PROGRAM ELEMENT APPENDIX (PEA) J
SMALL INNOVATIVE MISSIONS FOR PLANETARY EXPLORATION (SIMPLEx)
NNH17ZDA004O

Summary of Major Changes from draft PEA J to Final PEA J With Amendment 1

Note: New text is in in Bold Font. These are the major changes, but there are other changes in the document. Proposers should be sure to read the final version carefully as not all differences are highlighted in this document.

1) Inserted the following to Section 1.1 and added Section 3.1 to require Notices of Intent (NOIs)

   Section 1.1:
   This program requires a Notice of Intent (NOI). Proposals that are not preceded by the mandatory NOI may be returned without review. No feedback will be provided in response to the NOI.

   Section 3.1 Proposal Submission Requirement: Mandatory NOIs
   To facilitate the early recruitment of a conflict-free review panel an NOI will be required for all submissions to this program element. Proposals that are not preceded by an NOI may be returned without review.

   The PI cannot be changed and proposers who want to add funded investigators between the NOI and the proposal submission must inform the point(s) of contact identified in the summary table of key information and cc sara@nasa.gov at least two weeks in advance of proposal submission. Additions of funded investigators within two weeks of the proposal submission require explicit permission from the NASA point of contact. Submission of an NOI does not obligate the proposer to submit a full proposal later.

2) Lucy opportunity was originally removed from launch opportunities list in Table A-1 in the final release of the PEA, because of schedule constraints. However, it has been reinstarated in the Amendment 1 of the PEA. Lucy trajectory information has been included in Appendix A.

3) Inserted the following to Sections 1.2 and 4.6.2.1 and added a row to Table A-1 in the appendix to address the lunar opportunities.

Section 1.2:
As part of NASA's Lunar Discovery and Exploration Program, proposals are also sought for CubeSat missions to be launched with expected commercial missions to the surface of Earth's moon. These secondary payloads launched with commercial lunar missions will be evaluated and funded separately from other proposed missions, and must address either lunar science or human exploration objectives.

Section 4.6.2.1
NASA anticipates that there will be regular flight opportunities to the Moon including both Space Launch System Exploration Mission (EM-x) and commercial launches. Details for these flight opportunities will be included in an amendment to Appendix A of this PEA as they become available.

Table A-1:
Added a new line to Table A-1 for opportunities on lunar missions.

4) Inserted the following text in Section 4.6.2.1 to address uncertainty of LEO/GTO launch opportunities:

Proposers may describe specific LEO or GTO launch opportunities if they know of them, but NASA may not be able to procure space on those particular launches. Proposers are encouraged to include a description of the trajectory needed for the proposed mission, and the robustness of the proposed mission to a variety of launch opportunities.

5) The Bold text below has been added to Section 6.1 to emphasize that not all proposals will be evaluated by the TMC panel and will not be categorized.

Proposals will be evaluated according to the evaluation criteria set forth in Section 7.2 of the SALMON-3 AO with the following exception: **although** all proposals will be reviewed by a science panel, **NASA may send only a subset of the proposals for review by the TMC panel after the science panel review, based on their science scores. Therefore, proposals that do not get evaluated by the TMC panel will not be categorized, and the PIs of those proposals will not receive feedback about the TMC strengths and weaknesses of the proposal.** The evaluation process will be as described in Section 7.1.1 of the SALMON-3 AO. As part of that process, NASA may request clarifications on potential major weaknesses in both the Intrinsic Science, Exploration, or

Technology Merit of the Proposed Investigation and the Experiment Science, Exploration, or Technology Implementation Merit of the Proposed Investigation.

6) The modifier "nominally" has been added to CubeSat mass limitations in Section 1.1 to point out that masses limitation listed are not hard requirements. Additionally, 3Ux4U CubeSat configuration has been added.

   Allowable configurations include 1U, 2U, 3U (**nominally** 4kg), 6U (2Ux3U) (up to **nominally** 12 kg) and 12U (2Ux6U, **3Ux4U**, or 1x12U) (up to **nominally** 24 kg) satellites.

7) The highlighted text below has been added to Section 1.1 to allow ESPA Grande and Propulsive ESPA.

   The dimensions of an ESPA-Class SmallSat must be no larger than 61x71x97 cm. **For launch opportunities that allow an ESPA Grande or Propulsive ESPA ring (See Table A-1), the volume constraints are 106x116x96 cm. For all three ESPA cases**, the total wet mass **of the proposed** SmallSat must not exceed 180 kg.

8) The following paragraph has been added to Section 2.4.1 to highlight new SMD policy for Class D missions.

   NASA's Science Mission Directorate has defined a new approach to managing Class-D science missions. This new approach, effective 1-January-2018, described in *NASA Science Mission (SMD) Class-D Tailoring/Streamlining Decision Memorandum*, was approved by SMD leadership to guide the implementation of Class-D missions. This document, along with other Class-D policy and guideline documents can all be found in the Program Library.

9) Changes to Section 4.1, Eligibility to Propose

For this particular PEA, only U.S. organizations are eligible to propose as the sole or lead organization. Non-U.S. organizations may participate as non-lead organizations collaborating with U.S. leads, under the rules described in Section 4.5.5 of this PEA and Section 5.8 of the SALMON-3 AO.

For this PEA, NASA will place full or partial limitations (as described in the SALMON-3 AO) on organizations that will be involved in the evaluation process. Cornell Technical Services LLC (CTS) **and Arctic Slope Regional Corporation (ASRC) and all of its subsidiaries and affiliates, are** subject to the "Full Limitation" as described in Section 4.2.1 of the SALMON-3 AO.

10) Section 4.5.5 was modified to change the amount of allowable non-U.S. contributions.

the sum of non-U.S. contributions of any kind to the entirety of the investigation is not to exceed one-half (1/2) of the proposed **Total Mission Cost.** Such contributions will not be counted against the PI-Managed Mission Cost, but they must be included in the calculation and discussion of the Total Mission Cost.

11) Added text in Section 4.6.4 to allow propulsion systems as the only source of explosive material.

With the exception of propulsion systems, SmallSat investigations that utilize explosive devices will not be considered.

12) Added requirement J-19 to allow 20 pages for Appendices F and G (Investigation or Mission Implementation and Management Sections).

<u>Requirement J-19.</u> Proposals shall conform to the page limits specified in the *Proposal Structure and Page Limits* table of the SALMON-3 AO, except up to 20 pages are allowed in the *Investigation or Mission Implementation and Management* Sections F and G.

13) Added trajectory information for the Psyche launch opportunity at the end of Appendix A in the final release of the PEA, and added trajectory information for the Lucy Launch opportunity at the end of Appendix A through Amendment 1 of the PEA.