भारत सरकार/GOVERNMENT OF INDIA

अंतरिक्ष विभाग/DEPARTMENT OF SPACE

क्रय यूनिट/PURCHASE UNIT-VI

विक्रम साराभाई अंतरिक्ष केंद्र/VIKRAM SARABHAI SPACE CENTRE

तिरुवनंतपुरम/THIRUVANANTHAPURAM – 695 013

विज्ञा. सं. वीएसएससी/सीएमएसई/विज्ञा./ 15 /2023 दि. 28.04.2023

ADVT. NO. VSSC/CMSE/ADVT/ 15 /2023 DT. 28.04.2023

भारत के राष्ट्रपति के लिए तथा उनकी ओर से वरिष्ठ प्रधान, क्रय एवं भंडार, विक्रम साराभाई अंतरिक्ष केंद्र (वीएसएससी), तिरुवनंतपुरम निम्नलिखित के लिए अभिरुचि की अभिव्यक्ति आमंत्रित करते हैं:-

For & on behalf of the President of India, the Sr. Head Purchase & Stores, Vikram Sarabhai Space Centre (VSSC), Thiruvananthapuram invites Expression of Interest for the following :-

क्रम सं. **Sl. No.**	**ब्याज की अभिव्यक्ति सं.** **Expression of Interest No.**	**वर्णन** **Description**
01	सीएमएसई/ईएफसीडी CMSE/EOI/EFCD/S200/01/2023	एलवीएम3 के लिए एस200/एचएस200 संविरचन एवं नॉजल एवं एसएस1 एवं एसएसएलवी के लिए एसएस2 नॉजल Fabrication & supply of S200/HS200 Nozzles for LVM3 & SS1 & SS2 Nozzles for SSLV – Details as per Annexure
	इच्छुक संभावित विक्रेता हमारी संदर्भ संख्या का उद्धरण करते हुए अपनी अभिरुचि की अभिव्यक्ति **दिनांक 14/06/2023 (14.00 बजे)** या उससे पहले ईओआई में उल्लिखित पते पर प्रस्तुत कर सकते हैं।Interested prospective vendors can furnish their Expression Of Interest quoting our reference No CMSE/EOI/EFCD/S200/01/2023 on or before **14/06/2023 (14.00 hrs)** to the address mentioned in the EOI. विस्तृत तकनीकी विनिर्देश और निबंधन एवं शर्तें हमारे वेबसाइट www.isro.gov.in और www.vssc.gov.in पर उपलब्ध हैं।Detailed technical specifications & terms & conditions are available in our website www.isro.gov.in and www.vssc.gov.in.	
	अभिरुचि की अभिव्यक्ति प्रस्तुत करने की नियत तिथि/Due date for submission of **Expression of Interest**	दिनांक 14/06/2023 को 14.00 बजे तक 14/06/2023 up to 14.00 hrs

शुद्धिपत्र, यदि कोई हो तो, हमारे वेबसाइट www.vssc.gov.in / www.isro.gov.in में मात्र प्रकाशित किया जाएगा।
Corrigendum, if any will be published in our websites : www.vssc.gov.in / www.isro.gov.in only.

हस्ताक्षरित/Sd/-

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

GOVERNMENT OF INDIA
DEPARTMENT OF SPACE, ISRO
VIKRAM SARABHAI SPACE CENTRE
TRIVANDRUM- 695013
KERALA STATE

Call for Expression of Interest

Fabrication and supply of S200/HS200 Nozzles for LVM3& SS1& SS2 Nozzles for SSLV

It is proposed to realize ablative S200/HS200 Solid Rocket Nozzlesfor LVM3 & SS1& SS2 Nozzles for SSLV through competent Indian Industries. Size of the S200/HS200 Nozzle is around 3.2m diameter and 3.5m height. Each Nozzle consists of five subassemblies namely: the convergent sub-assy (CSA),Flex seal sub assembly (FSA), Submerged sub-assembly (SSA),Divergent fore end sub-assy (FESA) and Divergent aft end sub-assy (AESA). SS1 Nozzle is around 2.3m diameter and 2.6m height. Each Nozzle consists of four subassemblies namely: the convergent sub-assy (CSA), Divergent fore end sub-assy (FESA), Divergent after end sub-assy (AESA) and submerged sub-assy. SS2 Nozzle is around 1.2m diameter and 1.5m height. Each Nozzle consists of four subassemblies namely: the convergent sub-assy (CSA), Divergent sub-assy (DSA), Flex seal sub assembly (FSA)& Submerged sub-assembly (SSA).

S200/HS200 Nozzles

The CSA consists of– FSTPL sub-assy (FSTPL liner, FSTP hardware and FSTPL backup liner), nose entry liner, nose insert liner and throat housing hardware and throat liner are bonded and assembled to the convergent sub-assy, FESA consists of divergent fore end liner and divergent fore end metallic hardware, AESA consists of divergent aft end liner, divergent aft end metallic hardware and the composite structural backup. Current requirement is 65nos Nozzles for a period of 5 years.

The divergent aft end liner,FSTP Liner, noseentry liner nose insert liner and throat liner are made from carbon phenolic material. FSTPL backup liner is made from silica phenolic material. Processing of Nose Entry liner, Nose insert liner, Throat Liner,divergent fore end liner, FSTPL backup liner and FSTPL are tape wound and cured in hydroclave. Maximum curingpressure is 65 bar. The divergent aft end liner tape wound and cured in an autoclaveat 7 bar pressure.

SS1 Nozzles

The CSA consists of– FSTPL, nose insert liner, flex seal sub-assyand Throat housing hardware and throat insert liner. FESA consists of divergent fore end liner and fore end divergent metallic hardware. AESA consists of one divergent aft end liner, aft end divergent metallic hardware and the composite structural backup. Current requirement is 6 Nozzles.

The divergent fore end and after end liner, FSTPL liner, nose insert liner and throat insert liner are made from carbon phenolic material. Processing of Nose insert liner, Throat Liner, divergent fore end liner and FSTPL are tape wound and cured in hydroclave at 30-40 bar pressure. The divergent aft end liner tape wound and cured in an autoclave at 5 bar pressure.

SS2 Nozzles

The CSA consists of– FSTPL, nose insert linerand throat graphite,TBU CP&SP. DSA consists of divergent liner and divergent metallic hardware and the composite structural backup Current requirement is 6 Nozzles.

The divergent liner, FSTPLiner, nose insert liner and TBU CP are made from carbon phenolic material. TBU SP is made from silica phenolic material. Processing of divergent liner and FSTPL are tape wound and cured in hyroclave at 30-40 bar pressure. The TBU CP&SP tape wound and cured in an ovenundervacuum. Nose insert liner is made by hydraulic press moulding.

The work involves procurement of raw materials and their storage, prepreg testing, impregnation in an impregnation plant, prepreg storing in cold storage, raw material and prepreg testing, prepreg cutting and tape winding, curing in a hydroclave and autoclave, extraction, machining, NDT by visual, ultrasonic and radiography, testing of specimen and dimensional inspection, liner bonding with metallic hardware, finish machining, dimensional inspection and assembly. Process and Quality documentation is also required.

Essential facilities required for the program are impregnation plant, cold storage for storing prepreg at +4°C, prepreg cutting machine, tape winding machine, Hydroclave and autoclave, CNC VTM with side head, Processing and assembly bay of around 5000 sq.m, Humidity controlled assembly bay of around 1000 sq.m, LINAC system, Ultrasonic equipment, Carbon analyser facility for chemical testing of resins and prepregs, Laser tracker/CMM for Dimensional inspection including conventional instruments like micrometers, Vernier calipers, unimaster, pi-tapes, etc..

In order to be considered as a potential supplier, interested companies should submit their EOI with information such as Brochure and other supporting materials relevant to the subject, Reference list of previous deliverables of similar items or categories, contact information, Financial strength and the plan of investment, Expertise, Resources such as land, buildings, staff, etc.

An interactive session with interested parties will be planned to bring forth a clear understanding of technical requirements, infrastructure to be built up including test facilities, quality system to be implemented and scope of work to be executed by the prospective vendors.

Contract will be made with the successful vendor after technical and commercial evaluation based on a competitive tender for the processing and supply of S200/HS200 Nozzles, SS1& SS2 Nozzles.

"Expression of interest" with all the above information shall be sent to Purchase & Stores Officer, CMSE Purchase, VSSC, Vattiyoorkavu, Trivandrum – 695 013, quoting our Ref. No. CMSE/EOI/EFCD/S200/01/2023 on or before 14.6.2023. VSSC reserves the right to accept or reject all or any such "Expression of interest" without assigning any reasons what so ever.

Sd/-

Sr Purchase & Stores Officer