

भारत सरकार
अंतरिक्ष विभाग (अं.वि.)
समानव अंतरिक्ष उड़ान केंद्र
बंगलुरु-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 00000 हमारी संदर्भ सं
Our Ref. No. HSDO 2025-001894-01
निविदा अंतिम तिथि
Tender Due at 14:00 hrs IST on 23/03/2026

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. PUBLIC TENDER-TWO PART)

क्र.सं. Sl. No.	विनिर्देशों सहित मद का विवरण Description of items with Specifications	इकाई Unit	मात्रा Quantity
1	Bio-vest with proposed sensors and acquisition unit (Wearable device)	No	4
2	Bio-vest with proposed sensors and acquisition unit : Host / Processing device	No	4
3	Bio-vest with proposed sensors and acquisition unit : Analytical Bio-marker device	No	4
4	Device Firm ware/ Algorithms/ Software	No	4
5	Bio-vest with proposed sensors and acquisition unit : GUI/ Application/ Interface Services	No	1
6	Warranty for 3 years	Years	3
7	Qualification Tests and Certifications	Unit	4
8	Taxes	No	1

सुपुर्दगी स्थल

Delivery At ATF, URSC Sports Complex

प्रेषण की विधि

Mode of Despatch ON SITE

शुल्क छूट

Duty Exemptions

विशेष अनुदेश

Special Instructions NIL

विशेष निबंधन

Specific Terms PUBLIC TENDER-TWO PART

निविदाकारों को अनुदेश

Instructions to Tenderers

- (1) THIS IS PUBLIC TENDER -TWO PART BID BASIS. 2] THE BID SHALL BE SUBMITTED AS TWO PARTS i.e. TECHNO-COMMERCIAL (PART-1) AND PRICE BID (PART-2).
- (2) PRICE DETAILS SHOULD NOT BE DISCLOSED IN THE PART-1 (TECHNICAL AND COMMERCIAL BID) AND IN ANY OTHER ATTACHMENTS ENCLOSED IN THE TECHNICAL BID.
- (3) IN CASE, PRICE DETAILS ARE MENTIONED IN PART-1, THE SAME WILL BE REJECTED. TENDERERS ARE ADVISED TO GO THROUGH THE RFP DOCUMENTS AND SUBMIT QUOTATION ACCORDINGLY.

Handwritten signature and date 6/3/26

(4) TENDER NUMBER AND DUE DATE OF THE TENDER SHALL BE MENTIONED ON THE TOP OF THE COVER.PLEASE SEND YOUR OFFER TO THE FOLLOWING ADDRESS PURCHASE AND STORES OFFICER, HSFC,URSC SPORTS COMPLEX NEAR DODDANEKUNDI POST OFFICE, KARTHIK NAGAR, BENGLAURU-560037

(5) QUOTATION DULY STAMPED AND SIGNED SHALL BE SUBMITTED ONLY BY POST OR BY HAND IN SEALED COVER ON OR BEFORE 23.03.2026 AT 14:00 HRS IST

(6) QUOTATION RECEIVED BY FAX OR EMAIL SHALL NOT BE CONSIDERED AS VALID OFFER AND WILL NOT BE ACCEPTED FOR EVALUATION.

(7) TENDERER IS ADVISED TO SUBMIT YOUR TENDER IN PERSON TO THE AUTHORIZED REPRESENTATIVE OF HSFC ONLY, IF THE TENDER DOCUMENT IS BULKY AND CANNOT DROP IN TENDER BOX.

(8) ANY TENDER RECEIVED THROUGH POST OR COURIER NEEDS TO BE DROPPED BY POSTMAN/COURIER PERSON INTO THE HSFC TENDER BOX KEPT IN RECEPTION AREA, HUMAN SPACE FLIGHT CENTRE (URSC SPORTS COMPLEX), NEAR DODDANEKUNDI POST OFFICE, KARTHIK NAGAR, BENGLAURU-560037

(9) IF THE TENDER DOCUMENT IS DROPPED IN OTHER TENDER BOX THAN HSFC TENDER BOX,IT IS LIABLE TO BE REJECTED.ACKNOWLEDGEMENT WILL NOT BE PROVIDED FOR TENDERS RECEIVED THROUGH POST/COURIER.TENDERER IS REQUESTED TO SUITABLY ADVISE YOUR RESPECTIVE AGENCIES.

(10) FOR ANY CLARIFICATONS, PLEASE SEND YOUR QUERIES TO THE EMAIL: kalpana-hsfc@isro.gov.in, Ph No. 080-6145-8857

U

Kalpana
6/3/26

भारत के राष्ट्रपति के लिए एवं ओर से
For and on behalf of the President of India
क्रेता / The Purchaser



भारत सरकार/Government of India
अंतरिक्ष विभाग/Department of Space
भारतीय अंतरिक्ष अनुसंधान संगठन/
Indian Space Research Organisation
समानव अंतरिक्ष उड़ान केंद्र/Human Space Flight Centre
बेंगलूरु/Bengaluru



Phone: +91-080-6145 8857, Email: kalpana-hsfc@isro.gov.in

TENDER NOTICE NO. HSDO 2025-00-1894-01

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	HSDO 2025-00-1894-01 (Two-Part)	Wearable Health Monitoring System

❖ विदेशी विक्रेताओं को प्रस्ताव देने की अनुमति नहीं दी गई है। मेक इन इंडिया नीति के अनुसार केवल श्रेणी- I

Date of Tender Release	:	06.03.2026 at 14:00 Hrs
Last Date for downloading of tender documents	:	23.03.2026 at 14:00 Hrs
Due Date for submission of Bid by Post/Courier	:	23.03.2026 at 14:00 Hrs
Date for opening of Part-I [Techno-Commercial bid]	:	23.03.2026 at 14.30 Hrs
Due Date for opening of Part-II [Price bid]	:	31.03.2026 at 14:00 Hrs

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 – 560 037. No other mode of payment for Tender fee is acceptable. Vendor name & tender number shall be indicated on the reverse side of the DD.

- ❖ **Bidders shall submit an amount of 16,00,000/- (Sixteen Lakh Rupees only) with the bid towards Earnest Money Deposit (EMD) which is 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, start-ups etc**

- ❖ 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, बेंगलूरु 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, AITF-2 Building, ISITE Campus, Doddanakundi, Marathahalli, Bengaluru-560 037 on payment of Non-refundable Tender Fee on all working days between 10.00 hours to 16.00 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.

- ❖ मुहरबंद प्रस्ताव प्राप्त करने की अंतिम तारीख, प्रत्येक निविदा के प्रति दर्शाये गए दिनांक के भा.मा.समयानुसार 14.00 बजे होगी ।
Deadline for the receipt of the sealed offers shall be up to 14:00 hrs IST on the due date mentioned against individual tender.
- ❖ 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 पी से संबंधित कोई भी पत्र .टी. kalpana-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 kalpana-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]

Tender Fee & Earnest Money Deposit

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.

Bids received **without Tender Fee** shall be **treated as invalid and shall not be considered.**

2. Earnest Money Deposit.

Bidders shall submit an amount of **Rs. 16,00,000/- (Rupees Sixteen Lakh only)** with the bid towards Earnest Money Deposit (EMD) which is 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.

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 or directly remit through HSFC "NTRP" portal. Proof of remittance shall be submitted along with the bid but in a separate cover or along with technical bid.

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."

INSTRUCTIONS FOR SUBMISSION OF TENDER in TWO-PART BASIS

i] The Tenders are invited in Two-Part Basis.

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

- a) This part should contain detailed specifications of the items/service quoted by you along with technical literature and leaflets if any.
- b) 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.
- c) Any other information called for in the tender related technical and specifications can also come in this part.
- d) Prices should not be disclosed in Part-I.

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

- a) The commercial terms applicable for the item quoted by you should be indicated in this part.
- b) If any compliance statement is called for the commercial terms / contractual terms and conditions, the same is to be attached in this part.
- c) 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.
- d) The Commercial terms such as delivery terms, delivery period, payment terms, validity of the offer, 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.

Part II: Price Bid

1. Prices may be quoted in the prescribed price bid format mentioned in RFP, Part-B, Point No.26
2. The prices applicable for the items, item-wise in response to the tender shall come into this part.
3. Tenderer shall indicate very clearly item-wise prices with reference to their technical offer.



भारत सरकार/Government of India
अंतरिक्ष विभाग/Department of Space
भारतीय अंतरिक्ष अनुसंधान संगठन/
Indian Space Research Organisation
समानव अंतरिक्ष उड़ान केंद्र/Human Space Flight Centre
बेंगलूरु/Bengaluru



INSTRUCTIONS TO DOMESTIC TENDERERS

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. Quotations directly from Foreign OEM/or from Agent quoting on behalf of Foreign OEMs are not allowed to participate in this 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 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, standards terms 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 Tenderers 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** [as notified vide OM No: F.12/17/2019-PPD dated 06.02.2020 and] 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. HSFC may, in such cases, seek written clarifications from the Bidder, including detailed price analyses of its Bid price in relation to scope, schedule, allocation of risks and responsibilities, and any other requirements of the tender document. If, after evaluating the price analyses, the HSFC determines that the Bidder has substantially failed to demonstrate capability to deliver the contract at the offered price, the HSFC may reject the Bid/ Proposal and evaluate the next higher bidder (and so on), at his/ their own quoted rate (if considered reasonable, and not by the counter-offering rate of Predatory Pricing), for the award of contract.
- 1.8 All requirements stated herein below are 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 by e-mail to the prospective Tenderers or uploaded in online or on the ISRO 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 and Corrigenda thereof will be uploaded on the ISRO website [i.e. www.isro.gov.in], Central Public Procurement Portal website [i.e. www.eprocure.gov.in/epublish]. 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 specified in the respective tender documents. The Bid 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. Tenderers should not submit their bid through E-mail unless called for shall not be accepted.
- 1.14 Tenderers shall quote the 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 by tenderer must be **FIRM AND FIXED** 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 mentioning the actual percentage of the item.
- 1.19 Sometimes, non-conformities/errors are also observed in responsive tenders between the quoted prices in figures and words. This situation normally does not arise in the case of procurement. This should be taken care of in the manner indicated below:
- a) If, in the price structure quoted for the required goods, there is a discrepancy between the unit price and total price (which is obtained by multiplying the unit price by the quantity), the unit price shall prevail, and the total price corrected accordingly;
 - b) If there is an error in a total corresponding to the addition or subtraction of sub-totals, the sub-totals shall prevail, and the total shall be corrected.
 - c) If there is a discrepancy between words and figures, the amount in words shall prevail,
- The prices quoted by tenderer shall remain valid for 120 days from the date of the bid opening. A bid valid for a shorter period shall be rejected by Purchaser as non-response.
- 1.20 The Tenderer should mandatorily provide the name of his Bankers, Account details while submitting their offer to Human Space Flight Centre [HSFC], Bengaluru.
- 1.21 Human Space Flight Centre [HSFC] reserves the right to place the Repeat Order for additional quantity if required, at the rates quoted within the period of 18 months from the date of release of original purchase order.
- 1.22 The Authority of person signing the Tender, if called for shall be produced.

- 1.23 Self-assessment technical and organizational competence to Supply the Stores of this nature and magnitude.
- 1.24 For items having Shelf Life, the same shall be supplied with maximum Shelf Life if order is placed.



Chapter – 2

Instructions to E-Procurement Tenders:

Not Applicable for this tender



GENERAL TERMS AND CONDITIONS

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-B.E-II dated 15.06.2017 as amended by Order No. P-45021/2/2017-B.E-II dated 28.05.2018, Order No. P-45021/2/2017-B.E-II dated 29.05.2019, Order No. P-45021/2/2017-B.E-II dated 04.06.2020, Order No. P-45021/2/2017-B.E-II dated 16.09.2020 and Order No. P-45021/2/2017-PP (BE-II)-Part(4) Vol. II [Revision] dated 19.07.2024 and Order No. DPIIT OM No. P-45021/2/2017-PP(BE-II)-Part (4) Vol.II dated 08.07.2025. thereafter any amendments issued shall be applicable to preference to Make in India 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 enhancing income, employment and 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: -

3.3 Definition for Class of Suppliers:

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

- a) Equal to or more than 50% for Class-I Local Supplier.
- b) Equal to or More than 20% but less than 50% for Class-II Local Supplier.
- c) Less than 20%: Non-Local Supplier.

3.4 Definition of Local Content:

Local Content means the amount of value added in India which shall, unless otherwise prescribed by the Nodal Ministry, be the total value of the item procured [excluding net domestic indirect taxes] minus the value of imported content in the item [including all customs duties] as a proportion of the total value, in percent.

3.5 Explanatory Notes for Calculation of Local Content given above:

- a) Imported items sourced locally from re-sellers/distributors shall be excluded from calculation of local content.
- b) The license fees / royalties paid / technical charges paid out of India shall be excluded from local content calculation.
- c) Procurement / Supply of repackaged / refurbished / rebranded imported products as understood commonly shall be treated as reselling of imported products and shall be excluded from calculation of local content. The definition of repackaged/ refurbished/ rebranded imported products is as follows:

- i) **Refurbishing** means repair or reconditioning of an imported product does not amount to manufacture because no new goods come into existence.
 - ii) **Repacking** means repacking of imported goods from bulk pack to smaller packs would not ordinarily amount to manufacture of a new item.
 - iii) **Rebranding** means relabeling or renaming or change in symbol or logo/makes or corporate image of a company/organization/firm for an imported product would amount to rebranding.
- d) To ensure that imported items sourced locally from resellers/distributors are excluded from calculation of local content, procuring entities to obtain from bidders, the cost of such locally-sourced imported items [inclusive of taxes] along with break-up on license/royalties paid/technical expertise cost etc. sourced from outside India. For items sold by bidder as reseller, OEM certificate for country of origin to be submitted.
- e) For contracts involving supply of multiple items, weighted average of all items to be taken while calculating the local content.
- 3.6 **Class-I Local Supplier** means a supplier or service provider, whose goods, services or works offered for procurement, meets the minimum local content as prescribed for Class-I Local Supplier i.e. Equal to or more than 50%.
- 3.7 **Class-II Local Supplier** means a supplier or service provider, whose goods, services or works offered for procurement, meets the minimum local content less than that prescribed for Class-II Local Supplier i.e. Equal to or More than 20% but less than 50%.
- 3.8 **Non-Local Supplier** means a supplier or service provider, whose goods, services or works offered for procurement, has local content less than that prescribed for Class-II Local Supplier i.e. Less than 20%.
- 3.9 **L1** Means the lowest tender or lowest bid or the or the lowest quotation received in a tender, bidding process or other procurement solicitation as adjudged in the evaluation process as per the tender or other procurement solicitation.
- 3.10 **Margin of Purchase Preference** means the maximum extent to which the price quoted by a Class-I Local Supplier may be above the L1 for the purpose of purchase preference.
- 3.11 **Works** means all works as per Rule 130 of GFR-2017, and will also include Turnkey Works.
- 3.12 **Special Treatment for items covered under Production Linked Incentive [PLI] Scheme:**
- Definition of Production Linked Incentive Scheme:**
- a) The Production Linked Incentive [PLI] Scheme is a part of Indias Make in India initiative that aims to boost domestic manufacturing and exports. The scheme offers incentives to companies to invest in and expand their manufacturing capability with the goal of reducing reliance on imports.
 - b) The manufacturers manufacturing an item under PLI scheme shall be treated as deemed Class-II Local Supplier for that item unless they have minimum local content equal to or higher than that notified for Class-I Local Supplier for that item, provided the manufacturer has received incentive from the concerned PLI

Ministry for the item. The above shall be applicable for the specific time period only, as notified by concerned PLI Ministry.

3.13 Eligibility of Class-I Local Supplier / Class-II Local Supplier / Non-Local Suppliers for different types of procurement:

- a) In procurement of all goods, services or works where equal to or more than 50% for Class-I Local Supplier, only Class-I Local Supplier, shall be eligible to bid irrespective of Purchase value.
- b) Only Class-I Local Supplier and Class-II Local Supplier, as defined in 3.3(a & b) above shall be eligible to bid in procurement except when Global tender enquiry has been issued. In Global Tender enquiries, Non-Local Suppliers shall also be eligible to bid along with Class-I Local Suppliers and Class-II Local Suppliers. In procurement of all goods services or works, not covered by sub-para 3.13(a) above.
- c) For the purpose of this order, Works includes Engineering, Procurement and Construction [EPC] Contracts and Services include System Integrator [SI] contracts.

3.14 Purchase Preference Policy:

3.14.1 In the procurement of Goods or Works, which are divisible in nature, the Class-I Local Supplier shall get purchase preference over Class-II Local Supplier as well as Non-Local Supplier, [required quantity is greater than 1 or not a package basis]. The divisible of Goods or Works shall be as per the following procedure:

- a) Among all qualified bids, the lowest bid will be termed as L1. If L1 is Class-I Local Supplier, the contract for full quantity will be awarded to L1.
- b) If L1 bid is not 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 Suppliers 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. 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 case some quantity is still left uncovered on Class-I Local Suppliers, then such balance quantity may also be ordered on the L1 bidder.

3.14.2 In the procurement of Goods or Works, which are not divisible in nature, and in procurement of services where the bid is evaluated on price alone, the Class-I Local Supplier shall get purchase preference over Class-II Local Supplier as well as Non-Local Supplier, as per the following procedure:

- a) Among all qualified bids, the lowest bid will be termed as L1. If L1 is Class-I Local Supplier, the contract for full quantity will be awarded to L1.
- b) If L1 is not Class-I Local Supplier, the lowest bidder among the Class-I Local Supplier, will be invited to match the L1 price subject to Class-I Local Suppliers quoted price falling within the margin of purchase preference, and the contract shall be awarded to such Class-I Local Supplier subject to matching the L1 price.

- c) 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 contract shall be awarded accordingly. In case none of the Class-I Local Supplier within the margin of purchase preference matches the L1 price, the contract may be awarded to the L1 bidder.
- d) Class-II Local Supplier will not get purchase preference.

3.15 Applicability in Tenders where Contract is to be awarded to Multiple Bidders:

3.15.1 In tenders where contract is awarded to multiple bidders 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:

- a) 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.
- b) 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.
- c) 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.
- d) 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.
- e) To avoid any ambiguity during bid evaluation process, HSFC 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.

3.16 Exemption of Small Purchases:

Notwithstanding anything contained in Paragraph 3.13 above, procurements where the estimated value to be procured is less than Rs. 5 lakhs shall be exempt from this Order.

3.17 **Exemption in Sourcing of Spares and Consumables of Closed Systems:**

Procurement of Spare Parts, Consumables for closed systems and Maintenance / Service Contracts with Original Equipment Manufacturer / Original Equipment Supplier / Original Part Manufacturer shall be exempted from Public Procurement [Preference to Make in India] Order.

3.18 **Minimum Local Content:**

The Local Content requirement to categorize a supplier as Class-I Local Supplier is equal to or more than 50% for Class-I Local Supplier. For Class-II Local Supplier, the Local Content requirement is equal to or more than 20% but less than 50%.

3.19 **Margin of Purchase Preference:**

The margin of purchase preference shall be 20%.

3.20 **Verification of Local Content:**

3.20.1 The Class-I Local Supplier / Class-II Local Supplier at the time of tender, bidding or solicitation shall be required to indicate percentage of local content and provide self-certification that the item offered meets the local content requirement for Class-I Local Supplier / Class-II Local supplier, as the case may be. They shall also give details of the location[s] at which the local value addition is made.

3.20.2 In cases of procurement for a value in excess of Rs. 10 Crores, the Class-I Local Supplier/ Class-II Local Supplier shall be required to provide a certificate from the statutory auditor or cost auditor of the company [in case of companies] or from a practicing cost accountant or practicing chartered accountant [in respect of suppliers other than companies] giving the percentage of local content.

3.20.3 The bidder shall give self-certification for local content in the quoted item [goods/works/services] at the time of tendering. However, at the time of execution of the project, for all contracts above INR 10 Crore, the contractor/supplier shall be required to give local content certification duly certified by cost/chartered accountant in practice. For cases where it is not possible to provide certification by cost/chartered accountant at the time of execution of project, the supplier shall be permitted to provide the certificate for local content from cost/chartered accountant after completion of the contract, within time limit acceptable to the procuring entity. In case the contractor/supplier does not meet the stipulated local content requirement and the category of the supplier changes from Class-I to Class-II/Non-local or from Class-II to Non-local, a penalty up to 10% of the contract value may be imposed. However, contract once awarded shall not be terminated on this account.

3.20.4 False declarations will be in breach of the Code of Integrity under Rule 175(1)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.

3.21 Any terms and conditions not covered under this chapter needs to be followed as per orders issued by Government of India, Ministry of Commerce and Industry, Department for Promotion of Industry and Internal Trade [Public Procurement Section - Preference to Make in India] as per Order No. P-45021/2/2017-B.E-II dated 15.06.2017 as amended

by Order No. P-45021/2/2017-B.E-II dated 28.05.2018, Order No. P-45021/2/2017-B.E-II dated 29.05.2019, Order No. P-45021/2/2017-B.E-II dated 04.06.2020, Order No. P-45021/2/2017-B.E-II dated 16.09.2020 and Order No. P-45021/2/2017-PP (BE-II)-Part(4) Vol. II [Revision] dated 19.07.2024 and as amended from time to time.

Tenders while self-declaring the local content for tendered item should not consider the cost of Transportation, Insurance, Installation, Commissioning, Training and After Sales Service support like AMC/CMC etc.

Formula to Calculate Local Content:

Local content = (Sale price - Value of imported content) * 100/ Sale price

Where, Sale price means price excluding net domestic indirect taxes and Value of imported content means price of imported content inclusive of all customs duties.

Formula to Calculate Local Content involving Supply of Multiple Items:

In case of bids requiring supply of multiple items (say X₁, X₂ and X₃) by a single bidder, the local content in the bid shall be

Local content = ((Sale price of X₁ - Value of imported content in X₁) + (Sale price of X₂ - Value of imported content in X₂) + (Sale price of X₃ - Value of imported content in X₃)) * 100/ (Sale price of X₁ + Sale price of X₂ + Sale price of X₃)



Chapter - 4

Countries Sharing Land Border with India

4.0 Restrictions under Rule 144(xi) of the General Financial Rules (GFRs), 2017.

Government of India, Ministry of Finance, Department of Expenditure, Procurement Policy Division vide Order (Public Procurement No.4) No. F.7/10/2021-PPD dated 23.02.2023 and as amended from to time are applicable for Countries Sharing Land Boarder with India.

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.

4.1 Requirement of Registration:

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, specified in Annexure-I of Order (Public Procurement No.4) No: F.7/10/2021-PPD dated 23.02.2023.

- 4.2 Any bidder (including an Indian bidder) who has a Specified Transfer of Technology (ToT) arrangement with an entity 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, specified in Annexure I of Order (Public Procurement No.4) No: F.7/10/2021-PPD dated 23.02.2023. The requirement of registration for bidders covered under Transfer of Technology (ToT) arrangement with an entity from a country which shares a land border with India will be applicable for all procurements where tenders are issued/published after 01.04.2023.

Definitions:

- 4.3 **Bidder** for the purpose of the Order (including the term tenderer, consultant vendor 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 person, participating in a procurement process.
- 4.4 **Tender** for the purpose of the Order will include other forms of procurement, except where the context requires otherwise.
- 4.5 **Transfer of Technology** means dissemination and transfer of all forms of commercially usable knowledge such as transfer of know-how, skills, technical expertise, designs, processes and procedures, trade secrets, which enables the acquirer of such technology to perform activities using the transferred technology independently- (Matters of interpretation of this term shall be referred to the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade, and the interpretation of the Committee shall be final).

4.6 **Specified Transfer of Technology** means a transfer of technology in the sectors and/or technologies, specified in paragraph 15, occurring on or after 23.07.2020.

4.7 **Bidder (or entity) from a country which shares a land border with India** for the purpose of the Order means

- a) An entity incorporated, established or registered in such a country; or
- b) A subsidiary of an entity incorporated, established or registered in such a country; or
- c) An entity substantially controlled through entities incorporated, established or registered in such a country; or
- d) An entity whose beneficial owner is situated in such a country; or
- e) An Indian (or other) agent of such an entity; or
- f) A natural person who is a citizen of such a country; or
- g) A consortium or joint venture where any member of the consortium or joint venture falls under any of the above

4.8 **Beneficial owner for the purposes of Para 4.7 (d) 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(s), 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 the majority of the directors or to control the management or policy decisions, including by virtue of their shareholding or management rights or shareholders 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.

4.8 **Agent** for the purpose of this Tender is a person employed to do any act for another, or to represent another in dealings with third persons.

[Note:

- i) A person who procures and supplies finished goods from an entity from a country which shares a land border with India will, regardless of the nature of his legal or commercial relationship with the producer of the goods, be deemed to be an Agent for the purpose of this Order.
- ii) However, a bidder who only procures raw material, components etc. from an entity from a country which shares a land border with India and then manufactures or converts them into other goods will not be treated as an Agent.]

4.9 **Sensitive Sectors/Technologies:**

Human Space Flight Centre being a Category-I Sensitive Sector. Bidders with Transfer of Technology arrangement in any technology with any entity from a country which shares a land border with India shall require registration.

4.10 **Sub-contracting in Works Contracts:**

In works contracts, including turnkey contracts, contractors 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.

4.11 **Certificate regarding Compliance:**

An undertaking shall be taken from bidders in the tender documents as per (Annexure III of Order (Public Procurement No.4) No. F.7/10/2021-PPD dated 23.02.2023) that the extant guidelines for participation in the tenders. If such undertaking given by a bidder whose bid is accepted is found to be false, further legal action in accordance with law will be initiated by the Department.

4.12 **Validity of Registration:**

In respect of tenders, registration should be valid at the time of submission of bids and at the time of acceptance of bids. In respect of supply otherwise than by tender, registration should be valid at the time of placement of order. If the bidder was validly registered at the time of acceptance / placement of order, registration shall not be a relevant consideration during contract execution.

4.13 **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].

4.14 **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 fulfils all requirements in this regard and is eligible to be considered. Where applicable, evidence of valid registration by the Competent Authority shall be attached.]

4.15 **Model additional Certificate by Bidders in the cases of Specified ToT:**

I have read the clause regarding restrictions on procurement from a bidder having Transfer of Technology (ToT) arrangement. I certify that this bidder does not have any ToT arrangement requiring registration with the competent authority.

OR

I have read the clause regarding restrictions on procurement from a bidder having Transfer of Technology (ToT) arrangement. I certify that this bidder has valid registration to participate in this procurement.

- 4.16 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.

**Land Border Sharing Declaration
(To be submitted in the bidders letter head)**

In-line with Department of Expenditures (DoE) Public Procurement Division Order vide ref. F.No.6/18/2019-PPD dated 23.07.2020 & 24.7.2020 and F.No. 7/10/2021-PPD(1) dated 23.02.2023

Tender Number: _____

Item Description/Job: _____

I/ we have read the clauses pertaining to Department of Expenditures (DoE) Public Procurement Division Order (Public procurement no 1, 2 & 3 vide ref. F.No.6/18/2019-PPD dated 23.07.2020 & 24.7.2020 and F.No. 7/10/2021-PPD(1) dated 23.02.2023) regarding restrictions on procurement from a bidder of a country which shares a land border with India. I/We hereby certify that I/ we the bidder Name of the Bidder _____ is / are

- a) Not from such a country and eligible to be considered for this tender.

OR

- b) From such country, has been registered with the competent authority and eligible to be considered for this tender. (Evidence of valid registration by the competent authority shall be attached)

For and behalf of _____ (Name of the bidder)
(Signature, date & seal of authorized representative of the bidder)



Chapter - 5

Terms and Conditions:

5.0 Definitions:

5.1 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 Purchasers 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.

5.2 **Contract Agreement:**

The Tenderer shall enter into a Contract Agreement with the Purchaser within 120 [One Hundred Twenty] 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 after the issue of Letter of Award and the same stands withdrawn.

5.3 **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.

5.4 **Prices:**

Tenders offering Firm and Fixed Prices only will be considered. Tenderer shall quote prices separately furnishing break-up of cost towards Basic Cost of Items, Packing, Forwarding, Freight, Handling, Installation, Commissioning and Training, Extended Warranty and AMC if any and applicable percentage of GST along with HSN Code.

5.5 **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.

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.

5.6 **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. Tenderers participating in HSFC tender should mandatorily submit GST Registration Certificate along with offer[s]. In case, the Tenderer[s] are not registered under GST their offer will be treated as invalid and the same will not be considered for evaluation.

5.7 **Goods and Services Tax:**

Intrastate Transactions

In terms of the Notification No. 09/2025-Central Tax [Rate] dated 17.09.2025 under Sl.No.462 issued by Government of India and Notification No. [09/2025] FD 02 CSL 2025 dated 19.09.2025 issued by Government of Karnataka the applicable rate of GST is 5% [CGST@2.5%+ SGST@2.5%] for Scientific and Technical Instruments, Apparatus, Equipment, Accessories, Parts, Components, Spares, Tools, Mock Ups and Modules, Raw Material and Consumables required for launch Vehicles and Satellites and Payloads

Interstate Transactions

Similarly, in terms of Notification No. 09/2025-Integrated Tax [Rate] dated 17.09.2025, under Sl.No.462, the applicable rate of IGST is @ 5% for Scientific and Technical Instruments, Apparatus, Equipment, Accessories, Parts, Components, Spares, Tools, Mock Ups and Modules, Raw Material and Consumables required for launch Vehicles and Satellites and Payloads.

Tenderers are hereby requested to take note of this aspect and submit the Quotation accordingly. Further, If the quoted items not fall under the above category, tenderers are advised to quote the applicable rate of GST. HSFC SHALL NOT ISSUE ANY GST DECLARATION FOR THE ABOVE CATEGORY OF ITEMS.

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.

Tenderer[s] are also requested to mention the HSN/SAC Code against each item at the time of submission of their offer.

5.7.2 Tenderers are here by requested to take note of this aspect and submit the Quotation accordingly. 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.

5.7.3 **Note: After release of Purchase Order/Contract to successful Tenderer, any increase in Statutory Levy beyond the original Delivery Schedule the applicable rates of Taxes and Duties are not reimbursable.**

5.8 **Customs Duty:**

Human Space Flight Centre, Bengaluru is exempted from payment of Customs Duty Notification No.45/2025-Customs dated 24.10.2025 under Sl.No.340. Necessary Customs Duty Exemption Certificate [CDEC] shall be provided by HSFC. Tenderers are requested to take note of this aspect and submit their offer clearly mentioning that the quoted Price does not include Customs Duty.

5.9 **Custom Duty for Brought Out Items:**

5.9.1 In case of Imported brought out items if any, HSFC shall only provide necessary Customs Duty Exemption Certificate [CDEC] against proof of Import Invoice, Airway Bill. Any additional duty apart from providing CDEC charged by Customs Authorities the same shall be borne by the Tenderer. In addition to above, Tenderers should bear the cost of additional duty if any, Freight and Custom Clearance Charges for imported brought out items. Tenderers are requested to take note of this aspect and submit their offer clearly mentioning that the quoted Price does not include Customs Duty for imported brought out items.

5.9.2 Similarly, while requesting for issue of CDEC for the brought out Imported items if any, the Tenderer[s] should mention the Item Description, Approximate Quantity and mention the approximate percentage of quoted price for import content of brought out items. Subsequently, Tenderers are requested to submit OEM Certificate and Country of Origin if any for brought out item along with HSN code.

5.10 **Income Tax:**

The Income Tax at Source [TDS] if any, shall be deducted as per the provisions of Income Tax Act as amended from time to time. Accounts Officer, HSFC will issue necessary IT Certificate.

5.11 **Evaluation of Tenders:**

The Evaluation/Loading criteria at appropriate MCLR Rate as notified by Reserve Bank of India from time to time shall be loaded in respect of Advance Payment, Bank Guarantees towards Free Issue of Materials [FIM], etc., having financial implications will be considered to arrive at L-1 status.

5.12 **Clarification Regarding Contents of the Bids:**

5.12.1 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.

5.12.2 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.

5.12.3 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. In the event, if HSFC has sought clarifications from bidders with a deadline date to submit their response, the bidders who does not reply within the deadline their offers are liable for rejection. Subsequently, if the Tenderer/s may be asked to give a presentation on his technical bid and arrange for functional demonstration of the stores offered the same shall be carried out at bidders cost. No change in the substance of the bid or the price thereof shall be sought/offered/permitted.

5.13 **Performance Security [PS]:**

- 5.13.1 successful tenderer should submit Performance Security 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 fulfilment of the Warranty/Extended Warranty obligation. The proceeds of the performance security shall be payable to the Purchaser as compensation for any loss resulting from the Tenderers failure to complete his obligations under the contract. The Purchaser shall discharge the performance security bond after completion of Tenderers performance obligations including the warranty and post-warranty obligations under the contract.
- 5.13.3 The Performance Security may be furnished in the form of Insurance Surety Bond, Account Payee Demand Draft, Fixed Deposit Receipt from a Commercial Bank, Bank Guarantee from a Commercial Bank or online payment in an acceptable form in favour of Accounts Officer, Human Space Flight Centre [HSFC], Bengaluru. The Bank Guarantee should remain valid for the entire contract period and an additional period of 60 days beyond the date of completion of all contractual obligations 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.
- 5.13.4 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 Contractors risk, cost and liability. The Earnest Money Deposit, if any executed shall be forfeited and appropriate penal and legal action shall be initiated.
- 5.13.5 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.

5.14 **Bank Guarantee towards Free Issue Materials [FIM]:**

- 5.14.1 The successful Tenderers shall furnish equivalent 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 HSFCs 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.
- 5.14.2 In the case of Central Public Sector Undertaking/Public Sector Enterprises/Autonomous Bodies and Government Organization, Indemnity Bond [IB] shall be considered in place of Bank Guarantee.
- 5.14.3 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.

5.15 **Normal Payment Terms for Domestic Supplier[s]:**

5.15.1 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) Packing List
- c) Delivery Challan
- d) Warranty and Guarantee Certificates.
- e) Test Certificate, if any.

5.15.2 All bills should be directly addressed and submit their bills to Accounts Officer, HSFC. All payments are subject to permissible legal deductions from the contract price as per the Contract. All payments shall be directly made by the Purchaser to the Contractor.

5.16 **Bank Charges:**

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

5.17 **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 during transit by Road or Rail. The Contractor[s] shall be held responsible for all losses and damages of Stores caused due to improper packaging.

5.18 **Guaranteed Time of Delivery:**

The time 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 impose Liquidated Damage/ Terminate/Cancel the Order/Contract at his discretion if applicable.

5.19 **Ultimate Consignee:**

Purchase & Stores Officer [Stores], Human Space Flight Centre, AITF-02 building, ISITE Campus, Doddanakundi, Karthik Nagar, Marathahalli, Bengaluru-560 037, Karnataka or as specified in Purchase Order.

5.20 **Place of Delivery:**

Human Space Flight Centre [HSFC], Doddanekkundi, (URSC Sports Complex), Near Doddanekkundi Post Office, Karthik Nagar Bengaluru-560037

5.21 **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. In case the Tenderer submitting quotation with Insurance, the element of insurance portion will be deducted from the quotation submitted by the Tenderer.

5.22 **Inspection and Acceptance Tests:**

- 5.22.1 The Purchasers representative[s] shall be entitled right to visit Contractors factory premises during manufacturing process to Inspect, examine and test the material and workmanship of all Stores to be supplied under this Contract and if any part of the said Stores is being manufactured on other premises, the Contractor shall obtain necessary permission from the sub-contractor to inspect, examine and test at sub-contractor premises by the Purchaser.
- 5.22.2 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 Purchasers representative to carry out the tests efficiently.
- 5.22.3 When the Stores have passed the specified test, the Purchasers 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.

5.23 **Acceptance of Stores:**

- 5.23.1 The Stores shall be tendered by the Contractor for Inspection at such places as may be specified by the Purchaser at the Contractors own risk, expenses and cost.
- 5.23.2 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.
- 5.23.3 It is expressly agreed that the acceptance of the Stores contracted for is subject to final approval in writing by the Purchaser.
- 5.23.4 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 of the rejection by the Purchaser shall be final and binding on the Contractor.

5.24 **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: -

- a) 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.
- b) If in the judgment of the Purchaser, the Contractor fails to comply with any of the other provisions of this Contract.
- c) In the event of Purchaser Terminating the Contract in whole or in part thereof, as provided hereinabove, the Purchaser reserves the right to purchase, upon such terms and in a manner as he may deem appropriate, Stores similar to that terminated and the Contractor shall be liable to the Purchaser for any additional cost for such similar Stores, and/or for Liquidated Damages for delays as defined in Clause 5.28 until such reasonable time as may be required for the final supply of Stores.
- d) If Contract is terminated as provided in Clause 5.24 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.

- e) Any completed Stores.
- f) 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.
- g) In the event, the Purchaser does not exercise its right to terminate the Contract as provided in Clause 5.28, 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 5.28 until the Stores are accepted.

5.25 **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 delivered 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.

5.26 **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) It shall be complete responsibility of the successful Tenderer to collect the rejected item at their own cost for repair or replacement of defective Stores. If the Contractor fails to take back the rejected Stores within the reasonable time after replacement, Purchaser has right to dispose the rejected Stores.
- b) Repair, Replace or rectify such defective Stores and recover extra cost so involved from the Contractor; or
- c) Terminate the Contract for default as provided under Clause 48.0 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.

5.27 **Force Majeure:**

- 5.27.1 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.

- 5.27.2 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 21 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.
- 5.27.3 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 carry out 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.
- 5.27.4 The Force Majeure condition is applicable only to the prime Contractor and Purchaser.

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

- 5.28.1 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, the Purchaser shall, without prejudice to any other right or remedy available under the law to Purchaser on account of such breach, shall recover from the Contractor as Liquidated Damages a sum one-half of one percent [0.5 percent] of the Total Contract value of the undelivered Stores for each calendar week of delay or part thereof. The total maximum Liquidated Damages shall not exceed Ten percent [10 percent] of the Total Contract value.
- 5.28.2 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.

Interest on Advance Payment:

- 5.28.3 **In case if any, 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 or extended 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.**

5.29 **Erection of Plant, Machinery and Installation of Software:**

- 5.29.1 Wherever Erection of Plant or Machinery and Installation of Software is the responsibility of the Contractor as per the terms of the Contract and in case the Contractor fails to carry out the Erection and Installation of the Software as and when called upon to do so within the period specified by the Purchaser, the Purchaser shall have the right to get the Erection and Installation of the Software etc., done through any source/agency of his

choice. In such an event, the Contractor shall be liable to bear any additional expenditure that the Purchaser is liable to incur towards erection. The Contractor, shall, however, not be entitled to any gain/payment due to such an action by the Purchaser.

- 5.29.2 If it appears to the authorised representative of the Purchaser that any work has been executed with unsound, imperfect or unskilful workmanship or with materials of any inferior quality or description, or that any materials or articles procured by the tenderer for the execution of the work are of unsound quality or of a quality inferior to that contracted for or otherwise not in accordance with the contract, the tenderer shall on demand in writing within 03 Months of the completion of the work from the said Authorised Representative notwithstanding that the same may have been passed, certified and paid for forthwith rectify, or remove and reconstruct the work so specified in whole or in part as the case may require remove the materials or articles so specified and provide other proper and suitable materials or articles at its own cost. In the event Tenderer fails to rectify or remove and re-execute the work or remove and replace with others, the material or articles complained of as the case may it shall be so strictly at the risk and expense in all respects of the Tenderer, including the right to refund of payment received and also cost of rectification

5.30 **Standard Warranty/Guarantee:**

- 5.31.1 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.
- 5.31.2 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 12 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.
- 5.31.3 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 at 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 12 Months from the date of acceptance of Stores thereof.
- 5.31.4 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/repaired items/stores shall be for 12 months or as specified in the tender document from the date of handing over of such replaced/repaired stores in complete and satisfactory condition to the Purchaser.
- 5.31.5 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 12 Months or as specified in the tender document 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.
- 5.31.6 All the replacement Stores shall also be guaranteed for a period of 12 or as specified in the tender document months from the date receipt of item in Stores at Purchasers site.

5.32 **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 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].
- b) 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.
- c) If the Contractor is unable to rectify the defects or offer replacements in lieu of defective items
- d) If the final Product does not pass Inspection and Quality requirements of Purchase Order/Contract.
- e) If the Contractor fails to perform any other obligations under Purchase Order/Contract.
- f) If the Contractor becomes bankrupt or otherwise insolvent.
- g) Owing to deficiency of service, breach of Contract.
- h) 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.
- i) To terminate the Purchase Order/Contract at any time by giving 30 days prior notice.

5.33 **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.

5.34 **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.

5.35 **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.

5.36 **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.

5.37 **Dispute Resolution for Public Sector Undertakings**

In the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contracts other than taxation, between the following Organizations/Departments, such dispute or difference shall be taken up by either party for its resolution through Administrative Mechanism for Resolution as mentioned in the Office Memorandum No: OM No: 4(1)-2013-DPE(GM)/FTS-1835 dated 22.05.2018 and as amended vide Office Memorandum No: DP-GM-05/0003/2019-FTS-10937 dated 20.02.2020, OM No: 05/0003-2019-FTS-10937 dated 14.12.2020 and OM No: DPE-05/0002/2023-AMRCD dated 25.07.2024 shall apply in consonance with applicable Indian Laws and Public Policy.

- a) CPSE and CPSE
- b) CPSE and Ministry/Department of Central Government
- c) CPSE and Public Authority/Organisation or University under the Central Government

- d) CPSE and State Government/State PSUs/Public Authority/Organisation or University under any State Government

The decision of AMRCD on the said dispute will be binding on both the parties.

5.38 **Dispute Resolution for MSMEs:**

The Micro, Small and Medium Enterprises Development [MSMED] Act, 2006 provides parties to a dispute (where one of the parties is a Micro or Small Enterprise) to be referred to the Micro and Small Enterprises Facilitation Council if the dispute is regarding any amount due under Section 17 of the MSMED Act, 2006. If a Micro or Small Enterprise, being a party to dispute, refers to the provisions in the MSMED Act 2006, these provisions shall prevail over this Agreement.

5.39 **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.

5.40 **Applicable 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 and its amendment acts 2015 and 2021.

5.41 **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 fulfilment 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.

5.42 **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.

5.43 **Security Interest:**

On each item to be delivered under this Contract, including an item of work in progress in respect of which partial payment have been made in accordance with the Terms of the Contract. Purchaser shall have a Security Interest for the item work in progress which shall be deemed 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.

5.44 **Training:**

The Contractor shall, if required by the Purchaser, provide all necessary facilities for the Practical Training to Purchasers Representative or Technical Personnel deputed to your manufacturing facility 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.

5.45 **Risk Purchase:**

In the event of failure on the part of the Contractor to deliver the ordered items in accordance with the delivery schedule mentioned in the Contract, the Purchaser shall have the option to procure the quantity of ordered item from any other Contractor with whom Purchaser has already having a Contract as per the Contract Price with them or in open market as required to meet Purchasers requirements. The extra expenditure involved, if any, incurred by the Purchaser, in procuring the quantity of ordered item on the Contractor, if the Contractor failed to supply, will be recovered from the bills due to the Contractor. However, the liability of the Contractor for such Risk Purchase shall be limited to actual quantity obtained from other sources.

5.46 **Fall Clause:**

5.46.1 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.

5.46.2 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 of 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.

5.47 **Limitation of Liability:**

5.47.1 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 Contractors total liability to the Purchaser, whether in Contract shall not exceed the total amount paid to the Contractor under the Contract.

5.47.2 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.

5.47.3 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.

5.48 **Buy Back Offer:**

Wherever it is considered necessary, the Quotation shall be given separately with Buy-Back Offer and also without Buy-Back Offer so as to enable Purchaser either to Trade or not to Trade the item while purchasing the new one.

5.49 **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.

5.50 **Conditional Discount Offer:**

Conditional Discounts Offers will not be considered.

5.51 **Lowest Offer:**

The Lowest Offer [L-1] shall be decided based on the aggregate value of all items put together [inclusive of Freight, Taxes and Duties, Packing and Forwarding or any other charges] for which Quotation have been called for wherever necessary.

5.52 **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.

5.53 **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.

5.54 **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 Tenderers 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.

5.55 **Pre-Delivery Inspection:**

5.55.1 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.

5.55.2 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.

5.56 **Erection, Assembly or Commissioning:**

Where Erection, Assembly or Commissioning is a part of the Contract, it should be done immediately on notification. The Contractor shall be responsible for any loss/damages sustained due to delay in fulfilling this responsibility.

5.57 **Instruction/Operation Manual:**

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.

5.58 **Average Financial Turnover:**

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 three years Audited Balance Sheet along with Profit and Loss Account duly authenticated by Chartered Accountant along with comments of Auditors.

5.59 **Viable Financial Plan/Model:**

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.

5.60 **Additional Quantity [Optional Clause]:**

The Purchaser reserves the right to increase/decrease the quantity during the placement of Purchase Order/Contract. Similarly, 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.

5.61 **High Sea Sale:**

Tenderers submitting offer[s] against High Sea Sale Trade, the Price of such offers should be in Indian Rupees only and shall be inclusive of Freight, applicable Additional Duty if any and Customs Clearance Charges for delivery up to Human Space Flight Centre, Bengaluru. The offers shall be Firm, Fixed Price. HSFC, will only provide Concessional Custom Duty Exemption Certificate vide Notification No. 5/2018-Customs

dated 25.01.2018 Sl. No. 539A. Please note HSFC will not reimburse any duty or additional duty paid to Customs.

In the event the Tenderers submit the Quotation in Foreign Exchange [FE] for High Sea Sale Trade, the Payment shall be released in equivalent Indian Rupees on the basis of Bills Selling Rate prevailing on the date of payment made to the Principal.

No GST or any other Taxes will be applicable for High Sea Sale. However, GST will be applicable in case of Services.

5.62 **Validity of Offer:**

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

5.63 **Public Procurement for Start-ups:**

The facilities/benefits will be extended for start-ups as per the Guidelines issued by Government of India.

5.64 **If any conflict between General Tender Terms and Conditions and RFP, the RFP will prevail.**





भारत सरकार/Government of India
अंतरिक्ष विभाग/Department of Space
भारतीय अंतरिक्ष अनुसंधान संगठन/
Indian Space Research Organisation
समानव अंतरिक्ष उड़ान केंद्र/Human Space Flight Centre
बेंगलूरु/Bengaluru-560 037



**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	Purchasers Specific Commercial Terms	Compliance by Vendor Agreed/Not Agreed. If Not Agreed specify your comments
01	Delivery Terms - The Quotation should be FOR Destination on Door Delivery Basis	
02	Packing and Forwarding Charges shall be inclusive.	
03	Delivery Period: [Refer SI.No.7 of RFP Part-A]	
04	Freight Charges Inclusive/Exclusive [In case of exclusive please indicate the applicable Percentage]	
05	Mode of Despatch	
07	<u>Goods and Services Tax:</u> 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. Tenderers participating in HSFC tender should mandatorily submit GST Registration Certificate along with offer[s]. In case, the Tenderer[s] are not registered under GST their offer will be treated as invalid and the same will not be considered for evaluation. <u>Intrastate Transaction</u> In terms of the Notification No. 09/2025-Central Tax [Rate] dated 17.09.2025 issued by Government of India and Gazette Notification No. [09/2025] FD 02 CSL 2025 dated 19.09.2025 issued by Government of Karnataka the applicable rate of GST [CGST =2.5% + SGST = 2.5%] is 5% for Scientific and Technical Instruments, Apparatus, Equipment, Accessories, Parts, Components, Spares, Tools, Mock Ups and Modules, Raw Material and Consumables required for launch Vehicles and Satellites and Payloads <u>Interstate Transaction</u>	

	<p>Similarly, in terms of Notification No. 09/2025-Integrated Tax [Rate] dated 17.09.2025, Under SI.No.462, the applicable rate of IGST is 5% for Scientific and Technical Instruments, Apparatus, Equipment, Accessories, Parts, Components, Spares, Tools, Mock Ups and Modules, Raw Material and Consumables required for launch Vehicles and Satellites and Payloads.</p> <p>Tenderers are here by requested to take note of this aspect and submit the Quotation accordingly. Further, if the items fall other than the above category, applicable rate of GST shall be paid.</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>Tenderer[s] are also requested to mention the HSN/SAC Code against each item at the time of submission of their offer..</p>	
	Customs Duty	
08	<p><u>In case of Import of Primary Item:</u></p> <p>Human Space Flight Centre, Bengaluru is fully exempted from payment of Customs Duty vide Notification No.45/2025--dated 24.10.2025 Customs, under SI.No.340. HSFC shall only provide necessary Customs Duty Exemption Certificate [CDEC] against proof of Import Invoice, Airway Bill. Any duty apart from providing CDEC charged by Customs Authorities the same shall be borne by the Tenderer. In addition to above, Tenderers should bear the cost of additional duty Freight and Custom Clearance Charges for import of Primary item. Tenderers are requested to take note of this aspect and submit the offer clearly mentioning that the quoted Price does not include Customs Duty.</p>	
	<p><u>In case of Imported brought out items if any:</u></p> <p>HSFC shall only provide necessary Customs Duty Exemption Certificate [CDEC] as per Notification mentioned at 8(a) above against proof of Import Invoice, Airway Bill. Any additional duty apart from providing CDEC charged by Customs Authorities the same shall be borne by the Tenderer. In addition to above, Tenderers should bear the cost of additional duty, Freight and Custom Clearance Charges for imported brought out items. Tenderers are requested to take note of this aspect and submit the offer clearly mentioning that the quoted Price does not include Customs Duty for imported brought out items. Tenderers are requested to submit OEM Certificate if any for brought out item.</p>	
	<p>c Declare Country of Origin of the quoted items.</p>	
9	<p><u>Income Tax:</u></p> <p>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</p>	
10	<u>Payment Terms:</u> : [Refer SI.No.7 of RFP Part-A]	

11	<p><u>Bank Charges:</u> 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.</p>	
12	<p><u>Advance Payment Bank Guarantee:</u> Normally, HSFC will not consider Advance Payment. In case of any Advance Payment requested by Tenderer, the same shall be supported by an Equivalent Bank Guarantee from a Nationalised Bank approved by RBI valid till receipt of the Final Product/Stores + 60 days.</p>	
13	<p><u>Interest on Advance Payment</u> 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 Tenderers 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.</p> <p>In case if any 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.</p>	
14	<p><u>Bank Guarantee towards Free Issue of Materials:</u> The successful Tenderer[s] shall furnish Equivalent 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 + 60 days.</p> <p>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.</p>	
15	<p><u>Performance Security [PS]:</u> 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/Extended 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 commercial Banks approved by RBI. 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.</p> <p>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</p>	

	<p>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.</p>	
16	<p><u>Warranty/Guarantee:</u> Tenderer[s] are requested the Indicate Applicable Standard Warranty/Guarantee Period till acceptance of Stores at Purchasers premises. Any replacements during the Warranty period shall be carried out by the successful Tenderer[s] Free of all Cost including To and Fro Freight Charges. The minimum Warranty/Guarantee shall be 03 years from the date of Acceptance.</p>	
17	<p><u>Force Majeure/Extension of Time:</u> 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 21 days from the date of the occurrence of the force majeure conditions. In the event of delay lasting over 90 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>	
18	<p><u>Liquidated Damage:</u></p>	

	<p>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, the Purchaser shall, without prejudice to any other right or remedy available under the law to Purchaser on account of such breach, shall recover from the Contractor as Liquidated Damages a sum one-half of one percent [0.5 percent] of the Total Contract value of the undelivered Stores for each calendar week of delay or part thereof. The total maximum Liquidated Damages shall not exceed Ten percent [10 percent] of the Total Contract value.</p> <p>In case if any 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.</p>	
19	<p><u>Termination and Short Closing of the Contract:</u></p> <p>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>	

	To Terminate the Contract wholly or partly without assigning any reason.	
20	Pre-Delivery Inspection [PDI - if any]: 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.	
21	Factory Acceptance Testing [FAT - if any]: 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.	
22	Tenderer[s] are requested to mention whether Installation, Testing, Commissioning, Demonstration, Acceptance and imparting Training is necessary for the Tendered Stores.	
23	Training Free of Cost at Purchasers Site, if applicable	
24	Supply and Installation is subject to Purchasers Acceptance.	
25	Instruction/Operation Manual to be supplied Free of Cost.	
26	Cost of Spares included in the Price Bid/Not included.	
27	Will you be able to provide Consumables/Spares for 10 Years?	
28	Items from Latest Production batch only are to be supplied.	
29	Samples to be provided at Free of Cost, if called for	
30	Whether Prequalification of your facility procedure completed [if applicable]	
31	Whether approximate Weight [Net and Gross] of the Consignment is mentioned	
32	Metric Measurement Systems to be followed.	
33	Defective/Rejected Items if any are to be replaced Free of Cost. It shall be complete responsibility of the successful Tenderer to collect the rejected item at their own cost for repair or replacement of defective Stores.	
34	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.	

	<p>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.</p>	
35	<p><u>Dispute Resolution for Public Sector Undertakings</u> In the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contracts other than taxation, between the following Organizations/Departments, such dispute or difference shall be taken up by either party for its resolution through Administrative Mechanism for Resolution as mentioned in the Office Memorandum No: OM No: 4(1)-2013-DPE(GM)/FTS-1835 dated 22.05.2018 and as amended vide Office Memorandum No: DP-GM-05/0003/2019-FTS-10937 dated 20.02.2020, OM No: 05/0003-2019-FTS-10937 dated 14.12.2020 and OM No: DPE-05/0002/2023-AMRCD dated 25.07.2024 shall apply in consonance with applicable Indian Laws and Public Policy.</p> <p>a) CPSE and CPSE b) CPSE and Ministry/Department of Central Government c) CPSE and Public Authority/Organisation or University under the Central Government d) CPSE and State Government/State PSUs/Public Authority/Organisation or University under any State Government</p> <p>The decision of AMRCD on the said dispute will be binding on both the parties.</p>	
36	<p><u>Dispute Resolution for MSMEs:</u> The Micro, Small and Medium Enterprises Development [MSMED] Act, 2006 provides parties to a dispute (where one of the parties is a Micro or Small Enterprise) to be referred to the Micro and Small Enterprises Facilitation Council if the dispute is regarding any amount due under Section 17 of the MSMED Act, 2006. If a Micro or Small Enterprise, being a party to dispute, refers to the provisions in the MSMED Act 2006, these provisions shall prevail over this Agreement.</p>	
37	<p><u>Jurisdiction:</u> The Courts within Bengaluru will have the Jurisdiction to deal with and deciding any matter arising out of this contract.</p>	
38	<p><u>Applicable Law:</u> The contract shall be interpreted and construed and governed by the Laws of India.</p>	
39	<p><u>Language and Measures:</u> 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.</p>	
40	<p><u>Two Part Bid System:</u></p>	

	<p>Tender shall be submitted in two separate sealed envelopes are to be sent duly Superscribed by Tender Number and due date as follows:</p> <p>1] Technical & Commercial Bid 2] Price Bid Please refer Tender Instructions</p>	
41	Compliance to Land Border Sharing as per Chapter-4 of General Terms and Conditions	
42	<p><u>Local Content:</u> Whether Class Local I or Class II Local Supplier. If so, please provide the percentage of local content and self-declaration of local content as per format. However, at the time of execution of the project, for all contracts above INR 10 Crore, the contractor/supplier shall be required to give local content certification duly certified by cost/chartered accountant, in practice.</p> <p>Similarly, tenderers requested confirm to product specific local content requirements mandated by respective Nodal Ministries</p> <p><u>Note:</u> Tenders while self-declaring the local content for tendered item should not consider the cost of Transportation, Insurance, Installation, Commissioning, Training and After Sales Service support like AMC/CMC etc as per Make in India Order.</p>	
43	<p><u>Validity of the Offer:</u> Minimum of 120 days from the date of opening the Tender</p>	
44	<p>Do you have Unique GeM Seller ID? If Yes, provide details. If No, As per Officer Memorandum No. 6/9/2020-PPD dated 24.08.2020 issued by Government of India, Ministry of Finance, Department of Expenditure, it shall be mandatory for sellers providing Goods and Services to Central Government Organizations to be registered on GeM and obtain Unique GeM Seller ID, at the time of placement of Purchase Order/acceptance of contract. Tenderers shall ensure the same</p>	
45	Indicate the applicable HSN/SAC Codes for the quoted item/s	



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

Land Border Sharing Declaration
(To be submitted in the bidders letter head)

In-line with Department of Expenditures (DoE) Public Procurement Division Order vide ref. F.No.6/18/2019-PPD dated 23.07.2020 & 24.7.2020 and F.No. 7/10/2021-PPD(1) dated 23.02.2023

Tender Number: _____

Item Description/Job: _____

I/ we have read the clauses pertaining to Department of Expenditures (DoE) Public Procurement Division Order (Public procurement no 1, 2 & 3 vide ref. F.No.6/18/2019-PPD dated 23.07.2020 & 24.7.2020 and F.No. 7/10/2021-PPD(1) dated 23.02.2023) regarding restrictions on procurement from a bidder of a country which shares a land border with India. I/We hereby certify that I/ we the bidder Name of the Bidder _____ is / are

- a) Not from such a country and eligible to be considered for this tender.
- OR
- b) From such country, has been registered with the competent authority and eligible to be considered for this tender. (Evidence of valid registration by the competent authority shall be attached)

For and behalf of _____ (Name of the bidder)
(Signature, date & seal of authorized representative of the bidder)

Request for Proposal (RFP)
For *Design and Development of Wearable Health Monitoring System*
(WHMS)

Human Space Flight Centre
Indian Space Research Organisation

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TERMINOLOGY AND ABBREVIATION

Acronym	Definition
CDR	Critical Design Review
ECG	Electrocardiograph
GUI	Graphical User Interface
HSFC	Human Space Flight Centre
IP	Intellectual Property
ISRO	Indian Space Research Organization
MIL – STD	Military Standard
OS	Operating System
PCB	Printed Circuit Board
PDR	Preliminary Design Review
PPG	Photoplethysmography
QM	Qualification Model
SpO ₂	Blood Oxygen Saturation
Tx	Transmission
USB	Universal Serial Bus
VO ₂ max.	Maximal Oxygen Consumption
WHMS	Wearable Health Monitoring System
CHMS	Crew Health Monitoring System
FM	Fight Model
EM	Engineering Model
DEPARTMENT	DEPARTMENT means ISRO, DoS

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A. Technical Terms & Conditions

1. Preamble

The Indian Space Research Organisation (ISRO) is looking forward to a sustainable presence of humans in space for its Gaganyaan spaceflight programmes, beyond Gaganyaan missions and future space station. In order to achieve this feat, the organisation has taken crucial steps to build confidence in biomedical engineering to support long – duration space missions and carry out numerous experiments to benefit humankind. Consequently, steps have been taken to carve the future and a request proposal for indigenous development of Wearable Health Monitoring System (WHMS) for ground use is proposed in this document. These systems will be further ruggedized to perform in space applications for on-orbit use and provide research-grade human health monitoring data.

The proposal consists of the technical cum commercial details applicable for development of the health monitoring system. The floated RFP will enable the potential organisations/vendors proficient in the development of medical grade wearable health monitoring devices. The eligibility of qualification of the parties for the award of purchase order will be assessed by RFP-WHMS committee and based on committee recommendations, the shortlisted parties will be asked for submitting their quotes (price bid) for developing the device.

1.1 Intended Use

The intended use of the WHMS device is to monitor subject's health vitals, store and subsequently transmit the corresponding raw and pre-processed data to the backend system for further analysis. The data must be stored over a secured private cloud managed by DEPARTMENT. The WHMS device will also be used for monitoring the vitals for ground training and prolonged on – orbit space missions.

2. Scope Of Work

The scope of work encompasses design, development, testing, delivery, maintenance and up-keep of WHMS including hardware and software components of the system. The scope shall also include following:

- 2.1. Design configuration of the WHMS at sub-system level.
- 2.2. Design and development of the sensors and markers used for measurement of physiological parameters.
- 2.3. Algorithms used to deduce parameters from the vitals measured by the device.



- 2.4. Functional testing of all components/sub-system of the WHMS and performance evaluation to validate the system's performance.
- 2.5. To ensure the system meets relevant regulatory standards.
- 2.6. Qualification and acceptance test of sub-systems & integrated systems under defined environmental level with relevant clinical standards.
- 2.7. Certification of the WHMS from appropriate authorized agencies.
- 2.8. Delivery of certified WHMS devices with documentation i.e., system design document, test reports and user manual, etc.
- 2.9. Deliverables: As per the Table 2.1.

Table 2-1: Summary of Hardware deliverables.

Work Description	Deliverables Quantity (nos.)			Total Deliverable Quantity (nos.)
	EM	QM/ Proto- FM	Functional Usage	
Wearable Device with Bio-vest and sensors	1	1	2	4
Host Devices	1	1	2	4
Analytical Biomarker Devices	1	1	2	4
GUI Interface/ Application	As described in functional requirements			

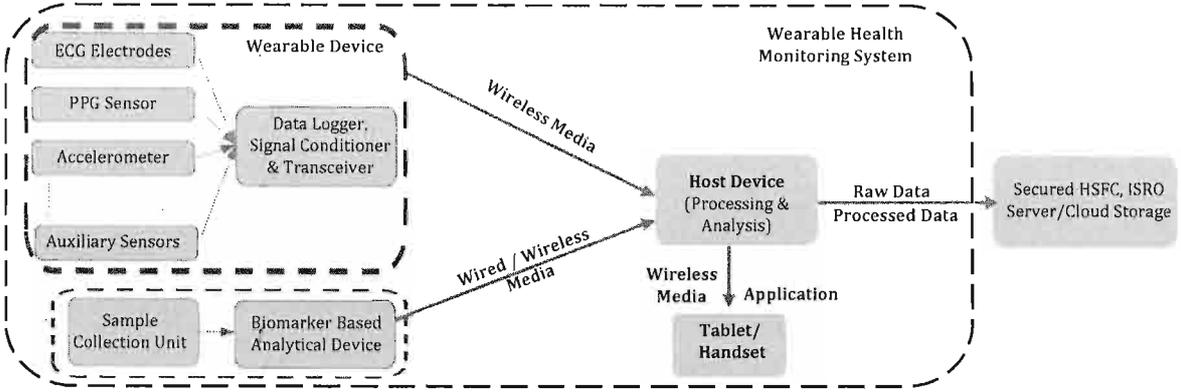
3. Functional Requirements

3.1 System Configuration

Table 3-1: Requirement of WHMS

Requirement ID	Requirement Description
3.1.1.	<p>The WHMS system shall consist of four major elements namely:</p> <ul style="list-style-type: none"> • Wearable Device with bio-vest and bio-sensors • Analytical Biomarker Device • Host Device with platform independent application • GUI Interface/ Application for data transfer to ISRO's secured server/cloud storage

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Requirement ID	Requirement Description
	 <p style="text-align: center;">Figure 3-1: WHMS Configuration</p>
3.1.2.	The wearable device means bio-vest with all proposed bio-sensors and the miniaturised acquisition unit to acquire the data from these sensors. Wearable device configuration is listed in figure 3-1.
3.1.3.	The wearable device shall record vital measurements, store the digitised raw/pre-processed data and transfer the data to the host system through wireless communication media, when requested or as programmed.
3.1.4.	<ul style="list-style-type: none"> • The wearable device shall accommodate multiple sensors strategically positioned at different locations in bio-vest for measurement over subject's body • The sensors data shall be acquired with suitable signal conditioning • The acquired data shall be logged to Data Logger • The Transceiver unit shall be enabled to transmit data to host device
3.1.5.	The biomarker based analytical device shall process the samples and it shall generate the processed data. The processed data will be transferred to the host device after appropriate buffering through wireless/wired media.
3.1.6.	<ul style="list-style-type: none"> • The biomarker based analytical device shall be a compact, non-obtrusive portable device, accounting to <i>sweat, salivary and urine-based samples</i> • The sample collection shall be non - intrusive • The biomarker based analytical device shall not contaminate the sample during collection

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Requirement ID	Requirement Description
3.1.7.	<ul style="list-style-type: none"> • The user samples shall be inserted in the device's cartridge for vitals and the bio-marker's acquisition and processing unit shall transfer the data to host system through wired and/or wireless communication media • The device shall be reusable considering replacement of biomarkers cartridge
3.1.8.	The wearable device and biomarker based analytical devices shall be able to work independent of each other.
3.1.9.	<ul style="list-style-type: none"> • The host system shall be a touch enabled tablet or a mobile handset running on platform independent operating system and shall be furnished with a GUI application. It shall display: <ul style="list-style-type: none"> ○ Processed health vitals (wearable device & biomarkers based) with real time plots ○ WHMS mode information ○ WHMS controls ○ WHMS connection status, battery status etc. ○ Status of data transfer to server • The WHMS device related parameters like mode of operation, connection status, etc. shall be displayed on all the GUI pages • A prompt/alarm shall pop - up in case of loss of connection during data transmission between: <ul style="list-style-type: none"> ○ Wearable to host ○ Host to server
3.1.10.	It shall <i>wirelessly transfer</i> the received/processed data to a secured DEPARTMENT server/cloud storage.
3.1.11.	Interpretation and analysis shall be part of GUI application.

3.2 User Interface

a) For Wearable Device

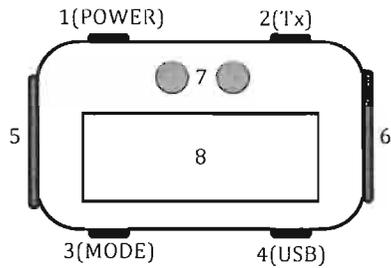
Table 3-2: Requirements for wearable device

Requirement ID	Requirement Description
POWER BUTTON	
3.2.1.	There shall be a POWER button to turn ON or turn OFF the device (on the side of the device).
3.2.2.	When the device is OFF, a long press of the POWER button for a duration of 5 to 8 seconds shall turn ON the device. The long press of 5 to 8 seconds shall give LED indication for device booting up.

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Requirement ID	Requirement Description
3.2.3.	When the device is ON, a long press of the POWER button for a duration of 5 to 8 seconds shall turn OFF the device with indication of powering down.
3.2.4.	The boot time for the device shall not be more than 5 seconds and should provide indication for readiness of device usage.
MODE BUTTON	
3.2.5.	There shall be a MODE button to prompt user for mode transition both at wearable device and GUI (in case of connectivity with the host device).
TRANSMISSION (Tx) BUTTON	
3.2.6.	There shall be a Tx button on the side of the device to connect over wireless media and initiate the wireless transfer of data stored in the device buffer. Data stored can also be transmitted if it requested through host device with suitable commands.
LIGHT EMITTING DIODE (LED)	
3.2.7.	<p>There shall be a provision of bi-colour LEDs on the front of wearable device. These LEDs will be used to displaying:</p> <ul style="list-style-type: none"> • Indication of boot up and powering down • Current Operation Mode of the device • Alarm indications <p>The LEDs shall be lit up on demand with the press of power button or as requested by GUI for status monitoring. Once the request is made it shall continuously display for 5 seconds and then it should go back to sleep mode.</p>
FRONT PANEL DISPLAY	
3.2.8.	<p>The front panel shall always display following:</p> <ul style="list-style-type: none"> • Wearable devices' health status • Remaining battery capacity • Mode of operations of wearable device • Connection status with the host device • Alarm indication <p>The front panel shall display parameters on demand i.e., with press of power button or whenever requested from GUI to save power. Once the request is made it shall continuously display for 5 seconds and then it should go back to sleep mode.</p>



Requirement ID	Requirement Description
UNIVERSAL SERIAL BUS (USB) PORT	
3.2.9.	The device shall accommodate a common mil-grade USB - C port for battery charging and data transfer.
3.2.10.	The USB - C port shall be placed on the side of the device.
3.2.11.	There shall be a lid on the side of the device at the USB port to block the ingress of liquid and to comply with IP68 rating.
WEARABLE BIO-VEST	
3.2.12.	The device shall have a free size bio-vest that can be worn on the chest with ergonomic fit.
3.2.13.	The bio-vest shall be elastic in nature and shall be capable to keep the form factor universal for all users.
3.2.14.	The device placed in the vest shall be intact and the electrode's contact shall not be disturbed with the subject's physical movements.
3.2.15.	There shall be unique identification for each device.
 <p>NOTES: Features 1 - 4 are control buttons and USB port Features 5 & 6 are straps/vest tying mechanism Feature 7 is for LEDs (No. of LEDs are indicative) Features 8 is for display</p>	
Figure 3-2: Indicative picture of acquisition unit of wearable device.	
OPERATION MODE SWITCHING MECHANISM	
3.2.16.	<p>There are two nominal mode switching sequences:</p> <ul style="list-style-type: none"> • Mode transition will happen only if Tx button is pressed within 3 seconds after the MODE button is pressed. If mode transition sequence is not completed then the wearable device shall stay in same operating mode. • Mode transition facility shall also be available on the host device GUI application.
3.2.17.	By default, after switching ON or RESET the wearable device shall enter IDLE mode of operation.

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Requirement ID	Requirement Description
3.2.18.	The mode transition sequence initiated from wearable device shall change the mode of operation from IDLE mode to ACQUISITION (when connected to host) mode or STORAGE mode (when connection with host is not available) and vice-versa.
3.2.19.	The loss of connectivity of wearable device with the host device shall result in mode transition as per below: <ul style="list-style-type: none">• ACQUISITION mode to STORAGE mode
3.2.20.	The device will enter SERVICE mode when POWER, MODE and Tx buttons are pressed together continuously for more than 5 seconds.
3.2.21.	The initiation of mode transition shall be accompanied by blinking of LEDs in a specific pattern.
3.2.22.	When switching between the modes, the device shall consider a duration of not more than 3 seconds to enter the target operating mode.
3.2.23.	A combination of LEDs of different colour shall denote the operation mode. The LEDs and device display shall remain active during the mode transitions.



b) For Analytical Biomarker Device

The following table shows the details of the bio-markers planned for developing analytical bio-marker device. The device shall be expandable to cater the future augmented requirements. However, for inclusion and deletion of the feature will leads to design complexities in the system will be reviewed by ISRO's relevant review forum.

Table 3-3: Description of Biomarkers to be acquired

Requirement ID	Requirement Description	
URINE BASED BIOMARKERS		
Sample Collection Frequency: Every 2 – 8 hours for a period of 24 – 48 hours for subject under observation ensuring the first morning void collection.		
	Biomarker	Inferred Health Parameter
3.2.24.	Melatonin	Measurement Range: 0 – 1 ng/ml • Circadian Dysregulation detection
3.2.25.	6 – Sulfatoxymelatonin (aMT6s)	Measurement Range: 0 – 10 µg/hr • Pain severity detection • Sleep Quality monitoring • Major Depression Disorder (MDD) detection
NOTE: The sample collection shall not disrupt subject's sleep cycle.		
SALIVA BASED BIOMARKERS		
Sample Collection Frequency: Every 30 – 60 minutes		
	Biomarker	Inferred Health Parameter
3.2.26.	Melatonin	Measurement Range: 0 – 1 ng/ml Circadian Dysregulation detection
3.2.27.	Cortisol	Sample Collection Condition: No physical exercise for at least 2 hours before sample collection Measurement Range: 0 – 50 nmol/l • Psychological Stress detection • Mental Disorder severity detection



Requirement ID	Requirement Description	
3.2.28.	Dim Light Melatonin Onset (DLMO)	<p>Sample Collection Condition: Under dim light conditions (<30lux) 2 to 3 hours before sleep time</p> <p>Measurement Range: 0 – 1 ng/ml</p> <ul style="list-style-type: none"> • Chronobiological Disorder detection • Phase of circadian timing in sleep
3.2.29.	Prostaglandins	<p>Measurement Range: 0 – 500 ng/l</p> <ul style="list-style-type: none"> • Urinary Tract Infection (UTI) detection • Food allergy detection
SWEAT BASED BIOMARKERS		
Sample Collection Frequency: Every 20-25 minutes/ as requested		
	Biomarker	Inferred Health Parameter
3.2.30.	Glucose	<p>Measurement Range: 0 – 300 mg/dl</p> <ul style="list-style-type: none"> • Complication detection • Aczema/Atopic Dermatitis detection
3.2.31.	Magnesium, Calcium and Phosphate	<p>Measurement Range: 0 – 200 nmol/l</p> <ul style="list-style-type: none"> • Fluid balance detection • Hydration level detection
BIOMARKER SAMPLE COLLECTION UNIT		
3.2.32.	The biomarker sample collection unit shall collect samples non-invasively.	
3.2.33.	It shall not contaminate samples during collection.	
3.2.34.	The sample transfer from collection unit to analytical device shall be manual.	

3.3 Modes of Operation of Wearable Device

The wearable device has four possible modes of operation i.e., IDLE, ACQUISITION, STORAGE and SERVICE. The transition between the modes of operations can be done with the help of several sequences defined below. However, the configuration may be revised during pre-liminary design review of the system in WHMS committee.

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- Mode Transition Sequence (MTS): Tx button pressed on wearable device followed by pressing of Mode button within 3 seconds
- Reset Sequence (RSQ): Mode, Power and Transmission buttons pressed together on wearable devices for more than 5 seconds

The brief description of the modes is as follows:

a) Idle Mode:

Table 3-4: Description of IDLE mode

Requirement ID	Requirement Description
3.3.1.	The device shall enter this mode in following conditions: <ul style="list-style-type: none"> • By default, when the device is turned ON • Exit from SERVICE mode after undergoing mode/factory reset • MTS initiated from wearable device when operating in ACQUISITION or STORAGE modes • Mode selection from the host GUI
3.3.2.	The device shall carry out self-diagnosis and store the device health data in onboard memory with timestamp. The wearable device's health data shall be transmitted to the host device once the connection is established.
3.3.3.	If the health of any bio-sensor is off-nominal, then sensor isolation configuration shall be received from the user.
3.3.4.	If the device health is nominal then it shall raise an alarm for mode switching and establishing connection with the host device after waiting for 60 seconds. In case the connection with the host is already established the alarm prompt shall also be available at host GUI. This alarm shall be addressable from both wearable device and host GUI.
3.3.5.	With establishment of connection, the host shall attach user profile identification information to the wearable device for stamping purpose.
3.3.6.	If the wearable device wakes up in an off-nominal state, an alarm shall be raised for connecting with the host device after waiting for 1 minute. If the connection couldn't be established within 5 minutes, the device shall enter SERVICE mode automatically. The alarm shall be addressable from both GUI and wearable device. During this phase the wearable device shall remain in wake-up state.
3.3.7.	The device shall not make any measurements in this mode as this is a no operation (NOOP) mode.

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Requirement ID	Requirement Description
3.3.8.	If the wearable device's health is nominal and mode transition sequence is successfully initiated then the device shall enter into the ACQUISITION mode (if wireless connection is already established). Otherwise, it should enter STORAGE mode. The facility of mode switching to any other mode will be available in the host GUI.
3.3.9.	If RSQ is initiated from wearable device, the device shall enter SERVICE mode irrespective of connectivity with the host device.

b) Acquisition Mode:

Table 3-5: Description of ACQUISITION mode

Requirement ID	Requirement Description
3.3.10.	<p>The device shall enter this mode in following conditions:</p> <ul style="list-style-type: none"> • MTS initiated from wearable device when operating in IDLE mode • Connectivity restored (auto or manual) with the device operating in STORAGE mode • Mode selection from the host GUI <p>For the wearable device to enter this mode, connection with the host device is mandatory.</p>
3.3.11.	In this mode the device shall acquire data from all the available sensors continuously with timestamp, device ID stamp & user profile stamp. The acquired data shall be transmitted to the host with appropriate buffering.
3.3.12.	If the mode transition sequence is successfully initiated using wearable device or GUI then the device shall enter IDLE mode.
3.3.13.	Loss of connectivity with the host device shall switch the operating mode of the wearable device to STORAGE mode automatically.
3.3.14.	If RSQ is initiated from wearable device, the device shall enter SERVICE mode.

c) Storage Mode:

Table 3-6: Description of STORAGE mode

Requirement ID	Requirement Description
3.3.15.	The device shall enter this mode in following conditions: <ul style="list-style-type: none"> • Loss of connectivity with the host device operating in ACQUISITION mode, this transition is automatic • MTS initiated successfully from wearable device operating in IDLE mode without connectivity with the device • Mode selection from GUI, this mode selection from GUI will terminate connection between the host and wearable device
3.3.16.	In this mode the device shall acquire data from all the available sensors continuously and store it in on-board memory with timestamp, device ID stamp & user profile stamp.
3.3.17.	The wearable device shall raise the alarm to ensure connectivity with the host device every 30 minutes. This alarm shall be addressable from both wearable and host device GUI.
3.3.18.	The device shall transition to ACQUISITION mode, if the connection with the host device is established (by pressing the Tx button). After transition to ACQUISITION mode the data stored shall be transmitted to host over a separate BLE link to the host device, ensuring the currently acquired data is stored on-board. This data transfer after mode switching shall not result in synchronization error between the two devices.
3.3.19.	If the on-board memory of the wearable device is about to be full, an alarm shall be raised before re-write. This alarm shall be addressable from both device and the host GUI. If the alarm is not addressed and device runs out of memory, the new storage shall overwrite the oldest recorded data.
3.3.20.	If RSQ is initiated from wearable device, the device shall enter SERVICE mode.
3.3.21.	No mode transition from this mode to other modes can be done with the help of GUI as the connectivity between wearable and host devices is not available.

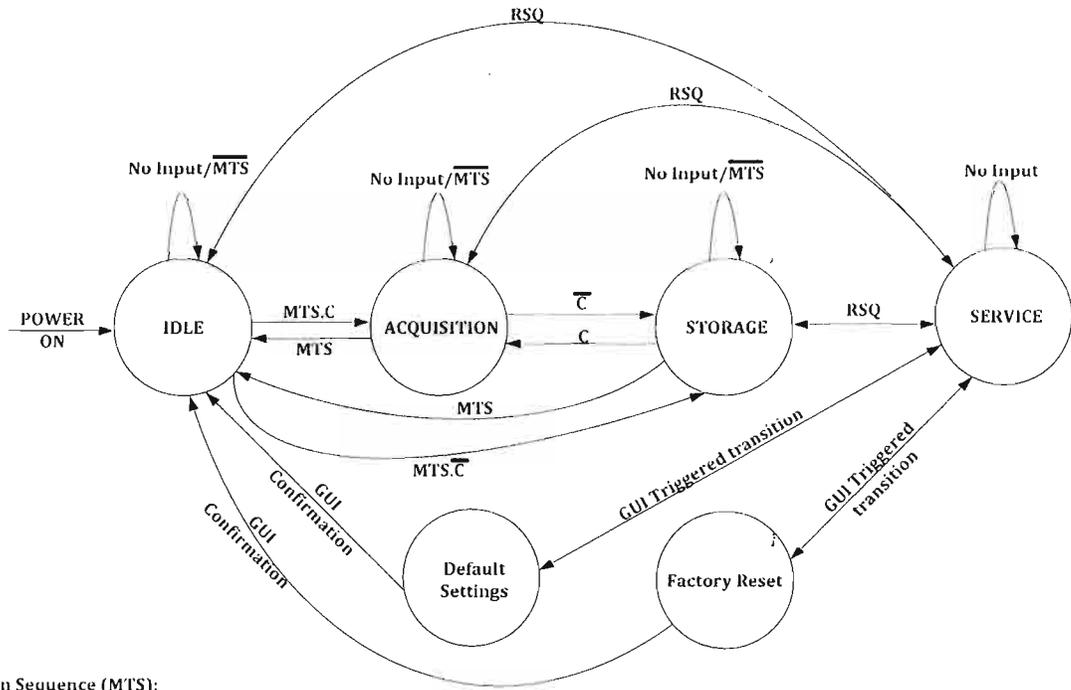
d) Service Mode

Table 3-7: Description of SERVICE mode

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Requirement ID	Requirement Description
3.3.22.	<p>The device shall enter this mode in following conditions:</p> <ul style="list-style-type: none"> • If RSQ is initiated from wearable device operating in any mode • In IDLE mode if the wearable device wakes up in an off-nominal state and connectivity with the host couldn't be established after waiting for 5 minutes, the device shall enter SERVICE mode automatically • Mode selection from GUI
3.3.23.	If RSQ is initiated in this mode the device shall go back to the previous mode of operation.
3.3.24.	No data acquisition shall be made by the wearable device in this mode of operation.
3.3.25.	In this mode using only GUI of host device can enter either factory reset or mode reset (default settings) state.
3.3.26.	<p>Factory Reset State:</p> <ul style="list-style-type: none"> • Acceptance of factory reset in this state shall prompt for data transfer to host and should not proceed for factory reset unless data transfer is completed • The data transfer can be done using either wired mode or in burst mode over the dedicated wireless BLE link • After data transfer the on-board device's memory shall be completely wiped and the mode is set to IDLE • The device can go back to SERVICE mode if request is rejected from GUI.
3.3.27.	<p>Mode Reset State:</p> <ul style="list-style-type: none"> • Acceptance of mode reset (default settings) in this state shall make transition to IDLE mode with settings restored to default • The on-board data shall remain safe during this operation • The device can go back to SERVICE mode if request is rejected from GUI.
3.3.28.	Post completion of factory/mode reset the device shall boot in IDLE mode only.





Mode Transition Sequence (MTS):
 Tx button pressed by Mode button pressed within 3 seconds
Communication Connectivity (C):
 Communication connectivity with host device
Reset Sequence (RSQ):
 Mode, Power and Tx button pressed together for more than 5 seconds

Figure 3-3: Mode transitions using wearable device buttons

3.4 Parameters to be Measured

Table 3-8: Description of measured and derived parameters

Requirement ID	Requirement Description	Measurement Specifications
3.4.1.	ECG	At least 3 leads ECG shall be used to acquire ECG waveforms. Sampling Rate: 512Hz or better Resolution: 6µV or better QRS event detection and RR interval resolution: 4ms or better The ECG shall be used for following: <ul style="list-style-type: none"> • Heart Rate Variability (HRV) calculation • Arrhythmia Detection • Stress monitoring

RS

Requirement ID	Requirement Description	Measurement Specifications
3.4.2.	Heart Rate Variability (HRV)	<p>Derived from EGC</p> <p>Measurement Ranges:</p> <ul style="list-style-type: none"> Standard Deviation of NN (SDNN) Intervals: $50 - 250 \pm 2\text{ms}$ Root Mean Square of Successive Differences (RMSSD): $15 - 200 \pm 2\text{ms}$ <p>Calculation Frequency: 1Hz</p> <p>HRV data shall be used predicting cardiovascular arrhythmia risks.</p>
3.4.3.	Arrhythmia Class	<p>The prediction for following or more arrhythmias shall be done using ECG data:</p> <ul style="list-style-type: none"> Sinus Tachycardia, Sinus Bradycardia, Ventricular Fibrillation, Ventricular Tachycardia, Normal Sinus Rhythm, Atrial Flutter <p>ECG data shall be processed for sufficient time predict the arrhythmia to ensure no false alarms about subject's health.</p>
3.4.4.	Estimated Stress Level	<p>Derived from EGC data</p> <p>Metric on a scale of 1 to 100</p> <p>Calculation Frequency: 1Hz</p>
3.4.5.	Pulse Oximetry	<p>Photoplethysmography (PPG) sensors shall be used for pulse oximetry.</p> <p>Sampling Rate: 75Hz or better</p> <p>The pulse oximetry data shall be used for following:</p> <ul style="list-style-type: none"> Heart Rate Calculation SpO₂ Measurements Hypoxia Detection Sleep Research
3.4.6.	Heart Rate	<p>Derived from Pulse Oximetry</p> <p>Measurement Range: $20 - 220 \pm 1$ bpm</p> <p>Calculation frequency: 1Hz</p>



Requirement ID	Requirement Description	Measurement Specifications
3.4.7.	SpO ₂	Derived from pulse oxymetry data. Measurement Range: 40 – 100 ± 1% Calculation Frequency: 1Hz
3.4.8.	Respiration/ Breathing Rate	Derived from strain, RIP /IMU sensor data Sampling Rate: 125Hz or better Measurement Range: 3 - 60 ± 1 bpm Calculation Frequency: 1Hz This data shall be used for following: <ul style="list-style-type: none"> • Tidal Volume Calculation • Minute Ventilation Calculation • Lung Capacity Calculation • VO₂ max calculation • Sleep Apnea detection • Chronic Obstructive Pulmonary Disease (COPD) detection
3.4.9.	Tidal Volume and Minute Ventilation	Derived from Respiration Rate Tidal Volume: <ul style="list-style-type: none"> • Measurement Range: 80-10000mL • Calculation Frequency: 1Hz Minute Ventilation: <ul style="list-style-type: none"> • Measurement Range: 80-65000mL • Calculation Frequency: 1Hz
3.4.10.	VO ₂ max	Derived from Respiration Rate Measurement Range: 10 - 100 ±1% ml/kg/min Calculation Frequency: 1Hz
3.4.11.	Blood Pressure (BP)	Derived from arterial pressure measurement sensor data. (May be derived from PPG and ECG data) Measurement Range: 40-180 ± 5 mmHg (Both Systolic and Diastolic) Calculation Frequency: 1Hz BP data can be used for following: <ul style="list-style-type: none"> • Hypertension Detection • Hypotension Detection

Requirement ID	Requirement Description	Measurement Specifications
3.4.12.	Body Temperature	<p>Acquired using Temperature sensor data</p> <p>Sampling Rate: 1Hz or better</p> <p>Measurement Range: 20-60 ± 0.1°C</p> <p>Body Temperature can be used for following:</p> <ul style="list-style-type: none"> • Heat Stress • Mental Performance • Physical Performance • Arousal • Sleep Circadian Cycles
3.4.13.	3 - Axes Acceleration	<p>Derived from 3-Axes Accelerometer sensor / IMU.</p> <p>Sampling Rate: 50Hz or better</p> <p>Measurement Range: -16 - +16 ± 0.004g</p> <p>The 3 - Axes Acceleration shall be used for following:</p> <ul style="list-style-type: none"> • Actigraphy • Cadence • Step Counting • Orientation Detection • Fall Detection • G - Force Calculation
3.4.14.	Actigraphy	<p>Derived from 3-Axes Accelerometer Data</p> <p>Calculation Rate: 1Hz</p>
3.4.15.	Cadence	<p>Derived from 3-Axes Accelerometer Data</p> <p>Measurement Range: 0 - 240 ± 1 SPM</p> <p>Calculation Rate: 1Hz</p>
3.4.16.	Workout Intensity Profile	Metric in minutes including heart rate zones with perceived effort of maximum effort
3.4.17.	Calories Burnt	Units of measurement kCal



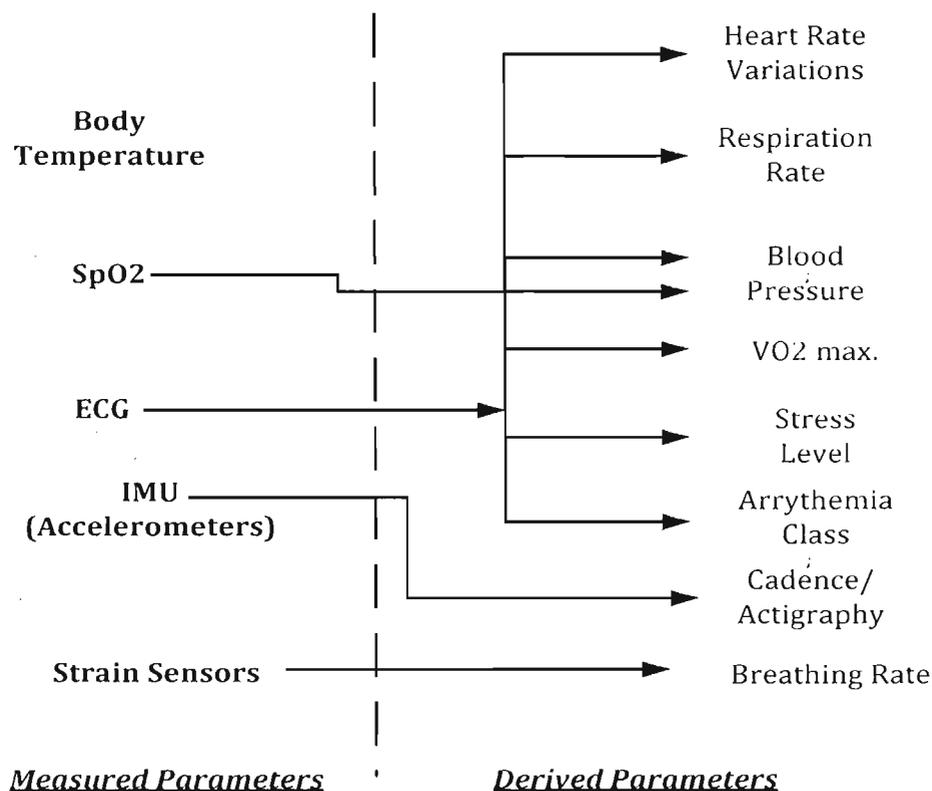


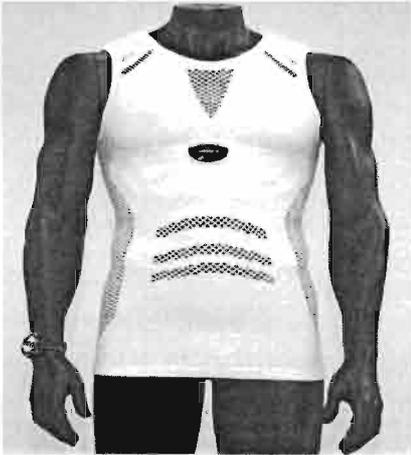
Figure 3-4 Relationship between measured and derived parameters

3.5 Hardware Requirements

Table 3-9: Description of hardware requirements

Requirement ID	Requirement Description
<i>MATERIAL</i>	
3.5.1.	The wearable device shall be non-obtrusive, comfortable to wear and should not cause itchiness to skin.
3.5.2.	The material of the wearable device in contact with the subject's skin shall be chosen considering ISO 10993 biocompatibility standard including but not limited to cytotoxicity, skin irritation or equivalent applicable standard.
3.5.3.	The outer material can be biocompatible like silicone, polycarbonate or equivalent.
3.5.4.	The choice of material for buttons on the device shall not compromise with signal quality and shall not cause any interference in signal acquisition.

Rm

Requirement ID	Requirement Description
3.5.5.	The material for Bio-vest shall meet the bio-compatibility aspects and shall be UV and microbial resistant ex:- Polyamide-micro combined Elastane.
FORM FACTOR	
3.5.6.	The device along with the vest shall weigh less than 350 grams.
3.5.7.	The form factor of the wearable device (acquisition unit) shall be within the range of 70mm x 50mm x 20mm or better in terms of volume.
3.5.8.	The device shall be worn on the chest using a bio-vest. The sensors can be attached on the body parts as per the requirement of sensor(s).
3.5.9.	The form factor of the proposed host device shall be within the range of 120mm x 60mm x 25mm or better. (Mass < 0.75 Kg)
3.5.10.	The form factor for the proposed bio-marker analytic device shall be evolved from the design considerations which cater the different kinds if planned bio-markers. However, the mass of the system shall be restricted to 1 kg.
 <p data-bbox="422 1664 1212 1697">Figure 3-5: Indicative picture for Wearable Device</p>	
ELECTRICAL OPERATING CONDITIONS	
3.5.11.	The device shall limit the operating voltage, current levels of the system under normal conditions that are not harmful as per the IEC 60601-1 standard.
3.5.12.	The device shall be protected from input voltage, current or energy spike resulting from static discharge from the user.

R2

Requirement ID	Requirement Description
BATTERY	
3.5.13.	The battery shall be lithium-ion type considering all human safety aspects.
3.5.14.	The device shall support a battery operation of at least 7 days (168 hours) of operation.
3.5.15.	The charging rate shall be within the safe limit of the battery.
3.5.16.	Provision for operation and charging shall be as follows: <ul style="list-style-type: none"> • DC based operation and charging (nominal voltage: 28 – 42V, 100V subject to revision as design evolves) • AC (@ 220V) based charging with adapter
3.5.17.	The number of charge/discharge cycles for the battery shall be 500 cycles before the battery degrades to 80% of its maximum claimed capacity.
PORTS & INTERFACES	
3.5.18.	The USB-C port shall USB 3.0 or USB 3.1 GEN1 or equivalent USB protocol to support a transfer rate of 100Mbps or better.
3.5.19.	The USB pin connectors shall be rated with ten thousand mating cycles.
3.5.20.	Provision of lid or equivalent mechanism shall be provided in order to tightly intact USB port when port is not in use considering liquid and dust particle ingress protection ingress IP68/69 or equivalent values.
SENSORS	
3.5.21.	Dry synthetic textile-based electrodes shall be used to record ECG signals.
3.5.22.	Strain, RIP / IMU sensor for Respiration/ Breathing Rate measurement.
3.5.23.	PPG sensors for pulse oximetry. (Can be planned separately from vest (ex-cap, finger etc.)
3.5.24.	Non-invasive arterial pressure measurement sensor for Blood Pressure measurement.
3.5.25.	Temperature sensor shall be flexible composite class like graphene based for skin temperature measurement.
3.5.26.	3-Axes Acceleration sensor for 3-Axes Acceleration sensing.
3.5.27.	The sensors shall be mounted/ placed as per the design requirements.

Rm

Requirement ID	Requirement Description
3.5.28.	In order to meet the functional requirements mentioned in table 3-8, more Bio-sensors at strategic locations in the bio-vest can be planned.
PROCESSING UNIT	
3.5.29.	The sampling rate for ECG signals shall be 512 Hz or better.
3.5.30.	Successfully completed measurements with timestamp shall be saved to on-board device memory or buffer as per the mode of operation of the device. Interrupted measurements shall not be saved in the memory.
3.5.31.	The device memory shall have capacity to store at least 07 days of continuous measurement of digitised raw data.
3.5.32.	In case of insufficient memory to save a new record in the onboard memory, the oldest measurement stored in onboard memory shall be deleted.

3.6 Communication Interfaces

Table 3.10: Description of communication interfaces

Requirement ID	Requirement Description
3.6.1.	The recorded digitised raw data shall be transferred over Bluetooth from wearable device to the host system.
3.6.2.	Bluetooth Low Energy 5.3 or better shall be used for wireless communication interface.
3.6.3.	The host device shall transfer the received data over Wi-Fi/Ethernet/1553 link to the secure DEPARTMENT server/cloud storage in encrypted form.
3.6.4.	The USB – C port shall support data transfer when connected over wired media from host device to wearable device.
3.6.5.	After switching to ACQUISITION mode from STORAGE mode a separate BLE link shall be used to transfer data from wearable device to the host device with higher speed ensuring no synchronization error between the two devices. This will lead to simultaneous transmission of acquired and stored data from wearable to host device.
3.6.6.	The analytical biomarker device shall be able to communicate with the host device over wireless or wired media to transfer processed data.

R

Requirement ID	Requirement Description
3.6.7.	The host device shall also support data transfer to PC/Tablet/Smart-Phone over wireless media (Wi-Fi). The provision to start data transfer in such cases shall be from host device only. This is to support data availability for GUI installed on PC/Tablet/Smart-Phone.
Figure 3-6: Communication Interfaces for WHMS	

3.7 Software Requirements

Table 3.11: Description of Software requirements

Requirement ID	Requirement Description
3.7.1.	An analytical engine with user – friendly GUI shall be provided on the host system.
3.7.2.	The application shall be platform-independent.
3.7.3.	The application shall be capable of connecting with a defined secure DEPARTMENT server/cloud storage.
3.7.4.	The application shall feature the health status of the device sensors, battery health of device, battery charge status of host device, connection status, mode of operation, battery status and all processed user health matrices.
3.7.5.	Digitised raw data shall be transferred from the host device application to secure DEPARTMENT server/cloud storage through Wi-Fi/Ethernet/1553 link.
3.7.6.	Provision to create new user profile shall be provided.
3.7.7.	The application shall support the user to define or update the device configuration.

Q2

Requirement ID	Requirement Description
3.7.8.	Power OFF and mode transition facility for WHMS device shall be available in GUI.
3.7.9.	The GUI shall display real time processed data along with predictions about subject's health. The graphical display of data shall be available in GUI.
3.7.10.	There shall be separate page for the display of biomarker-based analysis of the subject's health.
3.7.11.	Facility for masking and addressing alarms shall be available.

3.8 Installation and Upgrade

Table 3.12: Description of Installation & Upgrades

Requirement ID	Requirement Description
MATERIAL REQUIREMENT	
3.8.1.	Industry shall complete installation, demonstration and training of all hardware and software.
3.8.2.	Industry shall support WHMS upgradation/ Comprehensive support for at least a time period of 3 years.
3.8.3.	Warranty means Comprehensive Maintenance, Training, and upgradation of the WHMS for 3 years
3.8.4.	Post-delivery development of upgrades shall be reviewed by forums responsible for reviews during the development of the WHMS or as deemed by HSFC, ISRO during the course of upgrades.

3.9 Certifications and Qualifications

Table 3.13: Description of Certifications and Qualifications

Requirement ID	Requirement Description
MATERIAL REQUIREMENT	
3.9.1.	The Wearable device i.e., bio-vest with embedded bio-sensors with acquisition unit and bio-marker device shall be approved by Indian Council of Medical Research (ICMR) or Central Drugs Standard Control Organization (CDSCO) or equivalent organization and meet all human safety conditions.
3.9.2.	It should meet standards for CE marking or equivalent certification from FDA.
3.9.3.	The Host system shall meet ISRO's human rating safety and qualification guidelines defined by ISRO PAX .

4. APPLICABLE STANDARDS

The system should comply with following standards:

Table 4.1: Summary of Application standards

Requirement ID	Tests/Classification	Compliance Standard	Description
4.1	Cytotoxicity	ISO 10993-5	Material used in the device shall not cause harm to cells
4.2	Skin sensitization and irritation	ISO 10993-10	Device material shall not cause an allergic reaction, skin irritation or sensitization when in contact with skin
4.3	Skin contacts with device	ISO 10993-11	To evaluate permanent contact of silicone, polycarbonate, carbon black with intact skin
4.4	Degree of protection	IEC 60601-1	Type CF is acceptable Leakage current: 10uA under normal conditions, 50uA under single-fault conditions
4.5	Medical equipment electrical safety	IEC 60601-1, IEC 60601-2	General requirement for basic safety and essential performance
4.6	EMI/EMC Compliance	IEC 60601-1-2 ANSI C63.27	EMC requirements and testing Standard for evaluation of wireless coexistence
4.7	Battery standards	IEC 62133-2	Rechargeable lithium polymer battery
4.8	Port Interface	IEC 60529	Connectors with IP68 water ingress performance
4.9	Temperature sensor	ISO 80601-2-56	Clinical validation of temperature

Requirement ID	Tests/Classification	Compliance Standard	Description
4.11	ECG signal quality	AAMI EC13	Performance requirement for ECG signal quality
4.12	Ambulatory ECG monitoring	IEC 60601-2-27	Ambulatory ECG monitoring intended for continuous monitoring over an extended period
4.13	Cardiac arrhythmia	IEC 60601-2-51	Detection of certain cardiac arrhythmias
4.14	Pulse oximeter and PPG	IEC 80601-2-59	Heart Rate and SpO ₂ calculation
4.15	Bio-markers	-	Standard compliance with respect to bio-medical safety standards

The device shall comply above mentioned pre-liminary standards. The compliance matrix for applicable standards with respect to device qualification shall be reviewed in respective design review committee/ RFP-WHMS committee (during design phase).

5. Development Cycle

5.1 WHMS Realization

The package realization consists of four main phases

- I. Design Phase
- II. Fabrication
- III. Testing
- IV. Qualification and Acceptance

a) Design Phase

The design shall absorb all user requirements and specification as described in the previous sections for WHMS. It should also cater for any requirement change projected by DEPARTMENT during the course of system development. The design shall consider the environmental conditions under which the system will be deployed. The operating conditions shall include all human spaceflight rated environmental levels i.e., vibration, shock, thermal, vacuum. In addition to environmental testing levels Electromagnetic Interference (EMI)/ Electromagnetic Compatibility (EMC) considerations, safety aspects also shall be considered. Design reviews will be carried out by teams identified by the HSFC to review and clear the technical aspects and overall system realization plan. Representatives from HSFC, ISRO will participate as co-developers during the course of system development.

b) Fabrication

The component selection, PCB layout design shall be as per ISRO/MIL-STD guidelines. Proper component de-rating and testability aspects should also be considered during fabrication.

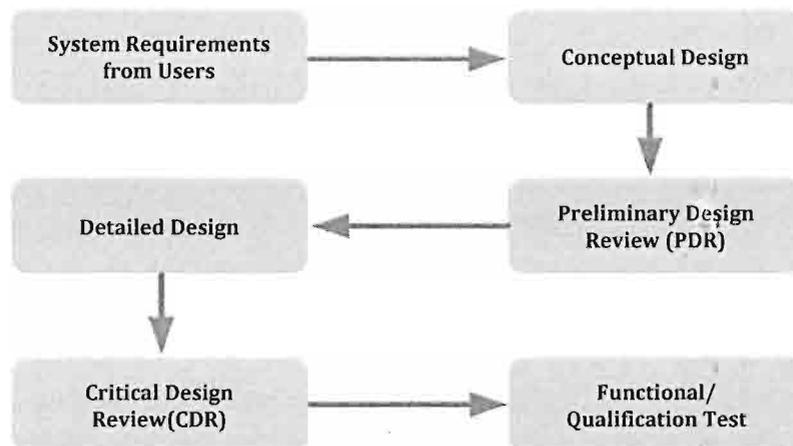


Figure 5-1: Package development cycle

RW

c) Testing Qualification and Acceptance Phase

The detailed test plan and check list have to be jointly worked out by INDUSTRY and DEPARTMENT. It should be reviewed in the identified design review forums (RFP-WHMS). The approved test plan shall be used to evaluate the performance of the system and the results should be reported back to the review forum.

The Engineering Model (EM) shall demonstrate all functional aspects of the WHMS system. However, the Qualification and proto-flight qualification levels shall be defined by the department during PDR review of the system by RFP-WHMS committee.

5.2 Responsibilities of Industry - Technical

- 5.2.1. Design of system as per the approved norms of DEPARTMENT considering electrical, mechanical and environmental aspects.
- 5.2.2. Realization and testing of system as per the DEPARTMENT approved test plan.
- 5.2.3. To ensure that all quality procedures are complied with.
- 5.2.4. To present technical, commercial and management issues to WHMS RFP committee for smooth execution of contract.
- 5.2.5. Handing over of all the design data and documents including the blueprints and intellectual property rights to DEPARTMENT.

5.3 Responsibilities of DEPARTMENT - Technical

- 5.3.1. Issue appropriate documents for system realization.
- 5.3.2. Formation of design review team and involved with industry to finalize design of each sub-system and algorithm.
- 5.3.3. To carry out mandatory quality surveillance during the entire process of fabrication, assembly & testing, quality assurance, quality auditing and certification of the deliverables.
- 5.3.4. Final Testing and qualification of package before acceptance.
- 5.3.5. Organizing periodical WHMS RFP committee meetings to ensure smooth execution of the contract.

5.4 ABSOLUTE RESPONSIBILITY

Throughout the currency of the contract, the industry shall be solely responsible for the correctness, accuracy and sufficiency of the systems' design, acceptance, calibration and testing documents. Any clearance given by the DEPARTMENT shall not absolve the industry of their responsibility in executing the contract in full conformity with the specifications.



The DEPARTMENT reserves the right at any time to modify the qualitative and quantitative requirements, specifications or drawings relating to the work that needs to be executed by the industry.

6. Party Qualification/ Selection Criteria

The qualification criteria for the award of the order relies in capability to build the product with respect to the approved specification from the RFP-committee and the lowest bid quoted through the parties (order shall be two part). The parties will be called for pre-bid and their technical selection or qualification criteria will be reviewed by RFP-WHMS committee.

Party/ vendor's quote shall comprise details of the cost of each sub-system i.e., sensors, bio-vest, wearable device, bio-maker device, developmental cost etc. Considering, the independent architecture of Bio-marker based analytical device and the quotes received from the vendors, order for individual system (wearable and bio-maker device) may be re-reviewed by RFP-WHMS committee.

6.1 Submission Requirements

In order to evaluate the party's capabilities following information to be submitted by the participating agencies:

6.1.1	Enterprise profile	Details to be furnished
1.A	<u>Business entities</u> involved in development, sales and marketing of wearable health monitoring devices	<ul style="list-style-type: none"> • Company name & address • Business Registration details • Product & services portfolio • Details of users/clients • Last three years' financial statement • MSME category based on investment & turnover • Details of in-house human resource • Details of collaborations – if any
1.B	<u>Start-ups (DPIIT registered)</u> involved in development, sales and marketing of wearable health monitoring devices	<ul style="list-style-type: none"> • Company name & address • DPIIT Registration details • Profile of founder members and leads • Products & services portfolio • Funding stage & Valuation details • Details of in-house human resource • Details of collaborations – if any
6.1.2	Technical capability	Details to be furnished
2.A	<u>Business entities</u> involved in development, sales and marketing of	<ul style="list-style-type: none"> • Details of prior experience in design, development and qualification of medical devices (wearable/ non-wearable)

	wearable health monitoring devices	<ul style="list-style-type: none"> • Details of in-house design, qualification and manufacturing facilities • Certification compliance and details
2.B	<u>Start-ups (DPIIT registered)</u> involved in development, sales and marketing of wearable health monitoring devices	<ul style="list-style-type: none"> • Details of product development in wearable/non-wearable medical devices • Details of benchmarking the device with standard medical equipment • Details of in-house technical expertise and facilities
6.1.3	<u>Brief description/ project execution plan of proposed product</u>	<ul style="list-style-type: none"> • For existing device which meets major requirement: Brief description of solution including hardware & software • For a device which is under development - brief description of development status and further plans • For new device development – brief description of technology and validation challenges. Also explain the roadmap for execution of the project.

6.2 Technical Qualification Criteria

The evaluation criteria to pre-qualify parties participating in the EOI is tabulated in the following table: (ECN: Evaluation Criteria Number)

ECN	Evaluation Criteria	Score	
		Business entities	Start-ups
6.2.1 Enterprise profile			
A.	Company name & address with business registration details	5	5
B.	Products & services portfolio	5	5
C.	Last three years' financial statement	5	NA
D.	DPIIT registration details, profile of founding members and leads	NA	5
E.	Details of users/clients and collaborations	5	5
Sub-total (6.2.1)		20	
6.2.2 Technical capability			
A.	Prior experience in design, development and qualification of wearable/ non-wearable medical devices	10	NA
B.	Existing product in wearable/non-wearable health monitoring segment	NA	10

C.	Design documentation of developed/underdevelopment product	10	10
D.	Certification compliance and details	5	NA
E.	Benchmarking the device with standard medical equipment	NA	5
F.	Adequacy of in-house technical resources for design and development	5	5
Sub-total (6.2.2)		30	
6.2.3 Brief description of proposed health monitoring system			
A.	System configuration for Wearable device and its interface with bio-vest	20	20
B.	System configuration for Bio-marker based analytical device	15	15
C.	System configuration of complete Wearable Health Monitoring System	15	15
Sub-total (6.2.2)		50	
<u>Total Maximum Score</u>		100	
<u>Minimum score for pre-qualification to price bid</u>		60	

6.3 Scoring Scheme

The table below draws the scheme for evaluation criteria, referring the Evaluation Criteria Number (ECN) from above table:

ECN	Scoring Scheme	Remarks
6.2.1. A.	<ul style="list-style-type: none"> Score of 5 rewarded, if all details are furnished 	Non-submission of details will lead to disqualification
6.2.1. B	<ul style="list-style-type: none"> Score of 5 rewarded, if portfolio comprises of clinical-grade or research-grade medical devices Score of 2 rewarded, if portfolio comprises of consumer-grade medical devices 	Portfolio not fitting in medical domain will lead to disqualification
6.2.1. C/D	<ul style="list-style-type: none"> Score of 5 rewarded, if financial statement is audited by third-party Score of 2 rewarded, if financial statement is internally audited 	Non-submission of details will lead to disqualification
6.2.1. E	<ul style="list-style-type: none"> Score of 5 rewarded, if all details are furnished 	
6.2.2. A/B.	<ul style="list-style-type: none"> Score of 7 rewarded, if experienced in design & development Score of 3 rewarded, if experienced in manufacturing/ Qualification 	

	<p>Score will be a sum of all the mentioned aspects</p> <ul style="list-style-type: none"> • Score of 7 rewarded, if similar product is commercially available (for start-ups) • Score of 7 rewarded, if product is developed & under development/ limited trial 	
6.2.2. C	Scoring will be on the discretion of RFP-WHMS committee based on design concept, hardware configuration, software architecture, test plan and user manual	Non-submission of details will lead to disqualification
6.2.2. D/E	<ul style="list-style-type: none"> • Score of 5 rewarded, if details are furnished Score of 0 rewarded, in either case 	
6.2.2. F	<ul style="list-style-type: none"> • Score of 5 rewarded, if details are furnished • Score of 0 rewarded, in either case 	
6.2.3. A	Scoring will be on the discretion of RFP-WHMS committee, under the metrics including design concept, technical constraint, hardware configuration, software architecture and test plan/project execution strategy. However, preference will be given to the parties who provide overall combined (Wearable + bio-marker) and feasible solution	Submission of system configuration of the proposed device is mandatory for consideration of pre-qualification
6.2.3. B.		
6.2.3. C		

7. Delivery Schedule & Payment Milestones

Table 7.1: Description of delivery schedule and payment milestones

R

Sl. No.	Work Package	Duration	Payment
1.	Placement of Purchase Order	T0	20 %
2.	Review of Design Document – Preliminary Design Review (PDR)	T1 = T0 + 3 months	-
3.	Review of Software Specification Document and Test Plan Document	T2 = T1 + 2 months	10 %
4.	Proto Flight Model (P-FM) Realization	T3 = T1 + 9 months	20%
5.	Testing, qualification and acceptance	T4 = T3 + 3 months	10%
6.	Review of test outcome Critical Design Review (CDR)	T5 = T4 + 1 month	-
7.	System deliverable along with all applicable documents, reports and user manual	T6 = T5 + 2 months	40%

- T0: Date of Purchase Order (PO) placement
- The total deliverable quantity is as defined in table 2-1.
- ISRO reserves the right to increase or decrease the deliverable quantity based on dynamic project needs.
- The payment w.r.t. defined milestones shall be made as per Part-B, Commercial Terms and Conditions, section 6.

8. Acceptance And Rejection

- 8.1. Responsibility for communicating acceptance and / or rejection of payment milestones with the DEPARTMENT.
- 8.2. The final acceptance of work package against each payment milestone shall be based on the conformity of procedures with applicable documents.
- 8.3. In the event of non-conformances noticed during any stage, the DEPARTMENT may consider for acceptance of the non-conforming product for partial payment. The perusal of such cases & recommendation relating to part payment would be carried out by HSFC/WHMS-RFP committee.

8.4. Short-term closure: For repeated non-performance/ conformance by the party and if party deviates from the ISRO's purchase and accounts guidelines

9. Changes And Modification

- 9.1. The DEPARTMENT reserves the right at any time to modify the qualitative and quantitative requirements, specifications or drawings relating to the work that needs to be executed by the industry.
- 9.2. The DEPARTMENT may also consider modifications, if any, proposed by the industry on their own initiatives.
- 9.3. Unless the DEPARTMENT directs otherwise, the industry shall in either case, submit within a reasonable time limit, an estimate of the effect of any such modification. In the light of these estimates, the DEPARTMENT shall decide whether and if so at what stage, the modification is to be introduced and advise the industry in writing together with the DEPARTMENT's new limits of liability within thirty days of receipt of the details by the industry.
- 9.4. When a modification or other change is so authorized, the industry shall proceed with action in accordance with the DEPARTMENT's direction. The industry shall, moreover, as soon as possible after the receipt of such directions submit to the DEPARTMENT a firm and detailed estimate showing any decrease or increase in cost owing to the modification and any effect on the delivery schedule on its introduction.

10. Documentation

The industry shall:

- Present all documentation in a manner consistent with good commercial practice in content and quality of material as well as reproduction
- Present the documents in their customary formats provided such formats meet the requirements stated above and are acceptable to the DEPARTMENT

The industry shall maintain the following documents and should also adhere to the documents mentioned in section 20.2 of commercial terms and condition part.

- I. Project Plan
- II. Progress Report
- III. System Design Document
- IV. Software Specification Document
- V. Test Plan Document
- VI. Test Report
- VII. Product Assurance Plan/ Quality plan

R2

**B. COMMERCIAL TERMS
&
CONDITIONS**

1. General

- 1.1 Conditions hereunder, the documents as per Annexures and drawings hereto form an integral part of this RFP and are complementary to each other.
- 1.2 The Party shall not give any publicity of any kind of whatsoever regarding this RFP to anyone without the prior written approval of the Department.

2. Administering Authorities

The Department and the Party shall have to identify the following administering authorities for specific functions, as mentioned against each.

2.1. Contract Managers

A Contract Manager has to be identified from both the Department and the Party for executing the Contract effectively. GD/DD, CTBG/HSFC will be the Contract Manager from the Department, and Party shall identify the Contract Manager from the Party side. They shall also be ultimately responsible for the overall performance of the Contract. A suitable organizational structure shall be put in place to support the Contract managers.

2.2. RFP Review Committee (RFP-WHMS)

A **Joint Working Committee named RFP-WHMS** is a technical cum need aspect review forum to evaluate the technical terms and conditions for the development of the product.

3. Organization of Work

- 3.1 The Party shall identify key persons for critical activities. They shall be replaced only by persons of equivalent qualification, knowledge, and experience and with the prior intimation to the Department in writing.
- 3.2 Party shall ensure that the progress of the work under the Contract shall not be affected due to the absence of the key personnel.
- 3.3 The Party shall identify all the personnel responsible for executing the job with clear demarcation of work, and the same shall be informed to the Department.
- 3.4 Party shall provide all Process documents, Plans, Reports, Registers etc. as envisaged.
- 3.5 Party shall provide the necessary support to the visiting team from the Department for carrying the tasks envisaged in the Contract.

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4. Contract Type, Prices and Pattern for Quote

- 4.1 The Department reserves the right not to award Contract to any Party without assigning any reasons.
- 4.2 The Department follows L1 evaluation criteria subject to technical evaluation as mentioned in Part A: Technical terms and conditions, section 6.2.
- 4.3 This Contract shall be “Firm & fixed price” basis for the entire Contract period.
- 4.4 The offers to be submitted shall contain the price break up as detailed subsequently in section 26 (Price Bid format).

5. Instruction for Submitting Quote:

- 5.1 The prices quoted shall be inclusive of the cost of shield material and bought out items.
- 5.2 The taxes applicable along with their percentage of rates and commercial terms shall be clearly mentioned in the Part-1: Technical and commercial bid.
- 5.3 Prices quoted shall be in Part -B: (Price Bid).
- 5.4 The prices for delivery shall be on for Bengaluru basis

6. Milestone & Payment terms:

The payment shall be made against the completion of following milestones

- 6.1 20% of total order value as advance after signing the Contract against Bank Guarantee for equivalent sum with validity till the receipt of wearable health monitoring system at Bengaluru.
- 6.2 10 % after completion of review of Software Specification Document and Test Plan Document by the Joint Working Committee against submission of Bank Guarantee for equivalent sum with validity till the receipt of devices for the flight hardware at Bengaluru.
- 6.3 20% after realisation of Proto Flight Model (P-FM) against submission of Bank Guarantee for equivalent sum with validity till the receipt of devices for the flight hardware at Bengaluru.
- 6.4 10% after completion of qualification tests and approval of design document and test results by the Joint Working Committee against submission of Bank Guarantee for equivalent sum with validity till the receipt of devices for the flight hardware at Bengaluru.
- 6.5 40% of the total order value after the receipt of all the mentioned WHMS devices at Bengaluru.

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7. Bio-sensor/textile materials

- 7.1 The Party shall be responsible for procuring the suitable bio sensors and material required for the fabrication of wearable health monitoring systems for carrying out validation tests based on the specifications and quality protocols given by the Department.
- 7.2 The Party shall be responsible for realizing at their own cost all other materials like Tooling/Fixtures/templates/Handling, assembly, test fixtures, consumables, etc., which may be required for the realization, assembly and testing of the debris shields under this Contract.

8. Transfer or Sub-Letting of Contract

The Party shall not be permitted to transfer or sub-let the work under the Contract either in whole or in part other than tie up indicated in the offer for the fulfillment of the Contractual obligations vested with them.

9. Secrecy

- 9.1 The technical information, drawings, specifications, and all related documents forming part of the RFP and Contract and exchanged between Department and the Party to each other shall not be used for any other purpose except for execution of the Contract. All rights for materials supplied by the Department, including rights in the event of grant of patent and registration of design, are reserved by the Department. The technical information, drawings, specifications, and any other documents shall not be modified divulged and/or disclosed to any third Party except with the written consent of the Department.
- 9.2 The drawings and documents sent along with the proposed Contract shall form part of vital documents, and the same should be kept confidential. Under any circumstances, the Party shall not part with or transfer the technology/contents of drawings and documents whatsoever to any third Party/agency without the Department's prior written consent. If at any time, it is brought to the Department's notice that the documents have been transferred by Party intentionally or otherwise to any third Party/agency, Party shall be liable to indemnify the loss/damage incurred by the Department. Also, the Department reserves its rights to resort to legal remedies as per applicable law.
- 9.3 The Party shall not take any document/process sheet/data of the results / CD etc. issued to them containing work details to, outside the place of work in any form.
- 9.4 The Party or, his employees, shall not divulge any information that is made known to him across to any person not authorized to receive such information.



- 9.5 Any violation of secrecy, detected at any time of the Contract, by any of the employees of the Party shall attract serious consequences. The Party shall execute necessary remedial action & submit the report, failing which Department can terminate Contract itself as deemed fit.
- 9.6 The plant designs, the process of manufacture, etc. whether or not protected by patent, are to be strictly treated as secret & the Party shall not disclose any details of the above to any unauthorized person or to any other Party not directly linked with the Department and shall not use the same for any other purpose.

10. Deviation of Any Process / Inspection Procedures

Party shall not deviate from any of the approved process documents or inspection procedures unless Department approves either by waiver or amendment to the concerned process documents or inspection procedures in writing.

11. Amendment to the Contract

Modifications or amendments to the Contract shall be affected only in writing, after the recommendation of RFP-WHMS signed by the Department and the Party's authorized representatives exercising their mutual consent to the modifications or amendments involved.

12. Warranty

The Vendor shall remedy at their expenses, the defects solely attributable to faulty workmanship that may appear in shield materials under the proposed Contract within a period of three year from the date of their acceptance by the Department.

13. Publicity Relating to The Contract

Advertisements, press releases, or other specialized publicity documents that are related to or reveal the existence of the Contract and are intended by the Party for public distribution and/or the press, broadcasting or television shall be notified to the Department. The Party should get written consent from the Department for any publicity/news/paper presentation, etc.

14. Packing, Forwarding, and Delivery

- 14.1 Party shall submit the storage and handling conditions of the health monitoring system, and RFP-WHMS shall review the same. After committee's approval, the Party shall ensure the materials are packed and

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transported as per the conditions approved by committee, using containers realized by Party.

14.2 Following dispatch documents shall be dispatched along with each consignment, as applicable:

- Commercial Invoice
- Delivery note.
- Inspection reports including visual inspection reports as applicable.
- Following technical documents shall accompany deliveries:
 - (a) Product Design Reports
 - (b) Dimensional inspection report & NDI reports.
 - (c) Non-Conformance reports.
 - (d) Non-conformance Review Board action closure reports, if any.
 - (e) Action closure reports.
 - (f) Qualification & Acceptance test reports.
 - (g) Quality clearance/ Product compliance reports from INDUSTRY's side.
 - (h) Pre-Dispatch Review Clearance by RFP-WHMS

15. Storage:

The final accepted health monitoring system shall be stored in safe custody until they are delivered to the Department. The Party shall ensure that a separate space is identified for the storage of the items related to this Contract to avoid mix up with other hardware/items.

16. Packaging & Forwarding:

The Party shall arrange for safe packing of the shield materials with all supporting documents, and delivery shall be on For Bengaluru basis.

17. Indemnity

The Party shall indemnify the Department against any action, claim or proceedings relating to infringement of all or any of the prevailing labour laws in country of origin during the currency of the Contract.

18. Intellectual Property Right

The ownership of intellectual property rights, whether statutorily protected or not and generated in the course of or resulting from work undertaken for the purpose of this Contract, shall vest with the Department.

The Party is strictly forbidden to make use of or transfer the technology gained in the course of executing the Contract to manufacture by themselves or transfer for use, the same to the third Party.

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19. Non-Disclosure Agreement

The Party and Department have to sign a Non-Disclosure Agreement before the placement of the purchase order.

20. The validity of The Contract

The Contract shall remain valid for a period of **24 months** from the date of signing the Contract (or) until the supply of the last batch of the monitoring system of the Contract, whichever is later.

21. Short Closing / Termination of Contract

Under normal circumstances, short-closing/termination of the Contract is not foreseen. However, in case of continued non-performance of the Party resulting in inordinate delays in the delivery dates in spite of repeated written requests for meeting the delivery schedule as provided for in the Contract, the Department reserves the right to terminate wholly or partly the Contract by giving a notice of not less than one month.

In case of major changes in the policies of the Government of India as a result of which the Department may curtail its requirements wholly or partly, the Department and the Party shall enter into negotiations to mutually agree to terminate this Contract wholly or partly.

In the event of short-closing/termination of the Contract, the following procedure shall be followed:

- a) The Department shall give a notice of not less than one month.
- b) On receipt of the notice, the Party shall take all necessary steps for winding up of the Contract in line with the notice within a reasonable period, but in any case, not exceeding three months from the date of posting the notice.
- c) The compensation to be paid to the Party shall be agreed to by mutual negotiations. The Department shall, in no circumstances, be liable to pay any sum which, when added to the other sums paid, due or becoming due to the INDUSTRY under this Contract, exceeds the value of this Contract.

22. Party's/Manufacturer's default liability:

The Department reserves the right to terminate the Contract in whole or in part as per its discretion and also under the circumstances noted below, giving sufficient notice to the Party:

- (i) If the Party commits a breach of any of the terms of the Contract.



- (ii) If the Party fails to rectify, reconstruct, or replace any defective part/assembly within a reasonable period mutually agreed to after the Department has given a notice to this effect.

23. Safety

The Party shall ensure strict compliance of the provisions of the Factories Act and the Workman's Compensation Act applicable in the Party's country. Any liability for the persons employed shall be the responsibility of the industry.

24. Disposal of Waste

- 24.1 All the scrap generated during the realization of test hardware using Departments' FIM or Party procured materials shall be disposed by the Party. While quoting, the Party shall consider the same.
- 24.2 The Party shall dispose waste products/materials generated during the process by following procedures and safety norms laid down by the Government Statutory authorities.

25. Other Points

All registers & records maintained by the Party shall be returned to the Department at the end of the Contract or termination of the Contract, as applicable.

26. Offer Evaluation (Price Bid Format):

Offer received will be evaluated based on technical conformance submitted by the Party as per section 11 of technical terms and conditions. Price bid shall be submitted in the following format

SI No	Description	Price In Currency
1	Unit cost for individual sub-system of Wearable Health Monitoring System a) Wearable device: a.1 Bio-sensors a.2 Bio-vest a.3 Acquisition Unit b) Analytical Bio-marker device with sample collection kits c) Host/ Processing System	

	d) development of GUI/ applications and Interface Services	
2	Unit cost for realisation of deice firmware/ Algorithms and software	
4	Warranty (3 years)	
5	Qualification test and Certifications for the health monitoring System	

- Warranty includes CAMC, Training and Upgradation support

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