Response to comments submitted in response to the Draft Second Stand Alone Mission of Opportunity Notice (SALMON-2) Announcement of Opportunity (AO) (NNH11ZDA017J). Identification of typos and other simple errors (like incorrect cross references) is not included in this table.

General questions regarding the SALMON-2 AO may be addressed to Dr. Paul Hertz, Chief Scientist, Science Mission Directorate, NASA, Washington, DC 20546; Telephone: 202-358-0986; Email: paul.hertz@nasa.gov.

	Comment	**NASA Response**
	Note: references in this column are to the numbering of sections and requirements in the Draft SALMON-2 AO.	*Note: references in this column are to the numbering of sections and requirements in the final SALMON-2 AO.*
1	We recognize that the SALMON-2 constitutes a superset of possible requirements for PEAs solicited through the SALMON-2 AO process. We look forward to seeing the tailoring of these requirements for each opportunity in order for the effort involved to be appropriate to the scale of the specific opportunity, and consequently we recommend that draft PEAs be released to the community to allow for community recommendations to feed back into the AO process. Such a feedback cycle would provide NASA with valuable information that could make the AO process smoother for all parties involved. To provide a concrete example, if the entire SALMON-2 set of requirements is applied in full force to small-scale opportunities, such as the Venture Odd missions, there appears to be a large outlay of required effort to meet all of the AO requirements which appears to be inappropriate for the award value of such a small AO.	It is SMD policy to release PEAs in draft form for community comment before they are finalized. An example of this is the Draft Earth Venture Instrument-1 PEA, which was released for community comment on September 29, 2011. The other mission directorates recognize the value of doing so as well. Note that Earth Venture Odd missions, due to their suborbital nature, are not solicited through SALMON; rather they are solicited through ROSES. So the full set of SALMON-2 requirements are not applicable to Earth Venture Odd proposals; only those requirements found in ROSES (and in the Earth Venture Odd program element) are applicable.
2	What is the difference between the science disciplines of astrobiology and space biology? Assumedly, neither is the discipline of space life sciences, which addresses human life and medicine in space.	Each PEA will specify the scope for that solicitation, include science scope. Part of that PEA-specific specification is to define the science disciplines that are being solicited. Generally SMD solicits proposals in astrobiology, and HEOMD solicits proposals in space biology and space life sciences.

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3	Is it correct to understand that participation on a partner mission is not possible unless a Partner Mission of Opportunity PEA is released? How might a U. S. investigator participate in a partner[1]s mission if a corresponding PEA is not released?	NASA only solicits proposals for PMOs when an applicable PEA is released. Generally (a) NASA releases PEAs when there is sufficient budget to select a PMO and (b) PEAs are released frequently enough that PMO opportunities are not missed. If there is no applicable PEA planned, then an unsolicited proposal may be submitted. However an unsolicited proposal for a PMO cannot be selected unless there is uncommitted funding available to finance the PMO.
4	The narrative text is often redundant with an associated explicit Requirement. For example, on Page 18, §5.1.2, it says: "For the purpose of this AO, a PEA may solicit New Missions using Existing Spacecraft (NMESs), defined as an investigation making use of a NASA spacecraft or other working space asset to conduct an investigation that is not a continuation of the spacecraft's original mission." Just below, Requirement 6 repeats that information and actually elaborates on it. The AO would be shorter and more easily digestible if the redundant narrative was deleted.	A slightly longer AO is considered to be an acceptable price to pay for increased clarity of policies and requirements.
5	Consider eliminating items from the AO that are likely to be explicitly set by the PEAs. There are many examples of this, such as §6.1.1 on page 44 that talks about a pre-proposal conference that might not occur, depending on the PEA.	The philosophy of SALMON-2 is to include those policies, practices, and requirements that are highly likely to be adopted by moist, if not all, PEAs. The goal is to make PEAS as short as possible and to minimize the boilerplate text that all PEAs would have to include. A preproposal conference is a good example. Although it is possible for a mission directorate to not have a pre-proposal conference regarding a PEA, it is highly unlikely. Therefore this text remains in SALMON-2. We have added a new Appendix G.2 that lists all of the requirement explicitly called out in SALMON-2 for specification in the applicable PEA.

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6	Consider deleting Appendix B (Requirements for Proposal Preparation) in its entirety. This is all material that should appear in individual PEA's. Having overlap between documents will only lead to ambiguity, e.g.: §6.2.1 on page 46 is self-contradictory. There's a prose paragraph saying "follow the format in Appendix B, unless modified by the PEA," followed by a requirement saying "Thou shalt follow the format in Appendix B." Eliminating Appendix B from the AO, and having one in each PEA will resolve this inconsistency.	The philosophy of SALMON-2 is to include those policies, practices, and requirements that are highly likely to be adopted by moist, if not all, PEAs. The goal is to make PEAS as short as possible and to minimize the boilerplate text that all PEAs would have to include. We have tried to develop Appendix B so that no tailoring will be needed in the PEA. Since close to 100% of Appendix B would be repeated ver batim for every PEA, we have decided to leave it in SALMON-2.
7	If Appendix B remains as part of the AO rather than part of each PEA, consider numbering the requirements sequentially. For example, in the draft AO, requirement B-1 would become Requirement 95. Doing this avoids the occasional inadvertent confusion between requirements (such as Requirement 1 and Requirement B-1)	We hope that most proposers will not be confused inadvertently by this numbering scheme. We also note that PEAs will have numbered requirements that, again, start with Requirement J-1 (e.g., for the PEA that is in Appendix J, see the Draft Earth Venture Instrument-1 PEA for an example). This suggestion has not been adopted.
8	In some places the AO refers to a PM, in others to an IPM. The former presumably applies to SCMs, while the latter applies to other types of MOs. This should be made explicit and consistent.	This is a historical artifact that has been eliminated. All references to IPM (instrument project manager), as well as IS (instrument scientist) and ISE (instrument system engineer), have been deleted.
9	CSRs are mentioned in several places in the AO. Substitute with "Phase A"?	All references to competitive concept study reports have been eliminated (we think).
10	It might be a benefit to the uninitiated to add a note in the 1st paragraph of the Foreword that says that this AO is not, itself, a solicitation, and that actual solicitations can be found in the PEAs	Text has been added to state this(Foreword).
11	The text states that the entire process – from the release of a Program Element Appendix (PEA) as an amendment to this standing Announcement of Opportunity (AO) to procurement negotiation and award – is anticipated to take no more than nine months. This does not seem realistic.	The text has been changed to state that the nine months is from PEA release to selection announcement (Foreword, Section 1.1, Section 3).
12	It would be useful if the SALMON solicitation explicitly called out demonstration flights of new technologies as a specific goal. Add: including reduction of the risks associated with flying new technology on future missions by flight demonstration of components and technologies on existing missions.	The text has been modified to add this goal (Section 2.2).

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13	Section 5.1 is not a requirement or a constraint. Consider moving it to Section 4.	The definitions of the categories of missions of opportunity have been moved to Section 2.3.
14	It would be extremely helpful if PEAs specified if any funding was actually available for proposals deemed to be Cat III.	Text has been added to state that each PEA will specify the funding available for selected investigations, including whether there is any funding available for Category III proposals (Section 2.4, Appendix G.2).
15	What is meant by the term ³Single Step² in the title of Section 5.3.1?	Section 2.5 has been added to define the single step as the solicitation, submission, evaluation, and selection of proposals prepared in response to this AO and the applicable PEA.
16	Can the fact that opportunities issued under SALMON-2 are all single step selections be noted at the very beginning of the document? This doesn't come up until page 22 in the draft (5.3.1 Commitment for a Single Step Selection)	Section 2.5 has been added to define the single step as the solicitation, submission, evaluation, and selection of proposals prepared in response to this AO and the applicable PEA.
17	The first two requirements appear prior to the Requirements and Constraints Section and should be moved to that section.	Although requirements regarding proposal content appear in Section 5, requirements regarding proposal submission remain in Section 3 and Section 6.2.
18	Can we partner with some Universities? Can other NASA Centers participate in our team?	Text has been added to clarify that organizations of every type, domestic and foreign, Government and private, for profit and not-for-profit, may submit proposals without restriction on number or teaming arrangements (Section 4.2.1).
19	Requirement 3 -- can you clarify what you mean by "evidence"? (letter signed by head of ESA?) can you clarify what you mean by endorsement date (date of the selection letter?)	The text in Section 5.1.1 has been changed to replace “evidence” with “Letter of Commitment” and to define the endorsement date as the cutoff date for the PEA by which time a NASA commitment is required. PMOs with later need dates for a NASA commitment should propose to a subsequent PEA.

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20	In Section 5.1.2, NMES is specified to include only existing spacecraft that are in flight now ("use of a NASA spacecraft or other working space asset once it has completed its prime (and extended) mission(s)"), and not spacecraft for missions that have been selected, but for which the spacecraft is still being built. It would be useful to expand SALMON to allow the flight of new technologies on missions that have yet to launch. Clearly, this would be a delicate process, in that it would be critical to make sure that the added hardware would not adversely affect the risk, cost, or schedule of the already-selected mission, but nevertheless, many missions have margin that could be used to serve as a "ride" for flight of new technologies that do not have an impact on the performance of the main mission. In particular, third stages, transfer stages, and cruise stages are possible vehicles which could, after their primary mission of placing the spacecraft on the desired trajectory, serve as platforms.	The concept of a NMES is intended to only encompass using existing missions as built for additional operational value (e.g., new science or exploration investigations). It is not intended to be used for enabling hosted payloads on NASA missions, including hosted technology demonstration payloads. Such investigations could be solicited for within either the PMO or the FMO categories of missions of opportunity. If opportunities such as these are offered, they will be done so on a PEA-by-PEA basis by the sponsoring mission directorate. It is not clear that having a PI identify these opportunities is preferable to having the sponsoring mission directorate identify these opportunities. No change has been made to the SALMON-2 AO.
21	There may sometimes be opportunities for a researcher to propose that an existing spacecraft do an investigation that is not in the primary mission of the spacecraft before the spacecraft has completed its prime mission--missions of opportunity during an interplanetary cruise, for example, to investigate properties of the interplanetary medium, or to do a coordinated observation with another probe to allow measurements at different locations at the same time, or radio science tests or experiments.	Excellent idea. The text in Section 5.1.2 has been modified to include the use of an existing mission on a no interference basis as a NMES.
22	Requirement 88 – In what format should the classified appendix be provided? Is the classified appendix supposed to be hardcopy even though the rest of the proposal is electronic?	Text has been added to state that the classified appendix regarding heritage should be submitted in hardcopy even though the proposal itself is submitted electronically (Section 5.10.3).

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23	Section 5.2.5 is not very clear, and it seems to be unconnected with the previous part of the solicitation. Who is authorized to propose a "Science-Exploration-Technology Enhancement Option"? Does this mean that the PI of an existing mission can propose adding an opening for guest investigators of participating scientists? Or can a researcher not affiliated with a mission propose adding themselves to an existing mission as a guest investigator or participating scientist?	Text has been added to clarify that SEOs may only be proposed as add-ons to investigations that are submitted in response to the applicable PEA (Section 5.2.5). So the answer to both of the hypotheticals is "no" because those missions are not being proposed in response to the applicable PEA.
24	Appendix B, Part J.X applies only to SCMs, correct? If so, this should be explicitly noted in the AO.	Orbital debris and end-of-mission requirements apply to any NASA payload that is launched, whether it is a SCM or not. Section 5.3.10 and Requirement 38 have been clarified to state a modified requirement for PMOs and hosted payloads, where the PI is not responsible for the host mission. That requirement is to include information in the proposal regarding the instrument's contributions to orbital debris and how the instrument will be passivated at end-of-mission.
25	Requirement 24 -- should this be interpreted as meaning that SALMON-2 won't/can't be used for balloon/sounding rocket/airship/aircraft-based missions?	Text has been added to state that the applicable PEA might broaden the allowable platforms beyond spacecraft to include other platforms such as suborbital platforms (Section 5.3.2).
26	I suggest you consult the NASA Instrument Capability Study as you develop reserve guidelines for the upcoming SALMON proposal call. International partnerships and "instrument only" reserve levels probably should be adjusted off the "normal" 25'% we use on full-up missions.	Text has been added to note that 25% is the minimum acceptable cost reserves, that instruments and international collaborations often require higher levels of cost reserves, and that the proposal must justify the adequacy of the proposed cost reserve level – it is insufficient to merely quote the AO-required minimum level as justification (Section 5.3.2).
27	Is the intent to impose (meet the full intent of) the full force of 7120.5D NID on all opportunities issued under SALMON-2? If the possibility of PEA-specific tailoring of 7120.5D is possible, then it should be noted.	Tailoring of NPR 7120.5 requirements must be approved through the waiver process that is described in NPR 7120.5D NID. Mission directorates are not generally permitted to tailor the requirements in advance of identifying the project (i.e., through release of a PEA). Text has been added to state explicitly that specific intended tailoring may be described in the proposal (Section 5.3.3).

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28	Is the intent that there will be no mandatory KSC insight for LVs outside of NLS-II?	Text has been added to state that NASA insight is required for non-NASA launches (Section 5.3.5).
29	Requirements 31 thru 36 and 38 seem odd for a PMO or an NMES. For these types of MOs, the telecom and launch approval plans are the responsibility of the host mission. The AO should be explicit that they do not apply in these cases.	Text has been added to appropriate requirements in Sections 5.3.6 through 5.3.10 to indicate which requirements do not apply to PMOs and hosted payloads, where the PI is not responsible for the host mission.
30	End of Section 5.5.1 -- "Adequate development unencumbered cost reserves for Phases A/B/C/D is defined to be a minimum of 25%." This reads like a requirement. If it is not intended to be a requirement, then the suggestion is that "defined" be changed to "recommended".	This text was deemed to be redundant with Requirement 53 and was deleted (Section 5.5.1).
31	We have identified what appears to be an inconsistency regarding the level of cost detail that needs to be provided, per the details listed below. Note that our comments are embedded in blue font. On page 31 the draft indicates: *5.5.2 Cost Estimating Methodologies and Cost Reserve Management* As the provision of cost details is not anticipated until later in formulation, proposals may use estimates derived from models or cost estimating relationships from analogous missions (see Appendix B, Section H, for additional details). Requirement 55. … . Which suggests that the level of cost detail required in the proposal could be cost model results, with cost details generated during formulation. However, Appendix B, Section H, page B-19 lists 5 requirements including: Requirement B-51. … . Requirement B-52. … . Which make it appear that substantial costing detail is expected in the proposal. The intention listed on page 31 and the details required on page B-19 and Table B3 do not appear consistent.	The instructions for Table B3 have been modified to indicate that the costs should be identified by WBS to the levels requested "to the extent known" at time of proposal. Since many proposed instrument costs are based on historical analogies or rebuilds, this detail is often known by the proposers at the time the proposal is written (Appendix B, Table B3).
32	Table 5.5.5-1, 4th column: MD" is not defined; please add to acronym list	MD is "mission directorate." It has been defined in place and added to the acronym list (Section 5.5.5).
33	Section 5.5.5, Requirement 62 – Does this apply to items from FHLP?	Assuming that FHLP means "flight hardware logistics program," the answer is yes.

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34	Section 5.8 -- text implies that there will be no limitation on the amount of contributions for **any** proposals submitted under SALMON-2. Is this correct? Would it be easier to include the historical limitation in the foundational AO language and then relax it via PEAs?	Text has been added that states that any limitations on contributions will be included in the PEA (Section 5.8). Note that some AOs have stated such limits (example: Explorer 2011) and some AOs have stated that there are no limits (example: Earth Venture 2).
35	The previous SALMON AO listed a limit on foreign contributions to missions, does NASA anticipate that the individual PEAs will specify contribution limits? We also recognize that the cost of access to space may be difficult to assess in some contributions, thus guidance may be necessary if contribution limits are specified.	Text has been added that states that any limitations on contributions will be included in the PEA (Section 5.8). Note that some AOs have stated such limits (example: Explorer 2011) and some AOs have stated that there are no limits (example: Earth Venture 2).
36	We recognize the general value of Science-Technology-Exploration-Enhancement Options (SEOs), although it is unclear whether they are evaluated in the overall science merit of the proposal; and if they are not evaluated within the science merit- then what is the purpose of having SEOs within the proposal?	Section 7.2.3, Factor B-6, states that SEOs are evaluated as a factor of Implementation Merit and Feasibility.
37	Page A-2, VI. Status of Cost Proposals -- AO language does not appear to support Bridge Phases. Page A-3, XIII Small and Small Disadvantaged Business Subcontracting -- "...offerors awarded contracts for Phase A concept studies..." language does not appear to be consistent with a single step process. Top of page A-4 -- another reference to Phase A concept study reports	Appendix A, General Instructions and Provisions, has been revised to be appropriate for single step selections.

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38	Proposal Structure and Page Limits table -- recommend the following numbering of section A -- A.1 Graphic Cover Page, A.2 Export controlled material statement, A.3 Optional Restriction on Use Statement, A. 4 PI Commitment. Recommend moving the text in the current A.2 and A.3 sections to the beginning of Appendix B	This is a good idea, and it has been implemented. The result is that the sections of Appendix B now include: Introduction (as before), General Requirements for Format and Content (as before, includes Proposal Structure and Page Limit Table), Electronic Cover Page Submission Through NSPIRES (formerly part A.2), Proposal team Member Commitment Through NSPIRES (formerly part A.3), A.1 Graphic Cover Page (as before), A.2 Export Controlled Material Statement (new with one new requirement), A.3 Optional Restriction on Use Statement (new with no requirements), A.4 PI Commitment (new with one new requirement, etc. as before. Note that the two new requirements resulted in a renumbering of all subsequent Appendix B requirements. (Appendix B, Part A)
39	Requirement B-1 -- recommend you consider increasing the file size (currently 20 MB) if NSPIRES can handle it. You could potentially end up with very intensive graphics in a proposal (body and appendices - especially Heritage) that could end up driving a proposal beyond the stated value (and compression will cause graphics to lose resolution when printed)	The file size has been increased to 25 MB. The limitation is imposed by the architecture of NSPIRES which makes downloading proposals very slow for reviewers. Since reviewers will be downloading electronic proposals, this is a significant consideration. Note that the two pilot tests with electronic SALMON proposals (Mars 2016 instruments, SOFIA second generation instruments) resulted in most proposers submitting proposals that were <10MB in size. (Appendix B, Appendix F)
40	Given the inexorable increase in file sizes over time due to technology “improvements”, and the fact that we have seen that some recent proposals have exceeded 20 Mbytes, serious consideration should be given to finding ways to allow file sizes of greater than 20 Mbytes. The risk in compressing a file that might otherwise naturally tend towards a larger file size is that the compression artifacts could compromise the reviewers’ ability to interpret parts of a proposal.	The file size has been increased to 25 MB. The limitation is imposed by the architecture of NSPIRES which makes downloading proposals very slow for reviewers. Since reviewers will be downloading electronic proposals, this is a significant consideration. Note that the two pilot tests with electronic SALMON proposals (Mars 2016 instruments, SOFIA second generation instruments) resulted in most proposers submitting proposals that were <10MB in size. (Appendix B, Appendix F)

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41	The new restriction for 5 pages for References seems arbitrary and without good motivation. In the past, this appendix was unlimited.	The page limit has been eliminated (Appendix B). Note however that proposals must be self contained and there is no expectation that reviewers will read the referenced documents.
42	Requirement B.28 -- Recommend you allow multiple foldouts. It's probably not realistic to believe you'll be able to get all of the information requested on a single foldout and still have it readable.	The text has been clarified to explicitly allow multiple foldouts (Appendix B, Part E.5).
43	Recommend that there be two versions of the requirements for Sections E and F. The current requirements are science-specific, and are not fully applicable to Exploration or Technology-related proposals	This is a good idea. However, until OCT or HEOMD issue a PEA and write such requirements, there are no templates for those sections and insufficient motivation to write them. Once OCT and HEOMD establish their standard requirements for these sections, they can be added to SALMON-2 through amendment.
44	What does the acronym JCL stand for?	Joint Cost and Schedule Confidence Level (Appendix C.3)
45	Will the Requirements Crosswalk table be filled out in the final version of the AO?	Yes (Appendix G.1).
46	Section 4.6 Launch Service Policies refers to the U.S Space Transportation Policy (2005), then follows with a bulleted list of restrictions on the use of foreign launch vehicles. The first bullet says, "Purchased launch services or payload accommodations must be obtained only on a spacecraft that will be launched on a U.S.-manufactured launch vehicle." Enforcing this restriction in the AO, which exceeds the U.S. Space Transportation Policy for purchased payload accommodations, would deny access to space to an entire class of small science payloads which are otherwise ideal candidates for SALMON opportunities. Flying as a hosted payload on a commercial satellite is the only feasible access to geo orbit for these payloads. I strongly recommend that the draft of NNH11ZDA017J be amended such that it requires compliance with the U.S Space Transportation Policy, but does not add restrictions beyond what the Policy requires.	According to the U.S. Space Transportation Policy, NASA payloads cannot launch on foreign launch vehicles without an exemption from the Director of the Office of Science and Technology Policy, in consultation with the Assistant to the President for National Security Affairs, unless no U.S. launch service is available. A cross-directorate NASA working group, led by the Office of the Administrator, is studying whether hosted payloads on commercial satellites launched on foreign launch vehicles can generally meet these prescriptions. The SALMON-2 AO will be modified in accordance with NASA-wide policy on this issue. NASA does not want to solicit or select proposals which in practice cannot be launched in compliance with U.S. Space Transportation Policy.