

X-ray Astronomy Mission Concepts Study

Frequently Asked Questions (FAQ)

Question: On page 3 and 4 the RFI requests a 20 word description of the 'category of response' along with answers to questions about participating in the workshop and proprietary information. Can these simply be embedded in the 10 pages of text? Also, do you really need email addresses for all team members to be captured within the 10 pages?

Answer

The information requested on pages 3 and 4 needs to be easy to identify and should not be embedded in the rest of the text. But it's intended to be brief (20 words for the category description is pretty brief!), and it's fine if it's just the first page of the file with your response. You don't have to include the e-mail addresses for all team members. It's helpful, but not required. The response should contain contact information for at least one technical lead as well as details for the POC. We'll contact the POC for any issues regarding the logistics of submitting a response, and the study team might follow up with the technical lead if they have any questions about the content of the response. Remember that you can include additional information, including a full team list, in an appendix.

Question: In estimating total mission cost, how should one account for post-launch operations (phase E) costs? Should post-launch operations costs be included in the ROM total mission cost?

Answer

The answer to this question is essentially the same as the answer to how to include launch vehicles. Ultimately, we will bin responses into broad cost categories and so we're looking for rough order of magnitude costs with brief explanations of what you included and how you estimated costs. As long as you describe your assumptions, then Phase E cost estimates are useful and can be included however you choose to determine them.

Question: I am trying to assess whether to submit a response to the RFI. We have a technology that represents a component of a larger instrument. Since this RFI specifically includes "relevant key enabling technologies for such missions or instruments," we think it may be appropriate. But we don't know whether component-level technologies fit well in this solicitation. Can you clarify?

Answer

This RFI asks for "key enabling technologies," and we are very interested in receiving responses that describe technologies that enable the science objectives listed in Table 1. Those responses should be submitted through the mechanism described in the RFI. It is important to note that this is a Request for Information and not a solicitation. So there is no associated funding. If you're willing to send information about your technologies, then we'd be delighted to receive it. ***It is also important to note that these RFI responses will be publicly disclosed, so please do not include any proprietary information.***

Question: Can you confirm that for purposes of mission cost categorization, 'total cost,' as used in the RFI, includes launch costs?

Answer

While the RFI doesn't explicitly mention the launch vehicle, it is expected that responders who are submitting mission concepts will carefully consider the choice of launch vehicle, as it drives mass and volume allocations, and include a rough estimate of the cost in their total mission costs. The RFI requests "a rough-order-of-magnitude (ROM) total cost, plus a brief explanation of how this cost was estimated. The ROM cost will be used to bin concepts into the following cost categories: small (\$300-\$600M), medium (\$600M-\$1B) and large (\$1B-\$2B)." So the ROM cost does not need to be particularly high fidelity, which would be difficult given the uncertainties in the costs of launch vehicles. But the cost explanation should include sufficient detail to allow the study team to understand the basis of estimate including the assumptions made for the launch vehicle.

Question: In the 2nd paragraph of the section labelled "Background," there is a statement that NASA/PCOS wants to address "high priority IXO scientific objectives described in the 2010 Astrophysics Decadal Survey." Does this preclude proposing missions and instruments that address high priority Decadal Survey science goals that are not included in Table 1?

Answer

The scope of the activity initiated by the release of the RFI is limited to defining a small number of mission concepts that fulfill all or some of the IXO scientific objectives that were ranked as high priority in NWNH and its appendices (the panel reports). The scientific priorities set by NWNH will not be revisited through the workshop or the study activity. A mission or instrument may be submitted through an RFI response that addresses broader science goals as long as elements of Table 1 are simultaneously addressed. Please keep in mind that the study process going forward will focus on the IXO-related science.

Question: Table 1, the first line concerns the science question: "What happens close to a black hole," and the last column of that line states that a key IXO performance requirement was to provide "Spectral resolution of 150 eV at 30 keV." Is this performance requirement correct?

Answer

Thank you very much for raising this issue. The requirement as listed is incorrect. It should read "150cm² at 30 keV." In answering your question we discovered inconsistencies between the specifications in the table and the performance requirements that were originally submitted by the IXO project to the Decadal survey. We have issued a revised table (see above). This new table corrects these errors and tries to ensure that each science objective is described such that it can be individually achieved and does not rely on the simultaneous capabilities of the integrated IXO observatory. We apologize for these errors and for any confusion that may have resulted.

Question: What is the page limit for the responses? Page 3, 1st paragraph of Requested Information states, "The response should not exceed ten (10) pages in length. Page 6, Item 10 of Instructions states, "The response should not exceed seven pages in length."

Answer

Thanks for catching this error. The limit is 10 pages.

Question: Does the 10-page limit include cover pages, reference lists, etc? Can we submit appendices?

Answer

The 10 pages described in the RFI should include all essential information. References or other supporting material can certainly be added as appendices.

Question: On page 4, the RFI requests ROM total cost as well as a brief explanation of how the cost was estimated. Formal ROM estimates including basis of estimate are typically proprietary information; however, proprietary information is excluded from submission on page 5. Would it be sufficient to just identify the cost category (small, medium, or large) of a concept instead of giving a formal ROM estimate, or would you be interested in a separate, proprietary estimate of the cost?

Answer

We do not want any proprietary information in the responses, so when in doubt, leave it out. If you would like to share something proprietary, feel free to contact the PO or to indicate that interest in the RFI response. The study team will contact you and make specific arrangements for your specific circumstance. Again, DO NOT include proprietary information in your RFI response.

For mission concept responses, we are looking for a cost estimate to one significant figure accompanied by enough information about how that cost was derived to be able to gauge credibility. So, feel free to invest as much effort as you like in estimating the cost of your ideas and then scrub the estimate. The goal should be to provide as much information as possible, but at low enough resolution that you are comfortable having the information discussed openly at the workshop.

Cost estimates that are described as a category are fine, but it would be very helpful if the category was defined with dollars as the bracket, e.g., Small (\$300M to \$600M). Without this, small in one response could mean \$300M and in another could mean \$1B.

Finally, please recall that the intent of this study is to work with the community through the RFI responses and the workshop to define mission concepts that the Program will then develop in a mission design lab. The results of the design run will include a cost estimate using vetted costing products for mission concepts in the early phases (e.g., PRICE-H). Since we're interested in the trades between science and cost, we don't want to invest

multiple design runs exploring the same mission cost point. So, we are requesting a low-resolution cost estimate to go with each RFI response. If one is not provided, the cost of a concept will be estimated using the best judgement of the study team, and the concepts will be binned by cost in preparation for the workshop.

Question: Do you anticipate that participation in the CST by employees of potential future industry partners constitutes a conflict of interest?

Answer

The intent of this study is to provide the broad community a voice in identifying possible future paths. The RFI is not expected to lead to or provide data for any specific future solicitation or procurement. So, participating in this study will have no impact on participation in any future competition. All results from this study will be made public to ensure that participants were not provided any particular advantage with respect to a future competition. Therefore, we do not see any future conflicts of interest for any CST members.