



भारत सरकार / Government of India
अंतरिक्ष विभाग / Department of Space
समानव अंतरिक्ष उड़ान केंद्र (इसरो)

HUMAN SPACE FLIGHT CENTRE [ISRO]

इसरो मुख्यालय परिसर, न्यू बी.ई.एल. रोड, बेंगलुरु-560094
ISRO HQ Campus, New BEL Road, Bengaluru – 560 094
Phone: +91-080-2217 2670/71, Email: aswathyps-hsfc@isro.gov.in

TENDER NOTICE NO. HSFC/PT/22/2023-24

भारत की राष्ट्रपति की ओर से वरिष्ठ प्रधान, क्रय एवं भंडार, एच.एस.एफ.सी., बेंगलूरु निम्न के लिए ऑनलाइन प्रस्तावों को आमंत्रित करती हैं :-

On behalf of the President of India, Sr. Head, Purchase & Stores, HSFC, Bengaluru invites online [email] quotations for the following:

क्र.सं./SI.No	निविदा संख्या/Tender Number	संक्षिप्त विवरण/Brief Description
1	HSM1 202300097601	Design, Realisation, Qualification and Delivery of Crew Seat Assembly

Date of Tender Release	:	05.12.2023
Last Date for downloading of tender documents	:	01.01.2024 at 14.00 Hrs
Confirmation to attend Pre-Bid Meeting	:	12.12.2023 at 16.00 Hrs
Date of PRE-BID Meeting	:	13.12.2023 at 10.30 Hrs
Due Date for submission of Bid by e-mail	:	01.01.2024 at 14.00 Hrs
Due Date for submission of Passwords	:	01.01.2024 at 14.00 Hrs
Due Date for opening of Part-I [Techno-Commercial bid]	:	01.01.2024 at 14.30 Hrs

- ❖ विदेशी विक्रेताओं को प्रस्ताव देने की अनुमति नहीं दी गई है। मेक इन इंडिया नीति के अनुसार केवल श्रेणी- I तथा श्रेणी- II के स्थानीय आपूर्तिकर्ता बोली में भाग लेने के योग्य हैं। ओ.ई.एम. से सीधे प्रस्ताव अथवा विदेशी ओ.ई.एम. की ओर से प्रस्ताव देने वाले एजेंटों को भाग लेने की अनुमति नहीं है / Foreign vendors are not permitted to quote. Only Class-I and Class-II local suppliers as per Make in India Policy are eligible to participate in the bid. Quotations directly from OEM/or from agents quoting on behalf of foreign OEMs are not allowed to participate in this tender.

- ❖ पूर्ण विवरण /कार्य के कार्यक्षेत्र तथा शर्तों एवं निबंधनों आदि के लिए कृपया संलग्न अनुबंध देखें / For full details/scope of work and terms and conditions etc. please see the enclosed annexures.

- ❖ निविदा दस्तावेज क्रय प्रभाग, एच.एस.एफ.सी. से खरीदे जा सकते हैं और साथ ही, निविदा दस्तावेज इसरो वेबसाइट पर भी उपलब्ध है। इच्छुक निविदाकार, वेबसाइट से डाउनलोड कर सकते हैं और अपने प्रस्ताव, 590/- रु. के निविदा शुल्क के साथ (क्रास किए गए चेक या डिमांड ड्राफ्ट द्वारा) जमा करा सकते हैं। अपना प्रस्ताव भेजते समय लिफाफे पर निविदा संख्या एवं दिनांक लिख दें।

Tender documents can be bought from the Purchase Division, HSFC and are also available on ISRO website Tender documents are available on ISRO website www.isro.gov.in. Interested tenderers may download the same from the website and submit their offer along with Tender fee of Rs. 590/- each (In the form of Crossed Demand Draft). While submitting your offer superscribe Tender No., and due date on the envelope.

- ❖ निविदा शुल्क (गैर-वापसी) को क्रास किए गए चेक या डिमांड ड्राफ्ट द्वारा लेखा अधिकारी, एच.एस.एफ.सी. बेंगलूरु 560094 के नाम जमा कराया जाएगा। निविदा शुल्क का भुगतान किसी अन्य माध्यम से स्वीकार नहीं किया जाएगा। डिमांड ड्राफ्ट के पीछे विक्रेता का नाम एवं निविदा संख्या लिखें।

The tender fees (non-refundable) shall be paid in the form of CROSSED DEMAND DRAFT (MICR DD ONLY) payable at BENGALURU in favour of The ACCOUNTS OFFICER, HSFC, Bengaluru – 560 094. No other mode of payment for Tender fee is acceptable. Vendor name & tender number shall be indicated on the reverse side of the DD.

- ❖ Bid Security Declaration shall be submitted by the bidder along with the Bid.
- ❖ निविदाकार जो वेबसाइट का उपयोग नहीं करते, वे, सभी कार्य दिवसों में 10.00 से 17.00 बजे के दौरान क्रय एवं भंडार अधिकारी, एच.एस.एफ.सी., न्यू बी.ई.एल.रोड, बेंगलुरु से गैर-वापसी निविदा शुल्क का भुगतान कर निविदा दस्तावेज प्राप्त कर सकते हैं।
Tenderers who do not utilise the website can obtain the Tender documents from Purchase and Stores Officer HSFC, ISRO HQ Campus, New BEL Road, Bengaluru- 560094 on payment of Non-refundable Tender Fee on all working days between 10.00 hours to 17.00 IST hours.
- ❖ डिमांड ड्राफ्ट वेबसाइट विज्ञापन की सूचना के दिनांक से पहले का न हो और प्रत्येक निविदा दस्तावेज के लिए अलग-अलग डी.डी भेजा जाए।
DD should not be dated prior to the date of advertisement intimation/website. Separate DD shall be sent for each tender document.
- ❖ अपेक्षित निविदा शुल्क के बिना प्राप्त निविदा को /अस्वीकृत समझा जाएगा।
Tenders received without the required tender fee will be treated as unsolicited/rejected.
- ❖ सरकारी विभाग, सार्वजनिक क्षेत्र के उपक्रम (केंद्रीय तथा राज्य दोनों), लघु उद्योग जो एन.एस.आई. की सूची में शामिल हैं, एम.एस.ई.के रूप में पंजीकृत तथा के.वी.आई.सी. में पंजीकृत विक्रेता, विदेशी आपूर्तिकर्ता/निर्माता निशुल्क निविदा दस्तावेज के लिए पात्र हैं। भारतीय एजेंट जो विदेशी निर्माता/आपूर्तिकर्ता की ओर से प्रस्ताव जमा करा रहे हैं, वे, अनिवार्यतः निविदा शुल्क जमा करायें।
Govt. Department, PSUs (both Central & State), SSI Units included in the list of NSIC, Vendors registered as MSEs and registered with KVIC, foreign manufacturers/supplier are eligible for free tender documents. Indian agents submitting offers on behalf of foreign manufacturers/suppliers shall mandatorily submit the tender fees.
- ❖ अंतिम तिथि बढ़ाने के अनुरोध पर विचार नहीं किया जाएगा।
No request for extension of the due date will be considered.
- ❖ बोली से पूर्व की बैठक में भागीदारी आवश्यक है। ऐसे विक्रेता जो बोली से पूर्व की बैठक में भाग नहीं लेंगे उनके प्रस्तावों को अमान्य माना जाएगा। / Participation in Pre-bid meeting is mandatory. Those vendors who have not participated in the pre-bid Meeting, their offers shall be considered as invalid.
- ❖ अंतिम तिथि से पूर्व प्राप्त बोली को उसी दिन, निविदाकार/उनके प्राधिकृत प्रतिनिधि के समक्ष 14.30 बजे खोला जाएगा।
Bids received before the deadline shall be opened in the presence of attending tenderers/their authorized representatives on the same day at 14.30 IST hrs.
- ❖ ऊपर दी गई तारीखों में छुट्टी घोषित होने के मामले में, एच.एस.एफ.सी.
In the event any date indicated above is declared as holiday, the next working day at HSFC shall be considered as the due date for receiving & opening of tenders.
- ❖ देर से प्राप्त प्रस्ताव को स्वीकार नहीं किया जाएगा /Late/Delayed offers will not be accepted.
- ❖ यदि शुद्धिपत्र कोई हो तो उसे केवल हमारी वेबसाइट <https://www.isro.gov.in> पर प्रकाशित किया जाएगा। / Corrigendum, if any will be published in our website: <https://www.isro.gov.in> only.
- ❖ पक्षकार, जिन्होंने समय पर बोली प्रस्तुत कर दी है और निविदा खुलने के समय उपस्थित रहना चाहते हैं तो वे उस तारीख से एक दिन पहले उक्त निविदा के सामने अपने प्राधिकृत प्रतिनिधि का नाम उल्लिखित करते हुए सूचित कर दें। विलंब से प्राप्त या अंतिम क्षण में प्राप्त अनुरोध पर विचार नहीं किया जाएगा। निविदा खुलने के समय आने वाले प्रतिनिधि सरकार द्वारा जारी कोई पहचानपत्र साथ लाएँ। इस पीसे संबंधित कोई भी .टी. पत्र aswathyps-hsfc@isro.gov.in को भेजा जाए।
Parties, who have submitted bids in time and want to participate in Tender opening, may inform their authorized representative's name one day in advance of the due date indicated against the particular tender. Delayed requests / requests for entry at eleventh hour will not be entertained. Representative shall carry any Government ID for attending tender opening. Any communication pertaining to this PT shall be forwarded to aswathyps-hsfc@isro.gov.in

- ❖ वप्रधान., क्रय एवं भंडार, एच.एस.एफ.सी. को किसी भी निविदा को , बिना कारण बताए, अंशतः या पूर्णतः स्वीकार अथवा अस्वीकार करने का अधिकार है । /Senior Head Purchase and Stores, HSFC reserve the right to accept or reject any tenders in part or full without assigning any reason thereof.

हस्ता / -/Sd/-

[वप्रधान., क्रय एवं भंडार / Sr. Head, Purchase & Stores]

भारत सरकार
अंतरिक्ष विभाग (अं.वि.)
समानव अंतरिक्ष उड़ान केंद्र
बेंगलुरु-560094 भारत
समानव अंतरिक्ष उड़ान केंद्र
फोन नं Ph No. 080-22172671 / Fax. -- / ईमेल e-mail: hpsa-hsfc@isro.gov.in



GOVERNMENT OF INDIA
DEPARTMENT OF SPACE (DOS)
HUMAN SPACE FLIGHT CENTRE
BENGALURU-560094;
PURCHASE & STORES

निविदा आमंत्रण
INVITATION TO TENDER

मैसर्स
M/s

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हमारी संदर्भ सं.
Our Ref. No.

HSM1 2023-000976-01

निविदा अंतिम तिथि
Tender Due at

14:00 hrs IST on 01/01/2024

महोदय

Dear Sirs,

कृपया निम्नलिखित मदों की आपूर्ति के लिए अनुलग्नक (फार्म सं. संलग्न) में उल्लिखित निबंधन एवं शर्तों के अनुसार संलग्न निविदा प्रपत्र में वर्णनात्मक सूचीपत्र/पैम्फलेट/साहित्य सहित हमारी संदर्भ सं. एवं अंतिम तिथि (मोटे अक्षरों में) ऊपर लिखते हुए अपनी मुहरबंद निविदा प्रस्तुत करें।

Please submit your sealed quotation, in the Tender Form enclosed here along with the descriptive catalogues /pamphlets /literature, superscribed with Our Ref.No. and Due Date for the supply of the following items as per the terms & conditions mentioned in Annexure(Form No. null)

क्र.सं. Sl. No.	विनिर्देशों सहित मद का विवरण Description of items with Specifications	इकाई Unit	मात्रा Quantity
1	Design, realization, qualification testing & delivery of CSA	1	1

सुपुर्दगी स्थल

Delivery At HSFC, ISRO

प्रेषण की विधि

Mode of Despatch BY ROAD

शुल्क छूट

Duty Exemptions NOT APPLICABLE

विशेष अनुदेश

Special Instructions NIL

विशेष निबंधन

Specific Terms

निविदाकारों को अनुदेश

Instructions to Tenderers

- (1) RFP for Design Realization, Qualification Testing & Delivery of CSA is attached as Annexure-A
- (2) This is an E-MAIL TENDER ENQUIRY [TWO-PART]. Offers shall be submitted on Two-Part basis by two separate e-mails with password protection.
- (3) Instructions for the submission of offer through e-mail, Instructions for Two Part Tender, General Instructions etc enclosed as Annexure-B and Instructions for Domestic Tender attached as Annexure C
- (4) All tenderers are requested to carefully follow the instructions before the submission of offer. Quotations submitted contrary to the instructions given in Annexure-B are liable to be rejected
- (5) A PRE-BID MEETING is scheduled to be conducted on 13th December 2023 at 10:30 Hrs at HSFC, Bangalore. Attendance in pre-bid meeting is mandatory, failing to attend pre-bid meeting the offer of such firms will not be considered for evaluation.
- (6) You are requested to confirm the willingness to participate in Pre-bid meeting to mail id: aswathyps-hsfc@isro.gov.in on or before 12th December 2023 ;16.00 Hrs
- (7) A Commercial Compliance Matrix Attached along with Annexure -C, you are requested to furnish the duly filled in and signed Compliance Matrix along with Offer
- (8) Any offer and password received after the due date and time specified above will not be accepted and the tender submitted will be treated as invalid offer.
- (9) L1 Offer will be considered including the cost of additional 3 sets also.

अश्वती पी.एस. / Aswathy P.S
क्रय एवं भंडार अधिकारी / Purchase & Stores Officer
05/12/2023

INSTRUCTIONS FOR SUBMISSION OF TWO PART E-MAIL TENDER ENQUIRY**i) Instructions for E-Mail offer submission**

1. This is an e-mail enquiry. The bids shall be submitted as two parts as Part I: Technical and Commercial Bid & Part II: Price Bid only through separate password protected e-mails.
2. The **bids** [Part-I & Part-II] shall be submitted to e-mail id: **etendercell-hsfc@isro.gov.in** on or before **01/01/2024 IST 14:00 HRS** which is the tender due date & time
3. The bids [Part-I & Part-II] submitted shall be in the form of document with Password protection in **pdf/rar/zip** file format.
4. The **passwords** for the bids [Part-I & Part-II] submitted shall be sent only to e-mail id: **etenderpassword-hsfc@isro.gov.in** on or before **01/01/2024 IST 14.00 HRS** by clearly indicating the heading as Password for Technical Bid [Part-I] & Password for Price Bid [Part-II] separately.
5. The password shall be 8 digit containing upper and lower case alphabets and alphanumeric characters.
6. **Password shall not be disclosed** to etendercell-hsfc@isro.gov.in or any other e-mail id. Also, do not mark any copy to any other email IDs. Any password sent to this e-mail id will be considered as invalid
7. Any clarification regarding this tender shall be forwarded to aswathyps-hsfc@isro.gov.in. It may please be noted that quotations and password **shall not** be disclosed to this email id.
8. Any offer and password received after the due date and time specified above will not be accepted and the tender submitted will be treated as invalid offer.

The email id s are as follows;

SI No	Category	Concerned E-mail ID	Date & Time	Remarks
01	Confirmation on participation on Pre-Bid Meeting	aswathyps-hsfc@isro.gov.in & vsaravan-hsfc@isro.gov.in	on or before 12 th December 2023 IST 16.00 Hrs	Quotations and password shall not be disclosed to this email id.
02	Clarification regarding this tender	aswathyps-hsfc@isro.gov.in. & vsaravan-hsfc@isro.gov.in		
03	Bids Part I- Technical & Commercial Bid Part II- Price Bid [To be submitted through separate mails]	etendercell-hsfc@isro.gov.in	on or before 1 st January 2024 IST 14.00 HRS	NOT be disclosed to any other e-mail id. Also, do not mark any copy to any other email IDs
04	passwords for opening the bids [Separate password for Part-I & Part-II]	etenderpassword-hsfc@isro.gov.in	on or before 1 st January 2024 IST 14.00 HRS	NOT be disclosed to any other e-mail id. Also, do not mark any Copy to any other email IDs.

ii] Instructions for TWO-PART Tender

The bids shall be submitted as two parts as Part I: Technical and Commercial Bid & Part II: Price Bid

Part I: Technical & Commercial Bid

Part – (a) Technical

1. This part should contain detailed specifications of the items/service quoted by you along with technical literature and leaflets if any.
2. A compliance statement showing the compliance of the item quoted by you with that of item tendered by us should be prepared and enclosed to this.
3. Any other information called for in the tender related technical and specifications can also come in this part.
4. Prices should not be disclosed in Part-I.

Part – (b) Commercial Terms: (Without Prices)

1. The commercial terms applicable for the item quoted by you should be indicated in this part.
2. If any compliance statement is called for the commercial terms / contractual terms and conditions, the same is to be attached in this part.
3. Prices should not be disclosed in this part. However, a copy of the price bid (without prices) can be enclosed in this part to enable to understand whether all the items required to be quoted by you have been quoted in the price bid. Alternatively, a statement is to be made indicating that you have quoted prices for all the items as per the tender and enclosed in the Price Bid as per the format.
4. The Commercial terms such as delivery terms, delivery period, payment terms, Warranty, validity of the offer, installation & commissioning, duties and taxes etc., shall come into this.

Notes:

1. Either Technical Specifications or terms & conditions as above should be very clearly reflected item-wise with reference to the items called for in the tender.
2. Please note that the **PRICE SHOULD NOT BE** indicated in this part.

5. Part II: Price Bid

1. The prices applicable for the items, item-wise in response to the tender shall come into this part.
2. Tenderer shall indicate very clearly item-wise prices with reference to their technical offer.

iii] General Instructions

- A PRE-BID MEETING is scheduled to be conducted on 13th December 2023 at 10.30 Hrs at Human Space Flight Centre [HSFC], Bangalore. Attendance in pre-bid meeting is mandatory, failing to attend the Pre-Bid meeting, the offer of such firms will not be considered for evaluation.
- Quotations submitted contrary to above instructions are liable to be rejected.
- Please ensure that the bids are submitted by mail within the due date & time with separate password for Part-I & Part-II.

IMPORTANT DATES

Date of Tender Release	:	05.12.2023
Last Date for downloading of tender document	:	01.01.2024 at 14.00 Hrs
Confirmation to attend Pre-Bid Meeting	:	12.12.2023 at 16.00 Hrs
Date of PRE-BID Meeting	:	13.12.2023 at 10.30 Hrs
Due Date for submission of Bid by e-mail	:	01.01.2024 at 14.00 Hrs
Due Date for submission of Passwords	:	01.01.2024 at 14.00 Hrs
Due Date for opening of Part-I [Techno-Commercial bid]	:	01.01.2024 at 14.30 Hrs

05/12/23.

**Request for Proposal for
Design, Realisation, Qualification Testing &
Delivery of
Crew Seat Assembly**

**Human Space Flight Centre
Indian Space Research Organisation
Oct 2023**

This document is the exclusive property of Human Space Flight Centre, ISRO HQ, Bangalore. No part of this document shall be copied, re-produced, disclosed or put to commercial use without the explicit written approval of the Centre.

Part A
Technical Terms
&
Conditions

(i) **Definitions:**

Wherever used hereinafter in this **Request-for-Proposal (RFP)**, the following expressions shall have meaning as given:

a) Gaganyaan Program

Gaganyaan Programme means the first phase of the Indian human spaceflight programme which envisages demonstration of human spaceflight capability.

b) Crew

Crew means a person/ group of persons who is/are selected and trained for undertaking spaceflight in Indian human spaceflight programme.

c) Crew Module

Crew Module (CM) means the habitat for crew during the duration of the Gaganyaan mission.

d) Crew Seat Assembly

Crew Seat assembly means the interface for the crew inside the Crew Module which includes Crew Seat, Impact Attenuation System & other necessary systems required for interfacing the crew seat assembly inside Crew Module. It shall have provision for adequately supporting the crew & keeping them safe during dynamic phases of the mission.

i. Crew Seat

Crew Seat provides support/ interface to the Crew supporting all body parts in favorable condition. It has necessary restraints to keep the crew supported and restrained during dynamic phases of the mission. It shall have liner to mitigate any pressure hotspots during various phases of the mission. Restraint harness with single point lock/ unlock mechanism shall also be provided in Crew Seat. Crew Seat shall also contain necessary electrical & pneumatic interfaces for interfacing the flight suit, based on the inputs supplied by HSFC/ ISRO, accommodating the crew health monitoring device and crew communication devices.

ii. Impact Attenuator (Energy Absorber):

Impact Attenuator/ Energy Absorber (EA) means the set of energy absorber unit used to absorb / mitigate the impact landing loads meeting the crew injury criteria as per applicable standards as defined in sections 2 & 3.

e) 50th pc Hybrid III ATD

50th percentile Hybrid III Anthropomorphic Test Dummy (ATD) means the bio-fidelic human dummy which simulates the 50th percentile American population and has enhanced fidelity for frontal impacts (as per NASA/TM/-2013-217380-REV1).

f) Raw material

A material (metallic & non-metallic) that has to undergo change in form before it can be used as a part. It shall meet the requirements of Gaganyaan material specification as per Section 3.2

g) Part

Individual pieces manufactured as per supplied drawings, processes and procedures.

h) Sub-assembly

Two or more parts assembled together either by joining or mechanical assembly to meet specified requirements.

i) Hardware / Assembly

General terminology applicable to the assembled units listed in this RFP scope for production. It is a final product which consists of two or more parts or sub-assemblies which meets the end requirement.

j) Design

Means the activities that convert the concept in to configuration, 3D model, meshing and analyzing for various loads.

k) Standing Review Committee (SRC committee)

It is the review committee constituted by HSFC/ ISRO dedicated for the execution of this project. SRC committee would review various technical activities being carried out and would provide various clearances at HSFC/ ISRO's behest. SRC committee would ensure that project meets various schedule requirements and would troubleshoot the issues hindering the progress of the project. SRC committee would also review and give clearances for various payment milestones. SRC committee may (whenever needed) refer to various design review committees & other expert committees of ISRO and form sub committees.

l) Production

Means the entire range of all those processes and activities that convert individual parts into sub-assemblies and sub-assemblies into assembly by

using consumables and standard parts including assembly, integration and testing.

m) Sub-assembly fabrication

All those working processes that requires for finish machining operation for a sub-assembly to suit to further assembly operation.

n) Inspection

All those processes that confirm by physical measurements, visual assessment and other means like NDT that parts have been produced to specifications.

o) Qualification testing:

A demonstration by test, that the 1st set of hardware that can meet performance requirements with sufficient margins as per human rating requirements when subjected to specified tests.

p) Acceptance testing

A demonstration by test, that a sub-assembly or component can meet performance requirement when subjected to specified acceptance tests.

q) HSFC:

The Human Space Flight Centre of the Indian Space Research Organization, HSFC/ ISRO of Space, Government of India.

r) ISRO:

The Indian Space Research Organization under HSFC/ ISRO, Dept of Space.

s) HSFC/ ISRO:

President of India or his successors, representatives or assigns, in this case, The Director, Human Space Flight Centre, ISRO HQ, Bengaluru.

t) Vendor:

The fabricating agency/Company or its representatives or assigns. In this case The Managing Director of the Company.

u) Approval:

Documents in the approval category require approval from HSFC/ ISRO prior to implementation by the Vendor. Approval is understood to mean permission to proceed unless otherwise specified.

v) Contract:

A written agreement concerning fabrication and supply of the hardware that is intended to be enforceable by law.

w) RFP:

Request for Proposal for Design, Realization, Qualification Testing and Delivery of Crew Seat Assembly.

(ii) Preamble:

Human Space Flight Centre (HSFC) of the Indian Space Research Organisation (ISRO) is developing Crew Module (CM) for Gaganyaan project. The Crew Seat Assembly (CSA) is used inside CM to interface the crew with CM. The Crew Seat Assembly (CSA) consists of Crew Seat, set of Impact Attenuators and other necessary systems required for interfacing the crew seat assembly inside CM. It supports the crew during different phases of mission and it shall attenuate the impact loads while landing in sea after the parachute phase. The Crew Seat Assembly (CSA) has to offer a comfortable posture (as per applicable standards) for the crew during all phases of mission such as ascent, abort, on-orbit, descent and landing.

The Crew Seat Assembly is attached to the CM through a set of Impact attenuators to mitigate the impact loads while landing after the parachute based descent phase. The Impact Attenuator design has to satisfy the Crew injury criteria as a system during all conditions of water landing.

This RFP is intended to provide the detailed requirements and definition of Crew seat assembly with Crew Seat, Impact attenuators and other necessary systems required for interfacing the crew seat assembly inside CM. HSFC intends to place the order with the Vendor for design, analysis, realisation of hardware, design validation through testing, qualification testing, hardware delivery & assembly of flight hardware of Crew Seat Assembly with CM. Considering that this structure is meant for use in manned mission, best practices as per applicable human rating standards followed for human spaceflight missions shall be strictly followed. Raw materials specification, manufacturing process, bought out items, inspection, storage and transport shall be as per human rating standards approved by HSFC/ ISRO. The Vendor shall take all measures to meet the schedule for the deliverables while meeting all the quality requirements.

1. General Description

The Crew Seat Assembly (CSA) consists of Crew Seat (CS) with a suitable liner, set of Impact Attenuators (IAs) and other necessary systems required for interfacing the crew seat assembly inside CM.

Crew Seat (CS) provides support/ interface to the Crew supporting all body parts in favourable condition. It has necessary restraints to keep the crew supported and restrained during dynamic phases of the mission. It shall have preferably a customized liner suited to individual Crew member in suited condition so as to mitigate any pressure hotspots. Restraint harness with single point lock/ unlock mechanism shall also be provided in Crew Seat. Crew Seat shall also contain necessary electrical & pneumatic interfaces, based on the inputs provided by HSFC, for interfacing the flight suit, accommodating the crew health monitoring device and crew communication devices.

The IA shall limit the impact loads experienced by the crew within human tolerable limits so that the necessary crew injury criteria are satisfied. Vendor shall provide the details of crew injury criteria to be followed for the design based on their manned mission heritage & applicable standards and this needs to be vetted & agreed upon by HSFC. Any modification, if required, in the crew injury criteria shall be proposed by HSFC at the time of detailed design which shall be accepted and implemented by the Vendor. The various impact conditions are as provided in Annexure-I. The CSA has to be designed for meeting both nominal and off nominal landing requirements (detailed design inputs shall be provided by HSFC after signing of the contract).

The detailed requirements and definition of the Crew Seat Assembly components are given in subsequent sections of this RFP.

One set of Crew Seat Assembly (CSA) consists of following parts (Detailed Bill of Material to be provided for different items) -

- a) Crew Seat (CS) with a liner & restraint system
- b) Impact Attenuators (IA)
- c) All required interface brackets for attaching CSA with Crew Module
- d) Other necessary systems required for interfacing the crew seat assembly inside CM

2. Scope of Work

The scope of work for Crew Seat Assembly (CSA) involves design & analysis, developmental testing, qualification testing, acceptance testing & flight hardware delivery and assembly of 1st set of Crew Seat Assembly flight hardware with CM as per the requirements given by HSFC/ ISRO. The Crew Seat Assembly (CSA) shall be designed for seating & supporting a crew of two (02) inside Gaganyaan CM. However, the design shall be either modular in nature so that any change in the number of crew can be accommodated or an integrated single unit shall be developed meeting the volumetric and mass constraints. The design shall be elegant with smooth contours and easy to realise with easily available Aerospace grade lightweight materials. Mass of the whole assembly has to be optimized and it should be within 140kg.

The scope and deliverables include-

- **Design Phase**

- Design, analysis and development of Crew Seat Assembly (CSA) meeting the requirements, standards & constraints provided by HSFC & other human factors (crew injury requirements and other ergonomic requirements i.e. anthropometry, reachability, crew comfort etc.). Design shall be carried out in close interaction with HSFC/ ISRO.
- Load cases (ascent, abort, on-orbit, descent, landing & post landing), anthropometric details, other design inputs, geometric & volume constraints and attachment/ interface locations with CM shall be provided by HSFC.
- Assessment of adequacy of support provided by Crew Seat to crew under various mission loads and presence of pressure hotspots (undesirable). Placement of restraint harness on crew in Crew Seat and its effect on crew physiology.
- Assessment of crew injury through simulation based on Brinkley's Dynamic Response Index (DRI) and specific injury risk using FE model of 50th pc Hybrid III ATD (as per the crew injury requirements proposed by Vendor based on their past

experience and applicable standards. It needs to be vetted & approved by HSFC/ ISRO). The results shall be presented to SRC committee and cleared. The leasing of FE model of 50th pc Hybrid III ATD (from start of design till qualification testing of CSA) shall be in Vendor's scope.

- Detailed design document and FE model of CSA with all necessary data (i.e. geometric properties, material properties, constraints, loads & boundary conditions), details of modification in FE model of 50th pc Hybrid III ATD if any & 3D CAD model to be submitted by the Vendor for review & approval by SRC committee.
- All detailed requirements for preliminary analysis are given in Annexure II.

- **Development Phase**

- Design & Realisation of IAs, CS & CSA, test setup realization
- Ergonomic trials with crew in static conditions for CS design. Developmental hardware of CSA may be provided to HSFC/ ISRO for carrying out Ingress/ Egress & other ergonomic trials of crew in CM.
- The design changes suggested by SRC committee (based on the feedback submitted by crew) must be implemented by Vendor. Vendor must plan the logistics for at-least providing the developmental CS hardware twice.
- Validation of the design through unit / system level testing using 50th pc Hybrid III ATD for various load cases provided by HSFC/ ISRO. Testing activities shall be carried out with participation of HSFC/ ISRO. The 50th pc Hybrid III ATD hardware shall be arranged by Vendor for a duration till qualification testing of CSA is complete.
- The Vendor shall identify all the developmental tests (which may include but will not be limited to: Attenuator Unit Level Impact Tests, System Level Impact Tests, i.e. Sled Testing at CSA level) and also mention the Pro rata cost for each test

- Test matrix and test plan shall be reviewed and cleared by SRC committee and changes if any recommended shall be incorporated.
- Detailed test results for all developmental tests and raw data (measured data with & without post processing) shall be provided to HSFC/ ISRO. All results (including crew injury assessment based on finalized crew injury criteria) to be presented to SRC committee and cleared. Changes, if any, recommended by SRC committee shall be incorporated.
- Any minor design modification due to change in input requirements (say within 10% of the design cost) based on review outcome, if any, shall be implemented by the Vendor without any additional cost implication to HSFC/ ISRO. If the change calls for more than 10% cost implication, then it has to be mutually discussed and agreed upon.
- Detailed design document, 3D CAD models, Bill of materials, Finite Element model, analytical models/ numerical/ theoretical studies, fabrication drawings, test data to be submitted by the Vendor for review and approval by SRC committee. Changes & recommendations, if any, by SRC committee shall be implemented.
- All developmental hardware shall be provided to HSFC after testing & SRC review, as part of deliverables.

- **Qualification Phase**

- Vendor has to prepare a detailed Qualification Test Plan (QTP) document and get it approved by SRC committee.
- Drawing generation, procurement of raw materials, realization of Qualification Model (QM) hardware shall be carried out as per approved design by SRC committee and applicable standards.
- Vendor shall carry out qualification tests which may include but would not be limited to - IA Unit level functional testing & structural testing, System level static structural testing, system level impact/ functional testing i.e. Sled Testing at CSA level &

final water drop testing (with full scale CM) and qualification for various load cases, environmental tests, etc. as per the levels specified by HSFC/ ISRO. Vendor shall supply pro rata costing for all tests.

- Vendor shall carry out all qualifications successfully. Changes, if any, recommended by SRC committee shall be implemented
- Detailed design document with updates if any, 3D CAD models, Bill of materials (BOM), Finite Element (FE) model, analytical models/ numerical/ theoretical studies, fabrication drawings, test data (including raw data) to be submitted by the Vendor for review and approval by SRC committee.
- Vendor has to prepare a manufacturing process plan and inspection plan and get it reviewed and approved by SRC committee.
- All Qualification testing activities shall be carried out with participation of HSFC/ ISRO.

- **Acceptance Testing and Hardware Delivery**

- Realization & delivery of 05 sets of flight worthy CSA hardware after acceptance testing.
- Acceptance tests shall be carried out by Vendor with HSFC/ ISRO participation. Necessary support shall be extended by Vendor for HSFC/ ISRO participation during acceptance testing of flight worthy CSA hardware.
- The Vendor shall identify all the acceptance tests (which may include but would not be limited to the tests mentioned in Annexure III and also mention the Pro rata cost for each test).
- Test matrix and acceptance test plan shall be reviewed and cleared by SRC committee. Changes, if any, recommended by SRC committee shall be implemented.
- Realization & delivery of additional 03 sets of IAs (each set fulfils the requirements of one CSA assembly (accommodating 02 crew)) along with other necessary interfacing elements.

- **Assembly of the Hardware**

- Vendor shall prepare and supply a detailed assembly plan & document to SRC committee for review and approval. Changes, if any, recommended by SRC committee shall be implemented.
- Vendor shall integrate/ assemble the Crew Seat Assembly (CSA) with Gaganyaan Crew Module (CM) for the first 01 set of CSA hardware.
- Vendor shall provide necessary training to HSFC/ ISRO engineers for carrying out the assembly of CSA hardware. The interfaces finalized based on Annexure II on the Crew Module shall be provided by HSFC/ ISRO for assembly of CSA with Crew Module.

3. Responsibilities of Vendor

3.1 Design & Analysis

- i) The design of Crew Seat Assembly (CSA) with its sub-systems (as per scope of work) is an iterative process which involves different functional elements, loading conditions, different materials and fabrication methods. The Vendor is responsible for carrying out the total design and analysis (ergonomic, structural, kinematic /kinetics/ MBD (multi body dynamic), other mechanical & Crew Injury assessment such as DRI, specific injury criteria i.e. head injury, neck injury etc.) of the Crew Seat Assembly for different impact/ other loading conditions stipulated by the HSFC/ ISRO.
- ii) A detailed Finite Element model for Crew Seat Assembly (CSA) has to be developed. The design and analysis of CSA has to be carried out for both nominal and off nominal load cases. Vendor has to carry out the total design, identification of worst case load cases and Finite Element Analysis of the system for the various cases stipulated. While designing the components/assembly, appropriate human rating factor shall be applied on the input loads (as illustrated in Annexure I) and analysis shall be carried out as per the human rating standards followed for human spaceflight missions globally. The input loads shall be supplied by HSFC/ ISRO.
- iii) **Design Studies:** Overall design of the system including the functional elements (including Impact Attenuators, Crew Seat and other necessary systems required for interfacing the crew inside CM)

a) **Crew Seat (CS)**- The Vendor shall carry out necessary ergonomic (i.e. anthropometry, reachability, crew comfort etc.) & structural design of the Crew Seat. The CS design shall include the design of CS supporting structure, design of restraint harness as well as design of CS liner. The CS liner shall ensure that pressure hotspots are eliminated and crew comfort is ensured during all phases of Gaganyaan mission. The restraint harness shall be provided to meet Brinkley's Dynamic Response Index (DRI) criteria as per applicable standards. The restraint harness shall meet the mission requirements and would keep the crew safe throughout the mission including during primary & secondary water impact events. All these restraints shall be connected to a single buckle and it shall be one-point lock unlock buckle. It has to be ensured that the buckle does not unlock inadvertently during any mission phase without crew intervention. The CS shall have all the necessary electrical, mechanical and pneumatic interfaces as specified by HSFC/ ISRO.

b) **Impact Attenuator (IA)**- The Vendor shall carry out the design of impact attenuation system in order to ensure that the loads are within human tolerable limits after attenuation for various water landing cases. Vendor shall also carry out the necessary design studies to ensure the structural integrity of IAs during the launch, ascent, abort, descent and specified water landing conditions/loads. The IA design shall ensure that post attenuation, the IAs don't deform under post landing dynamic loads of CM and CSA remains fixed in place post attenuation.

The Vendor shall design and realise the configuration of joint between Crew Seat Assembly and CM structure considering the Degrees of Freedom (DoF) requirement during Impact Attenuator functioning.

iv) The typical water impact event where CM hangs with parachutes is as shown in Annexure-I. During the course of design process these load profiles may get updated and the updated data shall be provided by the HSFC/ ISRO. The Vendor shall also estimate the worst case landing load cases and they would be provided by HSFC/ ISRO (if not already covered in Annexure I). The Vendor shall estimate and generate the loads acting on each Impact Attenuator, Crew Seats and other systems of CSA for varied landing

conditions. The Vendor shall design IAs meeting the design constraints like envelope, stroke, frequency etc. as given in Annexure II.

- v) Vendor shall carryout the assessment of presence of pressure hotspots in the CS under various mission loads and get it vetted by HSFC/ ISRO.
- vi) The Vendor shall carry out detailed ergonomic design (anthropometric design, pressure profile, reachability, support, comfort etc.) & structural design of the Crew Seat as per applicable standards and share the detailed 3D CAD Model & Finite Element model, Bill of Material shall also be shared with HSFC/ ISRO and if demanded, changes shall be incorporated in the design and developmental models based on crew/ SRC committees' feedback. During CS design mass optimization shall be done.
- vii) The Vendor shall carry out detailed kinematic /kinetics/ MBD (multi body dynamic) and impact/ transient analysis to bring out the adequacy of the design. The analysis details along with numerical/ analytical/ theoretical model & Finite Element model shall be shared with HSFC/ISRO and if demanded additional analysis shall be carried out to prove the robustness of design.
- viii) All design & analysis results (structural / kinematic / other etc.) shall have to be presented by the Vendor to the SRC committee and design modifications, additional analysis checks recommended by the HSFC/ ISRO shall be carried out/implemented by the Vendor and action closure shall be presented to the SRC committee.
- ix) Vendor shall carry out the assessment of crew injury based on Brinkley's DRI and specific injury criteria (i.e. HIC-15, neck injury etc. using Hybrid III ATD) both based on simulation and testing. The crew injury criteria shall be proposed by Vendor based on their past flight heritage and available standards. The proposed crew injury criteria & findings of crew injury assessment shall be presented to SRC committee. Any design modifications of CSA w.r.t. injury parameters, additional analysis/ checks recommended by the SRC committee shall be carried out/implemented by the Vendor and action closure shall be presented to the SRC committee.
- x) In order to carry out the crew injury assessment, the Vendor shall arrange suitable 50th pc Hybrid III Anthropomorphic Test Dummy (ATD) hardware and

FE model for the duration of the project. The cost of leasing the FE model and arranging hardware of the ATD shall be absorbed in the cost of the project.

xi) Periodic developments w.r.t. design iterations, testing, fabrication & CSA integration activities shall be informed to HSFC engineers for participation.

xii) **Water drop analysis:**

The assessment for the water drop test of Crew Seat Assembly with full scale Crew Module and ATD in loop has to be carried out as per proposed qualification test plan for CSA for which all necessary inputs shall be provided.

3.2 Raw materials procurement, Testing & Qualification

i) The material of construction for CSA elements would be of suitable aerospace grade light weight material. The materials of construction for CSA elements shall meet the Gaganyaan material procurement specifications as defined by HSFC/ ISRO.

ii) All materials procured shall undergo First Article Inspection (FAI). The FAI testing philosophy shall be mutually discussed and finalized as per the Gaganyaan material procurement specification requirements. If not readily available, the materials specifications shall have to be presented to Gaganyaan material procurement specification committee and get approved.

iii) Procured raw material quantity shall also include rejection that may occur during various manufacturing stages & during various other developmental, qualification stages. The materials required for FAI, qualification of special processes and facilities, requalification, revalidation of process etc., shall also form part of the procurement.

iv) A reputed and mutually agreed upon 3rd Party inspection Agency and / or HSFC/ ISRO personnel shall mandatorily participate in identified inspection/witnessing stages.

3.3 Realization of components

i) Generation of fabrication drawings & subsequent realization shall commence after approval of design by SRC committee.

- ii) The Vendor shall prepare a detailed process document and the same shall be presented to the Process review committee identified by HSFC/ ISRO for approval.
- iii) The Vendor shall realise the components/sub-assemblies as per the option and quantity given in Section 2.
- iv) The Vendor shall realise the required fixtures for carrying out the Unit Level testing/system level testing and qualification of the hardware.
- v) The Vendor shall carryout Inspection, testing and qualification of individual elements/assembly as per HSFC/ ISRO specifications, in the presence of HSFC/ ISRO personnel. All technical support for inspection and testing of the integrated unit shall be provided by the supplier.
- vi) All the bought out items shall be from reputed aerospace grade vendor & vendor information can be submitted to HSFC/ ISRO.
- vii) A reputed & mutually agreed upon 3rd Party inspection agency shall mandatorily participate in all the stages such as material procurement & testing, First Article Inspection, dimensional inspection (for critical dimensions) of finished hardware, Assembly, NDT inspection, qualification testing, etc.
- viii) The Vendor should meet the mandatory criteria as per the details given in Annexure IV, however other outsourced activities, if any, shall be carried out by a reputed and mutually agreed upon Vendor & it shall be indicated in the quote. The sub-contracting vendors must have carried out prior work of similar nature. Sub-contracting shall be the responsibility of the Vendor.
- ix) The HSFC/ ISRO reserves the right to evaluate the facilities of the proposed sub-contractor for approval. Also, the sub-contracting activities shall be under the full responsibility of the Vendor.

3.4 Testing

- i) Vendor shall carry out following ergonomic tests on Crew Seat (CS) during developmental phase of the project in collaboration with HSFC/ ISRO which may include but would not be limited to- (i) seating studies, (ii) ingress/ egress trials inside CM, (iii) other ergonomic studies (such as reachability & comfort) & (iv) load tests evaluation (centrifuge or equivalent) under various Gaganyaan mission loads during ascent/ descent / abort (if any) on

CS to ensure that the design of CS meets the Gaganyaan mission requirements. If Centrifuge tests are planned, Vendor shall arrange the appropriate centrifuge facility for carrying out these tests. The test equipment shall be calibrated and certified as per HSFC guidelines.

- ii) Ergonomic trials shall be carried out on developmental prototypes of Crew Seats as per mutually agreed upon plan. Vendor shall make available the developmental models of CSA for ergonomic trials. Any feedbacks of the crew in the ergonomic trials shall be incorporated in the hardware without any extra cost.
- iii) The Vendor shall carry out unit level testing of Impact Attenuators as per the approved development and qualification test plan to ensure that the design is meeting the specifications. Each type of IA shall be tested in unit level at Vendor's place. The test equipment shall be calibrated and certified as per standards.
- iv) The Vendor shall carryout System level static tests and impact tests based on the loading conditions stipulated by the HSFC/ ISRO. The test equipment shall be calibrated and certified as per standard.
- v) The Vendor shall design the required fixtures, arrange the test facility and necessary instrumentation (sensors, high speed camera and DAQ among others) for carrying out the testing & qualification of Impact Attenuators and system level static and impact tests.
- vi) Test plan, instrumentation plan among other shall be provided for review and approval by SRC committee.
- vii) The water drop tests of CSA with Crew Module (CM) shall need to be carried out at a facility within India. The required water drop facility shall be identified by the Vendor in consultation with HSFC/ ISRO. Here mass and stiffness simulated full scale Crew Module hardware shall be provided as free issue material (FIM) by HSFC/ ISRO. The test shall validate the CSA design by subjecting it to water drop. The test shall be carried out with suitable 50th pc Hybrid III ATD hardware in loop to make the crew injury assessment.

- viii) The Vendor shall carry out unit level functional & structural testing and system level functional & structural testing of IA, CS, other systems of CSA along with Crew Seat Assembly (CSA) as a whole for characterization, estimating energy dissipation in each IA, design verification and data generation. The test results shall also be presented by the Vendor to the SRC committee. Any design modifications of CSA, additional analysis/ checks recommended by the SRC committee shall be carried out/implemented by the Vendor and action closure shall be presented to the SRC committee.
- ix) Representatives from HSFC/ ISRO shall participate during various tests being carried out during developmental and qualification phases of contract. The necessary access to facilities shall be arranged by the Vendor.

3.5 Quality

3.5.1 Responsibility for quality:

- i. The Vendor shall be responsible for total quality of the hardware.
- ii. Vendor shall generate documents for toolings, manufacturing, inspection, Quality Assurance (QA), Quality Control (QC), acceptance/qualification test, surface protection, packaging, transportation, assembly and bought-out items. Vendor shall provide acceptance, qualification documents along with QA/ QC certificates for bought out items.
- iii. Vendor shall prepare and update QC plans for the parts, sub-assemblies and assemblies based on the manufacturing process plan.
- iv. The Vendor shall follow appropriate human rating standards defined by HSFC/ ISRO for design, realisation, inspection, testing and qualification of the hardware.
- v. The QA/ QC plans prepared by the Vendor shall be vetted by the HSFC/ ISRO and only after obtaining necessary approval it shall be implemented.

3.5.2 Inspection and Quality Assurance:

- i. Quality surveyors of HSFC/ ISRO shall cross check and oversee inspection procedures and ensure adherence to the quality control stipulations.

- ii. Alternatively, it shall be verified/witnessed by a reputed and HSFC/ ISRO approved 3rd Party inspection agencies.
- iii. Specifically identified inspection stages shall be indicated in the process sheets for which the Vendor should obtain written inspection clearances from the HSFC/ ISRO before proceeding with next operation.
- iv. The Vendor shall perform the online inspection and final inspection of hardware.
- v. Vendor shall perform final inspection of the CSA hardware inside Crew Module after it is assembled to Crew Module (CM).
- vi. Vendor shall issue a quality certificate along with delivery of CSA hardware.
- vii. Vendor shall carry out FMECA evaluation for the CSA hardware & submit it.

3.6 Assembly

- i. Vendor shall prepare and supply a detailed assembly plan to HSFC/ ISRO for review and approval.
- ii. Vendor shall integrate/ assemble the Crew Seat Assembly (CSA) with Gaganyaan Crew Module (CM) before flight (for the first 01 set of CSA) & provide necessary training to HSFC/ ISRO engineers for carrying out the assembly of remaining hardware. The necessary interfaces on the Crew Module shall be provided by HSFC/ ISRO for assembly of CSA with Crew Module.
- iii. **Assembly fixtures:** Vendor shall in consultation with HSFC/ ISRO finalize the assembly fixture requirements for integrating CSA with CM.

4. Responsibilities of the HSFC/ ISRO

- 4.1 HSFC/ ISRO shall conduct Standing Review Committee (SRC committee) meetings whenever required for reviewing the critical loads cases considered, design, analysis, test plan and test results presented by the Vendor in a time bound manner. The HSFC/ ISRO shall provide SRC committee clearance for every milestone based on the activity completed after all SRC committee recommendations are implemented satisfactorily.
- 4.2 HSFC/ ISRO shall provide the necessary anthropometric details, mass budget and other electrical/ mechanical/ pneumatic interfaces to be mounted on CSA.

- 4.3 SRC committee shall review and vet the crew injury criteria as proposed by Vendor.
- 4.4 SRC committee shall provide approval for all the documents such as process documents, material procurement document, testing documents etc., prepared and submitted by the Vendor on real time basis without any delay.
- 4.5 HSFC/ ISRO shall provide all necessary inputs (input data such as input loads, functional envelope, available interfaces inside CM & other design constraints etc.) for carrying out the design of CSA in a document form upon signing of project.
- 4.6 There will be a reputable & mutually agreed upon 3rd party inspection agency which shall cross check and oversee inspection procedures and ensure adherence to the quality control stipulations. There shall be mandatory check points identified in the process plan and QC plan. These check points shall be informed at least 15 days in advance. With HSFC/ ISRO's clearance of these mandatory check points, further operations shall be carried out on the components, sub-assembly, assemblies etc.
- 4.7 HSFC/ ISRO shall arrange and conduct Pre-Dispatch review at the Vendor's site whenever necessary, on real time basis.
- 4.8 HSFC/ ISRO shall make milestone payments to the Vendor as per finalized terms and conditions.
- 4.9 HSFC/ ISRO shall provide the mass and stiffness simulated Crew Module hardware & the corresponding Finite Element model (with minimum required details) to Vendor for carrying out water drop tests of CSA. Logistics for positioning the hardware and collecting it back shall be the responsibility of HSFC.

5. Requirements and Specifications

5.1 General

- 5.1.1 CSA design shall be carried out for accommodating a crew of 2 in CM. The nominal mass of each suited crew may be taken as 85kg. In addition to this, there should be a provision to address the expected variation (± 10 kg) in crew mass from time of design to flight.
- 5.1.2 The CSA shall be designed to remain rigid and behave as a structure for all other phases of the mission except during water landing of CM. During water landing of CM, the CSA should allow its IAs to stroke and attenuate the water landing loads and limit it to meet the specified injury limits.
- 5.1.3 For CSA design, development & testing the applicable human rating standards shall be followed as that for other human spaceflight missions.
- 5.1.4 After IA stroking the CSA shall have stability so that easy & safe egress of the crew can be ensured.

5.2 Crew Seat

- 5.2.1 The CS & CSA shall be designed to accommodate a suited crew with flight suit inflated.
- 5.2.2 The Crew Seat shall ensure that pressure hotspots are eliminated and crew comfort is ensured during all phases of the Gaganyaan mission.
- 5.2.3 The CS restraint harness shall be provided to meet Brinkley's Dynamic Response Index criteria as per standards.

5.3 Impact Attenuator

- 5.3.1 There shall be a provision in each IA assembly to adjust the length of IA for assembly feasibility (± 10 mm).
- 5.4 The CSA shall have appropriate provision to attach it with the interfaces identified in CM structure.
- 5.5 The CSA shall be provided with required pneumatic & other electrical interfaces, details of which shall be provided by the HSFC/ ISRO.
- 5.6 The CSA has to be designed within the available envelope, stroke, volume and mass specified in Annexure II.

5.7 The CSA design shall be of sleek configuration without any sharp corners. It should facilitate hindrance free and easy ingress/egress for the crew.

5.8 Assembly

5.8.1 The CSA elements shall be designed so that they can be assembled inside the CM during final phases of the CM integration. The CSA elements shall be sized so that they can be taken through the side hatch opening of CM for assembly. The dimensional details of the side hatch opening are as given in Annexure-II.

6. Qualification Plan

The testing procedure and qualification plan shall include but would not be limited to the list given below-

6.1 Raw Material Characterization - as detailed in section 3.2

6.2 Inspection: The Vendor shall carryout a detailed dimensional inspection including that of functionally critical dimensions and NDT inspection and the reports shall be submitted to the HSFC/ ISRO for acceptance. For critical dimensions' inspection by a reputed & mutually agreed upon 3rd party inspection agency can be planned.

6.3 Following qualification tests are planned -

S. No.	Qualification Tests		Remarks
1	CSA Functional Tests		Design shall be qualified with applicable human safety factors as mentioned in Annexure-II
	a)	CS Ergonomic Tests - Centrifuge equivalent or	The Crew Seat hardware shall be subjected to various Gaganyaan mission loads with ATD/ crew seated in CS for evaluation of its ergonomic performance.
	b)	Unit Level Drop Tests	Each type of IA shall be dynamically tested in unit level for accessing the energy absorption characteristics with respect to time & to evaluate the effect of strain rate on its performance (Test setup to be mutually discussed and finalised).
	c)	System Level Dynamic Testing at CSA level	The CSA hardware shall be dynamically tested for various critical water landing loads to qualify the overall design for Gaganyaan

		i. Sled Testing ii. Water Drop Testing with full scale CM & ATD	mission. (Test setup to be mutually discussed and finalised). For carrying out water drop testing the Crew Module shall be positioned at Vendor's premises by HSFC
2	CSA Structural Tests		Design shall be qualified with applicable human safety factors as mentioned in Annexure-II
	a)	Unit Level Static Structural Tests	Unit level static structural test shall be carried out in both directions to validate the structural integrity of the IA at unit level.
	b)	CSA System Level Static Structural Tests	Static structural tests shall be carried out at CSA level for qualify its design for Gaganyaan loads
	c)	Other Environmental Tests	CSA design shall be qualified for various environmental levels being experienced during Gaganyaan. The environmental levels shall be specified by HSFC/ ISRO at the time of contract signing.

7. Delivery Schedule

The design, realization and testing of the CSA has to be completed as per the schedule mentioned below. The 1st set of flight hardware shall be delivered within 12 months from the date of placement of order. The major stages and time frame envisaged for design, realisation, testing, inspection and delivery are indicated below.

1	Placement of PO		: T0
	Receipt of necessary inputs from HSFC to Party	T1	: T0+ 1 week
2	Design & presentation to PDR		: T1+ 2 months
3	Design Clearance	T2	: T1+ 3 Months
4	Ergonomic Tests & Attenuator unit development and testing (Developmental Test Clearance)	T3	: T2 + 4 Months

5	QM Hardware realization & Qualification Testing	T4	: T2 + 5 months
6	Clearance from HSFC/ ISRO on QM hardware (Qualification Test Clearance)	T5	: T4 + 1 month
7	Delivery of 1 st & 2 nd set of Flight Hardware with usable IAs		: T5+3 months
8	Additional 3 sets of IAs Delivery		: T5+3 Months
9	3 rd set FM Hardware Delivery		: T5+7 months
10	4 rd set FM Hardware Delivery		: T5+11 Months
11	5 th set FM Hardware Delivery		: T5+15 Months

The Vendor shall take all measures to meet the schedule for the deliverables while meeting all the quality requirements. The Vendor shall be selected based on preferred delivery basis. Along with the flight hardware all other hardware used for developmental & qualification testing shall be supplied to HSFC.

8. Documentation

The supplier shall provide following and all other relevant design document, operation / user manual and service manual with complete details of the components along with the list of critical spares, storage conditions, shelf life (samples for extending shelf life), list of equipment for testing, assembly procedure, storage conditions, shelf life, any periodic maintenance & list of equipment for inspection/ testing etc. in hard copy. Also, a softcopy of the same shall be submitted in DVD form. Vendor shall provide following documents-

- 1) CSA Operational Manual
- 2) CSA hardware Inward Inspection Manual
- 3) Design, Development & Qualification Testing Documents
 - 3.1) Ergonomic Design Document
 - 3.2) Design and analysis document
 - 3.3) Testing & Qualification Procedure Document

- 3.4) Test results document with processed & raw test data (the test results have to be verified with design values)
- 3.5) Final 3D CAD model, bill of material, theoretical/ numerical codes used for design and Finite Element model of the designed CSA
- 3.6) Test report
- 3.7) Testing Non-conformance Report
- 3.8) FMECA

4) Fabrication

- 4.1) Raw Material Qualification Document
- 4.2) Raw Material Test Report
- 4.3) Fabrication Drawings
- 4.4) Process plan, QC/QA plan
- 4.5) Inspection plan & inspection Report
- 4.6) Acceptance Plan
- 4.7) Dimensional deviation report
- 4.8) Non-destructive testing report
- 4.9) Inspection Report through Third party
- 4.10) Non-Conformance Reports
- 4.11) Hardware clearance report
- 4.12) Quality Certificates

5) Assembly

- 5.1) Assembly & test procedure documents
- 5.2) Assembly Plan
- 5.3) Assembly parts list
- 5.4) Assembly log book
- 5.5) Assembly checklist
- 5.6) Interface inspection report
- 5.7) Assembly non-conformance report

6) Facility log book

7) Failure report

8) Transportation & Storage Plan

9. Testing & Pre-shipment Review

The Vendor shall be responsible for arranging review by SRC or a committee appointed by SRC for the hardware at their site at factory (before shipment) and shall arrange all the items required for the same. The Vendor shall conduct the acceptance test as per the approved procedures & provide all necessary documentation to the committee for scrutiny and acceptance with the participation and to the satisfaction of the HSFC before the shipment of the system from the Vendor's site.

10. Instruction for Submitting Quote

- i) The offers shall be submitted on a two-part bid basis (Technical part & Commercial part) by two separate e-mails with individual password protection. The passwords shall be kept confidential and separately sent to the mail id provided by the HSFC/ ISRO [Please refer Instructions at Annexure-B].
- ii) The prices quoted shall be inclusive of the cost of design & analysis and development, raw material procurement, realisation, development & qualification testing, acceptance testing, hardware delivery at HSFC/ ISRO premises, inspection & final assembly (of 1st set of hardware) of CSA to Crew Module. The Vendor shall submit the quotation in the format as specified in Annexure V with detailed cost split-up for various headers.
- iii) Vendor may indicate milestone payments for different stages along with the quote.
- iv) If the Vendor is unable to execute the design as per specification, then HSFC/ ISRO shall short close the Purchase Order and the work done till that phase shall be assessed and payment shall be made as mutually discussed and agreed by SRC committee.
- v) Before submitting the quote, a pre-bid meeting shall be arranged by the HSFC/ ISRO . Attendance in pre-bid meeting is mandatory for the parties.
- vi) The taxes applicable along with their rates shall be clearly mentioned in the Technical and commercial bid.
- vii) Prices quoted shall be for delivery at HSFC.

03 sets of Crew Seat Assembly. The Vendor shall quote for additional 3 sets also separately. (shall be covered in cost break up format)

- ix) The Vendor shall mandatorily provide completely filled compliance matrix given below which shall be considered for selecting the Vendor.

Compliance Matrix

SI No	Criteria	Expected Response from Vendor
1.	Core competence, previous experience and heritage in design realization and supply of space worthy impact attenuation systems/ energy absorbers.	Vendor has to furnish necessary evidence.
2.	Core competence, previous experience and heritage in ergonomic design and realization & supply of space worthy crew seats.	Vendor has to furnish necessary evidence.
3.	Prior experience in human injury assessment and carrying out occupant safety analysis	Vendor has to furnish necessary evidence.
4.	Details of machineries, equipment and testing facility available with the Vendor for realization of the hardware as per the RFP scope and testing of the same. Compliance to mandatory list of facilities required as per Annexure IV has to be ensured.	Vendor has to furnish the details of manufacturing facilities/machineries available with the Vendor for realization of the hardware. If outsourcing is planned, details of activities outsourced and vendors shall be provided.
5.	Any tie up with national/international agencies for technology development/ acquisitions/ realization/ testing	Vendor has to provide in detail the areas where sub-contracting/ tie-up is planned.

	is envisaged. If so, details to be furnished.	Agency should be capable & prior experience in end to end design, development & delivery of similar systems should exist. Necessary proof of availability of facilities shall be furnished. Necessary concurrence from ISRO shall be obtained.
6.	Partial solution is not acceptable. End to end solution to be provided.	Vendor has to be comply with HSFC/ ISRO requirements.
7.	Ability to procure materials as per ISRO Gaganyaan standards	Vendor has to comply.
8.	<p>Qualification Testing facilities</p> <ol style="list-style-type: none"> 1. Unit level attenuator static structural & dynamic functional testing facility 2. System level static structural test and impact test facility (sled test facility & water drop test facility) 3. Test setup/ test fixture 	<ol style="list-style-type: none"> 1. Vendor has to furnish the details of list of testing facility and equipment available with them meeting the design requirements. 2. In case Vendor wants to collaborate with a 3rd party for carrying out the qualification tests. Details thereof shall be mentioned to HSFC/ ISRO & necessary approval shall be obtained.
9.	List the sub-contractors and their accreditations	1. Details of the Sub-contractor with name, address and their expertise area. Concurrence from HSFC/ ISRO shall be obtained.

		<p>2. If ISRO approved vendors are not available, selected vendors shall have prior experience in executing the jobs of aerospace quality, they shall have design capability meeting the HSFC/ ISRO requirements and shall be able to carry out necessary design iterations. Necessary purchase orders / evidence shall be submitted to HSFC/ ISRO.</p>
10.	Supply of additional CSA hardware	<p>In addition to existing list of deliverables, Vendor may agree to the additional requirements if it originates from HSFC/ ISRO.</p> <p>Pro rata cost of flight worthy CSA hardware and additional set of attenuators (in case additional requirement is projected by HSFC/ ISRO) may be provided along with the quote.</p>
11.	<p>Annual Turnover with proof for last three years.</p> <p>(Minimum average annual financial turnover of the bidder during last three years should be more than or equal to INR 250 crores)</p>	<p>1. Income tax return of last three years shall be provided</p> <p>2. Audited statement of annual turnover, balance sheet and profit & loss account of the party to whom PO is to be placed for last 03 years duly authenticated by a Chartered Accountant/ cost accountant shall be provided</p>

Annexure-I

Gaganyaan Mission Loads (Tentative) for Crew Seat Assembly Design

Introduction

Gaganyaan mission consists of several different mission phases such as- ascent phase, abort phase, orbital phase, descent phase, parachute deployment and water landing phases of the mission. It is observed that except for water landing phase of the mission, loads during all other mission phases fall under sustained loads criteria i.e. the load duration is greater than 0.5 seconds.

Gaganyaan loads during various mission phases can be categorized under static and Water Landing Loads. The details about various static and water landing Gaganyaan mission loads are being provided here.

Gaganyaan Crew Module Axis Convention

The Gaganyaan Crew Module is used as a safe habitat for the crew during the Gaganyaan mission. It provides earth like conditions to the crew during the mission for their survival and accommodates the necessary systems such as Crew Seat Assembly, ingress/ egress hatch etc.

Water Landing Loads (Tentative)

In Gaganyaan mission, after re-entry the Crew Module makes descent under parachutes before it makes water landing. Following points must be noted:

- **Nominal Inclination of Crew Module:** The Crew Module hangs under main parachutes at a nominal inclination (β) of 27 degs. It is as shown in Figure-2. Under nominal conditions while hanging from main parachutes, there can be other deviations in the attitude of CM as is usual for other parachute landing modules.
- **Vertical landing velocity of Crew Module:** There are three numbers of main parachutes which reduce the vertical touch down velocity of Crew Module (v_v) to 8.5 m/s during water landing. In the off nominal event of one main chute failure, the vertical touch down velocity of Crew Module (v_v) can reach as high as 11 m/s during water landing.

- **Horizontal landing velocity of Crew Module:** At the time of water landing the Crew Module can also have a horizontal velocity due to winds. Based on initial estimate the horizontal velocity of Crew Module (v_l) due to winds can be as high as 10 m/s.
- **Effect of Sea Waves:** In addition to above, there can be variations in the landing conditions due to the effect of sea waves and currents. The details can be supplied later.

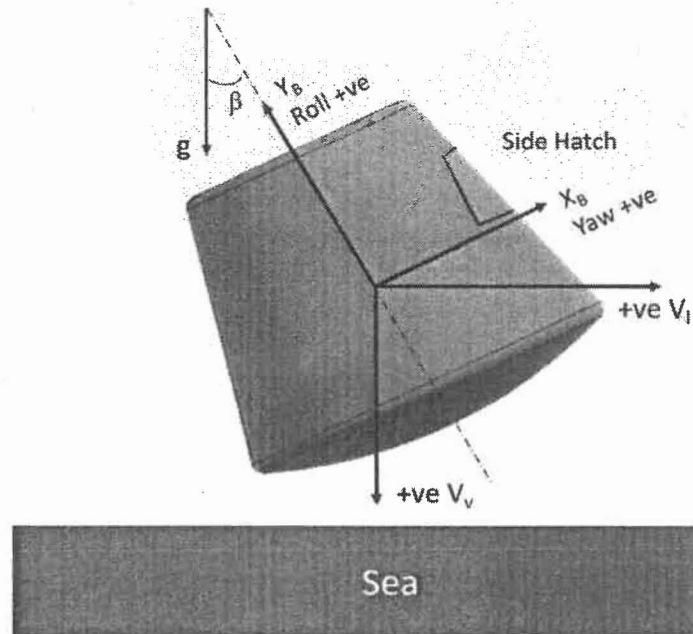


Figure 1: Parameters during CM water landing in Gaganyaan mission

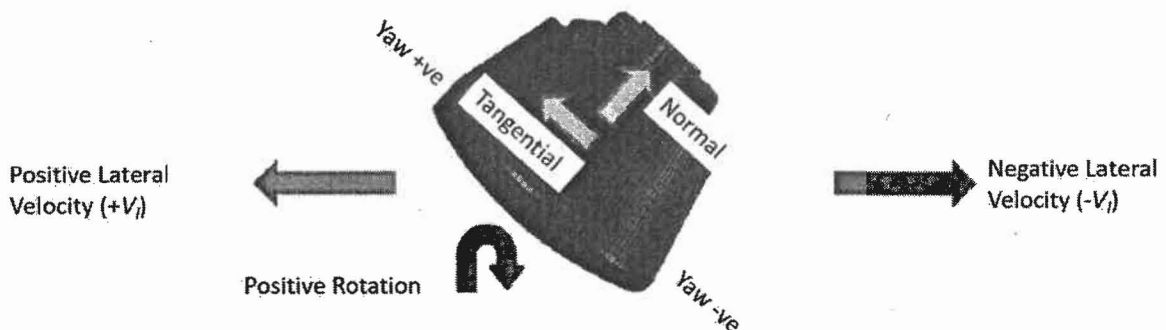


Figure 2: Impact condition and axis convention for single plane rotation (rotation in pitch plane) cases

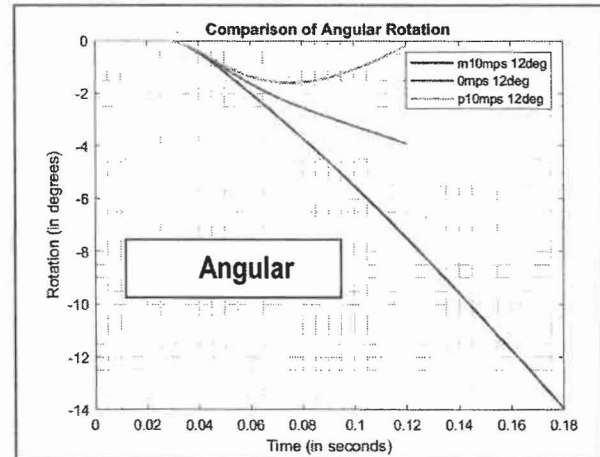
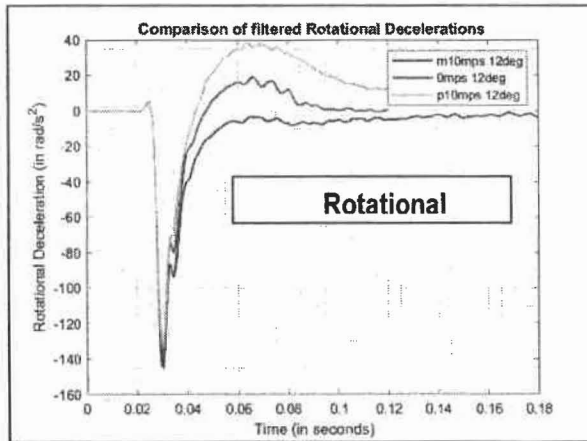
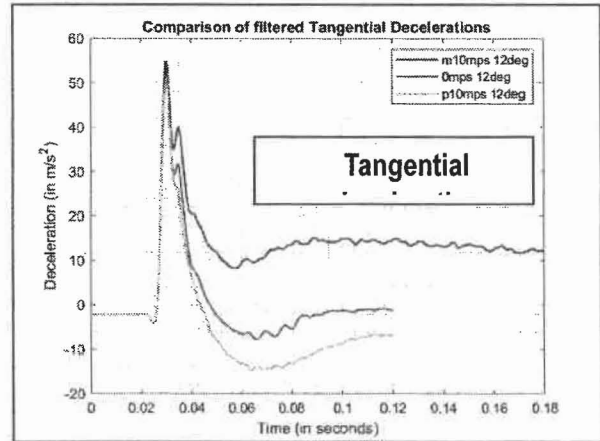
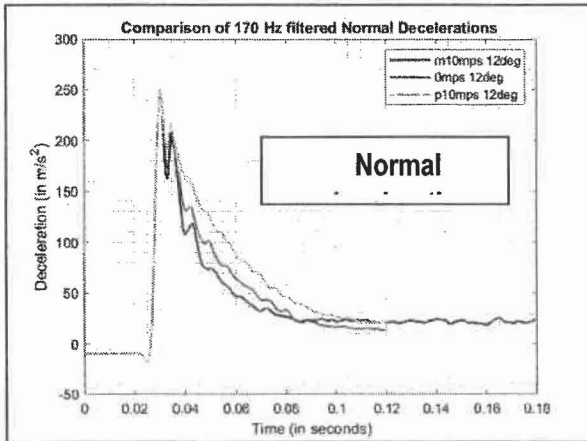
Water Impact Load Data

A typical CM water impact load case is being provided here for carrying out initial feasibility studies-

- i. The water load data is provided here in the form of **linear decelerations** (m/s^2) (i.e. normal deceleration, tangential deceleration), **rotational deceleration** (rad/s^2) and **rotation** (in degrees) of CM. These data have been extracted at Crew Module C.G. location.
- ii. The normal deceleration is along the Roll +ve axis of CM. The tangential deceleration is opposite to the lateral touch down velocity (v_l) direction. Positive value of angular rotation corresponds to an anti-clockwise rotation in the Yaw (X+) - Roll(Y+) plane (i.e., about the Pitch (+) axis) of the CM.

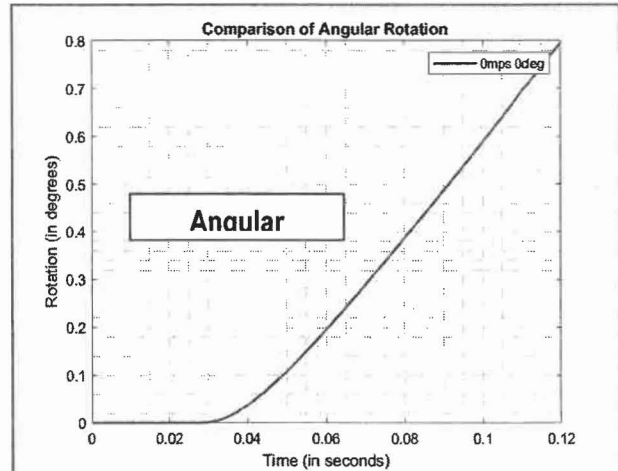
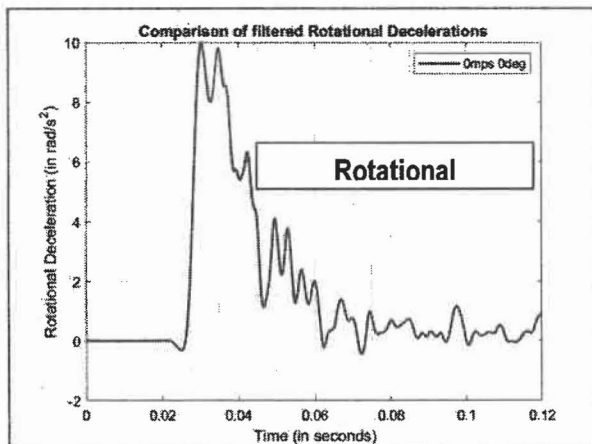
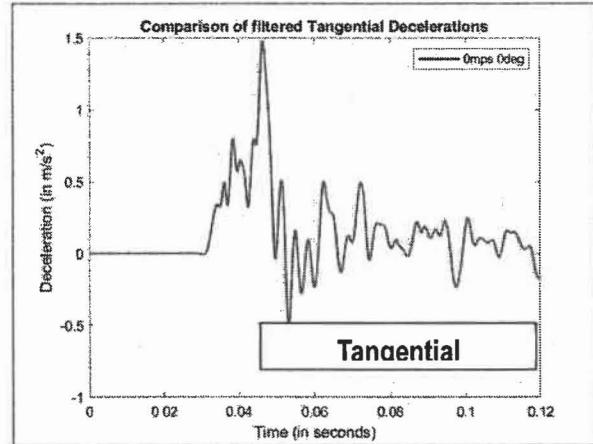
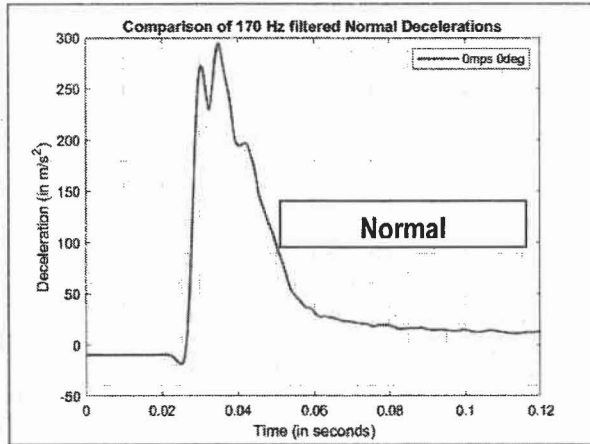
DATA SET 1:

1. Hang angle (β) = 12° ;
2. Vertical velocity (v_v) = 11 m/s
3. Lateral velocity (v_l) = $\{-10, 0, 10\}$ m/s



Data Set 2:

4. Parachute Hang Angle (β) = 0° ,
5. Vertical Landing Velocity (v_v) = 11 m/s
6. Lateral Landing Velocity (v_l) = {0} m/s



Annexure-II

Inputs & Constraints for design of Crew Seat Assembly

It must be noted that all inputs being provided here are **tentative**. The necessary inputs and design constraints for design of Crew Seat Assembly can be broadly classified under following categories.

- 1) Gaganyaan Mission Loads during various phases of the mission
- 2) Crew Safety Requirements & Injury Criteria
 - i. Crew orientation inside Crew Module
 - ii. Applicable crew injury criteria
- 3) Available envelope inside Crew Module
- 4) Available hard points/ interfaces for attaching Crew Seat Assembly inside Crew Module
- 5) Mass Budget
- 6) Structural Design Requirements
- 7) Human Rating Requirements
- 8) Integration Constraints
- 9) Ergonomic Constraints
 - i. Display Panel Location
 - ii. Crew Anthropometry

1) Gaganyaan mission loads during various phases of the mission

Typical load cases for Gaganyaan mission loads are as given in Annexure-1. Other details can be supplied after contract signing.

2) Crew Safety Requirements & Injury Criteria

The Crew Seat design should meet certain crew safety requirements and injury criteria under various Gaganyaan mission loads. Based on the studies performed within ISRO and data available the overall safety requirements and injury criteria may be divided under following heads-

2.1) Crew Orientation inside Crew Module

Based on the studies performed within ISRO following points are to be noted-

- i. The crew should be positioned in semi supine posture inside Crew Module so as to withstand ascent, abort and descent phase loads
- ii. The crew sagittal plane should be normal to the pitch axis of Crew Module

- iii. The Crew head should be towards Yaw +ve axis of Crew Module. It can be noted that ingress/ egress side hatch is also positioned towards Yaw +ve axis of Crew Module.

2.2) Applicable Crew Injury Criteria

Following points may be noted in this regard-

- i. The crew seat design shall meet the necessary crashworthiness requirements as cleared by SRC. The impact attenuation (energy absorber) system design shall ensure that necessary crew protection requirements are met during water landing event.
- ii. Provision shall be given in Crew Seat Assembly to prevent flail injury to the crew during various phases of the mission.
- iii. All the sharp corners, burrs etc. shall be eliminated from the Crew Seat Assembly.

3) Available envelope inside Crew Module

The available clear envelope inside Crew Module for Crew Seat Assembly function is as shown in Figure-1.

It may be noted that the envelope given does not contain the envelope required for impact attenuator (energy absorber) attachment. The envelope also does not consider the envelope required for final crew positioning. The party may propose a configuration based on their studies which can then be studied by ISRO for its feasibility of implementation.

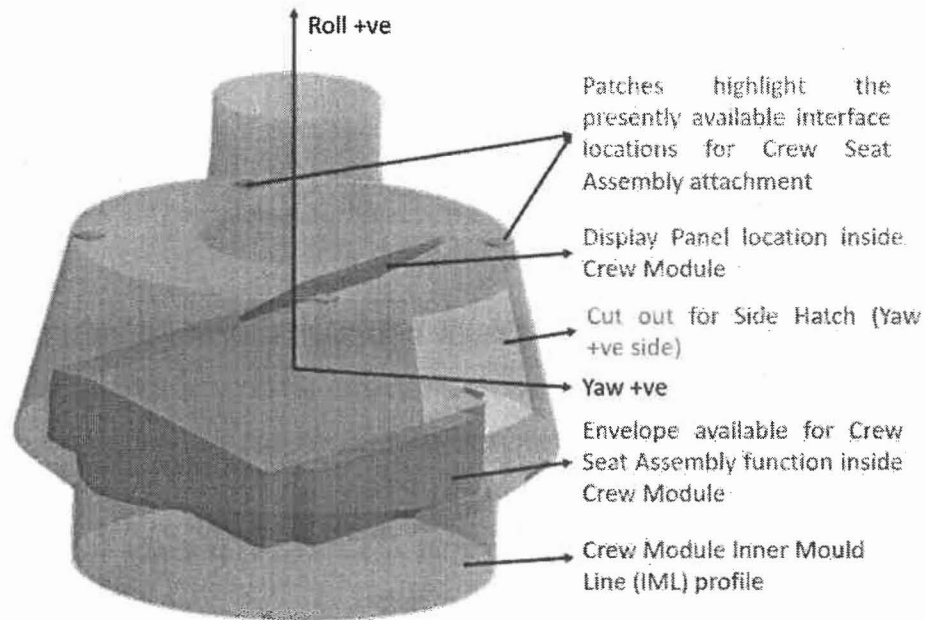


Figure 1: Illustration for items positioned inside Crew Module(Tentative)

4) Available hard points/ interfaces for attaching Crew Seat Assembly inside Crew Module

The presently available hard points / interfaces inside Crew Module for attaching Crew Seat are as given in Figure-1. Party may propose a configuration with minimal changes in these interface locations.

5) Mass Budget

The overall mass budget for Crew Seat Assembly design is 140 kg. This mass includes the mass of interface brackets needed for attaching Crew Seat Assembly to Crew Module. During the design the mass of the Crew Seat Assembly shall be minimized. However, this mass budget does not include the crew mass. For design studies a crew mass of 70kg + 15 kg (flight suit mass) may be considered additional.

6) Design Requirements

Following structural design requirements should be met for the Crew Seat Assembly design-

- i. The first modal frequency for the Crew Seat Assembly with Crew in flight suit should be greater than 20 Hz (TBF).

- ii. In case of attenuator failure during water landing, the Crew Seat Assembly should withstand the incident loads without structural failure.
- iii. The Crew Seat Assembly should remain fixed during all other phases of the mission except during water landing. The necessary provision to be implemented for facilitating this has to be proposed by the party.
- iv. Based on initial studies, it is proposed to use a Dynamic Amplification Factor (DAF) of 1.8 (TBF) over water landing peak loads for structural design of Crew Seat Assembly.
- v. For meeting Gaganyaan human rating requirements, it is decided to use a Factor of Safety of 1.4 (TBF) over all limit loads for **structural design** of metallic components. Thus,
 - a. For all static loads a FoS of 1.4 (TBF) has to be considered over limit loads for structural design of metallic components
 - b. For water landing loads a FoS of 1.4 over a DAF of 1.8 (TBF) has to be considered over peak loads for structural design of metallic components
- vi. Impact Attenuator / Energy Absorber Design
 - a. For the impact attenuator (energy absorber) design it is proposed to make use of a factor of 1.4 over the incident limit load during water landing. Party may comment on adequacy/ applicability of this factor based on their experience.
 - b. It is proposed to have a margin of 50% over attenuator stroke after full crushing of attenuator under worst case loads. This is in addition to the above mentioned factor of 1.4 to be considered over water landing loads.

7) Human Rating Requirements

Following Gaganyaan human rating requirements should be met for Crew Seat design-

- i. The materials of construction for the Crew Seat Assembly shall be a suitable aerospace grade material. The raw materials of construction for Crew Seat Assembly shall meet the ISRO Gaganyaan material procurement requirement. These details can be shared after contract signing.
- ii. The items used in Crew Seat Assembly shall meet the toxicity, flammability (Limiting Oxygen Index), TML, CVCm, WVR requirements as specified by

Gaganyaan human rating specifications. These details can be shared after contract signing.

8) Integration Constraints

Following points may be noted-

- i. After realization of Crew Module structure, the only access available for taking sub-systems inside is through side hatch. The Crew Seat Assembly shall be designed that either the complete assembly can be taken inside the Crew Module from side hatch opening or individual components can be taken inside from the side hatch opening and assembled. The tentative side hatch opening is as given in Figure-2.
- ii. It is planned to assemble the Crew Seat Assembly inside the Crew Module after other essential packages have been installed. Therefore, a detailed integration plan has to be made and discussed with ISRO before design finalization.
- iii. The integration activities to be planned inside Crew Module should be minimal and the activity should not pose threat to other packages populated inside the Crew Module.

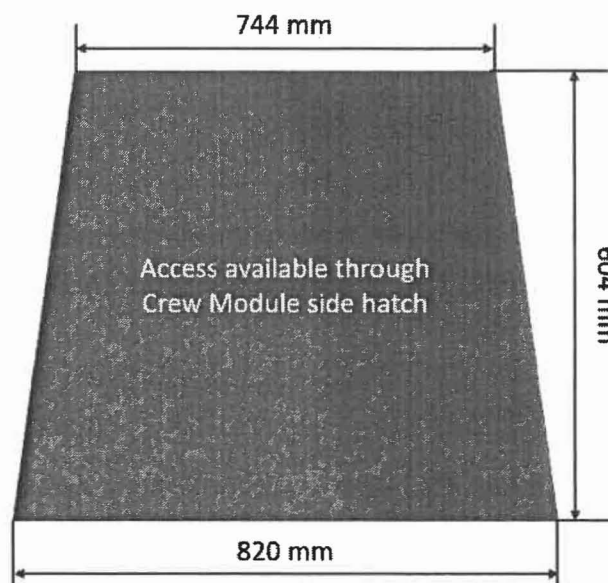


Figure 2: Tentative side hatch opening dimensions

Annexure-III

Acceptance Test Plan for the CSA

Following acceptance tests shall be performed on the CSA hardware and its units before dispatch. A tentative list of tests is as given below. Details shall be discussed & approved after contract signing.

S. No.	Type of Test		Remarks
1	Ergonomic Tests		3D profile scanning of CS shall be done along with seating trials, if needed, to eliminate the possibility of any pressure hotspots being present
2	Attenuator	unit batch acceptance test	
3	Full Dimensional Inspection of the CSA H/W		
4	Bearing Qualification Tests		A tentative qualification plan is given. Details shall be discussed & approved after contract signing.
	A.	Material Chemistry	
	B.	Visual Inspection	
	C.	Dimensional Inspection	
	D.	Hardness Testing	
	E.	Magnetic Particle Inspection	
	F.	No load rotational break away torque	

Annexure-IV

List of Mandatory Facilities for Design, Realization, Testing & Qualification of Crew Seat Assembly

The list of mandatory facilities that must be possessed by the party is as given below-

S No	Facility		Whether Party Possesses the facility (Yes/ No)	Mandatory / Desirable requirement	Remarks
1	In house Design Facility				In house facility must be available.
	a.	3D CAD Modelling & FE Simulation licensed software + trained manpower		Mandatory	
	b.	Kinematic/ Kinetics/ Multi Body Dynamic simulation licensed software + trained manpower		Mandatory	
	c.	2D CAD drawing generation licensed software + trained manpower		Mandatory	
2	Previous experience in carrying out occupant safety studies using 50 th pc Hybrid III ATD FE model and hardware.			Mandatory	Vendor has to furnish previous purchase orders details / evidence.
3	Availability of 50 th pc Hybrid III ATD FE model and Hardware			Desirable	The ATD FE model and hardware must be arranged by the party for completion of the project.
2	In house Machining & Integration Facility (Details to be provided)			Desirable	Collaborating agency to be mentioned if facility not available in house*

3	In house Quality Workshop		Desirable	Collaborating agency to be mentioned if facility not available in house*
4	Testing Facility			Collaborating agency to be mentioned if facility not available in house
	a. Unit level attenuator testing facility		Desirable	
	b. Sled Testing Facility (CSA level)		Desirable	
	c. Water Drop Testing Facility (full scale CM level)		Desirable	
	d. Static Structural Testing Facility		Desirable	
	e. Centrifuge Facility or equivalent (if planned)		Desirable	
	f. Environmental Testing Facility (Sine, Random etc.)		Desirable	

Note:

- 1) Sub-contracting work is solely the responsibility of Vendor. HSFC shall not be responsible for locating, arranging the subcontractors for the execution of the contract.

* All sub-contractors/ collaborating agencies should have some heritage in producing aerospace grade components & also prior experience in supplying similar items

Annexure-V

Format for cost split up to be provided by Vendors

Sl. No	Item	Pro-rata cost	Total cost	Justification
1	Design & Analysis cost			
2	Developmental cost [realisation of developmental H/W, testing (unit test system level, sled testing, centrifuge or equivalent test) and seating trials for crew at HSFC]			
3	Qualification cost [realisation of H/W tests (units & system level), sled test & full water drop test]			
4	CSA H/W realisation cost (total 05 sets) including acceptance test, inspection			
5	Cost for realization of addition 3 set of IA's including acceptance test & inspection			
10	Cost for integration of 1 st set of CSA & its final assembly to Crew Module			
13	Taxes + customs+ P& F charges			
14	Total work cost for items delivery at HSFC (inclusive of taxes and P&F cost)			

Annexure-VI

Milestone Payments for the Project

S. No.	Deliverables	Payment %
1.	Inception report with initial design assessment (advance)	30%
2.	Design Clearance	10%
3.	Ergonomic Tests & Attenuator unit development and testing (Developmental Test Clearance)	20%
4.	Clearance from HSFC/ ISRO on QM hardware (Qualification Test Clearance)	20%
5.	5th set FM Hardware Delivery	20%



GOVERNMENT OF INDIA
DEPARTMENT OF SPACE
HUMAN SPACE FLIGHT CENTRE [HSFC]
BENGALURU

INSTRUCTIONS TO DOMESTIC TENDERERS AND GENERAL TERMS AND CONDITIONS

Chapter – 1

1.0 Important:

- 1.1 Foreign vendors are not permitted to participate in this tender. Only Class-I and Class-II Local suppliers as per Make in India Policy are eligible to participate in the tender.
- 1.2 The Product/Price Preference applicable as per the guidelines of Government of India applicable to MSEs and other agencies shall not be applicable for procurement under Gaganyaan Programme.
- 1.3 Registered Tenderers or Tenderers who have already applied for Renewal of Registration, Central PSUs/PSEs/Autonomous Bodies, Micro, Small and Medium Enterprises or any other authority are exempted from the payment of EMD/Bid Security. MSEs are only entitled for [a] issue of Tender Documents Free of Cost [b] Exemption of Earnest Money Deposit [EMD] against production of a valid Udayam Certificate or any other registration certificate provided by any other Body specified by Ministry of MSEs. However, for MSEs Performance Security is mandatory for Goods and Services and policy does not provide benefits for Exemption from Performance Security.
- 1.4 The intending Tenderers are advised to read the Technical specifications, terms and conditions and other details carefully relating to the work contemplated in the Bid document and fully acquaint themselves as to all conditions and matters which may in anyway affect the work or cost thereof. The Tenderer shall be deemed to have known the nature, scope and magnitude of the work. Tenderer should bid only if he considers himself eligible and if it is in possession of all documents required as per the tender. The intending Tenderers are required to bid after carefully examining all instructions, eligibility criteria, forms, terms standards and specifications as per the tender document with full understanding of its implications.
- 1.5 If the Tenderer is found ineligible after opening of tenders, his tender shall become invalid *ipso facto*, and costs of the tender document if any and processing fees as applicable shall not be refunded. Offers which are not in compliance with the tender conditions will be rejected without assigning any reasons thereof. Failure to furnish all requisite information or and/or documents shall result in repudiation of the Offer. Notwithstanding the foregoing, Human Space Flight Centre [HSFC], Bengaluru reserves the right to assess the capability of the Tenderer to perform the contract keeping in view the overall interest of HSFC. In the event, if the Tenderer's capability and capacity are found to be unsatisfactory; HSFC reserves the right to reject the bid, without assigning any reasons thereof.

- 1.6 Any neglect or omission or failure on the part of the Tenderer in obtaining necessary information as stated above or in any other matter affecting the Tenderer shall not relieve him from any risks or liabilities or the entire responsibility for completion of the work in accordance with the bid documents.
- 1.7 **Predatory Pricing:** The Vendor[s] shall specifically take note that "Predatory Pricing" will not be accepted and such Bids not meeting even the Basic Cost of input i.e., Quoting unreasonably low prices to undercut and obtain the Contract are liable to be ignored/rejected. In order to obtain Quality, Products/Services the assessment of the Purchaser about the Predatory Pricing will be final.
- 1.8 All requirements stated herein below are a minimum and HSFC reserves the right to request for any additional information and also reserves the right to reject the proposal of any Tenderer, if in the opinion of HSFC, if the qualification or data is incomplete or if the Tenderer is found not qualified to satisfactorily perform the contract. The Tenderer shall bear all costs and expenses associated with preparation and submission of bid including post bid discussions, technical and other presentations and HSFC will in no case be responsible or liable for such costs, regardless of the outcome of the bidding process. The Tenderer shall also not be entitled to claim any costs, charges and expenses incidental to or incurred by him through or in connection with the submission of the Bid or its consideration by HSFC even though HSFC may elect to modify or withdraw the invitation to Bid or not to accept the Bid.
- 1.9 At any time prior to the deadline for submission of bids, HSFC may for any reason on his own initiative modify the bidding document by amendment. The amendment will be notified in writing or by fax or e-mail to the prospective Tenderers or uploaded online on the website. HSFC shall bear no responsibility or liability arising out of non-receipt of the same in time or otherwise. Notwithstanding the above, HSFC may at its discretion extend the deadline for submission of bids in order to afford reasonable time to prospective Tenderers to consider the amendment in preparing the bids.
- 1.10 All the bids in prescribed form enclosed with tender documents must be submitted before the time and date fixed for the receipt of offers as set forth in the tender document. HSFC will not be responsible for non-receipt of tender[s]/offer[s] due to any postal delays/loss of tender documents in transit and delay due to courier, etc. and it shall be the sole responsibility of the Tenderer to ensure delivery of the tender[s]/offer[s] within the time fixed. HSFC reserves the right to accept or reject any of the tender in full or part without assigning any reason thereof. Offers received after stipulated time and date will be rejected.
- 1.11 Public Tender documents will be also be uploaded on the HSFC website i.e. www.isro.gov.in and CPP Portal. Interested Tenderers may download the tender documents from website and submit their offers as per details mentioned in the Tender Notification.
- 1.12 If the tender opening date happens to be on an unidentified Holiday due to any reasons, including Force Majeure, tender[s] shall be opened on the next working day.
- 1.13 Tenderers shall submit quotations through online or offline as the case may be. The Tender shall be complete in respect of all technical specifications, instructions, drawing, pamphlets and catalogues, as per the tender document. Failure to furnish all information as per the requirements of the tender document and submission of bid not substantially responsive to the tender document shall render the tender liable for rejection. Any/All Bids by way of Fax/E-mail unless called for shall not be accepted.

- 1.14 Tenderers shall quote Prices in Indian Rupees Only for Indigenous Stores in accordance with the Price Template.
- 1.15 All available technical literature, catalogues, Original Equipment Manufacturer Certificate [OEM] and other data in support of the specifications and details of the items should be furnished along with the offer wherever necessary.
- 1.16 Samples, if called for, should be submitted free of charges by the Tenderers and Human Space Flight Centre [HSFC] shall not be responsible for any loss or damages thereof, due to any reason whatsoever. In the event of non-acceptance of tender, the Tenderer will have to remove/take away the samples at his own expenses.
- 1.17 Approximate Net and Gross weight of the items offered shall be indicated in your offer. If dimensional details are available, the same should also be indicated in your offer.
- 1.18 The Price quoted must be firm and should indicate quantity wise unit rate separately which have to be filled online. The percentage of GST where legally leviable and intended to be claimed shall be calculated and indicated in the column provided in online forms explicitly.
- 1.19 All amounts shall be indicated both in words as well as in figures. Where there is difference between amount quoted in words and figures, the amount quoted in words shall prevail over the amount mentioned in figures. The Bid and the prices quoted shall remain valid for three calendar months initially from the date of the bid opening. A bid valid for a shorter period shall be rejected by Purchaser as non-responsive.
- 1.20 The Tenderer should provide along with his tender the name of his Bankers, Account details if required by Human Space Flight Centre [HSFC], Bengaluru.
- 1.21 Human Space Flight Centre [HSFC] reserves the right to place order on the successful Tenderers for additional quantity at the rates quoted or as mutually agreed for a period up to 18 months from the date of release of original order.

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Chapter-2

1. Tender Fee.

Tender fee of Rs. 590/- (Rs. Five Hundred Ninety Only) The tender fee shall be payable in the form of crossed Demand Draft in favour of The Accounts Officer, HSFC, BENGALURU along with the bid but in a separate cover or along with technical bid. On the back side of the D.D, please write your company's name. Also submit relevant valid documents in case of exemption i.e. MSME, NSIC etc.

“Bidders shall submit an amount of 5,00,000/- (Rs. Five Lakhs only) with the bid towards Earnest Money Deposit (EMD).

The scanned copy of the EMD shall be forwarded along with your offer through mail and the original shall be sent through Speed Post by superscribing the Tender Enquiry Number and due date on the envelop to Purchase & Stores Officer, Human Space Flight Centre, ISRO HQ campus, New BEL Road, Bengaluru-560094, Ph. No. 080 2217 2670.

2. Earnest Money Deposit.

EMD of Rs. 5,00,000/- (Rs. Five Lakhs only) is payable – provide the same in the form of crossed Demand Draft in favour of The Accounts Officer, HSFC, BENGALURU along with the bid but in a separate cover or along with technical bid. On the back side of the D.D, please write your company's name. Also submit relevant valid documents in case of exemption i.e. MSME, NSIC etc.

The EMD shall be submitted in the form of DD/Banker's cheque/Bank Guarantee/Fixed Deposit Receipt (FDR) made in the name of Accounts Officer, HSFC, and be payable at par at Bengaluru.

Bids received without EMD shall be treated as invalid and shall not be considered.

The following categories of bidders shall be exempt from paying EMD subject to submission of appropriate documentary evidence with the bid in support thereof (if applicable):

- Vendors already registered / empanelled with ISRO as authorized vendors.
- Central PSUs/PSEs and autonomous bodies
- Micro and Small Enterprises
- Khadi and Village Industries Commission
- National Small Industries Corporation
- Any other establishments specifically exempted from paying EMD by an order of the Government of India.

The EMD of bidders who withdraw their bid during the tender evaluation process shall be forfeited. EMD of unsuccessful bidders shall be refunded without interest after the tender has been awarded, within 30 days of the award of the tender.

EMD of successful Tenderer may be retained and converted to Security Deposit, if applicable.”

Chapter - 3

3.0 Public Procurement [Preference to Make in India]

3.1 This order is issued pursuant to Rule 153[iii] of General Financial Rules-2017:

3.2 Government of India, Ministry of Commerce and Industry, Department for Promotion of Industry and Internal Trade [DPIIT], Public Procurement Division issued order No. P-45021/2/2017-PP(BE II) dated 16.09.2020 and as amended from time to time in order to encourage 'Make in India' and promote manufacturing and production of goods and services in India with a view to support the Indian industries. ISRO has implemented "Make in India - Purchase Preference Policy". The "Purchase Preference" is applicable for the "Class I Supplier" for the goods/ services/ works covered in this tender, subject to the following terms and conditions: -

- a] The subject items fall under divisible category.
- b] The offers are sought from Class I and Class II Local suppliers.

3.3 Definition for Class of Suppliers:

A supplier or service provider, whose goods, services or works offered for procurement, has local content:

- i. Equal to or more than 50% for Class-I Local Supplier.
- ii. Equal to or More than 20% but less than 50% for Class-II local supplier.
- iii. Less than 20%: Non-Local Supplier.

3.4 'Local Content' means the amount of value added in India [i.e. indigenous items/services added in the offered products/services/works] be the total value of the item offered [excluding net domestic indirect taxes] minus the value of imported content in the item [including all customs duties/IGST] as a proportion of the total value [excluding net domestic indirect taxes], in percent.

3.5 The margin of Purchase Preference shall be up to 20%.

3.6 'Margin of purchase preference' means the maximum extent to which the price quoted by the "Class-I local supplier" above the L1 [landed cost].

3.7 'L1' means the lowest technically accepted tender / bid / quotation [i.e. lowest landed cost including duties, taxes and freight & Insurance].

3.8 Works means all works as per Rule 130 of GFR- 2017, and will also include 'turnkey works'. Works includes Engineering, Procurement and Construction [EPC] contracts and services include System Integrator [SI] contracts.

3.9 Purchase Preference Policy: -

Goods/Works which are divisible in nature [required quantity is greater than 1 or not a package basis]:

- i. If L1 is 'Class-I local supplier', the order/contract for full quantity shall be awarded to L1 bidder.
- ii. If L1 bid is not from a 'Class-I local supplier', 50% of the order quantity shall be awarded to L1. Thereafter, the lowest bidder among the 'Class-I local supplier' will be invited to match the L1 price for the remaining 50% quantity subject to the Class-I local supplier's quoted price falling within the margin of purchase preference [i.e. 20%] and contract for that quantity shall be awarded to such Class-I local supplier subject to matching the L1 price [inclusive of duties, taxes and freight & insurance].
- iii. In case such lowest eligible 'Class-I local supplier' fails to match the L1 price or accepts less than the offered quantity, the next higher 'Class-I local supplier' within the margin of purchase preference shall be invited to match the L1 price for remaining quantity and so on, and contract shall be awarded accordingly. In cases where none of the 'Class-I local supplier' within the margin of purchase agree to match L1 price, in such cases 100% quantity shall be ordered on original L1 bidder.
- iv. In case no offers are received from 'Class-I local supplier' or none of the 'Class-I local supplier' falls within the margin of purchase preference of 20%, the order shall be processed on L1 vendor.
- v. In case L1 bidder [not a 'Class-I local supplier'] is not accepting splitting of order on 50:50 basis, in that case the order/contract shall be awarded to such 'Class-I local supplier' for full quantity subject to matching the L1 price.

3.10 Goods/Works which are not divisible [i.e. required quantity is 1 or as a package] and Services:

- i] If L1 is from a 'Class-I local supplier' the contract will be awarded to L1 bidder.
- ii] If L1 is not from a 'Class-I local supplier', the lowest bidder among the 'Class-I local supplier' will be invited to match the L1 price subject to local supplier's quoted price falling within the margin of purchase preference [i.e. 20%] and the contract shall be awarded to such 'Class-I local supplier' subject to matching the L1 price [inclusive of duties, taxes and freight & insurance].
- iii] In case such lowest eligible 'Class-I local supplier' fails to match the L1 price, the 'Class-I local supplier' with the next higher bid within the margin of purchase preference shall be invited to match the L1 price and so on, and order/contract shall be awarded accordingly. In case where none of the 'Class-I local supplier' within the margin of purchase preference agree to match the L1 price then the order/contract shall be awarded to the original L1 Bidder.

3.11 Applicability in tenders where contract is to be awarded to multiple bidders:

In tenders where contract is awarded to multiple bidder's subject to matching of L 1 rates or otherwise, the 'Class-I local supplier' shall get purchase preference over 'Class-II local supplier' as well as 'Non-local supplier', as per following procedure:

- i] In case there is sufficient local capacity and competition for the item to be procured, as notified by the nodal Ministry, only Class I local suppliers shall be eligible to bid. As such, the multiple suppliers, who would be awarded the contract, should be all and only 'Class I Local suppliers'.
 - ii] In other cases. 'Class II local suppliers' and 'Non-local suppliers' may also participate in the bidding process along with 'Class I Local suppliers' as per provisions of this Order.
 - iii] If 'Class I Local suppliers' qualify for award of contract for at least 50% of the tendered quantity in any tender, the contract may be awarded to all the qualified bidders as per award criteria stipulated in the bid documents. However, in case 'Class I Local suppliers' do not qualify for award of contract for at least 50% of the tendered quantity, purchase preference should be given to the 'Class I local supplier' over 'Class II local suppliers'('Non local suppliers' provided that their quoted rate falls within 20% margin of purchase preference of the highest quoted bidder considered for award of contract so as to ensure that the 'Class I Local suppliers' taken in totality are considered for award of contract for at least 50% of the tendered quantity.
 - iv] First purchase preference has to be given to the lowest quoting 'Class-I local supplier', whose quoted rates fall within 20% margin of purchase preference, subject to its meeting the prescribed criteria for award of contract as also the constraint of maximum quantity that can be sourced from any single supplier. If the lowest quoting 'Class-I local supplier', does not qualify for purchase preference because of aforesaid constraints or does not accept the offered quantity, an opportunity may be given to next higher 'Class-I local supplier', falling within 20% margin of purchase preference, and so on.
 - v) To avoid any ambiguity during bid evaluation process, the procuring entities may stipulate its own tender specific criteria for award of contract amongst different bidders including the procedure for purchase preference to 'Class-I local supplier' within the broad policy guidelines stipulated in sub-paras above.
- 3.12 **Exemption of small purchases:** Notwithstanding anything contained in paragraph 3, procurements where the estimated value to be procured is less than Rs. 5 lakhs shall be exempt from this Order. However, it shall be ensured by procuring entities that procurement is not split for the purpose of avoiding the provisions of this Order.
- 3.13 The 'Class-I & II local supplier' should provide a "Self-Certification" along with technical offer indicating that the item offered meets the minimum local content [as per Definitions] as called for in the tender and provide the percentage of local content along with details of the location[s] at which the local value addition is made. In case of two bid tenders, it is mandatory to indicate compliance to MLC [minimum Local Content] in technical bid zone.
- 3.14 In case the offers sought from only Class I and Class II local suppliers [as indicated at S. No. 3.2[b] above], the offer received without indicating the percentage of local content and without self-certification will not be considered and rejected.

- 3.15 In cases the quoted price is in excess of Rs.1000 Lakhs [including duties, taxes and freight & Insurance] the 'Class-I & II local supplier shall provide a certificate from the statutory auditor or cost auditor of the company [in the case of companies] or from a practicing cost accountant or practicing chartered accountant [in case of suppliers other than companies] giving the percentage of local content.
- 3.16 A committee [with an external expert from a practicing cost accountant or practicing chartered accountant, if required] constituted for independent verification shall verify the self-declarations & auditor's / accountant's certificates on random basis, as per the requirements.
- 3.17 The ink-signed certificate shall be provided on vendors letter head along with the offer [in case of e-mail tender, copy of ink-signed certificate shall be uploaded along with your offer under concerned tab. Original in Hard copy shall be produced on request]. In case of non-submission of certificate, the purchase preference shall not apply.
- 3.18 In case of a complaint received from any local supplier indicating a need for review/ verification of Local content of successful vendor / awarded vendor, for accepting a complaint from such complainant [w.r.t the false declaration given by the successful vendor on the local content], a complaint fee of Rs.2 Lakhs or 1% of the locally manufactured items being procured [subject to a maximum Rs. 5 Lakhs], whichever was higher, to be paid by demand draft by the complainant. In case, the complaint is found to be incorrect, the complaint fee shall be forfeited. In case, the complaint is upheld and found to be substantially correct, deposited fee of the complainant would be refunded without any interest.
- 3.19 False declarations will be in breach of code of the integrity for which a bidder or its successor's will not be eligible/debarred for purchase preference from further tenders / pending tenders for two years along with other actions as may be applicable.
- 3.20 Further, in case the violation/false declaration established, in such case, a penalty amount up to 2% value of the each order will be deducted on such defaulted bidders.
- 3.20 Any terms and conditions not covered under this chapter shall be as per "Public Procurement (Preference to Make in India) as per Government of India, Ministry of Commerce and Industry, Department for Promotion of Industry and Internal Trade [DPIIT], Public Procurement Division issued order P-45021/2/2017-PP (BE II) dated 16.09.2020 and as amended from time to time"

The above declared percentage of local content does not include in any item the cost of Transportation, Insurance, Installation, Commissioning, Training and After Sales Service Support like AMC/CMC. etc.

Eligibility conditions to participate Tender in HSFC for Countries Sharing Land Border with India:

The Bidder shall mandatorily submit the copy of valid Registration Certificate issued by DPIIT along with the tender without which the offer will be treated as invalid.

Requirement of Registration:

Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Department for Promotion of Industry and Internal Trade [DPIIT]. Hence, Bidder or Agent from a country sharing border with India shall mandatorily submit the copy of valid Registration Certificate registered with DPIIT along with the tender, without which the offer will be treated as invalid.

Model Clauses of Tenders:

1. Any bidder from a country which shares a land border with India will be eligible to bid in any procurement whether of goods, services (including consultancy services and non-consultancy services) or works (including turnkey projects) only if the bidder is registered with the Competent Authority.
2. "Bidder" [including the term 'tenderer', 'consultant' or 'service provider' in certain contexts] means any person or firm or company, including any member of a consortium or joint venture [that is an association of several persons, or firms or companies], every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such persons, participating in a procurement process.
3. "Bidder (or entity) from a country which shares a land border with India" for the purpose of this Order means:
 - An entity incorporated, established or registered in such a country; or
 - A subsidiary of an entity incorporated, established or registered in such a country; or
 - An entity substantially controlled through entities incorporated, established or registered in such a country; or
 - An entity whose beneficial owner is situated in such a country; or
 - An Indian (or other) agent of such an entity; or
 - A natural person who is a citizen of such a country; or
 - A consortium or joint venture where any member of the consortium or joint venture falls under any of the above
4. The beneficial owner for the purpose of [3] above will be as under:
 - i] In case of a company or Limited Liability Partnership, the beneficial owner is the natural person[s], who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means.
Explanation:---
 - a. "Controlling ownership interest" means ownership of or entitlement to more than twenty-five per cent of shares or capital or profits of the company;

- b. "Control" shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholder's agreements or voting agreements;
 - ii] In case of a partnership firm, the beneficial owner is the natural person[s] who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;
 - iii] In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals;
 - iv] Where no natural person is identified under [i] or [ii] or [iii] above, the beneficial owner is the relevant natural person who holds the position of senior managing official;
 - v] In case of a trust, the identification of beneficial owner[s] shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.
5. An Agent is a person employed to do any act for another, or to represent another in dealings with third person.
6. The successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority.
7. The registration shall be valid at the time of submission of bid and at the time of acceptance of bid.
8. If the bidder was validly registered at the time of acceptance / placement of order, registration shall not be a relevant consideration during contract execution

Model Certificate for Tenders:

"I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I certify that this bidder is not from such a country or, if from such a country, has been registered with the DPIIT, I hereby certify that this bidder fulfils all requirements in this regard and is eligible to be considered. [Where applicable, evidence of valid registration by the DPIIT shall be attached]".

Model Certificate for Tenders for Works involving possibility of sub-contracting:

"I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent

Authority. I hereby certify that this bidder fulfills all requirements in this regard and is eligible to be considered. Where applicable, evidence of valid registration by the Competent Authority shall be attached.]"

Model Certificates for Tenders for Work involving possibility of Sub-Contracting:

"I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority. I hereby certify that this bidder fulfills all requirements in this regard and is eligible to be considered. Where applicable, evidence of valid registration by the Competent Authority shall be attached.]"

The bidders, who have beneficial ownership in countries which share land border with India and intend to participate in public procurement in India, shall directly approach the DPIIT for Registration as per Format as Appendix "A". Bidders are also required to submit application for "Security Clearance" as per the Format as Appendix "B". The Appendix "A" and "B" Format are available in DPIIT website [i.e. www.dipp.gov.in] vide Office Memorandum No. P-45021/112/2020-PP(BE-II (E-43780) dated 24.08.2020. Complete application containing both "Registration" and "Security Clearance" formats duly filled in, may be directly submitted in the Office of Joint Secretary [MKN], DPIIT, Room No. 236A, Udyog Bhawan, New Delhi. The registration granted by DPIIT shall be only for the purpose of bid participation under Rule 144[xi] of General Financial Rules, 2017.

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Chapter – 4

Terms and Conditions:

- 4.0 **Definitions:** In the contract, the following expressions shall, unless the context otherwise requires, have the meanings, hereby respectively assigned to them: -
- a] **“Acceptance”** shall mean conditional determination by Purchaser of the completion of the Work or any element thereof in accordance with the Contract, by issuance of a Certificate of Substantial Completion of Work as provided in the Contract.
 - b] **“Approval”** shall mean approval in writing issued by the Purchaser in terms of the tender.
 - c] **“Contract”** shall mean the documents forming the tender, the offer, the award of tender and the formal agreement executed between the competent authority on behalf of Purchaser and the Contractor, together with the documents referred to therein including the conditions enumerated herein, specifications, designs, drawings and instructions issued from time to time by the competent authority of Purchaser and all these documents taken together, shall be deemed to form one Contract and shall be complementary to one another.
 - d] **“Contractor”** shall mean the individual, firm, Limited Liability Partnership [LLP] or company, undertaking the works and shall include the legal representatives, nominees, affiliates, successors-in-interest, permitted assigns, Heirs, Executors and Administrators of such individual, LLP, Firm or Company, unless repugnant to the context or meaning thereof.
 - e] **“Contract Value”** shall mean the sum for which the tender is accepted as per the Letter of Award.
 - f] **“Date of commencement of work”** The date of start of Contract shall be reckoned from the date of issue of Letter of Award.
 - g] **“Drawings”** shall mean the drawings referred to in the Contract document including modifications if any and such other drawings as may be from time to time, be furnished or approved by Purchaser.
 - h] **“Letter of Award”** shall mean Purchaser’s letter or notification conveying its acceptance of the tender, subject to such conditions as may have been stated therein.
 - i] **“Market Rate”** shall be the rate as decided by the competent authority of the Purchaser on the basis of the prevailing cost of materials and labour at the site where the work is to be executed plus the percentage mentioned elsewhere in the tender document to cover, all overheads and profits.
 - j] **“Month”** means English calendar month and ‘Day’ means a calendar day of 24 hours each.
 - k] **“Purchaser”** shall mean The President of India represented by its Director or Sr Head/Head, Purchase and Stores, Human Space Flight Centre [HSFC] Bengaluru or his successors or assigns.
 - l] **“Purchase Order”** shall mean the communication signed on behalf of the Purchaser by an officer duly authorized intimating the acceptance on behalf of the Purchaser on the terms

and conditions mentioned or referred to therein accepting the Tender or offer of the Contractor.

- m] **“Template”** shall mean the standard template of rates to be read with any of receipt amendments thereto issued up to the date of receipt of tender.
- n] **“Stores”** shall mean what the Contractor agrees to supply under the Contract/Tender as specified in the Purchase Order including erection of plant and machinery and subsequent testing should such a condition be included in the Purchase Order.
- o] Words indicating the singular only also includes the plural and vice versa, where the context so requires.
- p] Words indicating Male Gender shall also include the Female or Neuter Gender, and vice versa, where the context so requires.

4.1 **Contract Agreement:**

The Tenderer shall enter into a Contract Agreement with the Purchaser within 45 [Forty Five] days from the date of Letter of Award or within such extended time, as may be granted by Purchaser failing which no payment shall be released to the Contractor. The cost of stamp paper/s, stamp duty, registration, if applicable on the Contract, shall be borne by the Contractor. In case, the contractor does not sign the Agreement as above or fails to start the work within 10 [Ten] days of the issue of Letter of Award and the same stands withdrawn.

4.2 **Transparency:**

Tenderers are free to ask Purchaser for clarifications on the Bidding/Tender terms and conditions, process, etc., during the procurement process. All such queries and clarifications shall be sought for in writing via e-mail and sent to the officer authorized by the Purchaser to issue such clarifications, as may be required. No verbal request will be entertained.

4.3 **Prices:**

Tenders offering Fixed Prices will be considered. Where a price variation clause is insisted upon by a Tenderer, quotations will be with prices subject to adjustment up or down as per specific variation formula with reference to the base prices of major raw materials/ components which will be detailed in the bid along with the respective percentage costs in the composite price for the finished goods. The Contractor shall be bound to carryout and complete the stipulated work irrespective of the variation in individual items as specified hereinabove.

For Indigenous Supplies, the Tenderer shall quote prices separately furnishing break-up of cost towards Basic Cost of Items Packing, Forwarding, Freight, Handling, Installation if any, and GST.

4.4 **Price Variation for Long Term Contracts:**

Where Tenderer[s] quote delivery period beyond 18 months, the illustrative formula for Price Variation Clause [PVC] shall be referred under General Financial Rules [GFR], 2017, Appendix-11 [see Rule 225 [viii] [b]. It may please be noted that the formula for Price Variation is available on the Website.

4.5 **Goods and Service Tax:**

Government of India has implemented Goods and Services Tax [GST] w.e.f 01.07.2017. The Tenderer[s] should mandatorily possess a valid GSTIN along with the GST Registration Certificate. Please send duly self-attested certificate of GST Registration along with offer[s], in the absence of which your offer[s] will be invalid and shall not be considered

4.6 **Concessional Goods and Services Tax:**

Human Space Flight Centre [HSFC], Bengaluru is eligible for availing Concessional GST in terms of following Notifications issued by Government of India and Government of Karnataka for the procurement of Goods against production of Certificate issued by an Officer not below the rank of Deputy Secretary to Government of India certifying that the Goods being procured will be used for satellite, launch vehicles & payload purposes only.

SI No	Notification	Concessional GST
1	i Government of India, Ministry of Finance, Department of Revenue, under S. No. 243A [now 243B] vide Notification No. 6/2018-Integrated Tax [Rate] dated 25.01.2018 and as amended vide Notification No. 24/2018-Integrated Tax [Rate] dated 31.12.2018	CGST @ 2.5%
	ii Government of Karnataka Finance Secretariat, under S. No. 243A [now 243B] vide Notification No. [6/2018] No. FD 48 CSL 2017, Bengaluru Dated 25.01.2018 and as amended as Notification No. [24/2018] No. FD 48 CSL 2017, Bengaluru Dated 31.12.2018	SGST @ 2.5%
2	Government of India, Ministry of Finance, Department of Revenue, under S. No. 243A [now 243B] vide Notification No. 7/2018-Integrated Tax [Rate] dated 25.01.2018 and as amended vide Notification No. 25/2018- Integrated Tax [Rate] dated 31.12.2018	IGST @ 5%

Tenderers are here by requested to take note of this aspect and submit the Quotation accordingly. Necessary GST Declaration Certificate shall be issued by respective Centers on Demand from the tenderer.

4.7 **Customs Duty:**

Human Space Flight Centre, Bengaluru is partially exempted from payment of Customs Duty vide Notification No.12/12-Cus dated 17.03.2012 superseded by Notification No. 50/17-Customs dated 30.06.2017 and as amended vide Notification No. 5/2018-Customs dated 25.01.2018 Sl. No. 539A. The necessary Customs Duty Concessional Certification [CDCC] shall be provided. Tenderers are requested to take note of this aspect and submit the Offer clearly mentioning that the quoted Price does not include Customs Duty. While requesting for issue of CDCC for the bought-out items, the Tenderer[s] should mention the Item Description, Quantity and Value for which CDCC is to be provided. In case of bought out items the necessary proof shall be produced.

4.8 Evaluation of Tenders:

The Evaluation/Loading criteria in respect of Payment Terms, Bank Guarantee towards Free Issue of Materials [FIM], etc., having financial implications will be considered to arrive at L-1 status.

4.9 Clarification Regarding Contents of the Bids:

During evaluation and comparison of bids, the Purchaser may, at its discretion, ask the Tenderer for clarification of his bid. The request for clarification will be given in writing and no change in prices or substance of the bid will be sought, offered or permitted.

However, at the time when tenders are under consideration, the Tenderers are advised to refrain from contacting by any means, either HSFC and/or their employees/representatives on matters related to the tender which are under consideration.

The tender evaluation and process of award of works is done by duly authorized Tender Scrutiny Committee and this Committee is authorized to discuss and get clarification/s from the Tenderers, if any. The Tenderer/s may be asked to give a presentation on his technical bid and arrange for functional demonstration of the stores offered. No change in the substance of the bid or the price thereof shall be sought/offered/permitted.

4.10 Bank Guarantee towards Free Issue Materials [FIM]:

The successful Tenderers shall furnish Bank Guarantee [BG] towards the cost of Free Issue Materials issued by Purchaser towards adequate Security for the FIM for the execution of the Contract and the said Tenderer will be duly authorized by PURCHASER to collect the free issue materials from HSFC's site subject to the furnishing of the aforesaid Bank Guarantee. The BG is to be kept valid till supply and acceptance of the final product.

In the case of Central Public Sector Undertaking/Public Sector Enterprises/ Autonomous Bodies and Government Organization, Indemnity Bond [IB] together with Insurance shall be considered in place of BG.

For Fabrication of items, in case FIM issued by HSFC, the Supplier should provide a material consumption statement indicating the quantity of FIM issued, actual quantity used, balance material returned, scrap returned etc. should be attached by the Fabricator to his final bill.

4.11 Payment Terms:

All payments are subject to permissible legal deductions from the contract price as per the Contract. All payments shall be released only after successful and satisfactory completion of quantum and type of work, specified for respective activity. All payments shall be directly made by the Purchaser to the Tenderer.

All interim payments made shall be regarded as payments by way of advance against the final payment only, and not as payment for work actually completed and shall not preclude defective/imperfect/ incomplete work to be removed. It will not be considered as an admission on the part of the Purchaser of the due performance of Contract or any part thereof nor shall it preclude, determine or affect in any way the powers of the Purchaser to determine the quality and quantity of work and issue such directions, as may be necessary

to the Contractor. Payments shall be released as per the Payment milestones as mentioned in Annexure V.

4.12 Terms of Payment in case of Indigenous Supplier[s]:

The Contractor[s] Bill will be processed for payment only after the Stores have been received, inspected and accepted by the Purchaser. Normally payment will be made for the accepted Stores within 30 days from the date of Receipt and Acceptance of the Material at Human Space Flight Centre [HSFC] against production of the following documents:

- a] Original Tax Invoice describing the Stores delivered, Quantity Unit Rate and their Total Value and applicable GST.
- b] Delivery Challan
- c] Warranty and Guarantee Certificates.
- d] Test Certificate, if any.

4.13 Bank Charges:

Any Bank Charges payable to our Bank shall be payable by Purchaser. Similarly, any Bank charges payable to your bank shall be payable by the Contractor.

4.14 Packaging:

The Contractor wherever applicable shall pack all Stores in crates or cartons or as applicable so as to protect it from damages and deterioration in transit by road, Rail, air freight for Space Qualified Stores. The Contractor[s] shall be held responsible for all losses and damages caused due to improper packaging during transit.

4.15 Performance Security [PS]:

Within 15 days from the date of issue of the Purchase Order or with in such extended time as may be granted by the Purchaser in writing, the Contractor shall execute an irrevocable interest free Performance Security for 3% of the Contract value to ensure due Performance of the Contract including the fulfillment of the Warranty obligation. The proceeds of the performance security shall be payable to the Purchaser as compensation for any loss resulting from the Tenderer's failure to complete his obligations under the contract. The Purchaser shall discharge the performance security bond after completion of Tenderer's performance obligations including the warranty and post-warranty obligations under the contract.

The Performance Security may either be furnished in the form of an Account Payee Demand Draft; or Fixed Deposit Receipt from a Nationalized Bank, or Bank Guarantee from a Nationalized Bank or Online Payment in favour of Accounts Officer, Human Space Flight Centre [HSFC], Bengaluru. The Bank Guarantee must be valid for the entire contract period and an additional period of 60 days beyond the date of completion of all contractual obligations of the Tenderer including the Warranty obligations. In the event the work is not completed within the stipulated period, the contractor shall get the Performance Security extended. The Bank Guarantee shall be executed on a Non-judicial stamp paper of appropriate value as per Specimen. The Performance Security will not carry any interest and shall be returned after completion of all the obligations of the Contract.

In the event the Contractor fails to furnish the Performance Security within 15 Days as stipulated hereinabove, i.e. after the receipt of Purchase Order or on signing of the Contract

or any extension thereof, the Purchase Order/ Contract shall be cancelled and terminated at the Contractor's risk, cost and liability. The Earnest Money Deposit, if any executed shall be forfeited and appropriate penal and legal action shall be initiated.

Central Public Sector Undertakings [PSUs]/Public Sector Enterprises [PSEs]/ Autonomous Bodies are exempted from payment of Performance Security, and instead, an Indemnity Bond shall be executed in lieu of Performance Security.

4.16 Guaranteed Time of Delivery:

The time for and the date of delivery of Stores will be deemed to be the essence of the Purchase Order/Contract failing which Purchaser reserves the right to terminate/cancel the Order/Contract at his discretion. Delivery shall be as mentioned in Technical Terms in Annexure V

4.17 Ultimate Consignee:

Purchase & Stores Officer [Stores], Human Space Flight Centre, ISRO HQ Campus, Anthariksh Bhavan, New BEL Road Bengaluru-560 094 or any other ISRO Centers/Units as specified in Purchase Order.

4.18 Insurance of the Stores:

No Insurance is required at Human Space Flight Centre [HSFC] cost. The Contractor shall be responsible for insuring the Stores wherever considered necessary.

4.19 Inspection and Acceptance Tests:

The Purchaser's representatives shall also be entitled at all reasonable times during manufacture to inspect examine and test at the Contractor's premises, the material and workmanship of all Stores to be supplied under this Contract and if part of the said Stores is being manufactured on other premises, the Contractor shall obtain the Purchaser's representative permission to inspect, examine and test and shall not release the Contractor from the obligations under this Contract.

For tests conducted at the premises of the Contractor or any of his sub-contractors, the Contractor shall Provide Free of Cost Assistance, Labour, Materials, Electricity, Fuel and Instruments as may be required or as may be reasonably needed by the Purchaser's representative to carry out the tests efficiently.

When the Stores have passed the specified test, the Purchaser's representative shall furnish a certificate to this effect in writing to the Contractor. The Contractor shall provide copies of Test Certificate to the Purchaser as may be required.

4.20 Acceptance of Stores:

The Stores shall be tendered by the Contractor for Inspection at such places as may be specified by the Purchaser at the Contractor's own risk, expenses and cost.

It is expressly agreed that the acceptance of the Stores contracted for, is subject to final approval by the Purchaser, whose decision shall be final.

If, in the opinion of the Purchaser, all or any of the Stores that do not meet the performance or quality requirements specified in the Purchaser Order, they will be rejected and the decision as to the rejection by the Purchaser shall be final and binding on the Contractor.

If the whole or any part of the Stores supplied are rejected the Purchaser shall be at liberty, with or without notice to the Contractor, to Purchase in the open market at the expense of the Contractor, Stores meeting the necessary performance and quality contracted for in place of those rejected, provided that either the Purchaser or the agreement to Purchase from another supplier is made six months from the date of rejection of the Stores as aforesaid.

4.21 Contractor[s] Default Liability:

The Purchaser upon a written notice of default to the Contractor, shall be entitled to terminate the Contract by giving 30 days prior notice, in whole or in part, at the sole risk and cost of the Contractor, in circumstances detailed hereunder: -

If in the judgment of the Purchaser, the Contractor fails to make delivery of Stores within time specified in the Contract/Agreement or within the period for which extension has been granted by the Purchaser to Contractor.

If in the judgment of the Purchaser, the Contractor fails to comply with any of the other provisions of this Contract.

In the event, the Purchaser terminates the Contract in whole or in part as provided in Clause 14.21, the Purchaser reserves the right to either purchase Stores on such terms and in such manner as he may deem appropriate, similar to that covered under the terminated Contract and the Contractor will be liable to the Purchaser for entire cost of such similar Stores terminated or require the Contractor to pay back all money paid by the Purchaser to the Contractor under this Contract. In either case, liquidated damages for delay as defined in Clause 4.25 shall be recoverable.

If Contract is terminated as provided in Clause 4.21 the Purchaser in addition to any other rights provided in this Article, may require the Contractor to transfer title and deliver to the Purchaser under any of the following cases in the manner and as directed by the Purchaser.

Any completed Stores.

The Purchaser shall pay to the Contractor, the Contract price for completed Stores delivered to and accepted by the Purchaser and for manufacturing materials delivered and accepted.

In the event, the Purchaser does not exercise its right to terminate the Contract as provided in Clause 4.21, the Contractor shall continue the performance of the Contract, in which case he shall be liable to the Purchaser for Liquidated Damages for delay as set out in Clause 4.25 until the Stores are accepted.

After acceptance of the deliverables by HSFC, HSFC shall have no claim against contractor, its affiliated entities, contractors and sub-contractors for any damage to property of HSFC and third parties or injuries (including death) to HSFC and third parties employees arising in connection with the use of the deliverables and documentation in Gaganyaan mission specific training, ground test, unmanned and manned Gaganyaan space flights, with

exceptions of claims against contractor, its affiliated entities, contractors and subcontractors in case of their willful misconduct.

In particular, HSFC hereby waives and shall ensure that each of Indian astronauts participating in the Gaganyaan manned space flight waives any claim against contractor, its affiliated entities, contractors and sub-contractors for liability of whatever crime in connection with death, bodily injury, disease, including critical disease, temporary or permanent loss of general or special ability to work and any other injury to health, or pain and suffering of Indian astronauts arising in connection with the use of the deliverables and documentation in Gaganyaan mission specific training, Gaganyaan manned space flight, with exception of claims against contractor, its affiliated entities, contractors and sub-contractors in case of their willful misconduct.

HSFC shall indemnify and hold contractor, its affiliated entities, contractor or subcontractor harmless from any claims that may be raised by Indian astronauts, heirs, successors, dependents, assignees, insurers, subrogees like in connection with death, bodily injury, disease, including critical disease, temporary or permanent loss of general or special ability to work and any other injury to health, or pain and suffering of Indian astronauts arising in connection with the use of deliverables and documentation in the Gaganyaan mission specific training, Gaganyaan manned spaceflight, with exception of claims against contractor, its affiliated entities, contractors and sub-contractors in case of their willful misconduct.

HSFC shall indemnify and hold contractor, its affiliated entities, contractor and subcontractors harmless from any claims resulting from the use of deliverables and documentation raised against contractor, its affiliated entities, contractor and sub-contractors by a third party, with exception of claims against contractor, its affiliated entities, contractor and sub-contractors in case of their willful misconduct.

Except (i) in case of willful misconduct or (ii) where this is expressly specified herein neither party shall be liable towards the other party in contract, tort (including negligence or breach of statutory duty) or otherwise for damages (a) for any increased cost or expenses, (b) for any loss of profit, business, contracts, revenues, customers or anticipated savings, or (c) for any special, indirect or consequential losses of any nature whatsoever

If a party decides to insure any risk described in this article 14, it shall ensure that the insurance policies contain the waiver of the subrogation rights towards the other parties, affiliated entities, contractors and sub-contractors and shall submit to the other Party a written statement of its respective insurance that they shall have no subrogation rights against the other party, its affiliated entities, contractors and subcontractors. In case the waiver from insurers subrogation rights has not been obtained, each party shall indemnify and hold harmless and defend the other party, its affiliated entities, contractors and subcontractors from any claims raised by its respective insurers against the other parties, affiliated entities, contractors and subcontractors.

4.22 **Replacement:**

If the Stores or any portion thereof, is damaged or lost during the transit, the Purchaser shall give notice to the Contractor setting forth particulars of such Stores damaged or lost during transit. The replacement of such Stores shall be effected by the Contractor within a reasonable time to avoid unnecessary delay in the intended usage of the Stores. The payment for the replacement of Stores shall be in accordance as per contract.

4.23 **Rejection:**

If the Stores supplied by the Contractor are found to be defective in material or workmanship or otherwise not in conformity with the requirements of the Contract specification, the Purchaser shall either reject the Stores or request the Contractor in writing to repair, rectify, replace the same. The Contractor, on receipt of such notification shall either rectify or replace the defective Stores free of cost to the Purchaser. If the Contractor fails to do so, the Purchaser may either: -

- a] Repair, Replace or rectify such defective Stores and recover extra cost so involved from the Contractor; or
- b] Terminate the Contract for default as provided under Clause 4.23 above. The right to terminate and the right to replace the Stores shall not be derogatory to one another and shall mutually complement one another. In other words, the Purchaser shall be entitled to take either decision, or both.

4.24 **Force Majeure:**

Neither party shall bear responsibility complete or partial non-performance of any of his obligations [except for failure to pay any sum which has become due on account of receipt of goods under the provisions of the Purchase Order/Contract], if the non-performance results from such force majeure circumstances such as, but not restricted to, flood, fire, earthquake, civil commotion, sabotage, explosion, epidemic, quarantine restriction, strike, lock out, freight embargo, acts of the Government either in its sovereign or its contractual capacity, hostility, acts of public enemy and other acts of God as well as war or revolution, military operation, blockade, acts or actions of state authorities or any other circumstances beyond the control of the parties that have arisen after the conclusion of Purchase Order/Contract. In such circumstances, the time stipulated for the performance of an obligation under the Purchase Order/Contract may be proportionately extended.

The party for whom it has become impossible to meet the obligation under this contract due to force majeure condition shall notify the other party in writing not later than 7 days from the date of the occurrence and cessation of the force majeure condition/s. In the event of delay lasting over one month, arising from force majeure causes, the Purchaser reserves the right to cancel the contract without any obligation to compensate the Tenderer in any manner. Unless agreed by both the parties, in writing, the Contractor shall continue to perform his obligations under the Purchase Order/Contract as far as is practical and shall seek all reasonable alternative means for performance not prevented by the force majeure event.

Any Certificate issued by the Chamber of Commerce or any other competent authority or organization of the respective country shall be sufficient proof of commencement and cessation of the above circumstances. In case of failure to carryout complete or partial performance of an obligation for more than 60 days, either party shall reserve the right to terminate the Contract totally or partially. A prior written notice of 30 days to the other party will be given informing of the intention to terminate without any liability.

The Force Majeure condition is applicable only to the prime Contractor and Purchaser.

4.25 **Delay in Completion/Liquidated Damages:**

The time and date stipulated in the contract for completion of the work shall be deemed to be the essence of the contract. If the Contractor fails to deliver the Stores within the time

specified in the Contract or any extension thereof or if the Contractor fails to maintain the required progress or comply with the relevant provisions of the general conditions of contract or special conditions of contract, if any and clear the site on or before the contract or extended date of completion, the Purchaser shall, without prejudice to any other right or remedy available under the law to Purchaser on account of such breach, recover from the Contractor as Liquidated Damages a sum one-half of one percent [0.5 percent] of the Contract price of the undelivered Stores for each calendar week of delay or part thereof. The total Liquidated Damages shall not exceed Ten percent [10 percent] of the Contract price of the unit or units so delayed.

In case of delay in delivery of the Stores beyond the delivery date stipulated in the Purchase Order/Contract or any extension thereof, such Stores shall be received without prejudice to the right of the Purchaser to claim Liquidated Damages and without prejudice to the terms and conditions of the Purchase Order/Contract.

In case if Advance Payment is Drawn by the suppliers, HSFC will be charging interest at appropriate rate in case of any delay attributable to the contractor/supplier in effecting the supply after the prescribed delivery date. The levy of interest in such cases shall be for the period beyond the specified delivery date, on the amount of balance advance payment.

4.27 Standard Warranty/Guarantee:

All products/stores supplied against the bid shall be of high reliability and shall carry comprehensive free of cost warranty. The Contractor shall guarantee and certify that the Stores supplied shall comply fully with the specifications laid down, for material, workmanship and performance. The Purchaser expects the stores to be highly reliable which would result in lower maintenance and repair cost.

Guarantee for the period as indicated in the tender documents shall be after acceptance of the Stores. If any defects are discovered, therein or any defects therein are found to have developed under proper use arising from faulty materials, design or workmanship, Contractor shall remedy such defects at his own cost provided, he is called upon to do so within a period of 36 months from the date of Acceptance thereof, by the Purchaser who shall state in writing in what respect the Stores or any part thereof, are faulty.

If in the opinion of the Purchaser, it becomes necessary to repair, replace or renew any defective Stores, such repair, replacement or renewal shall be made by the Contractor Free of all Cost to the Purchaser, provided the notice informing the Contractor of the defect is given by the Purchaser in this regard within the said period of 36 Months from the date of acceptance of Stores thereof.

If Contractor fail to rectify the defects, the Purchaser shall have right to reject or repair or replace, at the cost of the Contractor the whole or any portion of the defective Stores. The warranty for such replaced/repared items/stores shall be for 36 months from the date of handing over of such replaced/repared stores in complete and satisfactory condition to the Purchaser.

The decision of the Purchaser, notwithstanding any prior approval or acceptance or inspection thereof, on behalf of the Purchaser, as to whether or not the Stores supplied by the Contractor are defective or any defect has developed within the said period of 36 Months or as to whether the nature of the defects requires renewal or replacement, shall be final,

conclusive and binding on the Contractor. The Warranty/Guarantee certificate has to accompany the shipment.

All the replacement Stores shall also be guaranteed for a period of 36 months from the date arrival of Stores at Purchaser's site.

4.28 Termination:

Under the normal circumstances, Termination/Short Closing of the Purchase Order/Contract is not foreseen. However, the Purchaser reserves the right to terminate the Contract in whole or in part by giving 30 days prior notice under the following circumstances:

- a] For repeated non-performance in the execution of Purchase Order/Contract.
- b] If the Contractor fails to deliver the final Product within the stipulated delivery schedule or any extension thereof, granted by Human Space Flight Centre [HSFC].
- c] If the Stores repeatedly fails in the Inspection and does not pass Inspection and Quality requirements of Purchase Order/Contract and/or the Contractor is not in a position to either rectify the defects or offer the Stores conforming to the contracted Quality Standards.
- d] If the Contractor is unable to rectify the defects or offer replacements in lieu of defective items
- f] If the Contractor fails to perform any other obligations under Purchase Order/Contract.
- g] If the Contractor becomes bankrupt or otherwise insolvent.
- h] Owing to deficiency of service, breach of Contract.
- l] For inefficiency, indiscipline, irregularity, insincerity, indifference in work, indulges in corrupt practices, disobedience, doubtful credentials/integrity, etc., at any point of time during the Contract period.

4.29 Parallel Contract:

Purchaser reserves the right to enter into Parallel Contract/s with one or more Contractors for procurement of Stores or any portion thereof that is covered by this Contract.

4.30 Subletting/Assignment of the Contract:

The Contract shall not be sublet, transferred or assigned to any other third-party Firm/Agencies/Person, etc., without the prior written permission of Purchaser. In case of violation of this clause, the Service Provider/Contractor shall be solely responsible for any legal action besides termination of Contract.

4.31 Secrecy:

The technical information, drawings, specifications and other related documents provided by the Purchaser and forming part of the Contract are the property of Purchaser and shall not be used or disclosed for any other purpose, except for execution of the Contract. All rights, including rights in the event of grant of patent and registration of designs are reserved

in favour of the Purchaser. The technical information, drawings, specifications, records and other documents provided by the Purchaser shall not be copied, transcribed, traced or reproduced in any other form or otherwise in whole and/ or duplicated, modified, divulged and/or disclosed to a third party nor misused in any other form whatsoever without Purchaser's consent in writing except to the extent required for the execution of this Contract. These technical information, drawings, specifications and other related documents which were originally provided by the Purchaser shall be returned to the Purchaser with all approved copies and duplicates, if any, immediately after they have been used for the agreed purpose, and shall be accompanied with a certificate of the Contractor signed by an authorised signatory that such technical information, drawings, etc. have been returned to the Purchaser and that the Contractor has not retained any copy/ies thereof with him.

4.32 Arbitration:

In the event of any dispute/s, difference/s or claim/s arising out of or relating to the interpretation and application of the Contract, such dispute/s or difference/s or claim/s shall be settled amicably by mutual consultations of the good Offices of the respective Parties and recognizing their mutual interests attempt to reach a solution satisfactory to both the parties. If such a resolution is not possible, within 30 days from the date of receipt of written notice of the existence of such dispute/s, then the unresolved dispute/s or difference/s or claim/s shall be referred to the Sole Arbitrator appointed by the Parties by mutual consent in accordance with the rules and procedures of Arbitration and Conciliation Act 1996 together with amendments thereto or any modification thereof. The arbitration shall be conducted in Bengaluru in the Arbitration and Conciliation Centre – Bengaluru [Domestic and International] as per its rules and regulations. The expenses for the Arbitration shall be shared equally or as may be determined by the Arbitrator. The considered and written decision of the Arbitrator shall be final and binding between the Parties. The Seat for Arbitration shall be "Bengaluru" and the Arbitration proceedings shall be conducted in "English" Language only.

Work under the contract shall be continued by the Contractor during the pendency of Arbitration proceedings, without prejudice to a final adjustment in accordance with the decision of the Arbitrator unless otherwise directed in writing by the Purchaser or unless the matter is such that the work cannot be possibly continued until the decision [whether final or interim] of the Arbitrator is obtained.

4.33 Arbitration with Public Sector Undertakings:

In case of any dispute or difference of opinion arises between the parties connected to this Contract, such disputes or difference of opinion shall be resolved amicably by mutual consultation. Failing which, either party may take recourse of any alternative dispute settlement mechanism.

Notwithstanding anything contained in above para, in case of any dispute or difference of opinion falling under the exception to the ambit of Administrative Mechanism for Resolution of CPSEs Disputes [AMRCD] the party to this Contract with mutual consent may take recourse of any alternative dispute settlement mechanism including arbitration for settlement of such disputes as per applicable law and procedure. Further, also that all the differences or disputes including publication related disputes concerning intellectual property rights arising out of any activities performed under this agreement shall be in first attempt settled through mutual deliberations, failing which shall be further settled in terms of applicable laws and procedure.

4.34 **Language and Measures:**

All documents pertaining to the Contract including specification schedule notices, correspondence, operating and maintenance instruction drawings or any other writing shall be written in English language only. The metric system of measurement shall be used exclusively in the Contract. Any document originally in a language other than English must be accompanied with certified English translation and the same shall be considered for evaluation.

4.35 **Applicable Law and Jurisdiction:**

The Contract shall be interpreted, construed and governed by the Laws of India and the Courts in Bengaluru City alone shall have exclusive jurisdiction in this regard, to the extent permissible under the Arbitration and Conciliation Act, 1996.

4.36 **Indemnity:**

The Contractor shall warrant and deemed to have warranted that all Stores supplied against this Contract are free and clean of infringement of any third party Patent, Copy Right or Trademark and shall at all times indemnify the Purchaser against all claims which may be made in respect of the Stores for infringement of any third party right protected by Patent, Registration of the design or Trade mark and shall take all risk of accidents or damage which may cause a failure of the supply from whatever cause arising and the entire responsibility for the sufficiency of all the means used by him for the fulfillment of the Contract. The Contractor shall indemnify and keep indemnified the Purchaser against payments to be made under and for the observance of the applicable laws without prejudice to his right to claim indemnity from his sub-contractors, if any.

4.37 **Counter Terms & Conditions:**

Where counter terms and conditions printed or cyclostyled condition have been offered by the supplier as part of its bid, the same shall not be deemed to have been accepted by the Purchaser, unless specific written acceptance thereof, is obtained and incorporated into the Agreement to be entered into between the Parties, upon award of the Tender/Contract.

4.38 **Security Interest:**

On each item to be delivered under this Contract, including an item of work in progress in respect of which payment have been made in accordance with the Terms of the Contract. Purchaser shall have a Security Interest in such items which shall be deemed to be released only at the time when the applicable deliverable items is finally accepted and delivered to the Purchaser in accordance with the terms of Contract. Such Security Interest of the Purchaser shall constitute a prior charge as against any other charge or interest created in respect of such items by any other entity.

4.39 **Training:**

The Contractor shall, if required by the Purchaser, provide facilities for the Practical Training of Purchaser's Engineering or Technical Personnel from India and for their active association on the manufacturing process throughout the manufacturing period of the Contract/Stores, number of such personnel to be mutually agreed upon.

4.40 **Risk Purchase:**

Risk Purchase Clause will be applicable for all Contracts.

4.41 **Fall Clause:**

The Price[s] charged for the Stores/Services supplied under the Contract by the Contractor shall be no event exceed the lowest price at which the Contractor sells the Stores/Services or offer to sell the Stores/Services of identical description to any Person[s], Firm, Party, Organisation[s] including the Purchaser or any Department of Central Government or any Department of State Government or any statutory undertaking of the Central/State Government as the case may be during the period till the performance of all supply orders placed during the currency of the Contract is completed.

If at any time during the said period, the Contractor reduces the sale price, sells or offers to sell such Stores/Services to any person[s], Organisation[s], including the Purchaser or any Department of Central Government or any Department of State Government or any statutory undertaking of the Central or a State Government as the case may be, at a price lower than the price chargeable under the Contract, he shall forthwith notify such reduction or sale or offer to the Purchaser and the price payable under the Contract for the Stores/Services supplied after the date of coming into force of such reduction or sale or offer of sale stand correspondingly reduced to the same lower rate.

4.42 **Limitation of Liability:**

The remedies stated in the Contract are exclusive and in no event shall the Contractor be liable for any, special, incidental, consequential or punitive damages of any nature. Notwithstanding any other provision of the contract, the Contractor's total liability to the Purchaser, whether in Contract shall not exceed the total amount paid to the Contractor under the Contract.

The Purchaser shall be under no obligations to accept the lowest or any tender and reserve the right of acceptance of the whole or any part of the tender or portion of the quantity offered and the Tenderer[s] shall supply the same at the rates quoted.

The Purchaser shall not be liable to the Contractor for any loss or damages suffered by it during the term of the Contract or subsequently, and in no event shall the Contractor be liable for any, special, incidental, consequential or punitive damages of any nature. Notwithstanding any other provision of the Contract, the Contract having been satisfactorily completed, the Purchaser's total liability to the Contractor, shall not exceed the total amount to be paid to the Contractor under the Contract.

4.44 **Rejection of Bids:**

Canvassing by the Tenderer in any form, unsolicited letter and post-tender correction may invoke summary rejection of Bids. Conditional Tenders will be rejected. The Tenderer shall not impose any conditions on the bid i.e. the bid must be unconditional.

4.45 **Conditional Discount Offer:**

Conditional Discounts Offers will not be considered.

4.46 **Lowest Offer:**

The Lowest Offer [L-1] shall be decided based on the aggregate value of all items put together for which Quotation have been called for wherever necessary.

4.47 Splitting of Order[s]:

The Volume/Quantity for certain specialized nature of jobs is considerably large and it is necessary the orders are split with more than one party in order to ensure timely delivery/services. Purchaser reserves right to split the Purchase Orders to more than one party. However, every effort will be made to bring the Commercial aspect including price of the parties on a single common platform.

4.48 Changes in the Name and Address of the Supplier:

In the event of Change in Name and Address of Tenderer/Contractor, Documentary Proof issued by the Appropriate Government Authorities shall be produced for making such change in the Contract and its procedures, in the absence of which PO/ Amendment/Payment will not be released.

4.51 Validity of Offer:

The offer should be valid for a minimum period of 120 days from the date of opening of the tender.

The Authority of person signing the Tender, if called for shall be produced.

4.52 Instruction/Operation Manual containing all assembly details including wiring diagrams should be sent wherever necessary in duplicate. All documents/ correspondence should be in English language only.

4.53 The Purchaser reserves the right to accept or reject any offer in whole or in part without assigning any reason.

4.54 It is expressly agreed that the acceptance of the Stores contracted for is subject to final approval in writing by the Purchaser.

4.55 Inspection/Test/Certificate should be provided for the goods after testing it thoroughly at the Contractors works. If any inspection by Lloyds or any other Third-Party Agency is considered necessary, it shall be arranged by Contractors on the instructions of the Purchaser.

4.57 For items having Shelf Life, the same shall be supplied with maximum Shelf Life if order is placed.

4.58 Average Financial Turnover for the preceding 03 Financial Years has to be provided by the Tenderer along with the Quotation. This should be supported with preceding three years Profit and Loss Account and Balance Sheet duly authenticated by Chartered Accountant.

4.59 Details of Financial capacity of the Firm Viz., details of Audited Balance Sheet including Profit and Loss account for the last 03 years certified by Chartered Accountant along with comments of Auditors has to be submitted by the Tenderer along with the Quotation.

4.60 Self-assessment technical and organizational competence to Supply the Stores of this nature and magnitude.

4.61 The Tenderer shall propose a viable Financial Plan/Model for successful execution of the Project, explaining Liquidity and Solvency capacity of the Firm which is equivalent to 100% of the Contract Value. The same shall be supported with documentary proof obtained from the Bankers.

4.62 **Preparation of Comparative Statement of Tenders:**

While preparing Comparative Statement of Tenders [CST] appropriate Marginal Cost of Funds based lending rate [MCLR] or any other rate as notified by Reserve Bank of India from time to time, shall be loaded in all cases where the Vendors have demanded for Advance Payment/Milestone Payment in order to arrive at landed cost of the Quotations received and evaluation of Quotations shall be made accordingly.

4.63 **Pre-Delivery Inspection:**

Pre-Delivery Inspection if required, shall be carried out by HSFC Engineers at the Contractors Factory Premises at our cost. The Contractor need not extend any Hospitality to our representatives.

4.64 **Additional Quantity:**

The Purchaser reserves the right to place order on the successful tenderer for additional quantity up to 25% of the quantity offered by them at the rates quoted



**HUMAN SPACE FLIGHT CENTRE [HSFC]
BENGALURU**

**SPECIFIC COMMERCIAL TERMS AND CONDITIONS TO BE COMPLIED BY TENDERER[S]
WITHOUT WHICH YOUR OFFER WILL NOT BE CONSIDERED**

Tenderer[s] will have to follow strict Compliance to our Commercial Terms and Conditions or otherwise, your Tender[s] will be rejected. Further, it is requested to mandatorily submit the Compliance Statement for the below mentioned Specific Terms.

SI No	Purchaser's Commercial Terms	Compliance/ Comments by Vendor
01	Delivery Terms - The Quotation should be FOR Destination/Door Delivery Basis	
02	Packing and Forwarding Charges Inclusive/Exclusive [in case of Exclusive please indicate the applicable Percentage]	
03	Delivery Period [in Weeks/Months] Please refer Clause No.7 of RFP	
04	Freight Charges, if any	
05	No Insurance Coverage is required at Purchaser's Cost	
06	Mode of Despatch	
07	Taxes and Duties	
	<p>a Government of India has implemented Goods and Services Tax [GST] w.e.f 01.07.2017. The Tenderer[s] should mandatorily possess a valid GSTIN along with the GST Registration Certificate. Please send duly self-attested certificate of GST Registration along with offer[s], in the absence of which your offer[s] will be invalid and shall not be considered.</p> <p>In the event, if the tenderers specifically not mentioned the GST Percentage or GST Amount while submitting their offer it will be deemed and considered as the prices quoted by the tenderers are inclusive of GST</p>	
	<p>b Goods and Service Tax [Intra State] Government of India, Ministry of Finance, Department of Revenue, under S. No. 243A [now 243B] vide Notification No. 6/2018-Integrated Tax [Rate] dated 25.01.2018 and as amended vide Notification No. 24/2018-Integrated Tax [Rate] dated 31.12.2018</p> <p>Government of Karnataka Finance Secretariat, under S. No. 243A [now 243B] vide Notification No. [6/2018] No. FD 48 CSL 2017, Bengaluru Dated 25.01.2018 and as amended as Notification No. [24/2018] No. FD 48 CSL 2017, Bengaluru Dated 31.12.2018</p>	
	<p>c Goods and Service Tax [Inter State] Government of India, Ministry of Finance, Department of Revenue, under S. No. 243A [now 243B] vide</p>	

		Notification No. 7/2018-Integrated Tax [Rate] dated 25.01.2018 and as amended vide Notification No. 25/2018-Integrated Tax [Rate] dated 31.12.2018	
08		Income Tax - Wherever Installation and Works Contracts are involved Applicable Income Tax will be deducted from the Contractors Bill and necessary Certificate will be issued by Accounts Officer, HSFC	
09		Customs Duty - Human Space Flight Centre [HSFC], Bengaluru/ISRO Centres/Units across India are partially exempted from payment of Customs Duty vide Notification No.12/12-Cus dated 17.03.2012 superseded by Notification No.50/17-Customs dated 30.06.2017 and as amended by Notification No. 5/2018-Customs dated 25.01.2018, Sl. No. 539A. In case of Imported bought out item if any, HSFC/Respective identified ISRO Centres/Units shall provide necessary Customs Duty Concessional Certificate [CDCC] only. While requesting for issue of CDCC for the bought out Imported Items if any, the Tenderer[s] should mention the Item Description, Quantity and Value for which CDCC is to be provided for the bought out Imported Items. The necessary proof should be produced while requesting for issue of CDCC from HSFC/Respective identified ISRO Centres/Units.	
10		Payment Terms Please refer Annexure VI of RFP	
11		Any Bank Charges payable to our Bank shall be payable by Purchaser. Similarly, any Bank charges payable to your bank shall be payable by the Contractor.	
12		Advance Payment Bank Guarantee: Normally Advance Payment will not be considered. In case of any Advance Payment, it shall be supported by an Equivalent Bank Guarantee from a Nationalised Bank valid till receipt of the Final Product/Stores + 60 days.	
13		Bank Guarantee towards Free Issue of Materials: The successful Tenderer[s] shall furnish Bank Guarantee [BG] towards the cost of Free Issue Materials issued by Purchaser towards adequate Security for the FIM for the execution of the Contract and the said Tenderer will be duly authorized by Purchaser to collect the free issue materials from respective Identified ISRO Centres/Units site subject to the furnishing of the aforesaid Bank Guarantee. The BG is to be kept valid till supply and acceptance of the final product. The Bill of Material for the material used for the Fabrication Work and available balance to be prepared by you and countersigned by the User Department is to be sent along with the final bill for arranging the balance payment.	
14		Performance Security [PS] -The Successful Tenderer[s] shall execute Performance Security for 3% of the value of the PO towards satisfactory execution of the PO including fulfilment of Warranty obligations. The Performance Security shall be executed through Account Payee Demand Draft/Bankers Cheque/Fixed Deposit Receipts or Bank Guarantee issued by a Nationalized Bank/Scheduled Bank. The Bank Guarantee must be valid for the entire Contract Period and an additional period of 60 days beyond the contractual obligations. The BG shall be executed on a Non-judicial stamp paper of appropriate value as per our specimen. In case the successful Tenderer[s] fails to furnish the Performance Security within 15 days after the receipt of PO or on signing of the Contract or any extension thereof, the Purchase Order shall be cancelled or terminated. The EMD if any, executed shall be forfeited and appropriate penal action shall be initiated. The performance Security will not carry any interest and shall be returned after completion of all the	

	contractual obligations. Central Public Sector Undertakings [PSUs]/ Public Sector Enterprises [PSEs]/Autonomous Bodies are exempted from payment of Performance Security [PS], and instead, an Indemnity Bond shall be executed in lieu of PS.	
15	Warranty/Guarantee - Tenderer[s] are requested the Indicate Applicable Standard Warranty/Guarantee Period [12 months] from the date of receipt and acceptance of items at our site. All the replacements during the Warranty period shall be carried out by the successful Tenderer[s] Free of all Cost including To and Fro Freight Charges.	
16	<p>Force Majeure/Extension of Time: Neither party shall bear responsibility complete or partial non-performance of any of his obligations [except for failure to pay any sum which has become due on account of receipt of goods under the provisions of the Purchase Order], if the non-performance results from such force majeure circumstances such as, but not restricted to, flood, fire, earthquake, civil commotion, sabotage, explosion, epidemic, quarantine restriction, strike, lock out, freight embargo, acts of the Government either in its sovereign or its contractual capacity, hostility, acts of public enemy and other acts of God as well as war or revolution, military operation, blockade, acts or actions of state authorities or any other circumstances beyond the control of the parties that have arisen after the conclusion of Purchase Order. In such circumstances, the time stipulated for the performance of an obligation under the Purchase Order may be proportionately extended.</p> <p>The party for whom it has become impossible to meet the obligation under this contract due to force majeure condition, shall notify the other party in writing not later than 21days from the date of the occurrence of the force majeure conditions. In the event of delay lasting over 60 days, arising from force majeure causes, the Purchaser reserves the right to cancel the contract without any obligation to compensate the Contractor in any manner. Unless agreed by both the parties, in writing, the Contractor shall continue to perform his obligations under the Purchase Order as far as is practical and shall seek all reasonable alternative means for performance not prevented by the force majeure event.</p> <p>Any Certificate issued by the Chamber of Commerce or any other competent authority or organization shall be sufficient proof of commencement and cessation of the above circumstances. In case of failure to carryout complete or partial performance of an obligation for more than 60 days, either party shall reserve the right to terminate the Contract totally or partially. A prior written notice of 30 days to the other party will be given informing of the intention to terminate without any liability.</p>	
17	Liquidated Damage - The time and date stipulated in the contract for completion of the work shall be deemed to be the essence of the contract. If the Contractor fails to deliver the Stores within the time specified in the Contract or any extension thereof or if the Contractor fails to maintain the required progress or comply with the relevant provisions of the general conditions of contract or special conditions of contract, if any and clear the site on or before the contract or extended date of completion, the Purchaser shall, without prejudice to any other right or remedy available under the law to Purchaser on account of such breach, recover from the Contractor as Liquidated Damages a sum one-half of one percent [0.5 percent] of the Contract price of the undelivered Stores for each calendar week of delay or part thereof. The total Liquidated Damages shall not exceed Ten percent [10 percent] of the Contract price of the unit or units so delayed.	

	In case of delay in delivery of the Stores beyond the delivery date stipulated in the Purchase Order or any extension thereof, such Stores shall be received without prejudice to the right of the Purchaser to claim Liquidated Damages and without prejudice to the terms and conditions of the Purchase Order.	
18	<p>Termination and Short Closing of the Contract - Under the normal circumstances, Termination/Short Closing of the Contract are not foreseen. However, HSFC reserves the right to terminate the Contract by giving 30 Days prior notice in the following circumstances: -</p> <p>Due to repeated non-performance in the execution of Contract.</p> <p>If the Contractor fails to deliver the Stores/Services within the stipulated time or any extension thereof, granted by the Purchaser.</p> <p>If the Contractor fails to perform any other obligations under this Contract.</p> <p>If the Contractor becomes bankrupt or otherwise insolvent.</p> <p>Owing to deficiency of Stores/Service, breach of Contract.</p> <p>For inefficiency, indiscipline, irregularity, insincerity, indifference in work, disobedience, doubtful credentials/integrity, etc., at any point of time during the Contract period.</p> <p>If the Contractor fails to Honour the whole or any part of Contract including failure to deliver the Stores/Services within the time stipulated in the Contract.</p> <p>If the Contractor is found to have made any false or fraudulent declaration or statement to obtain the Contract or he is found to be indulging in unethical or unfair trade practices.</p> <p>When both the parties agree mutually.</p> <p>Any special circumstances, which must be recorded to justify the cancellation or termination of Contract.</p> <p>To Terminate the Contract wholly or partly without assigning any reason.</p>	
19	Pre-Delivery Inspection [PDI - if Required] - The successful Tenderer[s] has to arrange for the necessary PDI of the Stores at the Contractor Factory Premises to enable HSFC Engineers to carry out PDI. The PDI is applicable wherever the RFP document/Scope of Work calls for such an inspection.	
20	Factory Acceptance Testing [FAT - if Required] - The successful Tenderer[s] has to arrange for the necessary FAT of the Stores at the Contractor Factory Premises to enable HSFC Engineers to carry out FAT. The FAT is applicable wherever the RFP document/Scope of Work calls for such a FAT.	
21	Tenderer[s] are requested to mention whether Installation, Testing, Commissioning, Demonstration, Acceptance and imparting Training is necessary for the Tendered Stores.	
22	Training Free of Cost at Purchaser's Site, if applicable	
23	Supply and Installation is subject to Purchaser's Acceptance.	
24	Instruction/Operation Manual to be supplied Free of Cost.	
25	Cost of Spares included in the Price Bid/Not included.	

26	Will you be able to provide Consumables/Spares for 10 Years?	
27	Items from Latest Production batch only are to be supplied.	
28	Confirm whether you will be able to provide Samples Free of Cost, if called for	
29	Whether Prequalification of your facility procedure completed [if applicable]	
30	Whether approximate Weight [Net and Gross] of the Consignment is mentioned	
31	Metric Measurement Systems to be followed.	
32	Defective/Rejected Items if any are to be replaced Free of Cost.	
33	Arbitration [For Indigenous] - In the event of any dispute or difference relating to the interpretation and application of the contract, such dispute or difference shall be settled amicably by mutual consultations of the good offices of the respective parties. If such a resolution is not possible, then the unresolved dispute or difference shall be referred to the Sole Arbitrator appointed by the Parties by mutual consent in accordance with the rules and procedures of Arbitration and Conciliation Act 1996 as amended from time to time. The arbitration shall be conducted in Bengaluru in the Arbitration and Conciliation Centre – Bengaluru (Domestic and International) as per its rules and regulations. The expenses for the Arbitration shall be shared equally or as may be determined by the Arbitrator. The considered and written decision of the Arbitrator shall be final and binding between the Parties. The applicable language for Arbitration shall be “English” only.	
34	Arbitration [For Public Sector Undertakings] - In case of any dispute or difference of opinion arises between the parties connected to this Contract, such disputes or difference of opinion shall be resolved amicably by mutual consultation. Failing which, either party may take recourse of any alternative dispute settlement mechanism. Notwithstanding anything contained in above para, in case of any dispute or difference of opinion falling under the exception to the ambit of Administrative Mechanism for Resolution of CPSEs Disputes [AMRCD] the party to this Contract with mutual consent may take recourse of any alternative dispute settlement mechanism including arbitration for settlement of such disputes as per applicable law and procedure. Further, also that all the differences or disputes including publication related disputes concerning intellectual property rights arising out of any activities performed under this agreement shall be in first attempt settled through mutual deliberations, failing which shall be further settled in terms of applicable laws and procedure.	
35	Jurisdiction - The Courts within Bengaluru will have the Jurisdiction to deal with and deciding any matter arising out of this contract.	
36	Applicable Law - The contract shall be interpreted and construed and governed by the Laws of India.	
37	Language and Measures - All documents pertaining to this Tender including technical specification or any other writings shall be written in English Language. The metric system of measurement shall be used exclusively in this Tender.	
38	Two Part Bid: For Two Part Bid two separate password protected e-mails to be sent as follows; 1] Technical & Commercial Bid 2] Price Bid Please refer Instructions given at Annexure B	
40	Validity of the Offer - Minimum of 120 days from the date of opening the Tender	
41	Local Content: Whether Class I or Class II Supplier. If so, please	

	provide the percentage of local content	
	<p>SELF CERTIFICATION BY VENDOR [To be submitted along with Technical Offer]</p> <p>This is to certify that the item offered by _____ Vendor Name _____ meets the minimum local content [i.e. Class-I or Class-II Local Supplier] as called for in the tender _____ percentage of local content along with the details of the location[s] _____ at which the local value addition is made.</p> <p>The above declared percentage of local content does not include in any item the cost of Transportation, Insurance, Installation, Commissioning, Training and After Sales Service Support like AMC/CMC. etc.</p>	

SELF CERTIFICATION BY VENDOR
[To be submitted along with Technical Offer]

This is to certify that the item offered by _____ Vendor Name _____ meets the minimum local content [i.e. Class-I or Class-II Local Supplier] as called for in the tender _____ percentage of local content along with the details _____ of _____ the _____ location[s] _____ at which the local value addition is made.

The above declared percentage of local content does not include in any item the cost of Transportation, Insurance, Installation, Commissioning, Training and After Sales Service Support like AMC/CMC. etc.

Authorized Signatory with seal