

Partnership Opportunity Document (POD)

with

The National Aeronautics and Space Administration (NASA)

Goddard Space Flight Center (GSFC)

for

Enclosure and Door Opening and Closing Mechanism

April 2015

## **General Information**

### Contracting Office Address

NASA's Goddard Space Flight Center, Code 210.S, Greenbelt, MD 20771

## **1.0 Introduction and Scope**

This partnership opportunity is for a Step 2 NASA Planetary Mission Opportunity in 2015. NASA/GSFC is seeking a partner for spaceflight instrument development for potential proposals to this opportunity.

GSFC mission teams have submitted proposals to the Europa Instrument Investigation announcement (NNH12ZDA006O-Europa). This opportunity is a two-step process. The first proposal response, which is competed and already underway, is primarily focused on the scientific merit and technical feasibility of the proposed mission and its associated scientific investigation. The initial submissions will be down-selected after formal peer review and the resultant subset of proposals will be funded to perform Phase A mission concept studies. During Phase A, which is also a competed process, the proposal will be expanded and refined to detail the entire end-to-end life cycle concept, with greater attention to engineering implementation, cost, and schedule.

Information on the Europa Instrument Program Element Appendix (PEA) of the Second Stand Alone Missions of Opportunity Notice (SALMON-2) can be found on NSPIRES (<http://nspires.nasaprs.com/external/solicitations/summary.do?method=init&solId={D663DD46-1929-9482-24BA-D5BCDBAA10BC}&path=open>). The time frame for this solicitation is intended to be:

Selection for competitive Phase A studies .....	April 2015 (target)
Concept Study Reports (CSR) due .....	December 2015 (target)
Down-selection .....	April 2016 (target)

The instrument schedule to be used for this POD is as follows (all dates are under review)

System Requirements Review.....	July 2016
Preliminary Design Review.....	April 2017
Critical Design Review.....	April 2018
System Integration Review.....	April 2019
Pre-Environmental Review.....	October 2019
Pre-Ship Review.....	February 2020

This partnership opportunity is being issued to interested and qualified teaming partners to help prepare the NASA/GSFC concept for CSR submittal and to provide a flight qualified instrument subsystem should the instrument be selected for flight. This

partnership opportunity is for the development, integration, test and delivery of an enclosure with a door opening and closing mechanism.

For this partnership opportunity dealing with the preparation of this submission, there will be no exchange of funds between the teaming partners. Funding will be available for subsequent phases should the investigation be approved to continue through the mission-defined gates for flight. NASA/GSFC reserves the option to not select any teaming partners under this POD offering on the basis of materials received.

## **2.0 Technical Description**

Desired spaceflight system - GSFC is interested in finding a partner to provide a spaceflight-qualified Enclosure and Door Opening/Closing Mechanism. No other subsystems are part of this POD.

**Detailed information on the Enclosure and Door Mechanism specifications will be provided to those responding with a Notice of Interest.** A Notice of Interest (intentionally not called a notice of intent) does not obligate an organization to provide a POD response.

## **3.0 Phase A Study and CSR Support**

**SOW:** If the mission is selected for a Phase A study, the proposal team will conduct a Phase A study and submit a detailed Concept Study Report (CSR) to NASA. The selected respondent to this POD will be expected to contribute to designing, documenting, and costing the enclosure and door mechanism for inclusion in the final Concept Study Report. The period of performance for this interval is detailed in the above timelines.

### ***POD Response Instructions for Pre-Selection Support***

The respondent shall:

- 1) Demonstrate understanding and recent (within the last 7 years) in the design, fabrication, integration and testing of enclosures and door opening/closing mechanisms:
  - Identify the means of addressing system requirements that your team assumes are likely to exist for the enclosure and mechanism,
  - Highlight particularly critical or challenging areas for the design of the mechanism,
  - Provide a technical summary/description of the proposed hardware including relevant heritage with cost information.
- 2) Identify any recommended potential study topics related to the enclosure and mechanism, including radiation tolerance.

- 3) Indicate the level of resources to be allocated for the proposal phase.
  - Discuss skills that will be provided, the appropriate level of conceptual design, and analyses and trade studies to be performed.
- 4) Identify pertinent missions for whom the respondent has previously provided support for proposal writing for similar hardware design, fabrication, integration and testing for the technical specifications listed.

#### **4.0 Development Support**

**SOW:** Following CSR submittal, if the mission is selected for development and launch, the respondent will be responsible for the design, development, and test of the enclosure and door opening/closing mechanism. The respondent is responsible for: identifying the enclosure and mechanism requirements and providing all aspects of the enclosure and mechanism (either directly, or through purchasing or teaming arrangements). The period of performance for this interval is expected to last approximately 55-65 months. The duration will depend upon selection timelines and budget allocations.

#### ***POD Response Instructions for Development Support***

The respondent shall:

- 1) Describe the level of recent experience with similar hardware and level of recent experience of supporting personnel.
- 2) Identify available design and modeling capabilities required to support development of the hardware.
- 3) Identify fabrication and testing facilities that will be required to support development and test of the hardware.
- 4) Identify a level of sustaining engineering to assist in potential anomaly resolution during instrument and observatory environmental testing.
- 5) Identify which missions the respondent has successfully supported (relevant to this POD and its technology) and provide a customer reference point of contact.
  - Provide information on recent similar hardware designed and delivered, and describe how that experience is applicable to this mission. This shall include basic information on scope of work, how well the delivered hardware met the cost and schedule estimates, and technical requirements.
- 6) Provide a Rough Order of Magnitude (ROM) cost estimate and timeline for the scope of the design, fabrication, and testing of the enclosure and mechanism. This ROM will not be considered a binding commitment, but will serve as a consideration during the partnership evaluation.
- 7) List ideas and methods of keeping costs low and the risk of cost growth low, including how to utilize existing open market hardware to minimize costs and provide a more robust system.

## **5.0 General Instructions for POD Response**

Potential respondents are asked to contact the GSFC team with a **Notice Of Interest** (intentionally not called a notice of intent). This Notice of Interest does not create an obligation to respond to the POD, but allows the GSFC team to disseminate additional details to provide answers to questions from potential partners. **Notice of Interest respondents will receive a document containing additional details on the Enclosure and Door Opening/Closing Mechanism, which can be used to facilitate a focused response to the partnership opportunity.** These details are competition sensitive and are not to be shared outside the teams necessary to prepare a full response.

After receipt of the mission document, respondents may send questions to the GSFC point of contact (POC) listed below. All questions and answers will be made available to all those who respond to the Notice of Interest. The source of the questions shall be held confidential. Questions and answers that contain information unique to a respondent's proprietary approach will not be shared if they are identified as such.

**Notice of Interest shall be sent to the POC listed below via email with 'Notice of Interest' in the subject line, a simple sentence or two expressing interest and an email address to send further information.**

For purposes of this partnership opportunity, the contact is Michael Adams, [Michael.L.Adams@nasa.gov](mailto:Michael.L.Adams@nasa.gov), 301.286.2010.

Responses to the POD shall:

- 1) Be in a presentation format that shall not exceed 20 pages. The font size for the text shall be no smaller than 12 point.
- 2) Address all requirements noted in Sections 2.0 through 6.0 of this document.

Responses will be treated as proprietary information and controlled as such by NASA's GSFC for the US Government.

The respondents shall deliver the requested information in a standard presentation format. **Final presentation packages (electronic copy only, Portable Document Format {PDF} recommended) must be received by 5 pm EDT, April 24, 2015.** Presentations are to be delivered to Michael Adams at the above listed email address.

## **6.0 Selection Criteria for Awarding Partnership Opportunity**

The information requested in this Section will allow the evaluators to determine how well the respondent's capabilities matches and enables the Europa Instrument Investigation. Recent experience in proposal and mission development phases are essential for selection.

## **Selection Criteria**

### Proposal/Pre-selection Support (30 points)

- Recent experience (and Team skills) and past performance in proposal phases
- Resource commitment
- Identification and description of key critical areas
- Understanding and addressing general requirements and needs for the proposed hardware on the target mission for which it is intended. Provide a discussion of the assumptions made.
- Recommended design studies

### Development Support (70 points)

- Reasonableness of cost and schedule estimates
- Recent experience and past performance in development phases
- Recent experience and heritage with respect to similar space flight hardware. Experience developing and implementing similar space flight hardware is a minimum requirement
- Completeness of identification of functions by mission phase
- Cost control measures
- Reasonableness of design and modeling capabilities to support the effort
- Reasonableness of fabrication and testing facilities to support the effort
- Ability to survive and operate in target environment

## **7.0 Acronym List**

CSR	Concept Study Report
EDT	Eastern Daylight Time
GSFC	Goddard Space Flight Center
NASA	National Aeronautics and Space Administration
NOI	Notice of Interest
PEA	Program Element Appendix
POC	Point of Contact
POD	Partnership Opportunity Document
ROM	Rough Order of Magnitude
SALMON-2	Second Stand Alone Missions Of Opportunity Notice
SOW	Statement of Work