

भारत सरकार / GOVERNMENT OF INDIA
अंतरिक्ष विभाग / DEPARTMENT OF SPACE
क्रय यूनिट-III / PURCHASE UNIT-III
विक्रम साराभाई अंतरिक्ष केंद्र / VIKRAM SARABHAI SPACE CENTRE
तिरुवनंतपुरम / THIRUVANANTHAPURAM – 695 022
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EXPRESSION OF INTEREST

No. VSSC/SPRE-PUR/EOI-04/STED/2022-23

Date: 06/01/2022

एएसओई एन्टिटी, विक्रम साराभाई अंतरिक्ष केंद्र, वीएसएससी, वेली, तिरुवनंतपुरम में प्रमोचन यान तथा उपग्रह पाइरो परीक्षण के लिए एकीकृत प्रकार्यात्मक परीक्षण स्टेशन (आइएफटीएस) के विकास तथा संस्थापना के लिए अभिरुचि की अभिव्यक्ति।

EXPRESSION-OF-INTEREST FOR DEVELOPMENT AND INSTALLATION OF AN INTEGRATED FUNCTION TEST STATION (IFTS) FOR TESTING LAUNCH VEHICLE AND SATELLITE PYROS AT ASOE ENTITY, VIKARAM SARABHAI SPACE CENTRE (VSSC), VELI, THIRUVANANTHAPURAM

इच्छुक प्रत्याशित निर्माता हमारे संदर्भ सं. VSSC/SPRE-PUR/EOI-03/STED/2022-23 का उद्धरण करते हुए 10/02/2022 [16:00 Hrs.] को या उससे पहले निम्नलिखित पते पर अपनी अभिरुचि की अभिव्यक्ति दे सकते हैं।

VSSC invites, EOI from prospective bidders for **DEVELOPMENT AND INSTALLATION OF AN INTEGRATED FUNCTION TEST STATION (IFTS) FOR TESTING LAUNCH VEHICLES AND SATELLITE PYROS AT ASOE, VSSC, THIRUVANANTHAPURAM**. Interested parties may furnish their Expression of Interest in Sealed Envelope quoting our Reference No. VSSC/SPRE-PUR/EOI-04/STED/2022-23 on or before 10/02/2022 [16:00 Hrs] to the following address:

नोट:- मेक इन इंडिया नीति के अनुसार केवल श्रेणी-I और श्रेणी-II के स्थानीय आपूर्तिकार इस बोली में भाग लेने के पात्र हैं।

Note:- Only Class-I and Class-II Local suppliers as per Make in India policy are only eligible to participate in the bid

वरि. क्रय एवं भंडार अधिकारी / Sr. Purchase & Stores Officer,
क्रय यूनिट III / Purchase Unit- III,
आरएफएफ क्षेत्र, इसरो पीओ / RFF Area, ISRO. PO,
तिरुवनंतपुरम / Thiruvananthapuram- 695022.
फोन/Ph: 0471-256 3775/3609

EOI documents are available at our website www.isro.gov.in and www.vssc.gov.in.

हस्ताक्षरित/Sd/-

वरि.प्रधान, क्रय एवं भंडार / Sr.Head, Purchase & Stores



Government of India
Department of Space
Vikram Sarabhai Space Centre
Indian Space Research Organization
Thiruvananthapuram-695022, Kerala

No. VSSC/SPRE-PUR/EOI-04/STED/2022-23

Date: 06/01/2022

INVITATION FOR EXPRESSION-OF-INTEREST

Vikram Sarabhai Space Centre (VSSC) proposes to invite **Expression-Of-Interest (EOI)** for development of an **Integrated Functional Test Station (IFTS)** for carrying out the testing of launch vehicle and satellite pyros used in ISRO.

IFTS caters to the requirements of closed bomb and functional tests of pyro devices at ambient and other environmental conditions where physical parameters such as pressure, stroke/displacement, force/load, strain and electrical parameters such as firing current, events, timing etc are acquired during the various phases of testing as part of development/production/qualification of ordnance devices/systems towards launch vehicle and satellite programs. Safety and quality are of utmost importance in this domain. It is necessary to procure instrumentation equipment like industrial controllers, data acquisition systems, signal conditioning modules, power supplies, cables and connectors etc. Integration and installation of the system, demonstration and service/warranty also shall be included in the scope of this contract.

Interested VENDORS having profound knowledge in instrumentation and data acquisition system with prior experience in developing similar systems in Aerospace/Defense sector and having sound financial background, commitment and desirous of long-term partnership with ISRO are invited to participate in the EOI. On receipt of EOI, VSSC shall evaluate and assess the suitability prior to short listing of VENDORS. This call for EOI does not carry with it any guarantee for allotment of contract.

EOI document can be downloaded from website www.isro.gov.in and the same shall be submitted within the due date and time. **"Expression of Interest" with all essential information shall reach the Senior Purchase and Stores Officer, Purchase Unit III, Vikram Sarabhai Space Centre, ISRO Post, Thiruvananthapuram 695022, Kerala, on or before 16.00 hours on 10th February 2022.** This EOI is issued as a "Pre-Bid Qualification". Inadequate or incomplete information will result in rejection of the offer. VSSC reserves the right to accept or reject all or any of the EOI. Mere compliance to the EOI terms does not guarantee further consideration for qualification.

Addendum, if any, to this EOI shall be hosted in our website www.isro.gov.in.

Senior Purchase and Stores Officer,
Purchase Unit III,
Vikram Sarabhai Space Centre,
ISRO P.O., Thiruvananthapuram - 695022, Kerala



Government of India
Department of Space
Vikram Sarabhai Space Centre
Indian Space Research Organization
Thiruvananthapuram-695022, Kerala

No. VSSC/SPRE-PUR/EOI-04/STED/2022-23

Date: 06/01/2022

**INVITATION FOR EXPRESSION-OF-INTEREST (EOI)
FOR DEVELOPMENT AND INSTALLATION OF AN INTEGRATED FUNCTIONAL TEST STATION (IFTS)
FOR TESTING LAUNCH VEHICLE AND SATELLITE PYROS AT ASOE ENTITY, VIKRAM SARABHAI
SPACE CENTRE (VSSC), VELI, THIRUVANANTHAPURAM**

A: Attention to bidders:

1. The EOI document shall be carefully read and all points shall be duly addressed.
2. EOI responses with incomplete/insufficient supporting data shall not be considered further. No further correspondence shall be entertained with respect to this.
3. Bidders can contact/visit VSSC/ISRO with prior appointment from Sr. Purchase & Stores Officer, Purchase Unit-III, SPRE Purchase, RFF Area, VSSC, ISRO.P.O, Thumba, Thiruvananthapuram - 695022 for any clarifications/discussions. Contact Phone No: 0471-2563775/3609. Email id: spso_prso_pur@vssc.gov.in, pso2_prso_pur@vssc.gov.in

1. Preamble

Vikram Sarabhai Space Centre (VSSC), Trivandrum is the lead Centre of Indian Space Research Organization (ISRO).

VSSC invites expression of interest from VENDORS to develop an instrumentation system that caters to carrying out functional testing of launch vehicle and satellite pyros and acquisition of physical and electrical parameters. VENDORS shall have prior experience in developing and installing similar systems within ISRO centers or other aerospace/defense organizations.

2. Scope of work

The scope of the work includes development of IFTS for carrying out closed bomb and functional tests of pyro devices at ambient and other environmental conditions, where physical parameters such as pressure, stroke/displacement, force/load, strain and electrical parameters such as firing current, events, timing etc are acquired during the various phases of testing as part of development/production/qualification of ordnance devices/systems towards launch vehicle and satellite programs.

Functional tests are conducted either at device level or system level to ensure the functional performance of the pyro device at its rated current at various environmental conditions.

The primary functions of IFTS are the following:

- Automated electrical initiation of pyro device with countdown
- Providing excitation to the sensors
- Calibration of sensors
- Acquisition of physical and electrical parameters from the various sensors
- Real time display & storage of the acquired data
- Graphical display interface of selected/all parameters
- Plotting the output graph with respect to the time
- Digital data shall be available after the test
- Test report generation

The VENDOR has to procure various hardware elements like data acquisition and signal conditioning modules, power supplies, cables, connectors and other necessary accessories for realization of IFTS. VENDOR shall also develop and provide necessary software with valid license. They also have to install the system, demonstrate and provide necessary training to the user and post installation support.

3. Duration

The whole development including factory acceptance test shall be completed within 6 months from the date of issue of purchase order.

4. System specifications

The major specifications of the IFTS system are given as follows.

Bridge wire configuration	Firing current Requirement	No of power supplies required	Voltage
Single	5A	1	Power supply set voltage is computed based on the current requirement and total resistance (Line resistance + Bridge wire resistance)
Double	10A (5A through each bridge wire)	2	
4 wire	20A (5A through each bridge wire)	4	

- Automated electrical initiation of pyro device: The IFTS shall provide the firing command through program for the initiation of pyro devices. It shall control the Mode of initiation (single, double or 4 bridge wire), setting of firing voltage, firing line resistance and voltage computation.
- For double and 4 wire initiation, simultaneous firing shall be ensured.
- The device initiation takes place within 2-8 ms generally. Hence, fast switching devices relays shall be used for the firing circuit.
- Prior to issuing the firing command, the line resistance shall be verified in the instrumentation console. This shall be taken from Igniter circuit tester through GPIB/USB interface. The bridge wire fuse time shall be computed and displayed in the console.

- Continuous acquisition of the following parameters shall be carried out during the functional/closed bomb test depending on the requirement.
 - Pressure
 - Strain
 - Load
 - Displacement
 - Firing current and Bridge wire fuse time
 - Event
 - Shock
 - Temperature
- Total error of the system should be $\leq 0.5\%$

5. Functional Requirements: -Following provisions shall be incorporated in the IFTS.

5.1 Initiation: Initiation command shall be through program only. The integrated software has to completely automate the following activities for electrical initiation of pyro devices:

- Computation of firing line resistance
- Computation of firing voltage for required current
- Set the firing voltage and enable the programmable DC power supply through USB/GPIB interface.
- Initiation with countdown
- Countdown hold if required

5.2 Type of Input for data acquisition: Input from the various sensors integrated on the pyro devices/systems during the functional test shall be acquired. The input modules used will differ according to the type of sensor used. Hence, the system should be capable to change its operation according to the type of input selected.

6. Items and details provided by VSSC

- 6.1** All the sensors shall be provided by VSSC.
- 6.2** All other required equipments and accessories shall be procured by the VENDOR.
- 6.3** A detailed reviewed and approved System Requirements Document will be provided to the party.

7. Essential criteria for evaluation of EOI

- **VENDORS registered in India need only participate.**
- The Vendor should be a profit making Company during the last 3 financial years ending 31st March of the corresponding year.
- Certified copies from Chartered Accountant for the annual financial turnover and balance sheet showing profit/loss to be furnished.
- In event of response from VENDORS already executing ISRO contracts, past performance will be considered.

- The VENDOR should have an established management structure and shall possess human resources with adequate knowledge, skill and experience in the of Instrumentation and Data acquisition systems.
- Party shall submit the EOI with all technical details duly filled in the Compliance Matrix attached with the EOI. Incomplete/insufficient data in the Compliance Matrix shall be considered as a disqualification. In addition, if the technical details provided were found incorrect at a later stage, the party shall get disqualified.
- Technical competence will be evaluated by a committee constituted by VSSC which will short list the qualified bidders based on the inputs (Annexure -1: Compliance Matrix) submitted by the party. If required, a visit to STED/ASOE, VSSC by the party can be arranged.
- Short listed bidders from the EOI only shall be allowed to participate in further tendering through Request For Proposal (RFP).
- The decision of VSSC shall be final and binding, based on inputs furnished by parties backed up with documentary evidence and discussions at VSSC.

Note:

1. For Clause No.7, all information provided by the VENDOR shall be supported with documentary evidence. Brochure, if any detailing the VENDOR profile may be submitted. Copy of the previous similar purchase/work orders executed by the VENDOR also may be appended.
2. The final evaluation of the responses will be based on inputs furnished against our criteria, assessment based on facility visit, if required, feedback from customers and overall assessment.

VENDORS who are meeting the requirements as specified in clause 7 of the EOI and are interested in associating with ISRO for development and installation of IFTS at ASOE, VSSC, Thiruvananthapuram may submit their interest in writing along with copies of supporting documents for verification/evaluation at VSSC. Qualified VENDORS will be shortlisted and detailed proposals from such VENDORS will be solicited through an RFP.

8. Confidentiality

All documents, information and any items related to IFTS that are received from VSSC shall be kept confidential and shall not be tampered with or disclosed to third parties without explicit written permission from VSSC/ISRO.

9. Other requirements

Security: VENDOR shall comply with the security regulations of VSSC.

Safety : VENDOR shall follow all safety stipulations.

Secrecy : VENDOR and their team shall abide by the INDIAN OFFICIAL SECRETS ACT in vogue and shall provide information of awareness of the above in writing.

Annexure - 1

Checklist for the supporting documents

(Filled checklist to be submitted by the Vendor along with the Expression of Interest)

Sl. No.	Document/Proof	Attached or Not-attached with EOI	Remarks
1.	Company registration details		
2.	Proof for experience in the area of developing and installing Instrumentation and Data acquisition systems		
3.	Certified copies from Chartered Accountant for balance sheet showing profit/loss for the last 3 years		
4.	Documents in support of prior experience of more than 3 years in working with aerospace/defense/space sectors in installing Instrumentation and Data acquisition systems		
5.	Copy of previous purchase orders executed with ISRO/Defense/Aerospace sectors		
6.	Company profile, management structure and human resources and their experience		
7.	Company brochure		
8.	Copies of similar purchase/work orders executed by the Company		