

भारत सरकार/GOVERNMENT OF INDIA
अंतरिक्ष विभाग/DEPARTMENT OF SPACE
विक्रम साराभाई अंतरिक्ष केंद्र/VIKRAM SARABHAI SPACE CENTRE
तिरुवनंतपुरम/THIRUVANANTHAPURAM - 695 022

विक्रम साराभाई अंतरिक्ष केंद्र (वीएसएससी), भारत सरकार, पीएसएलवी तथा एलवीएम३ की हल्की मिश्रधातु संरचनाओं एवं मोटर आवरणों के लिए भंडारण सुविधा हेतु देश के अंदर के इच्छुक प्रतिष्ठानों से अभिरुचि की अभिव्यक्ति आमंत्रित करता है।

Vikram Sarabhai Space Centre [VSSC], Govt. of India invites Expression of Interest from interested firms within the country for Storage facility for Light Alloy Structures and Motor Cases of PSLV and LVM3

विस्तृत तकनीकी विनिर्देशन तथा एवं शर्तें हमारे वेबसाइट www.isro.gov.in और www.vssc.gov.in पर उपलब्ध हैं।

Detailed Technical Specification and Terms & Conditions are available in our website www.isro.gov.in and www.vssc.gov.in .

इच्छुक प्रत्याशी निर्माता हमारे संदर्भ सं. 601Q 2022 003143 01 का उल्लेख करते हुए दिनांक 09/02/2023 को 4 बजे अपराह्न या उससे पहले निम्नलिखित पते पर अपनी अभिरुचि की अभिव्यक्ति प्रस्तुत कर सकते हैं।

Interested prospective Manufacturers can furnish their Expression of Interest quoting our reference No. 601Q 2022 003143 01 on or before 09/02/2023; Time : 4pm to the following address.

वरि. क्रय एवं भंडार अधिकारी
Sr. Purchase & Stores Officer
क्रय यूनिट, एमएमई क्रय,
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हस्ताक्षरित/Sd/-

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

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Expression of Interest (EoI)

**Storage facility for Light Alloy Structures
and Motor Cases of PSLV and LVM3**

**Indian Space Research Organisation
Department of Space
Government of India**

Expression of interest

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Scope of Work

1. Background

Vikram Sarabhai Space Centre (VSSC), Department of Space (DOS), Government of India invites **Expression of Interest (EOI)** from interested Indian industries for Storage of Light Alloy Structures and Motor Cases for PSLV and LVM3. VSSC has collaboration with many Indian Industries to realize these Structures and Motor Cases. In order to meet the requirement of storage near the launch site, VSSC is looking for prospective Industries to provide **Storage Facility in and around Chennai/Coimbatore/Bengaluru/Hyderabad**. In this context, an Expression of Interest is sought.

2. Introduction

Light Alloy Structures and Motor Cases are the major hardware of Launch Vehicles. They are being transported mainly in dedicated metallic containers by Trailers. For long storage of these hardware, there is a need for a covered hanger with adequate protection against natural calamities.

In each PSLV flight, there are 24 nos. of Structures and 23 nos. of Motor Case Segments. In each LVM3 flight, there are 29 nos. of structures and 6 nos. of Motor Case Segment. Size range of these Structure and Motor Case is indicated in the table in the subsequent section. Proposed storage facility area to be calculated consideration storage of Light Alloy Structures and Motor cases meant for 6 flights of PSLV and 2 flights of LVM3. A sample floor layout plan is attached as annexure-1 for illustration.

3. Extent of Work

3.1 Layout of Hardware Storage

- 1.Storage hanger with 5 Ton EOT crane and height below crane hook 7 meter (minimum) for Light Alloy Structures and 13 meter (minimum) for S200 Motor Cases with wider access to Highway for transportation of 6-meter-wide and 10 meter long containers.
- 2.Storage hanger shall be fully covered to protect the hardware from rain, wind, bird dropping, any other hard material impact etc.

3. Flooring shall be able to take weight of hardware and same shall be above ground level to ensure flood proofing
4. Required area (3600 Sq-M) can be in single building or multiple buildings
5. Typical Layout is shown in Figure 1. Entry of 4-6 M wide Trailer shall be possible for moved in & out easily and loading & unloading of hardware

3.2 Scope of the Department

1. Providing supporting fixtures for storing LAS hardware and motor cases
2. Hardware Lifting Fixture also will be supplied by the Department
3. Installation of provisions to enable the cocooning of hardware – Suitable Wrapping covers for all hardware, plumbing/installation of N₂ gas pipes wherever necessary, Metal clamping and Storage tank for storing Nitrogen with suitable control will be taken care by the Department
4. Any other general ladders/ platforms shall be provided by Department.

3.3 Scope of Vendor

3.3.1 General requirements

The Work involves following:

1. The storage hanger shall be exclusive for storage of Department hardware only
2. Safe unloading/loading of the Light Alloy Structures and Motor Cases from/on the Trailer using EOT Crane
3. Load testing of EOT Crane to be done once in a year for a factor of safety of 2
4. EOT crane with four-point sling to be used for lifting and movement of the Structures and Motor Cases
5. Light alloy Structures of diameter more than 1 meter are being transported in metallic container. All the interface fasteners to be unscrewed carefully before lifting the structures.
6. Further, while loading the Light alloy Structures and Motor Cases in the metallic containers, proper care to be taken for fastening the hardware with container interface using fasteners
7. Visual Inspection of the hardware and reporting, if any observation noticed. Persons identified by the vendor will be trained by the Department to execute the

overall work. Personnel certified by the Department only shall be allowed to enter or operate the facility

8. The process document for hardware receipt in container, unloading, storage and loading & dispatch shall be provided by Department.
9. Storing the Light Alloy Structures and Motor Cases in controlled surrounding by local cocooning and nitrogen filling as shown in Annexure II. Installation of facility for cocooning will be done the Department. However, regular Maintenance of entire system including maintaining gas pressure and supply will be the scope of vendor.
10. Continuous video security surveillance of the storage area must be provided. Video of hardware loading and unloading shall be made and kept safe for Department's future reference
11. Provision of land/ plot fencing from all the sides with single point accessibility for entry and exit of personnel and hardware to ensure security of hardware
12. Security of entire place shall be ensured by dedicated and reliable Security Agency
13. Storing the hardware on Department supplied pallets with neoprene coating or any other supporting fixtures
14. Total nos. of Light Alloy Structures proposed for storage works out to maximum of 144 nos. for PSLV (6 flights) and 58 nos. for LVM3 (2 flights). Total nos. of Motor Cases proposed for storage works out to maximum of 138 nos. for PSLV (6 flights) and 6 nos. for LVM3 (2 flights)
15. The total cost for the proposed Light Alloy Structures and Motor Cases works out to ₹684.24 Crore. All Risk Insurance Policy to be obtained by the vendor for the same in the name of Director, VSSC.

3.3.2 Guidelines for storage of hardware

1. There are product specific travelling logbooks for each hardware, which is being dispatched with each hardware. These logbooks are to be tagged with the hardware while storage.
2. There are hardware, which are accompanied with loose components and fasteners. The details of such components and fasteners are available in the travelling logbook. These loose parts to be kept securely with traceability with hardware. While collection of the hardware, the corresponding loose part dispatch also to be ensured.

3. There shall be inward inspection, receipt acknowledgement certificate, and dispatch note for each unloading/dispatch with the audit certification by Department Engineer.
4. These shall be periodical inspection as per document provided by Department and report submitted.

3.3.3 Routine inspection of Motor Cases

1. Machined interfaces are to be inspected after removal of protective paint (Rustex-3) and calcium based grease from tapped holes. Tapped holes gauging to be done for GO/NOGO thread plug gauge. After carrying out inspection, protective paint (Rustex-3) and calcium based grease to be re-applied on machined interfaces and tapped holes respectively. The frequency of the inspection to be followed as per applicable document indicated in Annexure-III. These activities will be taken care by the Department as per the predefined requirement. Vendor's scope is to enable the access to Department personnel to carry out the task.
 2. For S139 and S200 Motor Cases, in addition to above inspection, there is a requirement of Ultrasonic Test (UT) of weldment as per applicable document indicated in Annexure-III. UT will be done by Department authorized inspector as and when requirement arises. Party shall provide necessary logistic support for carrying out the activity.
4. **Light Alloy Structures Size Range and Floor Area** – all hardware are cylindrical in Shape

PSLV Light Alloy Structures				
Sl. No.	Structure diameter range (mm)	Structure Height range (mm)	Floor area required for structures Flight (m ²)	No. of Structures/ Flight
1	700-2800	613-4100	171	24

LVM3 Light Alloy Structures				
Sl. No.	Structure diameter range (mm)	Structure Height range (mm)	Floor area required for structures Flight (m ²)	No. of Structures/ Flight
1	700-3200	400-4100	462	28

5. Motor Case Hardware Size Range and Floor Area

PSLV Motor Cases				
Sl. No.	Diameter range (mm)	Height range (mm)	Floor area required for hardware / Flight (m ²)	No. of Hardware/ Flight
1	1023-2800	3300-4165	196	23

LVM3 Motor Cases				
Sl. No.	Diameter range (mm)	Height range (mm)	Floor area required for hardware / Flight (m ²)	No. of Hardware/ Flight
1	3200	3000-8300	96	6

Figure 1: Sample Layout of Storage Hanger

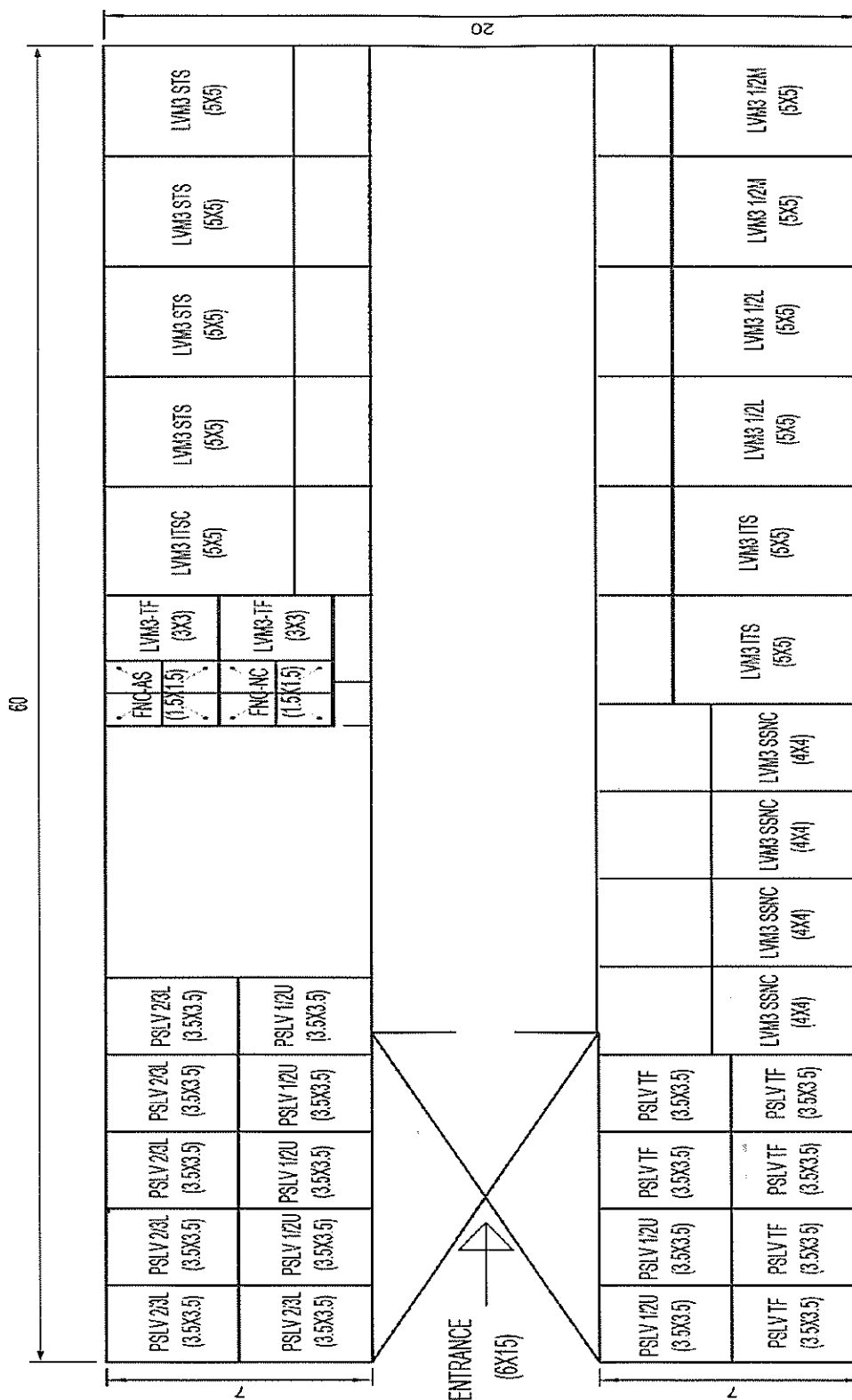
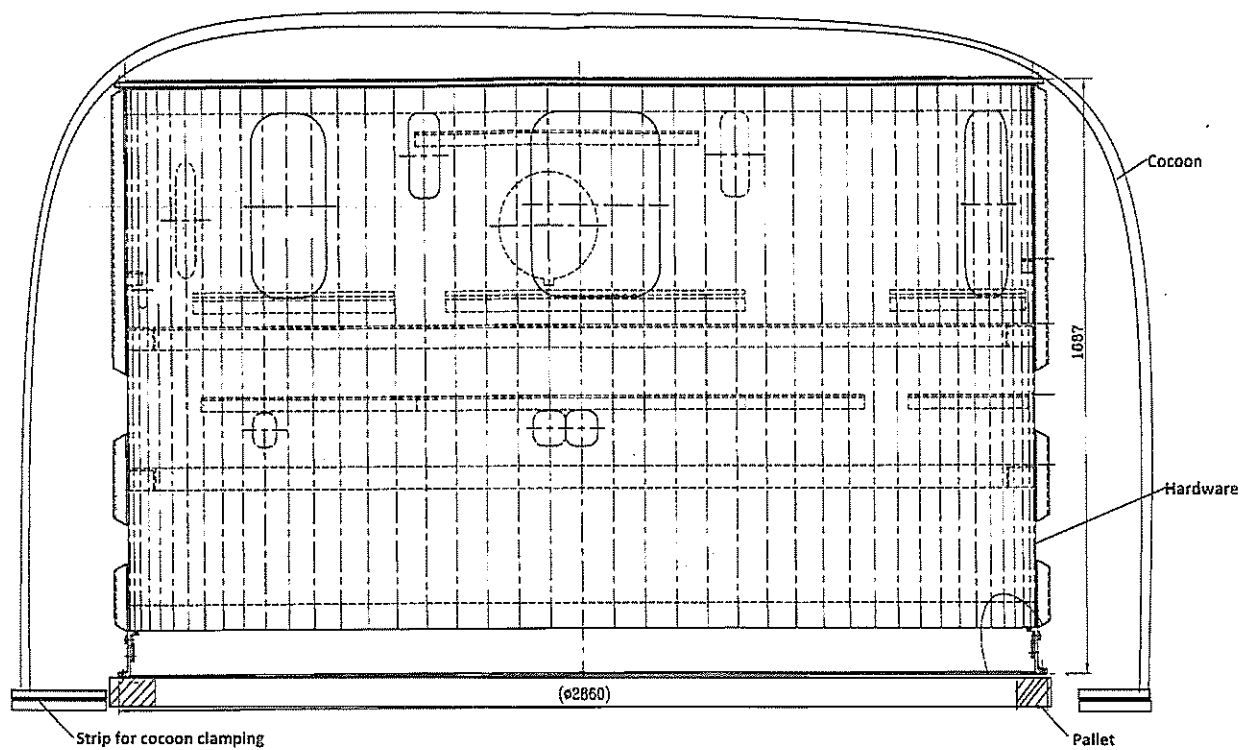


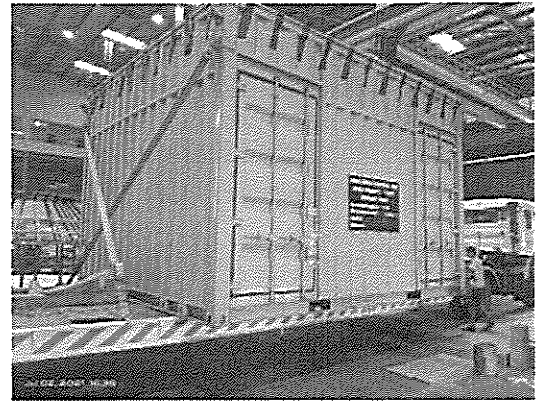
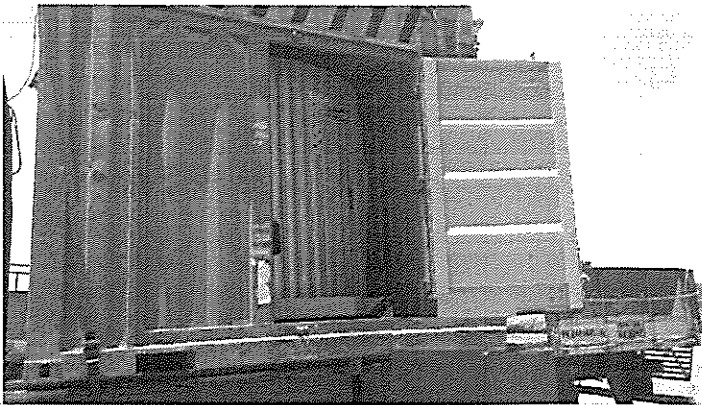
Figure 2: Sample Layout of Cocooned Structure



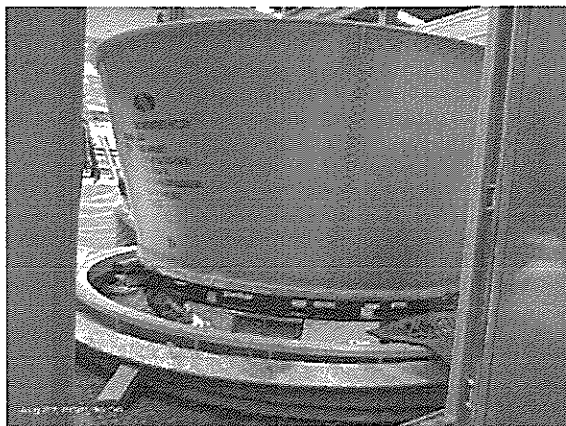
Annexure-III**Applicable documents for storage of Light Alloy Structures and Motor Cases**

1. Report on storage procedure for S139 segment hardware at SDSC, SHAR – Volume 1 vide doc. No. ISRO-VSSC-TR-0247-1-13, Issue 1 dt. 06/05/2013
2. Report on storage procedure for S200 segment hardware at SDSC, SHAR – Volume 2 vide doc. No. ISRO-VSSC-TR-0248-1-13, Issue 1 dt. 06/05/2013
3. Report on storage procedure for Solid Motor metallic hardware fabricated with 15CDV6/SA515 Gr.70/ IS226/IS2026 Material – Volume 3 vide doc. No. ISRO-VSSC-TR-0250-1-12, Issue 1 dt. 06/05/2013
4. Storage and Preservation of LAS Materials and Assemblies. MME/TT/43.86/QCP/67/2012 dt. January, 2012

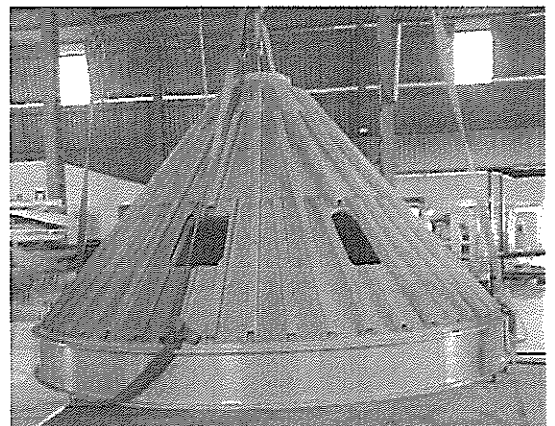
Figure 3: Sample Images of Light Alloy Structure and Motor Case



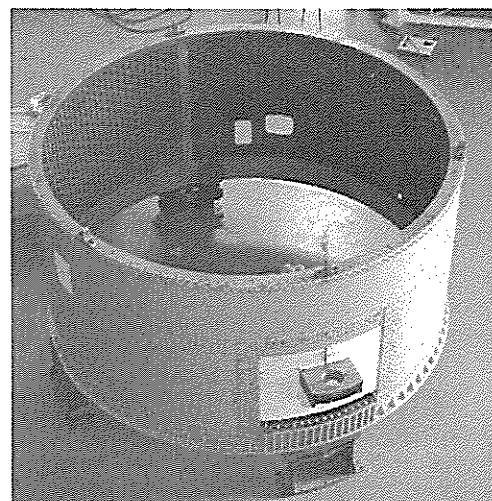
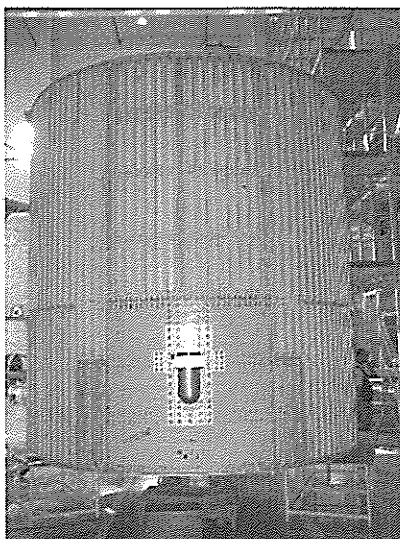
Loading of hardware inside container and Locking of Container at Trailer



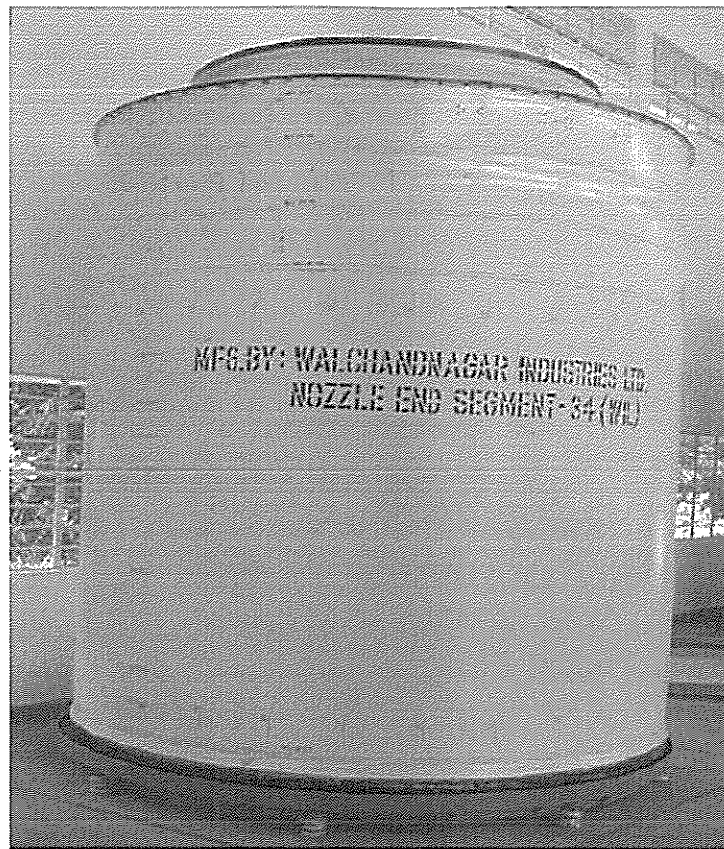
Bolting hardware inside Packing Container



Hardware Lifting for loading



Typical Light Alloy Hardware



Storage of a Motor Case Segment (Typical) on a Metallic Pallet

Case File Ref: 601Q 2022003143

Compliance Matrix for Eol – Storage Facility for LAS & Motor Case (Please Tick relevant option)				
1	Experience in handling/storage of Light Alloy Structures and Motor Cases for Aerospace application	Yes	No	If Yes, duration (no. of year of experience) to be indicated:
2	Space availability for ODC Consignment (upto 6m x 5m x 10m) accessibility and manoeuvring	Yes	No	
3	Availability of exclusive Hanger for storage and movement of Light Alloy Structures and Motor Cases	Yes	No	
4	Agreement to provide Bank Guarantee (or any other mode of surety, mutually agreeable to VSSC and the party) for the Light Alloy Structures and Motor Cases	Yes	No	
5	Safe Loading/Unloading facility for Light Alloy Structures using Over Head Crane	Yes	No	
6	Availability of security surveillance of entire facility	Yes	No	
7	Provision of fencing from all the sides with single point accessibility for entry and exit of personnel and hardware to ensure security of hardware	Yes	No	
8	Statutory clearance for the facility	Yes	No	
9	The work force employed are adequately covered under prevailing labour laws	Yes	No	

Note: Documentary evidence to be provided to support the response in above compliance matrix. Also, if any augmentation in the existing facility is required to meet the requirement, details of the same to provided with time frame of completion.

Case File Ref: 601Q 2022003143

Eligibility Criteria Table: EoI for Storage Facility for LAS & Motor Case

Criteria	Weightage	Break-up of Weightage (on 100 scale)
Past experience of the firm in handling/storage of Light Alloy Structures and Motor Cases for Aerospace application	A	20
Availability of exclusive Hanger for storage and movement of Light Alloy Structures and Motor Cases	B	20
Financial strength of the vendor - Turnover figures of the last three years	C	15
Quality accreditations, Licensing requirements	D	15
Storage Practice and Traceability system	E	10
Proximity of facility to National Highway and distance from Chennai/Coimbatore/Bengaluru/Hyderabad	F	20

Note: Documentary evidence to be provided to support the response in above Eligibility Criteria Table.

Pre-qualification criteria

1. The bidder shall provide
 - (a) A brief description of the background and organization of your firm/entity.
 - (b) The turnover of the company on the basis of the audited accounts of the previous three years.
 - (c) Copy of the last three years Income Tax returns shall be provided.
 - (d) GST No.
2. The bidders shall provide valid authorization certificate from the manufacturer that they are the authorized dealer / distributor /agent for the items in our locality.
3. Your previous experience:
Copies of Purchase Orders awarded to you by any Government/PSU's shall also be attached.
4. Only Class I and Class II Local suppliers as per Make in India Policy are eligible to participate in the bid.
5. Foreign vendors are not permitted to quote
6. The percentage of Local content should be specifically mentioned in the offer, with break-up and location details without which it will be summarily rejected.
7. Preference will be given to Class I Local Supplier and in their absence, Class II Local Suppliers will be considered.
8. Validity Period of Empanelment is 15 years.