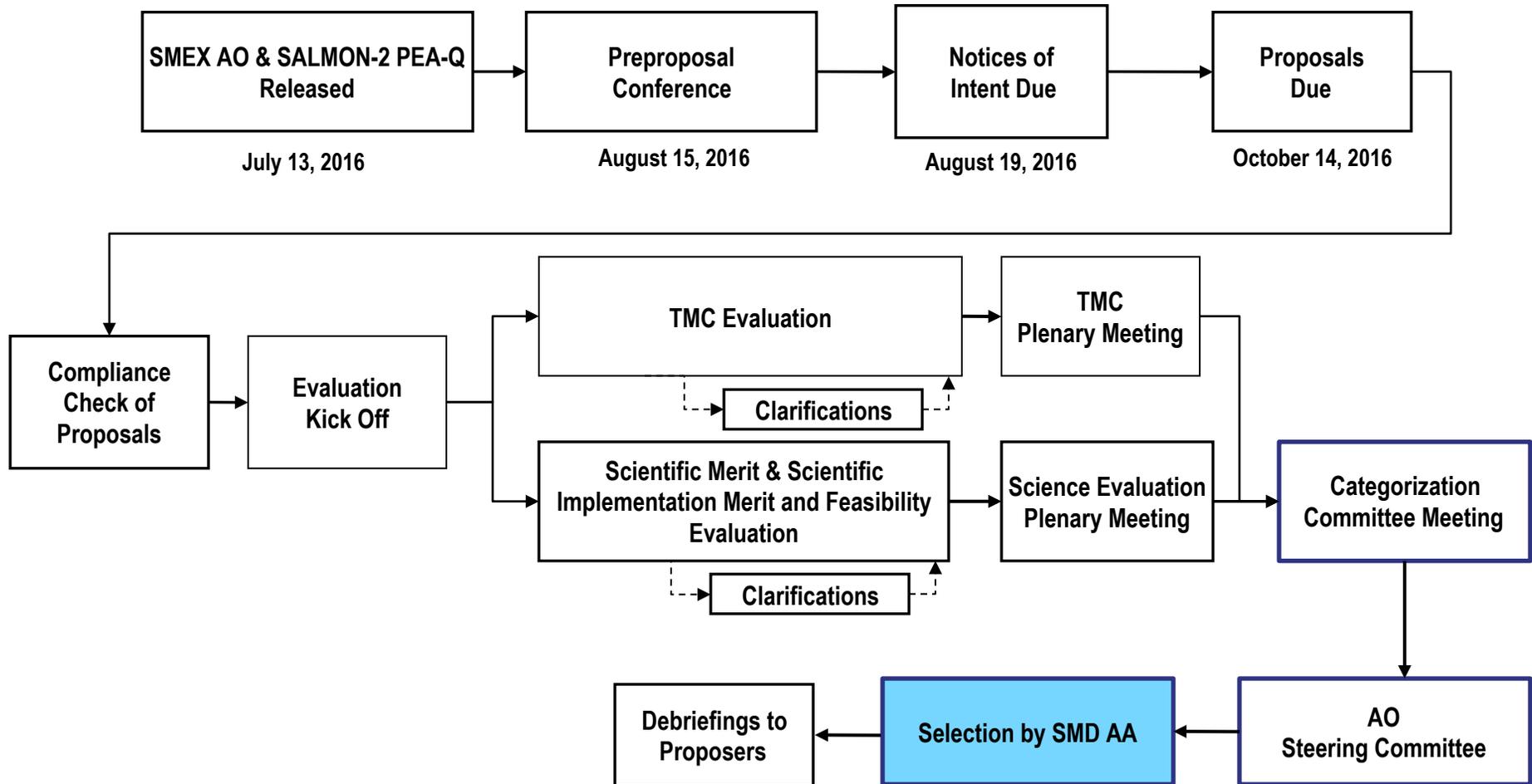
Selection



Evaluation, Categorization, and Selection Process



Proposal Evaluation Flow





Selection Factors



- As stated in Section 7.3 of the AO, the Selection Official may take into account a wide range of programmatic factors in deciding whether or not to select any proposals and in selecting among selectable proposals, including, but not limited to, planning and policy considerations, available funding, programmatic merit and risk of any proposed partnerships, and maintaining a programmatic balance across the mission directorate(s).



References



SMEX and MO Reference Material



2016 Heliophysics SMEX and MO Acquisition Page

The 2016 Heliophysics Explorer SMEX and MO acquisition home page is available at <http://explorers.larc.nasa.gov/HPSMEX/>

The contents of the web site include the following:

- Links to SMEX and MO pages
- 2016 Heliophysics SMEX and MO major milestones
- Community announcements
- FBO
- Teaming interest
- Preproposal conference



SMEX Reference Material



2016 Heliophysics SMEX Acquisition Home Page

The 2016 Heliophysics SMEX Acquisition Home Page available at <http://explorers.larc.nasa.gov/HPSMEX/SMEX/index.html>, will provide updates and any addenda during the solicitation process. The contents of the SMEX acquisition page include the following:

- Links to the NSPIRES for access to the solicitation
- Program library
- Evaluation plan
- Q&A

2016 Heliophysics SMEX Program Library

The Library provides additional regulations, policies, and background information. The Library is accessible at <http://explorers.larc.nasa.gov/HPSMEX/SMEX/programlibrary.html>



MO Reference Material



2016 Heliophysics Explorer MO Acquisition Home Page

The 2016 Heliophysics Explorer AO Acquisition Home Page available at <http://explorers.larc.nasa.gov/HPSMEX/MO/index.html>, will provide updates and any addenda during the solicitation process. The contents of the Heliophysics Explorer MO acquisition page include the following:

- Links to the NSPIRES for access to the solicitation
- Program library
- Evaluation plan
- Q&A

2016 Heliophysics Explorer MO Program Library

The Library provides additional regulations, policies, and background information. The Library is accessible at <http://explorers.larc.nasa.gov/HPSMEX/MO/programlibrary.html>

- Use Table B3b template in the program library to develop cost funding profile.



Questions?



**All further questions pertaining to the SMEX AO or PEA-Q
MUST
be addressed to:**

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Washington, DC 20546
hq-explorers@nasa.gov
(subject line to read “SMEX AO” or “PEA-Q”, as applicable)
202.358.0558**