

No. : 25912241,25869371  
 Fax. No. : 25869661,25869316



Government of India  
 Ministry of Defence  
 Defence R & D Organisation (DRDO)  
 High Energy Materials Research Laboratory  
 Armament Post  
 Sutarwadi  
 Pune - 411021

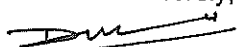
### ONLINE INVITATION OF BIDS

Invitation of Online Bids for TAM (THERMAL ACTIVITY MONITOR) WITH ACCESSORIES AS PER SPEC. NO. HEMRL/QARD/2022/SPEC/TAM/186

Request for Proposal (RFP) for RFP No. HEMRL/25FET001/CP dated 10-Feb-2025

1. Online Bids are invited for supply of items listed in Part-V of this RFP as per Two Bid. The online bid (both techno-commercial and price bid) should be uploaded by bidder before the due date and time.
2. The address and contact numbers of sending documents (viz. EMD (Bid Security), Tender Fee, Earnest Money for Integrity Pact and signed Integrity Pact document (if applicable) / Technical Brochure if any) other than techno-commercial and financial bids being submitted in electronic mode or seeking clarification regarding this RFP are given below:
  - a. Queries to be addressed to : **The Director HEMRL**
  - b. Postal address : **Armament Post  
Sutarwadi  
Pune - 411021**
  - c. Name and Designation of contact Officer : **Dr. DEBDAS BHOWMIK  
SCIENTIST F**
  - d. Telephone No(s) of contact Officer : **+02025912241**
  - e. Fax number(s): **25869661,25869316**
  - f. email-ID of contact Officer : **mmd.hemrl@gov.in**
3. This RFP is divided into 6 (SIX) parts as follows :
  - i. **Part I (A)** contains **General Information and Instruction for the Bidders** about the RFP such as the time, online submission and opening of Bids, Validity period of Bids, etc. **Part I(B)** contains Tender Acceptance Letter to be filled by the Bidder and uploaded in cover 1.
  - ii. **Part II (A)** contains **Standard Terms and Conditions of RFP**, which will form part of the Contract / Supply Order (herein after referred as the Contract) with the successful Bidder(s). **Part II (B)** contains instructions for online submission of Bids. The terms and conditions of **Part II (A) and Part II (B)** which are to be followed for each RFP issued by DRDO are available under Standard Document on defproc.gov.in and DRDO Website ([www.drdo.org](http://www.drdo.org))
  - iii. **Part III** contains **Special Terms and Conditions** applicable to this RFP and which will also form part of the Contract with the successful Bidder(s).
  - iv. **Part IV** contains **Vendor Qualification Criteria. [Attached]**
  - v. **Part V** contains **Details of the Store(s) / Service(s) Required** e.g Technical Specifications, Delivery Period, Mode of Delivery, Consignee details, etc.
  - vi. **Part VI** contains **Format of Price Bid**. Price bid needs to be filled and uploaded as per Supplied Format only.
4. This RFP is being issued with no financial commitment and the Buyer reserves the right to change or vary any part thereof or foreclose the instant procurement at any stage. The Buyer also reserves the right to disqualify any vendor, should it be necessary, at any stage on grounds of National Security.
5. You may contact The Director HEMRL for any grievance related to bidding condition, bidding process and / or rejection of bid. With regard to bidding condition, this shall be done in writing at least seven days in advance of the stipulated date of submission of bid.

Yours sincerely,

  
 ( Dr. D. Bhowmik, SCF )  
 for The Director HEMRL  
 For & on behalf of President of India

## PART-I(A) - GENERAL INFORMATION AND INSTRUCTIONS

### 1. Pre-Bid Conference

A pre-bid meeting will be held at 11:00 hrs on 04-MAR-2025 at MMD Conference Hall to answer any queries or to clarify doubts regarding submission of proposals. Bidders or their authorized representatives (duly authorised in writing) are invited to attend. This event will not be postponed due to non-presence of your representative.

### 2. Last Date and Time for Uploading the Bids

2.1 As specified in defproc.gov.in

The online Bids (both Techno-Commercial and Price bid, in case of two bids system) should be uploaded by the due date and time. The responsibility to ensure this lies with the Bidder.

### 3. Location of the Tender Box

3.1 Tender Box is located at HEMRL Security Gate (for receipt of documents such as EMD (Bid Security), Tender fee, Earnest Money for Integrity Pact and signed integrity pact document (if applicable) / Technical Brochure, catalogues if any, other than techno-commercial and financial bids being submitted in electronic mode).

### 4. Manner of Uploading / Deposition of Bids

4.1 Bids (both Techno-Commercial and Price bid, in case of two bids system) is required to be submitted online on Portal (<https://defproc.gov.in>). Bids sent by Post/FAX or e-mail will not be considered.

### 5. Time and Date for opening of Bids :

5.1 Bids will be opened online as specified on defproc.gov.in. If due to any exigency, the due date for opening of the bids is declared a closed holiday, the bids will be opened on the next working day at the same time or on any other day / time, as intimated by the buyer.

### 6. Place of Opening of the Bids :

6.1 Bids will be opened online only.

### 7. Marking of Bids

7.1 Envelope containing documents such as EMD, Tender Fee, Earnest Money for Integrity Pact and signed Integrity Pact document (if applicable) / Technical Brochure, if any, must be clearly marked with Tender Reference No. and Date of opening

### 8. Procedure for Submission of Bid

#### 8.1 For Online Bids

Bids would be submitted as per standard online e-procurement procedure for Single Bid/Two bid System. The original tender fee , EMD instrument (if applicable), Earnest Money for Integrity Pact and signed Integrity Pact document ( if applicable) / Technical Brochure, if any should be sent in an envelope duly marked with tender reference no. and addressed to Director, on or before ``Bid submission end date and time``. In case Original tender fee and EMD instrument (if applicable) are not received on or before ``Technical bid opening date and time``, bid of such bidders will summarily be rejected.

### 9. Forwarding of Bids

9.1 Bids should be submitted by Bidders online only, under the firm`s memo / letter pad inter alia furnishing details like GSTIN number, Bank address with NEFT Account if applicable, etc. and complete postal and e-mail address of firm`s office failing which the bid would not be considered.

### 10. Clarification Regarding Contents of the RFP

A prospective bidder who requires clarification regarding the contents of the bidding documents shall notify to the Buyer in writing about the clarifications at least 7 (seven) days prior to the date of opening of the Bids. Copies of the query and clarifications by the purchaser will be sent to all prospective bidders who have received the bidding documents from the lab and would be posted on the website.

### 11. Indian firms need to quote only in Indian Rupees

Bidders must submit Quotation pertaining to themselves only. An Indian firm can quote in FE on behalf of their OEM only if they are either a 100% subsidiary of the OEM or an Indian Agent of the foreign OEM in accordance with their agency agreement. The firms claiming to be:

- a) A 100% subsidiary would be required to produce documentary evidence in support of their claim along with their Techno-Commercial bid failing which their bid would be disqualified.
- b) An agent of foreign OEM, for submitting the offer on behalf of OEM, would be required to produce a copy of their agency agreement with the principals and a copy of registration/enlistment with DRDO/Ministry of Defence as an Indian agent, if registered/enlisted, along with their Techno-Commercial bid, failing which the bid would be disqualified. It would be mandatory for an Indian agent to get registered / enlisted with DRDO/Ministry of Defence as an Indian agent of OEM prior to evaluation of their Price bid, failing which their bid also would be disqualified.

## 12. Validity of Bids

The Bids should remain valid for 180 days from the date of opening of Bids.

## 13. Modification and Withdrawal of Bids

13.1 If a bidder intends to modify or withdraw his Bid after online submission, it can be done through selection of appropriate option available on the [defproc.gov.in](http://defproc.gov.in) portal.

## 14. Earnest Money Deposit (Bid Security)

14.1 "Bidders are required to submit Earnest Money Deposit (EMD) instrument, in favour of The Director HEMRL, Pune, for amount of Rs. 1800000.00 in Indian Rupee only along with their bids. In case of two bid system, EMD shall be enclosed in the envelope containing the Techno-Commercial bid for Offline Tenders and for online upload scanned copy of EMD on website. The EMD may be submitted by Indigenous bidder in the form of an Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee. In case of foreign bidder, EMD is to be submitted in the form of appropriate Bank Guarantee from a first class bank of international repute. EMD is to remain valid for a period of forty-five days beyond the final bid validity period. EMD of the unsuccessful bidders will be returned to them, without any interest whatsoever, at the earliest after expiry of the final bid validity and latest on or before the thirtieth day after the award of the Contract.

EMD of the successful bidder would be returned without any interest whatsoever after the receipt of Performance Security Bond from them as called for in the Contract. EMD is not required to be submitted by those Bidders who are registered with the National Small Industries Corporation (NSIC), Departments of MoD, other DRDO labs and as per the policy of Government of India in vogue. Such bidders would be required to furnish the relevant documents in their Techno-Commercial bid in support of the claim. The EMD will be forfeited if the Bidder withdraws amends, impairs or derogates from the tender in any respect within the validity period of their tender.

In case original Tender Fees and EMD instrument (if applicable) are not received on or before ``techno-commercial bid opening date and time``, bid of such vendors will summarily be rejected."

### 14.2 Bid Security Declaration

Bidders may submit a Bid securing declaration accepting that if they withdraw or modify their Bids during the period of validity, or if they are awarded the contract and they fail to sign the contract, or to submit a performance security before the deadline defined in the request for bids document, they will be suspended for the period of upto 2 years from being eligible to submit Bids for contracts with the any procuring entity of DRDO.

## 15. Clarification Regarding Contents of the Bids

During evaluation of bids, the Buyer may, at his discretion, ask the bidder for clarification(s) on the Bid(s). The request for clarification will be given in writing. No clarification on the initiative of the bidder will be entertained after opening of bid.

## 16. Rejection of Bids

Canvassing by the Bidder in any form, unsolicited letter and post tender correction may invoke summary rejection with forfeiture of EMD. Conditional tenders will be rejected. Non-compliance of applicable General Information will disqualify your Bid

## 17. Unwillingness to Quote

Bidders unwilling to quote should ensure that intimation to this effect reaches before the due date and time of opening of the Bid, failing which the defaulting Bidder may be de-registered for the range of items in this RFP,

as per the policy in vogue

**18. Debarred/blacklisted firms**

Bids of debarred/blacklisted firms will not be considered for evaluation

**19. Document to be submitted with Techno-commercial Bid:**

The following documents are to be furnished by the Bidder in Cover-1 along with Techno Commercial Bid as per the tender document:

19.1 Signed and Scanned copy of appropriate valid company registration certificate or partnership deed (if applicable), experience certificate as required, PAN No and Tender Acceptance Letter as per Part I (B).

19.2 Scanned copy of instrument used to provide Tender Fee and Earnest Money Deposit or Proof of Registration with DRDO/MOD/ NSIC etc.

19.3 Signed and Scanned Copy of legal Agency Agreement/100% Subsidiary Certificate/Registration as an Agent (if applicable). If not applicable kindly upload a pdf document indicating Not Applicable.

19.4 Signed and scanned copy of previous three years Income-tax/GSTIN /Affidavit of partnership firm. If not applicable kindly upload a pdf document indicating Not Applicable.

19.5 Signed and Scanned Copy of the Make and model of all the systems, sub systems and additional items as mentioned in the Techno Commercial Bid.

19.6 Scanned Copy of Proforma of End User Certificate for Export License (if applicable). If not applicable kindly upload a pdf document indicating Not Applicable.

Note :

The original Tender Fees and EMD Instrument along with complete technical details such as Brochures, catalogues and write-ups if any should also be sent by post/courier in an envelope, addressed to The Director HEMRL, Pune, positively on or before ``Bid submission end date``.

**20. Price Bid to be uploaded in Cover-2**

as specified in defproc.gov.in

**PART-I(B) - TENDER ACCEPTANCE LETTER (E-PROCUREMENT)**

**(TO BE FILLED BY BIDDER AND UPLOADED IN COVER 1)**

**(To be given on Company Letter Head)**

Date :

To,

The Director, HEMRL

Subject : Acceptance of Terms & Conditions of Tender.

Tender Reference No. and ID: \_\_\_\_\_

Name of the Tender / Work: \_\_\_\_\_

1. I / We have downloaded / obtained the tender document(s) for the above mentioned 'Tender / Work from the web site(s) namely \_\_\_\_\_ as per your advertisement, given in the above mentioned website(s)
2. I / We hereby certify that I / we have read the entire terms and conditions of the tender documents from Page No. \_\_\_\_\_ to \_\_\_\_\_ (including all documents like annexure(s), schedule(s), etc.), (duly filled Compliance table attached) which will form part of the contract agreement and I / we shall abide hereby by the terms / conditions / clauses contained therein.
3. The corrigendum(s) issued from time to time by your department/ organizations related to this tender too have also been taken into consideration, while submitting this acceptance letter.
4. I / We hereby unconditionally accept the tender conditions of above mentioned tender document(s) / corrigendum(s) in its totality / entirety
5. I / We do hereby declare that our firm/company has not been blacklisted/debarred by any Govt. Department/Public Sector undertaking.
6. I / We certify that all information furnished by the our firm/company is true & correct and in the event that the information is found to be incorrect/untrue or found violated, then your department/organization shall without giving any notice or reason therefore or summarily reject the bid or terminate the contract, without prejudice to any other rights or remedy including the forfeiture of the full said earnestmoney deposit absolutely.\n\n

Yours Faithfully,  
(Signature of the Bidder, with Official Seal)

**Compliance Table**

S.No.	Part of RFP	Compliance of Para / Sub Para of RFP (Yes / No)	Reasons for Compliance / Non-Compliance (if any)	Remarks

## PART-II(A) - STANDARD TERMS & CONDITIONS

The Bidder is required to give confirmation of their acceptance of the Standard Terms and Conditions of the RFP mentioned below which will automatically be considered as part of the Contract concluded with the successful Bidder as selected by the Buyer. Failure to do so may result in rejection of the Bid submitted by the Bidder.

### 1. Effective Date of the Contract

In case of placement of a supply order, the date of acceptance of the Supply Order would be the effective date. The firm should check the supply order and convey acceptance of the same within seven days of its receipt. If such an acceptance or communication conveying firm's objection to certain parts of the supply order is not received within the stipulated period, the supply order will be deemed to have been fully accepted by the firm. In case a contract is to be signed by both the parties, the Contract shall come into effect on the date of signatures of both the parties on the Contract (Effective Date) or as agreed during negotiations. The performance of the Contract shall commence from the Effective Date of the Contract/Supply Order.

### 2. Law

The Contract shall be considered and made in accordance with the laws of the Republic of India and shall be governed by and interpreted in accordance with the laws of the Republic of India.

### 3. Arbitration

All disputes or differences arising out of or in connection with the Contract shall be settled by bilateral discussions. Any dispute, disagreement or question arising out of or relating to the Contract or relating to product or performance, which cannot be settled amicably, shall be resolved by arbitration in accordance with any one of the following provision:

#### 3.1 Option 3(a) : For Defence PSUs

The case of arbitration shall be referred to the Secretary Defence (R&D) for the appointment of arbitrator(s) and proceedings.

#### 3.2 Option 3(b) : For Central Public Sector Enterprises (CPSEs)

In the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contract(s), such disputes or difference shall be taken by either party for resolution through Administrative Mechanism for Resolution of CPSEs Disputes (AMRC) as per provisions of Department of Public Enterprises OM No. 4(1)/2013-DPE (GM)/FTS-1835 dated 22-05-2018 as amended.

#### 3.3 Option 3(c) : For Other firms

The cases of arbitration may be referred to arbitrator / arbitrators appointed as per section 11 of Indian Arbitration and Conciliation Act, 1996 as amended and the proceedings shall be conducted in accordance with procedure of Indian Arbitration and Conciliation Act, 1996 as amended.

OR

The case of arbitration may be referred to International Centre for Alternative Dispute Resolution (ICADR) for the appointment of arbitrator and proceedings shall be conducted in accordance with procedure of Indian Arbitration and Conciliation Act, 1996 as amended.

Bidders need to select one of the above options

#### 3.4 Option 3(c) : For Other Firms

The cases of arbitration may be referred to arbitrator / arbitrators appointed as per section 11 of Indian Arbitration and Conciliation Act, 1996 as amended and the proceedings shall be conducted in accordance with procedure of Indian Arbitration and Conciliation Act, 1996 as amended.

OR

The case of arbitration may be referred to International Centre for Alternative Dispute Resolution (ICADR) for the appointment of arbitrator and proceedings shall be conducted in accordance with procedure of Indian Arbitration and Conciliation Act, 1996 as amended.

OR

The case of arbitration may be conducted in accordance with the rules of Arbitration of the International Chamber of Commerce by one or more arbitrators appointed in accordance with the said rules in India. However, the arbitration proceedings shall be conducted in India under Indian Arbitration and Conciliation Act, 1996 as amended.

Bidders need to select one of the above options

#### **4. Penalty for Use of Undue influence**

The Seller undertakes that he has not given, offered or promised to give, directly or indirectly, any gift, consideration, reward, commission, fees, brokerage or inducement to any person in service of the Buyer or otherwise in procuring the Contract or forbearing to do or for having done or forborne to do any act in relation to the obtaining or execution of the Contract or any other contract with the Government of India for showing or forbearing to show favour or disfavour to any person in relation to the Contract or any other contract with the Government of India. Any breach of the aforesaid undertaking by the Seller or anyone employed by him or acting on his behalf (whether with or without the knowledge of the Seller) or the commission of any offers by the Seller or anyone employed by him or acting on his behalf, as defined in Chapter IX of the Indian Penal Code, 1860 or the Prevention of Corruption Act, 1986 or any other Act enacted for the prevention of corruption shall entitle the Buyer to cancel the contract and all or any other contracts with the Seller and recover from the Seller the amount of any loss arising from such cancellation. A decision of the Buyer or his nominee to the effect that a breach of the undertaking had been committed shall be final and binding on the Seller. Giving or offering of any gift, bribe or inducement or any attempt at any such act on behalf of the Seller towards any officer/ employee of the Buyer or to any other person in a position to influence any officer/ employee of the Buyer for showing any favour in relation to this or any other contract, shall render the Seller to such liability/ penalty as the Buyer may deem proper, including but not limited to termination of the contract, imposition of penal damages, forfeiture of the Bank Guarantee and refund of the amounts paid by the Buyer.

#### **5. Agents / Agency Commission**

5.1 The Seller confirms and declares to the Buyer that the Seller has not engaged any individual or firm, whether Indian or foreign whatsoever, to intercede, facilitate or in any way to recommend to the Government of India or any of its functionaries, whether officially or unofficially, to the award of the contract to the Seller; nor has any amount been paid, promised or intended to be paid to any such individual or firm in respect of any such intercession, facilitation or recommendation. The Seller agrees that if it is established at any time to the satisfaction of the Buyer that the present declaration is in any way incorrect or if at a later stage it is discovered by the Buyer that the Seller has engaged any such individual/firm, and paid or intended to pay any amount, gift, reward, fees, commission or consideration to such person, party, firm or institution, whether before or after the signing of this contract, the Seller will be liable to refund that amount to the Buyer. The Seller will also be debarred from entering into any contract with the Government of India for a minimum period of five years. The Buyer will also have a right to consider cancellation of the Contract either wholly or in part, without any entitlement or compensation to the Seller who shall in such an event be liable to refund all payments made by the Buyer in terms of the Contract along with interest at the rate of 2% above (i) MCLR (Marginal Cost of Funds based Lending Rate) declared by RBI pertaining to SBI for Indian bidders, and (ii) London Inter Bank Offered Rate (LIBOR) / EURIBOR for the foreign bidders. The applicable rates on the date of opening of bid shall be considered for this. The Buyer will also have the right to recover any such amount from any contracts in vogue with the Government of India.

OR

5.2 The Seller confirms and declares in the Techno-Commercial bid that they have engaged an agent, individual or firm, for performing certain services on their behalf. The Seller is required to disclose full details of any such person, party, firm or institution engaged by them for marketing of their equipment in India, either on

a country specific basis or as a part of a global or regional arrangement. These details should include the scope of work and responsibilities that have been entrusted with the said party in India. If there is noninvolvement of any such party then the same also be communicated in the offers specifically. The information is to be submitted as per the format at DRDO.SA.01. Without prejudice to the obligations of the vendor as contained in various parts of this document, appointment of an Agent by vendors will be subjected to the following conditions:

- a) Details of all Agents will be disclosed at the time of submission of offers and within two weeks of engagement of an Agent at any subsequent stage of procurement.
- b) The Seller is required to disclose termination of the agreement with the Agent, within two weeks of the agreement having been terminated.
- c) Buyer /MoD reserves the right to inform the Seller at any stage that the Agent so engaged is not acceptable whereupon it would be incumbent on the Seller either to interact with Buyer / MoD directly or engage another Agent. The decision of Buyer /MoD on rejection of the Agent shall be final and be effective immediately.
- d) All payments made to the Agent 12 months prior to tender submission would be disclosed at the time of tender submission and thereafter an annual report of payments would be submitted during the procurement process or upon demand of the Buyer / MoD.
- e) The Agent will not be engaged to manipulate or in any way to recommend to any functionaries of the Govt of India, whether officially or unofficially, the award of the contract to the Seller or to indulge in corrupt and unethical practices.
- f) The contract with the Agent will not be a conditional contract wherein payment made or penalty levied is based, directly or indirectly, on success or failure of the award of the contract.
- g) On demand, the Seller shall provide necessary information/inspection of the relevant financial documents/information, including a copy of the contract(s) and details of payment terms between the Seller and the Agent engaged by him.
- h) If the equipment being offered by the Seller has been supplied /contracted with any organisation, public/private in India, the details of the same may be furnished in the technical as well as commercial offers. The Sellers are required to give a written undertaking that they have not supplied/is not supplying the similar systems or subsystems at a price lower than that offered in the present bid to any other Ministry/Department of the Government of India and if the similar system has been supplied at a lower price, then the details regarding the cost, time of supply and quantities be included as part of the commercial offer. In case of non disclosure, if it is found at any stage that the similar system or subsystem was supplied by the Seller to any other Ministry/Department of the Government of India at a lower price, then that very price, will be applicable to the present case and with due allowance for elapsed time, the difference in the cost would be refunded to the Buyer, if the contract has already been concluded.

Following details are also to be submitted in the Techno-Commercial bid:

- a) Name of the Agent
- b) Agency Agreement between the Seller and the Agent giving details of their contractual obligation
- c) PAN Number, name and address of bankers in India and abroad in respect of Indian Agent
- d) The nature of services to be rendered by the Agent and
- e) Percentage of agency commission payable to the Agent



## **6. Access to Books of Accounts**

In case it is found to the satisfaction of the Buyer that the Bidder/Seller has violated the provisions of use of undue influence and/or employment of agent to obtain the Contract, the Bidder/Seller, on a specific request of the Buyer, shall provide necessary information/ inspection of the relevant financial documents/information/Books of Accounts.

## **7. Non-disclosure of Contract Documents**

Except with the written consent of the Buyer/ Seller, other party shall not disclose the Contract or any provision, specification, plan, design, pattern, sample or information thereof to any third party.

## **8. Withholding of Payment**

In the event of the Seller's failure to submit the Bonds, Guarantees and Documents, supply the stores/goods and conduct trials, installation of equipment, training, etc. as specified in the Contract, the Buyer may, at his discretion, withhold any payment until the completion of the Contract.

## **9. Liquidated Damages**

The Buyer may deduct from the Seller, as agreed, liquidated damages at the rate of 0.5% per week or part thereof, of the basic cost of the delayed stores which the seller has failed to deliver within the period agreed for delivery in the contract. LD can also be levied on the Seller on the basic cost of the stores supplied partially within the scope of the order/ contract that could not be put to use due to late delivery of the remaining stores. The maximum quantum of LD would be 10% of the total order value.

## **10. Termination of Contract**

10.1 The store/service is not received/rendered as per the contracted schedule(s) and the same has not been extended by the Buyer

OR

The delivery of the store/service is delayed for causes not attributable to Force Majeure for more than 12 months after the scheduled date of delivery and the delivery period has not been extended by the Buyer

10.2 The delivery of store/service is delayed due to causes of Force Majeure by more than 12 months provided Force Majeure clause is included in the contract and the delivery period has not been extended by the Buyer

10.3 The Seller is declared bankrupt or becomes insolvent

10.4 The Buyer has noticed that the Seller has violated the provisions of use of undue influence and/ or employment of agent to obtain the Contract.

10.5 As per decision of the Arbitration Tribunal.

## **11. Notices**

Any notice required or permitted by the Contract shall be written in English language and may be delivered personally or may be sent by FAX/email or registered pre-paid mail/ airmail/e-mail, addressed to the last known address of the party to whom it is sent.

## **12. Transfer and Sub-letting**

The Seller has no right to give, bargain, sell, assign or sublet or otherwise dispose of the Contract or any part thereof, as well as to give or to let a third party take benefit or advantage of the Contract or any part thereof without written consent of the Buyer.

## **13. Use of Patents and other Industrial Property Rights**

The prices stated in the Contract/ SO shall be deemed to include all amounts payable for the use of patents, copyrights, registered charges, trademarks and payments for any other Industrial Property Rights. The Seller shall indemnify the Buyer against all claims from a third party at any time on account of the infringement of any or all the rights mentioned in the previous paragraphs, whether such claims arise in respect of manufacture or use. The Seller shall be responsible for the completion of the supplies including spares, tools, technical literature and training aggregates irrespective of the fact of infringement of the supplies or any or all the rights mentioned above.

## **14. Amendments**

No provision of the Contract / SO shall be changed or modified in any way (including this provision) either in

whole or in part except when both the parties are in written agreement for amending the Contract / SO.

## 15. Taxes and Duties

### 15.1 In respect of Indigenous Bidders

#### A. General

- a) If the quoted prices exclude GST / Local Tax or any other Statutory Duties/Taxes, the same must be specifically stated with applicable rates. In the absence of same, it will be presumed that the prices include all such charges and no claim for the same will be entertained.
- b) If reimbursement of any Duty/Tax is intended as extra over the quoted prices, the Bidder must specifically say so. In the absence of any such stipulation it will be presumed that the prices quoted are firm and final and no claim on account of such duty/tax will be entertained after the opening of tenders.
- c) If a Bidder chooses to quote a price inclusive of any duty/tax and does not confirm that duty/tax so included is firm and final, he should clearly indicate the rate of such duty/tax and quantum of such duty/tax included in the price. Failure to do so may result in ignoring any request for change of duty/tax at a later date due to any reason whatsoever.
- d) Any addition to duty/tax and change in any duty/tax upward/downward as a result of any statutory variation in duty/tax taking place within contract terms shall be allowed to the extent of actual quantum of such variation of duty/tax paid by the supplier. Similarly, in case of downward revision in any duty/tax, the actual quantum of reduction of such duty/tax shall be reimbursed to the Buyer by the Seller. All such adjustments shall include all reliefs, exemptions, rebates, concession etc., if any, obtained by the Seller.
- e) TDS as per Income Tax Rules will be deducted and a certificate to that effect will be issued by the Buyer/ Buyer's paying authority.

#### B. Customs Duty

Custom duty exemption Certificate will not be issued by the Buyer for components/ raw material imported by the Bidder. Bidder shall quote amount inclusive of Custom Duty as applicable.

#### C. GST

- a. GST rates will be considered as per the published rates by GST Authorities as amended from time to time.
- b. Unless otherwise specifically agreed to in terms of the Contract, the Buyer shall not be liable for any claim on account of fresh imposition and/or increase of GST on raw materials and/or components used directly in the manufacture of the contracted stores taking place during the pendency of the contract.
- c. Bidders are advised to specifically mention the rate of GST payable to facilitate correct evaluation of quotes. In the absence of such explicit declaration regarding %age of tax rate, it would be deemed that quoted prices include applicable GST.

#### D. Local Taxes

- a. Normally, materials to be supplied to Government Departments against Government Contracts are exempted from levy of Town Duty, Terminal Tax and other levies of local bodies. The local Town/Municipal Body regulations at times, however, provide for such exemption only on production of such exemption

certificate from any authorized officer, Seller should ensure that stores ordered against contracts placed by this office are exempted from levy of Town Duty, Terminal Tax or other local taxes and duties. Wherever required, firm should obtain the exemption certificate from the Buyer, to avoid payment of such local taxes or duties.

b. In case where the Municipality or other local body insists upon payment of these duties or taxes, the same should be paid by the Seller to avoid delay in supplies and possible demurrage charges. After the issue of exemption certificate by the Buyer, the Seller may get the reimbursement from the local authority. In case of any difficulty, the receipt obtained for such payment should be forwarded to the Buyer without delay together with a copy of the relevant act or by-laws/notifications of the Municipality of the local body concerned to enable this office to take up the case for refund with the concerned bodies if admissible under the said acts or rules.

#### 15.2 In respect of Foreign Bidders

All taxes, duties, levies and charges which are to be paid for the delivery of stores/services, including advance samples, shall be paid by the parties under the Contract in their respective countries. However, the corporate/individual income tax, if applicable, will continue to be paid by the concerned party/individual.

DRDO is a public funded research institution and has been exempted from the payment of Customs Duty, as per the description of stores and conditions thereon, under Customs Notification No. 51/96 as amended and Notification No. 39/96 as amended, However, if required, Basic Custom duty applicable cess is to be paid as per prevailing notification. [Applicable where INCOTERMS is DDP (destination)]

#### **16. Denial Clause**

Variations in the rates of statutory levies within the original delivery schedule will be allowed if taxes are explicitly mentioned in the contract/ supply order and delivery has not been made till the revision of the statutory levies. Buyer reserves the right not to reimburse the enhancement of cost due to increase in statutory levies beyond the original delivery period of the supply order/ contract even if such extension is granted without imposition of LD.

#### **17. Undertaking from the Bidders**

Bidder/firm/company/vendor will submit an undertaking that in the past they have never been banned/debarred for doing business dealings with Ministry of Defence/Govt. of India/any other Govt. organisation and that there is no enquiry going on by CBI/ED/any other Govt. agency against them.

#### **18. Purchase Preference Policy**

Make in India: This RFP complies with Public Procurement (Preference to Make in India), order 2017 by Department of Industrial Policy and Promotion, Ministry of Commerce and Industry Government of India issued vide letter No. P-45021/2/2017-B.E-II dated 15th June 2017 and as amended (for updated details please refer to [www.dipp.gov.in](http://www.dipp.gov.in))

#### **19. Purchase preference to Micro and small enterprises (MSEs)**

Purchase preference to Micro and small enterprises (MSEs) will be given to MSEs as per provisions of Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012 as amended (for details please refer [www.dcmsme.gov.in](http://www.dcmsme.gov.in)).

#### **20. Documents to be Furnished for Claiming Payment**

##### 20.1 Indigenous Sellers

The payment of bills will be made on submission of the following documents by the Seller to the Buyer.

20.1.1 Any other document / certificate that may be provided for in the Contract.

20.1.2 Ink-signed copy of Contractor's Bill.

20.1.3 Ink-signed copy of Commercial Invoice / Seller's Bill.

20.1.4 Bank Guarantee for Advance, if applicable.

20.1.5 Guarantee/ Warranty Certificate.

20.1.6 Details for electronic payment viz. Bank name, Branch name and address, Account Number, IFS Code, MICR Number (if these details are not already incorporated in the Contract).

20.1.7 Original copy of the Contract and amendments thereon, if any.

20.1.8 Self certification from the Seller that the GST/ applicable taxes as received under the contract would be deposited to the concerned taxation authority.

##### 20.2 Foreign Sellers

In case of payment through Letter of Credit (LC), paid shipping documents are to be provided to the Bank by

the Seller as a proof of dispatch of goods as per contractual terms /LC conditions so that the Seller gets payment from LC. The Bank will forward these documents to the Buyer for getting the goods/stores released from the Port/Airport. However, where the mode of payment is DBT, the paid shipping documents are to be provided to the paying authority by the Buyer. Documents will include :

- 20.2.1 Insurance Policy of 110% value in case of CIF/ CIP contract.
- 20.2.2 Certificate of Conformity and Acceptance Test at PDI, if any.
- 20.2.3 Phyto-sanitary/ Fumigation Certificate, if any.
- 20.2.4 Clean on Board Airway Bill/Bill of Lading.
- 20.2.5 Original Invoice
- 20.2.6 Packing List
- 20.2.7 Dangerous Cargo Certificate, if applicable.
- 20.2.8 Certificate of Origin from Seller's Chamber of Commerce, if any.
- 20.2.9 Certificate of Quality and year of manufacture from OEM.

## **21. Franking Clause**

### 21.1 In Case of Acceptance of Store(s)

The fact that the goods have been inspected after the delivery period and passed by the Inspecting Officer will not have the effect of keeping the contract alive. The goods are being passed without prejudice to the rights of the Buyer under the terms and conditions of the Contract.

### 21.2 In Case of Rejection of Store(s)

The fact that the goods have been inspected after the delivery period and rejected by the Inspecting Officer will not bind the Buyer in any manner. The goods are being rejected without prejudice to the rights of the Buyer under the terms and conditions of the contract.

## **22. Claims**

22.1 The quantity claims for deficiency of quantity and/ or the quality claims for defects or deficiencies in quality noticed during the inspection shall be presented within 45 days of completion of inspection

22.2 The Seller shall collect the defective or rejected goods from the location nominated by the Buyer and deliver the repaired or replaced goods at the same location, within mutually agreed period, under Seller's arrangement without any financial implication on the Buyer.

## **23. Liability Clause**

23.1 Any damage caused to the property or suffered by the personnel of Buyer during the execution of Contract shall remain the liability of the Buyer. Such liability shall be fixed on Seller in case of grossly negligent act or omission on the part of Seller.

23.2 This provision is limited to the relations between the Parties. It is without prejudice to the rights and actions to which the victims of damage, or any Social Security Organizations could prevail themselves legally.

23.3 Either party would provide reasonable assistance to resolve the claim of other Party to mitigate loss or damage.

23.4 Neither, the Seller shall be liable to the Buyer, nor shall the Buyer be liable to the Seller for any immaterial, punitive, indirect, special, incidental, or consequential loss or damage. This will hold good irrespective of whether such liability is based or claimed to be based on any breach of a Party's obligation under the Contract, or any negligent act or omission of a Party, its employees, servants, appointed representatives, sub-contractor or professional consultants, or such liability arises otherwise out of or in connection with the Contract.

23.5 The Buyer shall not be liable for any compensation in any manner to the Seller for whatsoever reason.

23.6 The Seller shall be liable to the Buyer for any compensation in any manner for whatsoever reasons for a sum not exceeding value of the Contract.

## **24. Risk and Expense Purchase**

In case Seller fails to honor the contractual obligations within the stipulated delivery period and as amended, Buyer may procure the said contracted goods/services through a fresh supply order/contract and the defaulting Seller has to bear the excess cost incurred, if any.

**25. INCOTERMS for Delivery and Transportation (for Foreign Bidder only)**

Unless otherwise specifically agreed to by the Buyer and the Seller and incorporated in the Contract, the applicable rules and regulations for transportation of goods from foreign countries will be as per the contemporary version of International Commercial Terms (INCOTERM 2020) evolved by International Chamber of Commerce, Paris.

**26. Procedure for Cost Comparison**

26.1 The basis for comparison of cost in different situations would be as follows :

- a) The financial bids of the qualified bidders will be compared on the basis of price quoted in the price bid format of the RFP/Bid document.
- b) If the competition is only among Indian bidders, the financial comparison should be considered on the basis of FOR destination prices including statutory levies, taxes and duties payable on final product.
- c) If the competition is among Indian and foreign bidders, the CIP/CIF cost quoted by the foreign bidders at destination port loaded with Custom Duty (CD) & GST (as applicable) which are to be paid extra as per actuals and a charge @ 1% of CIP/CIF cost will be basis of comparison with the basic cost (FOR destination basis) offered by Indian bidders including statutory levies, taxes and duties payable on final product.
- d) If competition is only among foreign bidders, the basis for comparison should be the CIF/CIP price (designated port). If CIF/CIP price is not available, additional 10% of FCA/FOB cost over and above quoted FCA/FOB cost to be loaded for comparison purpose only
- e) In import cases, all the foreign bids would be brought to a common denomination in Indian Rupees by adopting the base exchange rate as BC selling rate of the State Bank of India on the day of last date of submission of bids.
- f) The Buyer reserves the right to evaluate the offers received by adopting Discounted Cash Flow (DCF) method with a discounting rate in consonance with the existing Government borrowing rate. DCF method would be used for evaluation of bids in the following cases:
  - i) To compare different payment terms, including advance payments and progressive stage payments so as to bring them to a common denomination for determining lowest bidder.
  - ii) To deal with cases where entering into AMC for period in excess of one year is a part of the contract for evaluation of the bid.
- g) Discount rate to be used under the method is to be the Government borrowing rate on the Date of Opening of Price Bids.
- h) If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price will prevail and the total price will be corrected accordingly.
- i) If there is a discrepancy between words and figures, the amount in words will prevail for calculation of price.
- j) The best acceptable bid will be considered further for placement of the Contract after price negotiation as decided by the Buyer.
- k) Net Present Value (NPV) : NPV method is a variant of DCF method which may be used for evaluation of tenders. The NPV of a contract is equal to the sum of the present values of all the cash flows associated with it. When choosing among the various bids, the bid with the lowest NPV will be selected. The as in fig.(1)

formula may be used for calculating

$$NPV = \sum_{t=0}^N \frac{A_t}{(1+i)^t}$$

Where

$A_t$  : Expected cash flow at time t

t : Time of expected cash flow

N : Total period

i : Discount rate

fig.(1)

#### **27. Handling of Classified Information by Indian Licensed Defence Industry**

Any classified document/information/ equipment being shared with Indian Licensed Defence Industries will be protected/ handled to prevent unauthorized access as per provisions of Chapter 5 of Security Manual for Indian Licensed Defence Industries issued by MoD (Department of Defence Production).

#### **28. Support to Start-ups**

This RFP complies with Ministry of Finance, Department of Expenditure, Public Procurement Division OM No. F.20/212014-PPD dtd 25.07.2016 and subsequent clarifications dtd 20.09.2016; 27.07.2019; 29.06.2020 and provides following support to Start-ups (as defined by the Department of Promotion and Industrial and Internal Trade - DPIIT) :

- a. Exemption from submission of Bid Security.
- b. Relaxation in prior Turnover and Experience: The Lab reserves its right to relax the condition of prior turnover and prior experience for Start-up enterprises subject to meeting of quality and technical specifications. The decision of the procuring entity in this regard shall be final.

#### **29. Restrictions on procurement from bidders from a country or countries, or a class of countries under 144 (xi) of the General Financial Rules 2017**

We certify as under:

``We 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, and solemnly certify that we fulfill all requirements in this regard and are eligible to be considered``.

We certify that:

- a) We are not from such a country or, if from such a country, we are registered with the Competent Authority (copy enclosed). And;
- b) We shall not subcontract any work to a contractor from such countries unless such contractor is registered with the Competent Authority.

## PART-II(B) - INSTRUCTIONS FOR ONLINE BID SUBMISSION

1. The bidders are required to submit soft copies of their bids electronically on the Defence eProcurement Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the Defence eProcurement Portal, prepare their bids in accordance with the requirements and submitting their bids online on the Defence eProcurement Portal.

2. More information useful for submitting online bids on the Defence eProcurement Portal may be obtained at: <https://defproc.gov.in>

### 3. REGISTRATION

3.1 Bidders are required to enroll on the e-Procurement module of the Defence eProcurement Portal (URL: <https://defproc.gov.in>) by clicking on the link "Online bidder Enrollment" on the Defence eProcurement Portal which is free of charge.

3.2 As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.

3.3 Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the Defence eProcurement Portal.

3.4 Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India with their profile.

3.5 Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSC's to others which may lead to misuse.

3.6 Bidder then logs in to the site through the secured log-in by entering their user ID / password and the password of the DSC / e-Token.

### 4. SEARCHING FOR TENDER DOCUMENTS

4.1 There are various search options built in the Defence eProcurement Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, Organization Name, Location, Date, Value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as Organization Name, Form of Contract, Location, Date, Other keywords etc. to search for a tender published on the Defence eProcurement Portal.

4.2 Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective 'My Tenders' folder. This would enable the Defence eProcurement Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.

4.3 The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

### 5. PREPARATION OF BIDS

5.1 Bidder should take into account any corrigendum published on the tender document before submitting their bids.

5.2 Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.

5.3 Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF/JPG formats. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.

5.4 To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use "My Space" or "Other Important Documents" area available to them to upload such documents. These documents may be

directly submitted from the ``My Space`` area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

## **6. SUBMISSION OF BIDS**

- 6.1 Bidder should log into the site well in advance for bid submission so that they can upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
- 6.2 The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
- 6.3 Bidder has to select the payment option as ``offline`` to pay the EMD as applicable and enter details of the instrument. Tender Fee can be paid through e-MRO portal of SBI or through offline mode.
- 6.4 Bidder should prepare the EMD as per the instructions specified in the tender document. The original should be posted/couriered/given in person to the concerned official, latest by the last date of bid submission or as specified in the tender documents. The details of the DD (Demand draft) /any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise the uploaded bid will be rejected.
- 6.5 Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. If the price bid has been given as a standard BOQ format with the tender document, then the same is to be downloaded and to be filled by all the bidders. Bidders are required to download the BOQ file, open it and complete the white coloured (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BOQ file is found to be modified by the bidder, the bid will be rejected.
- 6.6 The server time (which is displayed on the bidders` dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.
- 6.7 All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology. Data storage encryption of sensitive fields is done. Any bid document that is uploaded to the server is subjected to symmetric encryption using a system generated symmetric key. Further this key is subjected to asymmetric encryption using buyers/bid openers public keys.
- 6.8 The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- 6.9 Upon the successful and timely submission of bids (ie after Clicking ``Freeze Bid Submission`` in the portal), the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.
- 6.10 The bid summary has to be printed and kept as an acknowledgement of the submission of the bid. This acknowledgement may be used as an entry pass for any bid opening meetings.

## **7. ASSISTANCE TO BIDDERS**

- 7.1 Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.
- 7.2 Any queries relating to the process of online bid submission or queries relating to Defence eProcurement Portal in general may be directed to the 24x7 Defence eProcurement Portal Helpdesk.



## PART-III - SPECIAL TERMS AND CONDITIONS

The Bidder is required to give confirmation of their acceptance of Special Terms and Conditions of the RFP mentioned below which will automatically be considered as part of the Contract concluded with the successful Bidder as selected by the Buyer. Failure to do so may result in rejection of Bid submitted by the Bidder

### 1. Apportionment of Quantity

Not Applicable

### 2. Performance Security Bond

The Performance Security Bond will be forfeited by the Buyer, in case the conditions regarding adherence to delivery schedule and/or other provisions of the Contract/ SO are not fulfilled by the Seller.

Performance Security Bond should be for an amount equal to 3-5% of the contract value (inclusive of taxes and duties) in favour of the Director HEMRL, Pune for safeguarding the Buyer's interest in all respects during the currency of the contract. The BG should be valid upto 60 days beyond the scheduled date of delivery as per the terms of the contracts. In case the execution of the contract is delayed beyond the contracted period and the Buyer grants the extension of delivery period, with or without liquidated damages, the Seller must get the Bond revalidated, if not already valid. The specimen of bond can be provided on request.

#### 2.1 Indigenous Bidder

They may be accepted in the form of Bank Draft, Fixed Deposit Receipt or a Bank Guarantee. Indemnity Bond acceptable in case of DPSUs / PSUs and Govt. Departments in lieu of BG.

#### 2.2 Foreign Bidder

They may be accepted in the form of Bank Guarantee or Stand-by Letter of Credit from an internationally recognized first class bank.

### 3. Warranty Bond

The Warranty Bond will be forfeited by the Buyer, in case the conditions regarding warranty provisions of the contract are not fulfilled by the Seller.

Warranty Bond for an amount of 10% percent of the contract value (inclusive of taxes and duties) would be obtained from the seller prior to return of performance security bond. Warranty bond should remain valid for a period of sixty days beyond the date of completion of all warranty obligations. Warranty bond would be returned to the Seller on successful completion of warranty obligations, under the contract. The specimen of bond can be provided on request.

#### 3.1 Indigenous Bidder

They may be accepted in the form of Bank Draft, Fixed Deposit Receipt or a Bank Guarantee. Indemnity Bond acceptable in case of DPSUs / PSUs and Govt. Departments in lieu of BG.

#### 3.2 Foreign Bidder

They may be accepted in the form of Bank Guarantee or Stand-by Letter of Credit from an internationally recognized first class bank.

### 4. Option Clause

Not Applicable

### 5. Repeat Order Clause

Not Applicable

### 6. Tolerance Clause

Not Applicable

### 7. Purchase Preference Clause

This RFP is covered by Public Procurement (Preference to Make in India), Order-2017, Order no. P-45021/2/2017-B.E-II dtd 15 June 2017 (as amended) by DPIIT/Ministry of Commerce and Industry. (For latest updates please refer to [www.dipp.gov.in](http://www.dipp.gov.in)). Purchase preference will be granted as detailed below. Contents of the MII Order-2017 (as amended) other than not listed below to be interpreted as per the Order.

7.1 Bidders are divided into three categories based on Local Content. Local Content is 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:

- 'Class-I local supplier': Local content equal to or more than 50 % minimum, if not prescribed.
- 'Class II Local Supplier': Local content equal to or more than 20 % minimum, if not prescribed.
- 'Non Local supplier': Local content less than that applicable for Class II Local supplier.

Note: If Nodal Ministry/Department has prescribed Local content higher than as mentioned above, the same will be applicable.

7.2 Margin of Purchase preference shall be 20%.

### 7.3 Purchase preference (s)

a. 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' as per following procedure:

- Among all qualified bids, lowest bid is termed as L1. If L1 is 'Class-I local supplier', the contract for full quantity will be awarded to L1.

- If L1 is not 'Class-I local supplier' then 50% of the Order quantity shall be awarded to L1. Thereafter, the lowest bidder among the 'Class-I local supplier' will be invited to match the L1 price for the remaining 50% quantity subject to the 'Class-I local supplier's' quoted price falling within the margin of purchase preference, 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 supplier's', then such balance quantity may also be ordered on the L1 bidder.

b. 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 following procedure:

- Among all qualified bids, the lowest bid is termed as L1. If L1 is 'Class-I local supplier', the contract will be awarded to L1.

- If L1 is not 'Class-I local supplier', the lowest bidder among the 'Class-I local supplier's', will be invited to match the L1 price subject to Class-I local supplier's 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.

- 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.

### 7.4 Information to be provided by vendor for verification of local content

a. 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 term 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.

b. 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 the 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.

- c. A supplier who has been debarred by any procuring entity for violation of this order shall not be eligible for preference under this Order for procurement by any other procuring entity for the duration of the debarment.
- d. False declarations will be in breach of the code of integrity under Rule 175(1)(i)(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.

#### **8. Transfer of Technology (ToT)**

Not Applicable

#### **9. Permissible Time Frame for Submission of Bills**

To claim payment (part or full), the Seller shall submit the bill(s) along with the relevant documents within 15 days from the completion of the activity / supply

#### **10. Payment Term**

##### 10.1 For Indigenous Seller

The Accounting and Payment currencies shall be in INR

The payment will be made as per the following terms, on production of the requisite documents :

10.1.1 100% payment within 30 days after receipt, satisfactory installation and acceptance of stores/equipment in good condition or the date of receipt of the bill whichever is later.

##### 10.2 For Foreign Seller

10.2.1 100% payment within 30 days after receipt, satisfactory installation and acceptance of stores/ equipment in good condition or after receipt of necessary documents warranted by delivery terms.

#### **11. Advance Payment**

11.1 No advance payment will be made.

#### **12. Part Supply and Pro-rata Payment**

Part Supply and Pro-rata Payment terms are as follows:

##### 12.1 Part Supply

Part Supply will not be acceptable.

##### 12.2 Pro rate payment

Pro rata payment will not be made for the part supplies of the store(s) made.

#### **13. Mode of Payment**

##### 13.1 For Indigenous Sellers

It will be mandatory for the Bidders to indicate their bank account numbers and other relevant e-payment details to facilitate payments through ECS/EFT mechanism instead of payment through cheque, wherever feasible

##### 13.2 For Foreign Seller

13.2.1 The payment will be arranged through Letter of Credit from Reserve Bank of India/State bank of India/any other Public Sector Bank, as decided by the Buyer, to the Bank of the Foreign Seller as per mutually agreed terms and conditions. The Letter of Credit will preferably be opened with validity of 90 days from the date of its opening, on extendable basis by mutual consent of both the parties. Letter of Credit opening charges in India will be borne by the Buyer. However, the extension charges, if any, will be borne by the party responsible for the extension.

13.2.2 For contracts costing up to US \$ 100,000 (or equivalent) or the payment of Training/ Installation & Commissioning/ AMC charges, preferable mode of payment will be by Direct Bank Transfer (DBT). DBT payment will be made within 30 days of receipt of clean Bill of Lading/ AWB/ Proof of shipment and such other documents indicating completion of the contractual obligation on part of the Seller as provided for in the contract, but such payments will be subject to the deductions of such amounts as the Seller may be liable to pay under the agreed terms of the Contract.

#### **14. Exchange Rate Variation (ERV) Clause**

Not Applicable

**15. Buy-Back**

Not Applicable

**16. Export License**

The Bidder is required to furnish full details and formats of End Use Certificate required for obtaining export clearance from the country of origin. This information will be submitted along with Techno-Commercial bid. In the absence of such information, it would be deemed that no document is required from the Buyer for export clearance from the country of origin.

**17. Free Issue of Material (FIM) as raw material**

Not Applicable

**18. Terms of Delivery**

18.1 For Foreign Bidder

Foreign bidders are required to quote both on CIF/CIP (Destination) and FCA/FOB (Gateway) basis.

18.2 For Indigenous Bidder

The delivery of goods shall be on FOR HEMRL basis.

**19. Packing and Marking Instructions**

19.1 A label in English shall be pasted on the carton indicating the under mentioned details of the item contained in the carton. The cartons shall then be packed in packing cases as required.

i) Part Number :

ii) Nomenclature :

iii) Contract annex number :

iv) Annex serial number :

v) Quantity contracted :

19.2 One copy of the packing list in English shall be inserted in each cargo package, and the full set of the packing lists shall be placed in Case No.1 painted in a yellow colour.

19.3 The Seller shall mark each package with indelible paint in English language as follows:-

i) Contract No. :

ii) Consignee :

iii) Port / airport of destination :

iv) Ultimate Consignee :

v) Package No. :

vi) Gross / Net Weight :

vii) Overall dimensions / volume :

viii) The Seller's marking :

19.4 If necessary, each package shall be marked with warning inscriptions: "Top", "Do not turn over", category of cargo etc.

19.5 The Seller shall provide packing and preservation of the equipment and spares/goods contracted so as to ensure their safety against damage in the conditions of land, sea and air transportation, transshipment, storage and weather hazards during transportation, subject to proper cargo handling. The Seller shall ensure that the stores are packed in containers, which are made sufficiently strong. The packing cases should have provisions for lifting by crane/fork lift truck. Tags with proper marking shall be fastened to the special equipment, which cannot be packed.

19.6 The packing of the equipment and spares/goods shall conform to the requirements of specifications and standards in force in the territory of the Seller's country.

19.7 Should any special equipment be returned to the Seller by the Buyer, the latter shall provide normal packing, which protects the equipment and spares/goods from damage or deterioration during transportation by land, air or sea. In such case the Buyer shall finalize the marking with the Seller.

**20. Inspection Instructions**

20.1 As per the spec.

20.2 QAP Doc / Specification No : HEMRL/QARD/2022/SPEC/TAM/186

20.3 Inspection Agency

Director or his nominated Rep

20.4 Inspection Authority

The Inspection will be carried out by Director HEMRL or his nominated Rep.

## **21. Warranty**

21.1 The Seller will declare that the goods, stores articles sold/supplied shall be of the best quality and workmanship and new in all respects and shall be strictly in accordance with the specifications and particulars contained / mentioned in the contract. The Seller will guarantee that the said goods/stores/articles would continue to conform to the description and quality for a period of, 24 months from the date of acceptance / installation of the said goods stores/articles. If during the aforesaid period of 24 months, the said goods/stores are discovered not to conform to the description and quality aforesaid, not giving satisfactory performance or have deteriorated, the Buyer shall be entitled to call upon the Seller to rectify the goods/stores/articles or such portion thereof as is found to be defective by the Buyer within a reasonable period without any financial implication on the Buyer.

21.2 If the defective part/subsystem/system needs to be taken by the Seller outside Buyer's premises to rectify the defect, Seller shall provide a comprehensive (during transit & storage insurance for repair period) insurance cover of the equivalent amount to the Buyer to cover for the time taken to rectify the defective goods and deliver the repaired or replaced goods at the same location without any financial implications on Buyer.

21.3 In cases of procurement of software, Seller shall issue/provide up grades of the software free of cost during the warranty period.

## **22. Product Support**

22.1 The Seller agrees to provide Product Support for the stores, assemblies / subassemblies, fitment items, Spares and consumables, Special Maintenance Tools (SMT)/Special Test Equipment's (STE) for a minimum period of 7 years after the warranty Period / delivery, whichever is later.

22.2 The Seller agrees to undertake a Maintenance Contract for a minimum period of 84 Months years/months. The seller is required to quote the price for both comprehensive and non-comprehensive maintenance of the equipment after the expiry of warranty period in the price bid.

22.3 Besides mandatory period, the Seller would be bound to give at least two years notice to the Buyer prior to closing the production line so as to enable a life time buy of spares before closure of the said production line.

## **23. Annual Maintenance Contract (AMC) Clause**

Not Applicable

## **24. Price Variation (PV) Clause**

Not Applicable

## **25. Intellectual Property Rights (IPR)**

Not Applicable

## **26. Minimum Order Quantity**

Bidder may indicate the applicable minimum order quantity (MOQ) if the quantity demanded by the buyer is less than MOQ.

## **27. Pre-Contract Integrity Pact Clause [for Cases more than 20 Crore]**

Not Applicable

## **28. Independent External Monitors (IEM)**

Not Applicable

## **29. Evaluation and Acceptance Criteria of Bids**

The bid will be considered and selected based on instructions contained in Part I and Part II of the RFP for

further evaluation of bids as per sequence given below:

#### 29.1 Techno-Commercial Bid Evaluation

Bids will be evaluated based on vendor qualification requirement as per Part IV of RFP or as per specifications, if applicable, and bids of the qualified bidders will be considered for further evaluation as mentioned in Part V of the RFP.

#### 29.2 Price Bid Evaluation

The Price bid of those bidders whose Techno-Commercial bid (if applicable) has been accepted will be opened and comparative statement will be prepared. The best acceptable bid will be decided upon the lowest price quoted by the particular Bidder as per the Price Format given at Part VI of the RFP. The Price Bid will be evaluated Lot wise.

### **30. Fall Clause**

Not Applicable

### **31. Certificate in respect of Fall Clause**

31.1 While submitting his bills for the goods supplied against the Rate Contract/Price Agreement, the Contractor shall give the following certificate also:

``I/We certify that the stores of description identical to the stores supplied to the Government under the contract herein have not been offered/sold by me/us to any other person/ organization up to the date of bill/the date of completion of supplies against supply orders placed during the currency of the RC/PA, at a price lower than the price charged to the Government under the contract.``

31.2 If the Contractor sells any goods at lower than the contract price, except covered by any of the three exceptions indicated above as per para 30 (c) of this part, such sales have also to be disclosed in the aforesaid certificate to be given by the Contractor to the Government. The obligations of the Contractor in this regard will be limited with reference to the goods identical to the contracted goods sold or agreed to be sold during the currency of the contract.

31.3 The successful bidder shall maintain stocks at the station and shall make deliveries against supply orders from such stocks within the specified period.

### **32. Force Majeure Clause**

32.1 Neither party shall bear responsibility for the complete or partial non-performance of any of its obligations, if the non-performance results from such Force Majeure circumstances as Flood, Fire, Earth Quake and other acts of God as well as War, Military operations, blockade, Acts or Actions of State Authorities or any other circumstances beyond the parties control that have arisen after the conclusion of the present contract.

32.2 In such circumstances the time stipulated for the performance of an obligation under the Contract is extended correspondingly for the period of time commensurate with actions or circumstances and their consequences.

32.3 The party for which it becomes impossible to meet obligations under the Contract due to Force Majeure conditions, is to notify in written form to the other party of the beginning and cessation of the above circumstances immediately, but in any case not later than 10 (Ten) days from their commencement.

32.4 Certificate of a Chamber of Commerce (Commerce and Industry) or other competent authority or organization of the respective country shall be considered as sufficient proof of commencement and cessation of the above circumstances.

32.5 If the impossibility of complete or partial performance of an obligation lasts for more than 6 (six) months, either party hereto reserves the right to terminate the Contract totally or partially upon giving prior written notice of 30 (thirty) days to the other party of the intention to terminate without any liability other than reimbursement on the terms provided in the agreement for the goods received.

32.6 A PARTY claiming Force Majeure shall exercise reasonable diligence to seek to overcome the Force Majeure event and to mitigate the effects there of on the performance of its obligations under this Contract.

### **33. Acquiring Manufacturing Drawings and Associated Hardware:**

Not Applicable

**34. Return of Documents**

Not Applicable

**35. Selection of Development cum Production Partner (DcPP(s)) / Production Agency (PA(s))**

Not Applicable

**36. Any Other Additional Terms and Conditions**

Not Applicable

## PART-IV - VENDOR QUALIFICATION CRITERIA

### 1. Technical Capabilities:

- The firm must be an OEM or authorized dealer of the OEM dealing with the system. Authorized dealer must submit the authorization certification from OEM valid up to 31/12/2025.
- In case of foreign OEM, the firm should have authorized support service in India. Documentary evidence for the same is to be provided.

### 2. Financial Capabilities:

- The annual turnover of the firm shall be minimum 2 cr. in any 2 financial years out of last 3 years. The audited statement of accounts indicating the same shall be furnished.



## PART-V - ESSENTIAL DETAILS OF ITEMS/SERVICES REQUIRED

### 1. Schedule of Requirements

List of items / services required are as follows:-

Sl. No.	Name / Description of Item(s) / Service(s)	Required Quantity
1	TAM (THERMAL ACTIVITY MONITOR) WITH ACCESSORIES as per spec no HEMRL/QARD/2022/SPEC/TAM/186	1 No.
<b>Total number of Items : 1 only</b>		

### 2. Technical Details

#### 2.1 Specifications/Drawings

Specifications/Drawings will be made available to the interested bidders by the RFP issuing authority. Specifications/drawings supplied by this office are to be returned with the Techno-Commercial Bid.

#### 2.2 Technical details with technical parameters

#### 2.3 Requirement of training/on-the-job training

#### 2.4 Requirement of installation/commissioning

#### 2.5 Full Inspection details as per provisions made in in Para 23 of Part III of the RFP.

#### 2.6 Requirement of Technical Documentation

#### 2.7 Nature of assistance required after completion of warranty as per provisions made in Para 25 of Part III of the RFP

#### 2.8 Requirement of pre-site inspection

#### 2.9 Any other details, as considered necessary

3. Bidders are required to furnish clause by clause compliance of specifications bringing out clearly the deviations from specification, if any. Bidders are advised to submit compliance statement for the technical parameters separately in the following format along with the Techno-Commercial Bid:

Para of RFP Specifications (Item-wise)	Specifications of Item offered	Compliance to RFP Specifications whether Yes / No	Remarks In (In case of non-compliance deviation from the RFP to be specified in unambiguous terms. In case of compliance, brochure reference, if available, to be indicated)

3.1 For Commercially-Off-The-Shelf (COTS) items, it is mandatory to enclose/provide catalogue / technical brochure to support the claims of compliance.

### 4. Delivery Period

Expected Delivery Period for supply of items/rendering services would be 6 Month from the Effective Date of the Contract. Please note that the Contract can be cancelled unilaterally by the Buyer in case items are not received within the contracted delivery period. Extension of contracted delivery period with/ without LD clause will be at the sole discretion of the Buyer.

### 5. Period of AMC

Not Applicable

### 6. Consignee details

Name: The Director HEMRL

Address: Sutarwadi, Pune - 411021

Contact details

Telephone No: 25912241,25869371

E-mail ID:mmd.hemrl@gov.in



**High Energy Materials Research Laboratory, Sutarwadi – 411 021.**  
**COMMERCIAL TERMS STATEMENTS (FOR FOREIGN BIDDER ONLY)**

**IMPORTANT NOTE**

THIS STATEMENT SHOULD BE DULY FILLED AND ENCLOSED WITH TECHNO-COMMERCIAL BID  
 NON RECEIPT OF THIS STATEMENT OR INCOMPLETE DETAILS PROVIDED  
 WILL LEAD TO REJECTION OF TENDER

Tender / RFP No. : HEMRL/25FET001/EP Dated : 10/02/2025

Sr. No.	Terms & Conditions	HEMRL General Commercial Terms	Terms Accepted / Offered by Firm (To be filled by the firm)
1	Delivery Terms	Foreign bidders are required to quote both on CIF/CIP (destination) and FCA/FOB (Gateway) basis.	
2	Freight & Insurance	Please specify	
3	Delivery schedule	6 Month from the Date of Placement of Order / Effective Date of Contract.	
4	Packing & Forwarding charges, Freight charges and Transit Insurance	Please specify	
5	Customs Duty	As mentioned in Tender / R. F. P. (Part – II (A) Sr. No. 15.2)	
6	Installation/Commissioning and Training (if required)	Please specify	
7	Warranty	24 months from the date of acceptance / installation of the said goods stores / articles.	
8	Certificate of Origin	To be provided alongwith the supply from Country's Chamber of Commerce	
9	Certificate of Conformance	To be submitted before shipment by the Firm	
10	Certificate of Manufacturing	To be submitted alongwith the supply by the Firm confirming that the store is as per current manufacturer's lot.	
11	Port of Shipment	To be mentioned	
12	Inspection & Acceptance	The Inspection will be carried out by Director HEMRL or his nominated Rep.	
13	Earnest Money Deposit (EMD)	As mentioned in Tender / R. F. P. (Part - I(A) Sr. No. 14)	
14	Payment terms	100% payment within 30 days after receipt and satisfactory installation and acceptance of stores / equipment in good condition or after receipt of necessary documents warranted by delivery terms.	
15	Currency of Payment	Please specify	
16	LC Opening	As mentioned in Tender / R. F. P. (Part - III Sr. No. 13.2)	
17	Banking Charges	In India Bank charges will be borne by HEMRL, Pune and outside India will be borne by beneficiary.	
18	Performance cum Warranty Bond	5% of Contract Cost in the form of Bank Guarantee (BG) in favour of The Director, HEMRL valid upto 60 days beyond warranty period to be submitted by the successful bidder only.	
19	Liquidated Damages	As mentioned in Tender / R. F. P. (Part II (A) Sr. No. 9)	
20	Export License	The Supplier will obtain necessary Export license, wherever required at their own cost before shipment of the units to India.	
21	Validity of Quotation	The Bid should remain valid for 180 days from the date of opening of Bids.	
22	Compliance to Point II of Part – I(A)	Please specify	
23	Compliance to all applicable parts and paras in the RFP	R.F.P No. & Date : HEMRL/25FET001/CP Date : 10/02/2025.	
24	Name & Address of the firm:		
25	Signature & Name of the Authorised Signatory with Stamp of the firm:		
26	Order to be placed on		

## High Energy Materials Research Laboratory, Sutarwadi – 411 021.

IMPORTANT COMMERCIAL TERMS STATEMENTS (To be filled by Indian Bidders)Tender / R.F.P. No. : HEMRL/25FET001/EP  
Date : 10/02/2025

(Please respond to all queries and strike out whichever is not applicable)

Sr. No.	TERMS & CONDITIONS	HEMRL Commercial Terms	RESPONSE OF FIRM M/s.	
1.	Delivery Terms	Free at HEMRL, Pune		
2.	Packing Charges	Charges if any, to be mentioned separately. Not to be mentioned as inclusive		
3.	Forwarding charges		If any to be specified	
4.	Transportation Charges		If any to be specified	
5.	Transit Insurance		If any to be specified	
6.	Percentage of GST	Please specify clearly the percentage of GST applicable (No GST concessional Certificate will be provided)		
7.	Erection, Installation & Commissioning, if applicable	Charges if any to be specified separately & not as inclusive		
8.	Delivery Schedule	6 Month from the Effective date of the Supply Order /Contract.		
9.	Training, if required	Charges if any, to be specified		
10.	Warranty	24 months from the date of acceptance / installation of the said goods/stores/ articles.		
11.	AMC after warranty period	Provided / Not provided If yes, provide AMC cost in % of basic cost.		
12.	Earnest Money Deposit (EMD)	As mentioned in Tender / R. F. P. (Part – I (A) Sr. No. 14)		
13.	Registration No. with Govt. Dept./DGS&D/DRDO/HEMRL/Others	Photocopy to be enclosed		
14.	Payment Terms	100% payment within 30 days after receipt and satisfactory installation and acceptance of stores / equipment in good condition or the date of receipt of the bill whichever is later.		
15.	Performance cum Warranty Bond	5% of total cost in the form of Bank Guarantee (BG) in favour of The Director, HEMRL valid upto 60 days beyond warranty period to be submitted by the successful bidder only.		
16.	Liquidated Damages	As mentioned in Tender / R. F. P. (Part II (A) Sr. No. 9)		
17.	GST Registration No.	Please indicate		
18.	Income Tax PAN No.	Please indicate		

19.	Bifurcation of Imported and indigenous items/components is term of % of Total Price.	Please indicate Imported: ____ % Indigenous: ____ %	
20.	Name of Foreign Firm/Original Equipment Manufacturer(OEM) represented by the Indian Agent/Representative	Please Provide details	
21.	Authorization letter/Agency Agreement	Photocopy to be provided	
22.	Nature of Services to be rendered by Indian Agent/Representative. Authorization letter from OEM	Please indicate (Sales, After Sales Service, etc)	
23.	Percentage Commission Payable to the Indian Agent /Representative by the OEM as per the agency agreement.	Please indicate	
24.	Name & Address of the firm for placement of Supply Order	Please specify	
25.	Currency for Payment	Please indicate	
26.	Validity of Quotation	The Bids should remain valid for 180 days from the date of opening of Bids.	
27.	Compliance to Point 11 of Part – I(A)	Please specify	
28.	Compliance to all applicable Parts and Paras of the R. F. P.	R.F.P. No. : HEMRL/25FET001/CP Dated 10/02/2025.	
29.	Samples, if any		
(a)	Advance		
(b)	With Quotation		
(c)	During TCEC	Not applicable	
(d)	Before Bulk manufacture		
(e)	Part Supply		
(f)	Full Supply		
30.	Any other point relevant to the context	May be mentioned	
31.	Signature & Name of the Authorized Signatory with Stamp of Vendor	Specify authority of Signing - Sole Proprietor - Partner - Company - Director (Agreement or Power of Attorney)	

**SPECIFICATION FOR TAM (THERMAL ACTIVITY  
MONITOR) WITH ACCESSORIES as per spec no.  
HEMRL/QARD/2022/SPEC/TAM/186**

**Scope of Supply**

Supply, delivery, installation, commissioning, and training of fully integrated thermal activity monitor comprising of thermostat, Mini/multicalorimeter, nanocalorimeter, UPS, humidifier cum dehumidifier unit, glass beads, consumables, branded PC with software, data management system and necessary accessories as per the specification and demonstration of functioning of the equipment at HEMRL.

**Purpose of TAM**

The equipment should be capable of measuring the amount of energy released during decomposition of all types of explosives and propellants to find out the real ageing of the same as per STANAG 4515, 4582, 4147 and MIL 175IA. Apart from the above test, the said equipment will be used to perform the following.

- a) Stability test of propellants, explosives and pyrotechnics.
- b) Ascertain compatibility study of all types of explosives, propellants, pyrotechnics and igniters with explosive and non-explosive ingredients.
- c) Quality control of all kinds of explosives, propellants, pyrotechnics and igniters.
- d) Vacuum thermal stability test for propellants and explosives.

**Thermostat Specifications**

Thermostat TAM-IV, 4 channel (100/240 VAC; 50/60 Hz)

- Temperature range: 4-150 °C
- Temperature accuracy:  $< \pm 0.1$  °C
- Long term stability:  $< \pm 100$   $\mu$  °C/24h
- Scanning rate:  $< \pm 2$  °C/h



Thermostat must include at least 4 positions, which can accommodate different calorimeters, ampoules, accessories by adding calorimeters to the thermostats for simultaneous measurements and up to 14 simultaneous calorimetric measurements.

Thermostats should contain basic minimum configuration needed for the applications of RH perfusion calorimetry, liquid perfusion calorimetry, gas perfusion calorimetry, vacuum/pressure calorimetry, solution calorimetry and STANAG 4582 by adding calorimeters, ampoules and accessories.

Required calorimeters for the thermostats should contain the following.

- A. **2 Nanocalorimeters:** For isothermal or temperature scanning experiments with the highest heat flow sensitivity. Nanocalorimeter should be able to configure with RH perfusion calorimetry with 1 mL and 4 mL reaction vessels. Possible applications should include amorphicity assessment by vapor induced crystallization, for stability and compatibility testing and effect of humidity or other vapor activities and for all applications where the atmosphere over the sample needs to be controlled.
- B. **12 MINI/6 multicalorimeters:** An array of minicalorimeters, each providing microcalorimeter - level sensitivity, configured in the groups of 6 (depending on the sample volume) in the available 2 channels in the calorimeter. Multicalorimeter should be able to be configured with multi sample calorimetry in closed ampoules. Possible applications should include for stability and compatibility, for amorphicity assessment and polymorphism, for curing and safety assessment as STANAG 4582.

## Calorimeter Specifications

### 1. Nanocalorimeter:

Calorimeter must conform to the following minimum specifications. Data must be included to demonstrate performance.

- Dynamic range:  $\pm 10$  milliwatt
- Short term noise:  $< \pm 10$  nanowatt
- Baseline Drifts:  $< 40$  nanowatt/24 h
- Accuracy:  $< 2\%$
- Precision:  $\pm 100$  nanowatt

*Arms*

The calorimeter must be true isothermal system, not adiabatic. As such, the temperature of the sample does not change more than  $\pm 0.0001$  °C. [Adiabatic calorimeters allow the temperature of the sample to change during a process; they are not equivalent technology.]

The calorimeter must operate in either heat flow (heat flux), dynamically corrected or powered compensation (feedback) modes of detection.

The heat flow response of the calorimeter must be calibrated using a fixed calibration heater.

The calorimeter must accommodate removable sample ampoules, up to 5 mL in volume, 1 mL or 4 mL preferably. Fixed cell design is not acceptable due to lack of flexibility and inherent issues with cleaning.

One calorimeter version of the nanocalorimeter should include two external pressure transducer (0 to 10 bar) and two 4 mL stainless steel vacuum – pressure ampoules for simultaneous heat flow and pressure measurement during energetic material (i.e. igniters, pyrotechnics, propellants, explosives) analysis.

Calorimeter must accommodate a wide variety of accessories and ampoules including the following:

### **RH Perfusion Accessories**

RH perfusion accessory interface module for communication and control of auxiliary equipment used with TAM. The auxiliary equipment should include precision syringe pump, gas flow control kit, pump control module and voltage I/O module. Ampoule RH perfusion made of stainless steel having capacity of 4 mL also, with O-ring cap and disposable Teflon disc has to be supplied.

#### **Specific for RH Perfusion:**

Description	Quantity
Nanocalorimeter, 4mL TAM-IV	2
Ampoule, RH perfusion, stainless steel, 4 mL	1
Ampoule, stainless steel, 4 mL, with circlip cap (pkg of 1)	1
Ampoule, RH perfusion, glass, 1 mL	2
Ampoule, RH perfusion, glass, 1 mL, with circlip cap (pkg of 1)	2
Ampoule, RH perfusion, glass, 4 mL	2
Ampoule, RH perfusion, glass, 4 mL, with circlip cap (pkg of 1)	2
Ampoule, RH perfusion, stainless steel, 1 mL	1

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Ampoule, RH perfusion, stainless steel, 1 mL with circlip cap (pkg of 1)	1
Ampoule, RH perfusion, Hastelloy, 4 mL, with circlip cap (pkg of 1)	2
Ampoule, RH perfusion, Hastelloy, 1 mL, with circlip cap (pkg of 1)	2
Reaction vessel, RH perfusion, Hastelloy, 4 mL	2
Reaction vessel, RH perfusion, Hastelloy, 1 mL	2
Gas flow control kit, for RH perfusion	1

**Specific for Gas Perfusion:**

Description	Quantity
Ampoule, perfusion, stainless steel, 4 mL	1
Ampoule, perfusion, stainless steel, 4 mL, with circlip cap (pkg of 1)	1
Ampoule, perfusion, stainless steel, 1 mL	1
Ampoule, perfusion, stainless steel, 1 mL, with circlip cap (pkg of 1)	1
Reaction vessel, perfusion, glass, 4 mL	2
Ampoule, perfusion, glass, 4 mL, with circlip cap (pkg of 1)	2
Reaction vessel, perfusion, glass, 1 mL	2
Ampoule, perfusion, glass, 1 mL, with circlip cap (pkg of 1)	2
Reaction vessel, perfusion, Hastelloy, 4mL	2
Ampoule, perfusion, Hastelloy, 4 mL, with circlip cap (pkg of 1)	2
Reaction vessel, perfusion, Hastelloy, 1 mL	2
Ampoule, perfusion, Hastelloy, 1 mL, with circlip cap (pkg of 1)	2
Gas flow control kit, for gas perfusion	2
Hygrostat, perfusion, Micro, 0.2 mL, for 4 mL disposable glass ampoules (pkg of 100)	5

**2. 4 mL Mini/Multicalorimeter**

Heat flow calorimeter system must accommodate multiple simultaneous differential measurements.

This can be accomplished through a multicalorimeter array of 6 Minicalorimeter.

Each calorimeter provides performance as defined in the below:

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- Dynamic range:  $\pm 25$  milliwatt
- Short term noise  $< \pm 100$  nanowatt
- Baseline drift  $< 200$  nanowatt/24h
- Accuracy  $< 5\%$
- Precision  $\pm 200$  nanowatt

The heat flow response of the calorimeter must be calibrated using a fixed calibration heater. The calorimeter must accommodate removable sample ampoules, up to 5 mL in volume. Fixed cell design is not acceptable due to lack of flexibility and inherent issues with cleaning.

### Start-up Kit

Suitable start-up kit with glass ampoules, caps, crimping tool, cap adjustment tool, decapper tool etc. to be supplied with TAM.

The multicalorimeter must accommodate a wide variety of ampoules and accessories, including the following:

Description specific for multicalorimeter	Quantity
Multicalorimeter, 4 mL, (8.4 J/K), 6ch TAM-IV	2
Start up kit, 4 mL (with 12 eyelets)	1
Vial decapper, 3 & 4 mL pressure release lifters, TAM, (pkg of 1)	1
Pressure release lifter, start up kit, 4 mL, TAM (pkg of 3)	4
Cap, crimping tool, ampoules, 3 & 4 mL	1
Clamping tool with safety lock	1
Decapper tool: A dual decapper tool for removing lids from the 3, 4 (13mm) and 20 (20mm) mL disposable glass ampoules used in TAM-III, TAM-IV and TAM-Air	1
Ampoule, stainless steel, 4 mL with threaded cap (pkg of 2)	1
Ampoule, Hastelloy, 4 mL, with threaded cap (pkg of 2)	1
Ampoule, stainless steel, 4 mL, with thread/O-ring cap (pkg of 1)	1
Ampoule, Hastelloy, 4 mL, with thread/O-ring cap (pkg of 1)	1
Ampoule, stainless steel, 1 mL, with circlip clip (pkg of 1)	1

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Sample ampoules:

Description	Quantity
Ampoules, glass, disposable, 4 mL (pkg of 485)	1
Aluminum caps, sealing discs, glass ampoules, 4 mL (pkg of 100)	5
Ampoule, Hastelloy, 4 mL, with threaded cap (pkg of 2)	6
Ampoule, stainless steel, 4 mL, with threaded cap (pkg of 2)	6
Ampoule, stainless steel, 1 mL, with circlip cap (pkg of 1)	6
Ampoule, Hastelloy, 1 mL, with circlip cap (pkg of 1)	6
Lifting eyelet, ampoule, 1 mL	12

**Vacuum Thermal Stability (VTS) Test Rearrangements**

The vacuum thermal stability (VTS) test rearrangements should have the facility of nanocalorimeter 4 mL. It should have the facility to permit measurement of sample heat flow and pressure. The pressure data should be collected using TAM assistance software. This ampoule should provide the ability to evacuate air above the sample prior to a measurement. It should have pressure transducer, calorimeter lid to collect the pressure transducer cable to TAM.

For VTS rearrangement must include the following:

Description specific for Vacuum Thermal Stability (VTS)	Quantity
Ampoule, vacuum/pressure, 4 mL, TAM-IV	2
Ampoule, VTS, stainless steel, 4 mL, with circlip cap (pkg of 1)	2
Ampoule, VTS, stainless steel, 4 mL, with thread/O-ring cap (pkg of 1)	1
Evacuation station	2
Extension cable for use with the 4 mL or 20 mL vacuum/pressure ampoules	2
Digital block heater 220 V (accepts the 4 mL, 20 mL & 100 mL block inserts)	1

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Block insert, VTS, 4 mL [used with digital block heater 110 VAC or digital block heater 220 VAC	2
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**Warranty:**

Lifetime support plan (LSP) for TAM-IV Heat flow calorimeter	2 years
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**Computer Hardware**

1. Computer System

- i. All in one branded PC compatible with the TAM and other accessories; latest configuration of i7 processor with 8 GB RAM, 1 TB HDD, Windows 10 or latest version, 24" LED monitor and latest version of office with per petual license preloaded and activated.
- ii. USB port for TAM, USB ports for the RH perfusion accessories and USB ports for printer, mouse & key board.

2. Printer: A4 size laserjet color printer.

**Software:**

- I. System controller and display system. Controller and display to visualize the heat flow and other instrument functions should be built in.
- II. TAM software. Software should be latest, genuine and original from TAM manufacture.
- III. Single point control. Single control for complete system including all modules, acquire, process, and reproduce the data.
- IV. Report generation. Multi data processing and report compiling and generation in single report.
- V. Windows Office & operating system. Required Windows office & operating system compatible with TAM should be provided.
- VI. Software should be capable of programming methods for all possible experiments possible with TAM and the analysis of each data generated. Should also have capability of analysis of kinetics, Arrhenius and other advanced applications.

**UPS requirements**

Dedicated UPS with pure sine wave has to be provided as per the details.



- I. UPS for computer. 3 hours power back-up unit for with full load of the system.
- II. UPS for TAM. 3 hours power back-up unit for with full load of the system.
- III. UPS for humidifier cum dehumidifier unit. 1 hour power back-up unit for with full load of the system.

#### **Analytical Balance**

Suitable analytical balance up to 5 decimal points for weighing the propellants and explosive should be provided.

#### **Digital Block Heater**

Digital block heater with block inserter for heating ampoules (size: 4 mL) from room temperature up to 90 °C with temperature stability of 0.1 °C.

#### **Evacuation Station**

Station should preferably be used with a block heater to permit evacuation at a desired experimental temperature.

Air conditioner with precision temperature controller and humidification/dehumidification unit should be supplied.

#### **Acceptance criteria:**

- The equipment must perform satisfactorily as per general and technical specification as mentioned above and a detailed acceptance criteria have been enclosed within.

#### **General points:**

- The installation, commissioning and demonstration of the operation of the equipment and necessary accessories such as unit with dehumidifier cum humidifier have to be carried out by the firm at HEMRL, Pune.
- Training for four persons for minimum five days at HEMRL. The supplier should provide free of cost training on operation & maintenance of the equipment to the laboratory & maintenance personnel at destination site of installation for a period of minimum one week deputing their experts. The training should include basic as well as advance theory of TAM, practical applications and related softwares.

*Amr*

- During warranty period every year, a refresher course on TAM and related softwares should be provided.
- Inspection and acceptance: to be carried out at HEMRL, Pune.
- Assurance of after sale service: seven years after completion of warranty period.
- Equipment should be supplied with operating and maintenance manuals, standard operating procedures and application notes.
- Assurance of availability of spare parts for next seven years after warranty period.
- CD/DVD of measurement software, manuals and operating system along with instrument.

*Anuabirami S*

(Dr. (Ms.) ANU ABIRAMI S)  
Sc. 'F', QARD

*RB Pawar*

(Dr. RB Pawar)  
Sc 'G'  
DH QARD

*C. Gururaja Rao*

C. Gururaja Rao  
Sc 'G'  
TD, Quality

Techno-commercial check list

Sr. No.	Description of Item/spec.	Vendor Response	
		Yes	No
<b>A. Technical</b>			
1.	<p>Supply, delivery, installation, commissioning, and training of fully integrated thermal activity monitor comprising of thermostat, Mini/multicalorimeter, nanocalorimeter, UPS, humidifier cum dehumidifier unit, glass beads, consumables, branded PC with software, data management system and necessary accessories as per the specification and demonstration of functioning of the equipment at HEMRL.</p> <p><b>Purpose of TAM</b></p> <p>The equipment should be capable of measuring the amount of energy released during decomposition of all types of explosives and propellants to find out the real ageing of the same as per STANAG 4515, 4582, 4147 and MIL 175IA. Apart from the above test, the said equipment will be used to perform the following.</p> <ol style="list-style-type: none"> <li>Stability test of propellants, explosives and pyrotechnics.</li> <li>Ascertain compatibility study of all types of explosives, propellants, pyrotechnics and igniters with explosive and non-explosive ingredients.</li> <li>Quality control of all kinds of explosives, propellants, pyrotechnics and igniters.</li> <li>Vacuum thermal stability test for propellants and explosives.</li> </ol> <p><b>Thermostat Specifications</b></p> <p>Thermostat TAM-IV, 4 channel (100/240 VAC; 50/60 Hz)</p> <ul style="list-style-type: none"> <li>Temperature range: 4-150 °C</li> <li>Temperature accuracy: <math>&lt; \pm 0.1</math> °C</li> <li>Long term stability: <math>&lt; \pm 100</math> <math>\mu</math> °C/24h</li> <li>Scanning rate: <math>&lt; \pm 2</math> °C/h</li> </ul> <p>Thermostat must include at least 4 positions, which can accommodate different calorimeters, ampoules, accessories by adding calorimeters to the thermostats for simultaneous measurements and up to 14 simultaneous calorimetric measurements.</p>		

Thermostats should contain basic minimum configuration needed for the applications of RH perfusion calorimetry, liquid perfusion calorimetry, gas perfusion calorimetry, vacuum/pressure calorimetry, solution calorimetry and STANAG 4582 by adding calorimeters, ampoules and accessories.

Required calorimeters for the thermostats should contain the following.

- A. **2 Nanocalorimeters:** For isothermal or temperature scanning experiments with the highest heat flow sensitivity. Nanocalorimeter should be able to configure with RH perfusion calorimetry with 1 mL and 4 mL reaction vessels. Possible applications should include amorphicity assessment by vapor induced crystallization, for stability and compatibility testing and effect of humidity or other vapor activities and for all applications where the atmosphere over the sample needs to be controlled.
- B. **12 MINI/6 multicalorimeters:** An array of minicalorimeters, each providing microcalorimeter - level sensitivity, configured in the groups of 6 (depending on the sample volume) in the available 2 channels in the calorimeter. Multicalorimeter should be able to be configured with multi sample calorimetry in closed ampoules. Possible applications should include for stability and compatibility, for amorphicity assessment and polymorphism, for curing and safety assessment as STANAG 4582.

## 2. Calorimeter Specifications

### 1. Nanocalorimeter:

Calorimeter must conform to the following minimum specifications. Data must be included to demonstrate performance.

- Dynamic range:  $\pm 10$  milliwatt
- Short term noise:  $< \pm 10$  nanowatt
- Baseline Drifts:  $< 40$  nanowatt/24 h
- Accuracy:  $< 2\%$
- Precision:  $\pm 100$  nanowatt

The calorimeter must be true isothermal system, not adiabatic. As such, the temperature of the sample does not change more than  $\pm 0.0001$  °C. [Adiabatic calorimeters allow the temperature of the sample to change during a process; they are not equivalent technology.]

The calorimeter must operate in either heat flow (heat flux), dynamically corrected or powered compensation (feedback) modes of detection.

The heat flow response of the calorimeter must be calibrated using a fixed calibration heater.



The calorimeter must accommodate removable sample ampoules, up to 5 mL in volume, 1 mL or 4 mL preferably. Fixed cell design is not acceptable due to lack of flexibility and inherent issues with cleaning.

One calorimeter version of the nanocalorimeter should include two external pressure transducer (0 to 10 bar) and two 4 mL stainless steel vacuum – pressure ampoules for simultaneous heat flow and pressure measurement during energetic material (i.e. igniters, pyrotechnics, propellants, explosives) analysis.

Calorimeter must accommodate a wide variety of accessories and ampoules including the following:

### **RH Perfusion Accessories**

RH perfusion accessory interface module for communication and control of auxiliary equipment used with TAM. The auxiliary equipment should include precision syringe pump, gas flow control kit, pump control module and voltage I/O module. Ampoule RH perfusion made of stainless steel having capacity of 4 mL also, with O-ring cap and disposable Teflon disc has to be supplied.

#### **Specific for RH Perfusion:**

<b>Description</b>	<b>Quantity</b>
Nanocalorimeter, 4mL TAM-IV	2
Ampoule, RH perfusion, stainless steel, 4 mL	1
Ampoule, stainless steel, 4 mL, with circlip cap (pkg of 1)	1
Ampoule, RH perfusion, glass, 1 mL	2
Ampoule, RH perfusion, glass, 1 mL, with circlip cap (pkg of 1)	2
Ampoule, RH perfusion, glass , 4 mL	2
Ampoule, RH perfusion, glass, 4 mL, with circlip cap (pkg of 1)	2
Ampoule, RH perfusion, stainless steel, 1 mL	1
Ampoule, RH perfusion, stainless steel, 1 mL with circlip cap (pkg of 1)	1
Ampoule, RH perfusion, Hastelloy, 4 mL, with circlip cap (pkg of 1)	2
Ampoule, RH perfusion, Hastelloy, 1 mL, with circlip cap (pkg of 1)	2
Reaction vessel, RH perfusion, Hastelloy, 4 mL	2
Reaction vessel, RH perfusion, Hastelloy, 1 mL	2

Gas flow control kit, for RH perfusion

1

**Specific for Gas Perfusion:**

Description	Quantity
Ampoule, perfusion, stainless steel, 4 mL	1
Ampoule, perfusion, stainless steel, 4 mL, with circlip cap (pkg of 1)	1
Ampoule, perfusion, stainless steel, 1 mL	1
Ampoule, perfusion, stainless steel, 1 mL, with circlip cap (pkg of 1)	1
Reaction vessel, perfusion, glass, 4 mL	2
Ampoule, perfusion, glass, 4 mL, with circlip cap (pkg of 1)	2
Reaction vessel, perfusion, glass, 1 mL	2
Ampoule, perfusion, glass, 1 mL, with circlip cap (pkg of 1)	2
Reaction vessel, perfusion, Hastelloy, 4mL	2
Ampoule, perfusion, Hastelloy, 4 mL, with circlip cap (pkg of 1)	2
Reaction vessel, perfusion, Hastelloy, 1 mL	2
Ampoule, perfusion, Hastelloy, 1 mL, with circlip cap (pkg of 1)	2
Gas flow control kit, for gas perfusion	2
Hygrostat, perfusion, Micro, 0.2 mL, for 4 mL disposable glass ampoules (pkg of 100)	5

**3. Calorimeter Specifications**

**2. 4 mL Mini/Multicalorimeter**

Heat flow calorimeter system must accommodate multiple simultaneous differential measurements.

This can be accomplished through a multicalorimeter array of 6 Minicalorimeter.

Each calorimeter provides performance as defined in the below:

- Dynamic range:  $\pm 25$  milliwatt
- Short term noise  $< \pm 100$  nanowatt
- Baseline drift  $< 200$  nanowatt/24h
- Accuracy  $< 5\%$
- Precision  $\pm 200$  nanowatt

The heat flow response of the calorimeter must be calibrated using a fixed calibration heater.  
 The calorimeter must accommodate removable sample ampoules, up to 5 mL in volume. Fixed cell design is not acceptable due to lack of flexibility and inherent issues with cleaning.

4. **Start-up Kit**

Suitable start-up kit with glass ampoules, caps, crimping tool, cap adjustment tool, decapper tool etc. to be supplied with TAM.

The multicalorimeter must accommodate a wide variety of ampoules and accessories, including the following:

Description specific for multicalorimeter	Quantity
Multicalorimeter, 4 mL, (8.4 J/K), 6ch TAM-IV	2
Start up kit, 4 mL (with 12 eyelets)	1
Vial decapper, 3 & 4 mL pressure release lifters, TAM, (pkg of 1)	1
Pressure release lifter, start up kit, 4 mL, TAM (pkg of 3)	4
Cap, crimping tool, ampoules, 3 & 4 mL	1
Clamping tool with safety lock	1
Decapper tool: A dual decapper tool for removing lids from the 3, 4 (13mm) and 20 (20mm) mL disposable glass ampoules used in TAM-III, TAM-IV and TAM-Air	1
Ampoule, stainless steel, 4 mL with threaded cap (pkg of 2)	1
Ampoule, Hastelloy, 4 mL, with threaded cap (pkg of 2)	1
Ampoule, stainless steel, 4 mL, with thread/O-ring cap (pkg of 1)	1
Ampoule, Hastelloy, 4 mL, with thread/O-ring cap (pkg of 1)	1
Ampoule, stainless steel, 1 mL, with circlip clip (pkg of 1)	1

Sample ampoules:

Description	Quantity
Ampoules, glass, disposable, 4 mL (pkg of 485)	1
Aluminum caps, sealing discs, glass ampoules, 4 mL (pkg of 100)	5
Ampoule, Hastelloy, 4 mL, with threaded cap (pkg of 2)	6
Ampoule, stainless steel, 4 mL, with threaded cap (pkg of 2)	6
Ampoule, stainless steel, 1 mL, with circlip cap (pkg of 1)	6

	Ampoule, Hastelloy, 1 mL, with circlip cap (pkg of 1)	6																		
	Lifting eyelet, ampoule, 1 mL	12																		
5.	<p><b>Vacuum Thermal Stability (VTS) Test Rearrangements</b></p> <p>The vacuum thermal stability (VTS) test rearrangements should have the facility of nanocalorimeter 4 mL. It should have the facility to permit measurement of sample heat flow and pressure. The pressure data should be collected using TAM assistance software. This ampoule should provide the ability to evacuate air above the sample prior to a measurement. It should have pressure transducer, calorimeter lid to collect the pressure transducer cable to TAM.</p> <p>For VTS rearrangement must include the following:</p> <table border="1"> <thead> <tr> <th>Description specific for Vacuum Thermal Stability (VTS)</th> <th>Quantity</th> </tr> </thead> <tbody> <tr> <td>Ampoule, vacuum/pressure, 4 mL, TAM-IV</td> <td>2</td> </tr> <tr> <td>Ampoule, VTS, stainless steel, 4 mL, with circlip cap (pkg of 1)</td> <td>2</td> </tr> <tr> <td>Ampoule, VTS, stainless steel, 4 mL, with thread/O-ring cap (pkg of 1)</td> <td>1</td> </tr> <tr> <td>Evacuation station</td> <td>2</td> </tr> <tr> <td>Extension cable for use with the 4 mL or 20 mL vacuum/pressure ampoules</td> <td>2</td> </tr> <tr> <td>Digital block heater 220 V (accepts the 4 mL, 20 mL &amp; 100 mL block inserts)</td> <td>1</td> </tr> <tr> <td>Block insert, VTS, 4 mL [used with digital block heater 110 VAC or digital block heater 220 VAC</td> <td>2</td> </tr> </tbody> </table>		Description specific for Vacuum Thermal Stability (VTS)	Quantity	Ampoule, vacuum/pressure, 4 mL, TAM-IV	2	Ampoule, VTS, stainless steel, 4 mL, with circlip cap (pkg of 1)	2	Ampoule, VTS, stainless steel, 4 mL, with thread/O-ring cap (pkg of 1)	1	Evacuation station	2	Extension cable for use with the 4 mL or 20 mL vacuum/pressure ampoules	2	Digital block heater 220 V (accepts the 4 mL, 20 mL & 100 mL block inserts)	1	Block insert, VTS, 4 mL [used with digital block heater 110 VAC or digital block heater 220 VAC	2		
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6.	<p><b>Warranty:</b></p> <table border="1"> <tr> <td>Lifetime support plan (LSP) for TAM-IV Heat flow calorimeter</td> <td>2 years</td> </tr> </table>		Lifetime support plan (LSP) for TAM-IV Heat flow calorimeter	2 years																
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7.	<p><b>Computer Hardware</b></p> <ol style="list-style-type: none"> <li>1. Computer System <ol style="list-style-type: none"> <li>i. All in one branded PC compatible with the TAM and other accessories; latest configuration of i5/i7 processor with 8 GB RAM, 1 TB HDD, Windows 10 or latest version, 24" LED monitor and latest version of office with per petual license preloaded and activated.</li> <li>ii. USB port for TAM, USB ports for the RH perfusion accessories and USB ports for printer, mouse &amp; key board.</li> </ol> </li> <li>2. Printer: A4 size laserjet color printer.</li> </ol>																			

8.	<p><b>Software:</b></p> <ol style="list-style-type: none"> <li>I. System controller and display system. Controller and display to visualize the heat flow and other instrument functions should be built in.</li> <li>II. TAM software. Software should be latest, genuine and original from TAM manufacture.</li> <li>III. Single point control. Single control for complete system including all modules, acquire, process, and reproduce the data.</li> <li>IV. Report generation. Multi data processing and report compiling and generation in single report.</li> <li>V. Windows Office &amp; operating system. Required Windows office &amp; operating system compatible with TAM should be provided.</li> </ol> <p>Software should be capable of programming methods for all possible experiments possible with TAM and the analysis of each data generated. Should also have capability of analysis of kinetics, Arrhenius and other advanced applications.</p>		
9.	<p><b>UPS requirements</b></p> <p>Dedicated UPS with pure sine wave has to be provided as per the details.</p> <ol style="list-style-type: none"> <li>I. UPS for computer. 3 hours power back-up unit for with full load of the system.</li> <li>II. UPS for TAM. 3 hours power back-up unit for with full load of the system.</li> <li>III. UPS for humidifier cum dehumidifier unit. 1 hour power back-up unit for with full load of the system.</li> </ol>		
10.	<p><b>Analytical Balance</b></p> <p>Suitable analytical balance up to 5 decimal points for weighing the propellants and explosive should be provided.</p>		
11.	<p><b>Digital Block Heater</b></p> <p>Digital block heater with block inserter for heating ampoules (size: 4 mL) from room temperature up to 90 °C with temperature stability of 0.1 °C.</p>		
12.	<p><b>Evacuation Station</b></p> <p>Station should preferably be used with a block heater to permit evacuation at a desired experimental temperature.</p> <p>Air conditioner with precision temperature controller and humidification/dehumidification unit should be supplied.</p>		
13.	<p><b>Acceptance criteria:</b></p> <ul style="list-style-type: none"> <li>• The equipment must perform satisfactorily as per general and technical specification</li> </ul>		

as mentioned above and a detailed acceptance criteria have been enclosed within.

**General points:**

- The installation, commissioning and demonstration of the operation of the equipment and necessary accessories such as unit with dehumidifier cum humidifier have to be carried out by the firm at HEMRL, Pune.
- Training for four persons for minimum five days at HEMRL. The supplier should provide free of cost training on operation & maintenance of the equipment to the laboratory & maintenance personnel at destination site of installation for a period of minimum one week deputing their experts. The training should include basic as well as advance theory of TAM, practical applications and related softwares.
- During warranty period every year, a refresher course on TAM and related softwares should be provided.
- Inspection and acceptance: to be carried out at HEMRL, Pune.
- Assurance of after sale service: seven years after completion of warranty period.
- Equipment should be supplied with operating and maintenance manuals, standard operating procedures and application notes.
- Assurance of availability of spare parts for next seven years after warranty period.
- CD/DVD of measurement software, manuals and operating system along with instrument.

Seal & date

Signature of Supplier with

**\*Note : The above confirmation shall be binding on the supplier as a legal compliance.**

Tel. No. : 25912241,25869371  
Fax. No. : 25869661,25869316



Government of India  
Ministry of Defence  
Defence R & D Organisation (DRDO)  
High Energy Materials Research Laboratory  
Armament Post  
Sutarwadi  
Pune - 411021

### ONLINE INVITATION OF BIDS

Invitation of Online Bids for TAM (THERMAL ACTIVITY MONITOR) WITH ACCESSORIES AS PER SPEC. NO. HEMRL/QARD/2022/SPEC/TAM/186

Request for Proposal (RFP) for RFP No. HEMRL/25FET001/CP dated 10-Feb-2025

- Online Bids are invited for supply of items listed in Part-V of this RFP as per Two Bid. The online bid (both techno-commercial and price bid) should be uploaded by bidder before the due date and time.
- The address and contact numbers of sending documents (viz. EMD (Bid Security), Tender Fee, Earnest Money for Integrity Pact and signed Integrity Pact document (if applicable) / Technical Brochure if any) other than techno-commercial and financial bids being submitted in electronic mode or seeking clarification regarding this RFP are given below:

- Queries to be addressed to : **The Director HEMRL**
- Postal address : **Armament Post  
Sutarwadi  
Pune - 411021**
- Name and Designation of contact Officer : **Dr. DEBDAS BHOWMIK  
SCIENTIST F**
- Telephone No(s) of contact Officer : **+02025912241**
- Fax number(s): **25869661,25869316**
- email-ID of contact Officer : **mmd.hemrl@gov.in**

- This RFP is divided into 6 (SIX) parts as follows :
  - Part I (A)** contains **General Information and Instruction for the Bidders** about the RFP such as the time, online submission and opening of Bids, Validity period of Bids, etc. **Part I (B)** contains Tender Acceptance Letter to be filled by the Bidder and uploaded in cover 1.
  - Part II (A)** contains **Standard Terms and Conditions of RFP**, which will form part of the Contract / Supply Order (herein after referred as the Contract) with the successful Bidder(s). **Part II (B)** contains instructions for online submission of Bids. The terms and conditions of **Part II (A) and Part II (B)** which are to be followed for each RFP issued by DRDO are available under Standard Document on [defproc.gov.in](http://defproc.gov.in) and DRDO Website ([www.drdo.org](http://www.drdo.org))
  - Part III** contains **Special Terms and Conditions** applicable to this RFP and which will also form part of the Contract with the successful Bidder(s).
  - Part IV** contains **Vendor Qualification Criteria. [Attached]**
  - Part V** contains **Details of the Store(s) / Service(s) Required** e.g Technical Specifications, Delivery Period, Mode of Delivery, Consignee details, etc.
  - Part VI** contains **Format of Price Bid**. Price bid needs to be filled and uploaded as per Supplied Format only.
- This RFP is being issued with no financial commitment and the Buyer reserves the right to change or vary any part thereof or foreclose the instant procurement at any stage. The Buyer also reserves the right to disqualify any vendor, should it be necessary, at any stage on grounds of National Security.
- You may contact The Director HEMRL for any grievance related to bidding condition, bidding process and / or rejection of bid. With regard to bidding condition, this shall be done in writing at least seven days in advance of the stipulated date of submission of bid.

Yours sincerely,

( Dr. D. Bhowmik, SC'F )  
for The Director HEMRL

For & on behalf of President of India

## **PART-I(A) - GENERAL INFORMATION AND INSTRUCTIONS**

### **1. Pre-Bid Conference**

A pre-bid meeting will be held at 11:00 hrs on 04-MAR-2025 at MMD Conference Hall to answer any queries or to clarify doubts regarding submission of proposals. Bidders or their authorized representatives (duly authorised in writing) are invited to attend. This event will not be postponed due to non-presence of your representative.

### **2. Last Date and Time for Uploading the Bids**

2.1 As specified in defproc.gov.in

The online Bids (both Techno-Commercial and Price bid, in case of two bids system) should be uploaded by the due date and time. The responsibility to ensure this lies with the Bidder.

### **3. Location of the Tender Box**

3.1 Tender Box is located at HEMRL Security Gate (for receipt of documents such as EMD (Bid Security), Tender fee, Earnest Money for Integrity Pact and signed integrity pact document (if applicable) / Technical Brochure, catalogues if any, other than techno-commercial and financial bids being submitted in electronic mode).

### **4. Manner of Uploading / Deposition of Bids**

4.1 Bids (both Techno-Commercial and Price bid, in case of two bids system) is required to be submitted online on Portal (<https://defproc.gov.in>). Bids sent by Post/FAX or e-mail will not be considered.

### **5. Time and Date for opening of Bids :**

5.1 Bids will be opened online as specified on defproc.gov.in. If due to any exigency, the due date for opening of the bids is declared a closed holiday, the bids will be opened on the next working day at the same time or on any other day / time, as intimated by the buyer.

### **6. Place of Opening of the Bids :**

6.1 Bids will be opened online only.

### **7. Marking of Bids**

7.1 Envelope containing documents such as EMD, Tender Fee, Earnest Money for Integrity Pact and signed Integrity Pact document (if applicable) / Technical Brochure, if any, must be clearly marked with Tender Reference No. and Date of opening

### **8. Procedure for Submission of Bid**

#### **8.1 For Online Bids**

Bids would be submitted as per standard online e-procurement procedure for Single Bid/Two bid System. The original tender fee , EMD instrument (if applicable), Earnest Money for Integrity Pact and signed Integrity Pact document ( if applicable) / Technical Brochure, if any should be sent in an envelope duly marked with tender reference no. and addressed to Director, on or before ``Bid submission end date and time``. In case Original tender fee and EMD instrument (if applicable) are not received on or before ``Technical bid opening date and time``, bid of such bidders will summarily be rejected.

### **9. Forwarding of Bids**

9.1 Bids should be submitted by Bidders online only, under the firm`s memo / letter pad inter alia furnishing details like GSTIN number, Bank address with NEFT Account if applicable, etc. and complete postal and e-mail address of firm`s office failing which the bid would not be considered.

### **10. Clarification Regarding Contents of the RFP**

A prospective bidder who requires clarification regarding the contents of the bidding documents shall notify to the Buyer in writing about the clarifications at least 7 (seven) days prior to the date of opening of the Bids. Copies of the query and clarifications by the purchaser will be sent to all prospective bidders who have received the bidding documents from the lab and would be posted on the website.

### **11. Indian firms need to quote only in Indian Rupees**

Bidders must submit Quotation pertaining to themselves only. An Indian firm can quote in FE on behalf of their OEM only if they are either a 100% subsidiary of the OEM or an Indian Agent of the foreign OEM in accordance with their agency agreement. The firms claiming to be:



- a) A 100% subsidiary would be required to produce documentary evidence in support of their claim along with their Techno-Commercial bid failing which their bid would be disqualified.
- b) An agent of foreign OEM, for submitting the offer on behalf of OEM, would be required to produce a copy of their agency agreement with the principals and a copy of registration/enlistment with DRDO/Ministry of Defence as an Indian agent, if registered/enlisted, along with their Techno-Commercial bid, failing which the bid would be disqualified. It would be mandatory for an Indian agent to get registered / enlisted with DRDO/Ministry of Defence as an Indian agent of OEM prior to evaluation of their Price bid, failing which their bid also would be disqualified.

## 12. Validity of Bids

The Bids should remain valid for 180 days from the date of opening of Bids.

## 13. Modification and Withdrawal of Bids

13.1 If a bidder intends to modify or withdraw his Bid after online submission, it can be done through selection of appropriate option available on the defproc.gov.in portal.

## 14. Earnest Money Deposit (Bid Security)

14.1 "Bidders are required to submit Earnest Money Deposit (EMD) instrument, in favour of The Director HEMRL, Pune, for amount of Rs. 1800000.00 in Indian Rupee only along with their bids. In case of two bid system, EMD shall be enclosed in the envelope containing the Techno-Commercial bid for Offline Tenders and for online upload scanned copy of EMD on website. The EMD may be submitted by Indigenous bidder in the form of an Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee. In case of foreign bidder, EMD is to be submitted in the form of appropriate Bank Guarantee from a first class bank of international repute. EMD is to remain valid for a period of forty-five days beyond the final bid validity period. EMD of the unsuccessful bidders will be returned to them, without any interest whatsoever, at the earliest after expiry of the final bid validity and latest on or before the thirtieth day after the award of the Contract.

EMD of the successful bidder would be returned without any interest whatsoever after the receipt of Performance Security Bond from them as called for in the Contract. EMD is not required to be submitted by those Bidders who are registered with the National Small Industries Corporation (NSIC), Departments of MoD, other DRDO labs and as per the policy of Government of India in vogue. Such bidders would be required to furnish the relevant documents in their Techno-Commercial bid in support of the claim. The EMD will be forfeited if the Bidder withdraws amends, impairs or derogates from the tender in any respect within the validity period of their tender.

In case original Tender Fees and EMD instrument (if applicable) are not received on or before "techno-commercial bid opening date and time", bid of such vendors will summarily be rejected."

### 14.2 Bid Security Declaration

Bidders may submit a Bid securing declaration accepting that if they withdraw or modify their Bids during the period of validity, or if they are awarded the contract and they fail to sign the contract, or to submit a performance security before the deadline defined in the request for bids document, they will be suspended for the period of upto 2 years from being eligible to submit Bids for contracts with the any procuring entity of DRDO.

## 15. Clarification Regarding Contents of the Bids

During evaluation of bids, the Buyer may, at his discretion, ask the bidder for clarification(s) on the Bid(s). The request for clarification will be given in writing. No clarification on the initiative of the bidder will be entertained after opening of bid.

## 16. Rejection of Bids

Canvassing by the Bidder in any form, unsolicited letter and post tender correction may invoke summary rejection with forfeiture of EMD. Conditional tenders will be rejected. Non-compliance of applicable General Information will disqualify your Bid

## 17. Unwillingness to Quote

Bidders unwilling to quote should ensure that intimation to this effect reaches before the due date and time of opening of the Bid, failing which the defaulting Bidder may be de-registered for the range of items in this RFP,

as per the policy in vogue

**18. Debarred/blacklisted firms**

Bids of debarred/blacklisted firms will not be considered for evaluation

**19. Document to be submitted with Techno-commercial Bid:**

The following documents are to be furnished by the Bidder in Cover-1 along with Techno Commercial Bid as per the tender document:

19.1 Signed and Scanned copy of appropriate valid company registration certificate or partnership deed (if applicable), experience certificate as required, PAN No and Tender Acceptance Letter as per Part I (B).

19.2 Scanned copy of instrument used to provide Tender Fee and Earnest Money Deposit or Proof of Registration with DRDO/MOD/ NSIC etc.

19.3 Signed and Scanned Copy of legal Agency Agreement/100% Subsidiary Certificate/Registration as an Agent (if applicable). If not applicable kindly upload a pdf document indicating Not Applicable.

19.4 Signed and scanned copy of previous three years Income-tax/GSTIN /Affidavit of partnership firm. If not applicable kindly upload a pdf document indicating Not Applicable.

19.5 Signed and Scanned Copy of the Make and model of all the systems, sub systems and additional items as mentioned in the Techno Commercial Bid.

19.6 Scanned Copy of Proforma of End User Certificate for Export License (if applicable). If not applicable kindly upload a pdf document indicating Not Applicable.

Note :

The original Tender Fees and EMD Instrument along with complete technical details such as Brochures, catalogues and write-ups if any should also be sent by post/courier in an envelope, addressed to The Director HEMRL, Pune, positively on or before ``Bid submission end date``.

**20. Price Bid to be uploaded in Cover-2**

as specified in defproc.gov.in

**PART-I(B) - TENDER ACCEPTANCE LETTER (E-PROCUREMENT)**

**(TO BE FILLED BY BIDDER AND UPLOADED IN COVER 1)**

(To be given on Company Letter Head)

Date :

To,

The Director, HEMRL

Subject : Acceptance of Terms & Conditions of Tender.

Tender Reference No. and ID: \_\_\_\_\_

Name of the Tender / Work: \_\_\_\_\_

1. I / We have downloaded / obtained the tender document(s) for the above mentioned 'Tender / Work from the web site(s) namely \_\_\_\_\_ as per your advertisement, given in the above mentioned website(s)
2. I / We hereby certify that I / we have read the entire terms and conditions of the tender documents from Page No. \_\_\_\_\_ to \_\_\_\_\_ (including all documents like annexure(s), schedule(s), etc.), (duly filled Compliance table attached) which will form part of the contract agreement and I / we shall abide hereby by the terms / conditions / clauses contained therein.
3. The corrigendum(s) issued from time to time by your department/ organizations related to this tender too have also been taken into consideration, while submitting this acceptance letter.
4. I / We hereby unconditionally accept the tender conditions of above mentioned tender document(s) / corrigendum(s) in its totality / entirety
5. I / We do hereby declare that our firm/company has not been blacklisted/debarred by any Govt. Department/Public Sector undertaking.
6. I / We certify that all information furnished by the our firm/company is true & correct and in the event that the information is found to be incorrect/untrue or found violated, then your department/organization shall without giving any notice or reason therefore or summarily reject the bid or terminate the contract, without prejudice to any other rights or remedy including the forfeiture of the full said earnestmoney deposit absolutely.\n\n

Yours Faithfully,  
(Signature of the Bidder, with Official Seal)

Compliance Table

S.No.	Part of RFP	Compliance of Para / Sub Para of RFP (Yes / No)	Reasons for Compliance / Non-Compliance (if any)	Remarks

## PART-II(A) - STANDARD TERMS & CONDITIONS

The Bidder is required to give confirmation of their acceptance of the Standard Terms and Conditions of the RFP mentioned below which will automatically be considered as part of the Contract concluded with the successful Bidder as selected by the Buyer. Failure to do so may result in rejection of the Bid submitted by the Bidder.

### 1. Effective Date of the Contract

In case of placement of a supply order, the date of acceptance of the Supply Order would be the effective date. The firm should check the supply order and convey acceptance of the same within seven days of its receipt. If such an acceptance or communication conveying firm's objection to certain parts of the supply order is not received within the stipulated period, the supply order will be deemed to have been fully accepted by the firm. In case a contract is to be signed by both the parties, the Contract shall come into effect on the date of signatures of both the parties on the Contract (Effective Date) or as agreed during negotiations. The performance of the Contract shall commence from the Effective Date of the Contract/Supply Order.

### 2. Law

The Contract shall be considered and made in accordance with the laws of the Republic of India and shall be governed by and interpreted in accordance with the laws of the Republic of India.

### 3. Arbitration

All disputes or differences arising out of or in connection with the Contract shall be settled by bilateral discussions. Any dispute, disagreement or question arising out of or relating to the Contract or relating to product or performance, which cannot be settled amicably, shall be resolved by arbitration in accordance with any one of the following provision:

#### 3.1 Option 3(a) : For Defence PSUs

The case of arbitration shall be referred to the Secretary Defence (R&D) for the appointment of arbitrator(s) and proceedings.

#### 3.2 Option 3(b) : For Central Public Sector Enterprises (CPSEs)

In the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contract(s), such disputes or difference shall be taken by either party for resolution through Administrative Mechanism for Resolution of CPSEs Disputes (AMRC) as per provisions of Department of Public Enterprises OM No. 4(1)/2013-DPE (GM)/FTS-1835 dated 22-05-2018 as amended.

#### 3.3 Option 3(c) : For Other firms

The cases of arbitration may be referred to arbitrator / arbitrators appointed as per section 11 of Indian Arbitration and Conciliation Act, 1996 as amended and the proceedings shall be conducted in accordance with procedure of Indian Arbitration and Conciliation Act, 1996 as amended.

OR

The case of arbitration may be referred to International Centre for Alternative Dispute Resolution (ICADR) for the appointment of arbitrator and proceedings shall be conducted in accordance with procedure of Indian Arbitration and Conciliation Act, 1996 as amended.

Bidders need to select one of the above options

#### 3.4 Option 3(c) : For Other Firms

The cases of arbitration may be referred to arbitrator / arbitrators appointed as per section 11 of Indian Arbitration and Conciliation Act, 1996 as amended and the proceedings shall be conducted in accordance with procedure of Indian Arbitration and Conciliation Act, 1996 as amended.

OR

The case of arbitration may be referred to International Centre for Alternative Dispute Resolution (ICADR) for the appointment of arbitrator and proceedings shall be conducted in accordance with procedure of Indian Arbitration and Conciliation Act, 1996 as amended.

OR

The case of arbitration may be conducted in accordance with the rules of Arbitration of the International Chamber of Commerce by one or more arbitrators appointed in accordance with the said rules in India. However, the arbitration proceedings shall be conducted in India under Indian Arbitration and Conciliation Act, 1996 as amended.

Bidders need to select one of the above options

#### **4. Penalty for Use of Undue influence**

The Seller undertakes that he has not given, offered or promised to give, directly or indirectly, any gift, consideration, reward, commission, fees, brokerage or inducement to any person in service of the Buyer or otherwise in procuring the Contract or forbearing to do or for having done or forborne to do any act in relation to the obtaining or execution of the Contract or any other contract with the Government of India for showing or forbearing to show favour or disfavour to any person in relation to the Contract or any other contract with the Government of India. Any breach of the aforesaid undertaking by the Seller or anyone employed by him or acting on his behalf (whether with or without the knowledge of the Seller) or the commission of any offers by the Seller or anyone employed by him or acting on his behalf, as defined in Chapter IX of the Indian Penal Code, 1860 or the Prevention of Corruption Act, 1986 or any other Act enacted for the prevention of corruption shall entitle the Buyer to cancel the contract and all or any other contracts with the Seller and recover from the Seller the amount of any loss arising from such cancellation. A decision of the Buyer or his nominee to the effect that a breach of the undertaking had been committed shall be final and binding on the Seller. Giving or offering of any gift, bribe or inducement or any attempt at any such act on behalf of the Seller towards any officer/ employee of the Buyer or to any other person in a position to influence any officer/ employee of the Buyer for showing any favour in relation to this or any other contract, shall render the Seller to such liability/ penalty as the Buyer may deem proper, including but not limited to termination of the contract, imposition of penal damages, forfeiture of the Bank Guarantee and refund of the amounts paid by the Buyer.

#### **5. Agents / Agency Commission**

5.1 The Seller confirms and declares to the Buyer that the Seller has not engaged any individual or firm, whether Indian or foreign whatsoever, to intercede, facilitate or in any way to recommend to the Government of India or any of its functionaries, whether officially or unofficially, to the award of the contract to the Seller; nor has any amount been paid, promised or intended to be paid to any such individual or firm in respect of any such intercession, facilitation or recommendation. The Seller agrees that if it is established at any time to the satisfaction of the Buyer that the present declaration is in any way incorrect or if at a later stage it is discovered by the Buyer that the Seller has engaged any such individual/firm, and paid or intended to pay any amount, gift, reward, fees, commission or consideration to such person, party, firm or institution, whether before or after the signing of this contract, the Seller will be liable to refund that amount to the Buyer. The Seller will also be debarred from entering into any contract with the Government of India for a minimum period of five years. The Buyer will also have a right to consider cancellation of the Contract either wholly or in part, without any entitlement or compensation to the Seller who shall in such an event be liable to refund all payments made by the Buyer in terms of the Contract along with interest at the rate of 2% above (i) MCLR (Marginal Cost of Funds based Lending Rate) declared by RBI pertaining to SBI for Indian bidders, and (ii) London Inter Bank Offered Rate (LIBOR) / EURIBOR for the foreign bidders. The applicable rates on the date of opening of bid shall be considered for this. The Buyer will also have the right to recover any such amount from any contracts in vogue with the Government of India.

OR

5.2 The Seller confirms and declares in the Techno-Commercial bid that they have engaged an agent, individual or firm, for performing certain services on their behalf. The Seller is required to disclose full details of any such person, party, firm or institution engaged by them for marketing of their equipment in India, either on

a country specific basis or as a part of a global or regional arrangement. These details should include the scope of work and responsibilities that have been entrusted with the said party in India. If there is noninvolvement of any such party then the same also be communicated in the offers specifically. The information is to be submitted as per the format at DRDO.SA.01. Without prejudice to the obligations of the vendor as contained in various parts of this document, appointment of an Agent by vendors will be subjected to the following conditions:

- a) Details of all Agents will be disclosed at the time of submission of offers and within two weeks of engagement of an Agent at any subsequent stage of procurement.
- b) The Seller is required to disclose termination of the agreement with the Agent, within two weeks of the agreement having been terminated.
- c) Buyer /MoD reserves the right to inform the Seller at any stage that the Agent so engaged is not acceptable whereupon it would be incumbent on the Seller either to interact with Buyer / MoD directly or engage another Agent. The decision of Buyer /MoD on rejection of the Agent shall be final and be effective immediately.
- d) All payments made to the Agent 12 months prior to tender submission would be disclosed at the time of tender submission and thereafter an annual report of payments would be submitted during the procurement process or upon demand of the Buyer / MoD.
- e) The Agent will not be engaged to manipulate or in any way to recommend to any functionaries of the Govt of India, whether officially or unofficially, the award of the contract to the Seller or to indulge in corrupt and unethical practices.
- f) The contract with the Agent will not be a conditional contract wherein payment made or penalty levied is based, directly or indirectly, on success or failure of the award of the contract.
- g) On demand, the Seller shall provide necessary information/inspection of the relevant financial documents/information, including a copy of the contract(s) and details of payment terms between the Seller and the Agent engaged by him.
- h) If the equipment being offered by the Seller has been supplied /contracted with any organisation, public/private in India, the details of the same may be furnished in the technical as well as commercial offers. The Sellers are required to give a written undertaking that they have not supplied/is not supplying the similar systems or subsystems at a price lower than that offered in the present bid to any other Ministry/Department of the Government of India and if the similar system has been supplied at a lower price, then the details regarding the cost, time of supply and quantities be included as part of the commercial offer. In case of non disclosure, if it is found at any stage that the similar system or subsystem was supplied by the Seller to any other Ministry/Department of the Government of India at a lower price, then that very price, will be applicable to the present case and with due allowance for elapsed time, the difference in the cost would be refunded to the Buyer, if the contract has already been concluded.

Following details are also to be submitted in the Techno-Commercial bid:

- a) Name of the Agent
- b) Agency Agreement between the Seller and the Agent giving details of their contractual obligation
- c) PAN Number, name and address of bankers in India and abroad in respect of Indian Agent
- d) The nature of services to be rendered by the Agent and
- e) Percentage of agency commission payable to the Agent

## **6. Access to Books of Accounts**

In case it is found to the satisfaction of the Buyer that the Bidder/Seller has violated the provisions of use of undue influence and/or employment of agent to obtain the Contract, the Bidder/Seller, on a specific request of the Buyer, shall provide necessary information/ inspection of the relevant financial documents/information/Books of Accounts.

## **7. Non-disclosure of Contract Documents**

Except with the written consent of the Buyer/ Seller, other party shall not disclose the Contract or any provision, specification, plan, design, pattern, sample or information thereof to any third party.

## **8. Withholding of Payment**

In the event of the Seller's failure to submit the Bonds, Guarantees and Documents, supply the stores/goods and conduct trials, installation of equipment, training, etc. as specified in the Contract, the Buyer may, at his discretion, withhold any payment until the completion of the Contract.

## **9. Liquidated Damages**

The Buyer may deduct from the Seller, as agreed, liquidated damages at the rate of 0.5% per week or part thereof, of the basic cost of the delayed stores which the seller has failed to deliver within the period agreed for delivery in the contract. LD can also be levied on the Seller on the basic cost of the stores supplied partially within the scope of the order/ contract that could not be put to use due to late delivery of the remaining stores. The maximum quantum of LD would be 10% of the total order value.

## **10. Termination of Contract**

10.1 The store/service is not received/rendered as per the contracted schedule(s) and the same has not been extended by the Buyer

OR

The delivery of the store/service is delayed for causes not attributable to Force Majeure for more than 12 months after the scheduled date of delivery and the delivery period has not been extended by the Buyer

10.2 The delivery of store/service is delayed due to causes of Force Majeure by more than 12 months provided Force Majeure clause is included in the contract and the delivery period has not been extended by the Buyer

10.3 The Seller is declared bankrupt or becomes insolvent

10.4 The Buyer has noticed that the Seller has violated the provisions of use of undue influence and/ or employment of agent to obtain the Contract.

10.5 As per decision of the Arbitration Tribunal.

## **11. Notices**

Any notice required or permitted by the Contract shall be written in English language and may be delivered personally or may be sent by FAX/email or registered pre-paid mail/ airmail/e-mail, addressed to the last known address of the party to whom it is sent.

## **12. Transfer and Sub-letting**

The Seller has no right to give, bargain, sell, assign or sublet or otherwise dispose of the Contract or any part thereof, as well as to give or to let a third party take benefit or advantage of the Contract or any part thereof without written consent of the Buyer.

## **13. Use of Patents and other Industrial Property Rights**

The prices stated in the Contract/ SO shall be deemed to include all amounts payable for the use of patents, copyrights, registered charges, trademarks and payments for any other Industrial Property Rights. The Seller shall indemnify the Buyer against all claims from a third party at any time on account of the infringement of any or all the rights mentioned in the previous paragraphs, whether such claims arise in respect of manufacture or use. The Seller shall be responsible for the completion of the supplies including spares, tools, technical literature and training aggregates irrespective of the fact of infringement of the supplies or any or all the rights mentioned above.

## **14. Amendments**

No provision of the Contract / SO shall be changed or modified in any way (including this provision) either in

whole or in part except when both the parties are in written agreement for amending the Contract / SO.

## 15. Taxes and Duties

### 15.1 In respect of Indigenous Bidders

#### A. General

- a) If the quoted prices exclude GST / Local Tax or any other Statutory Duties/Taxes, the same must be specifically stated with applicable rates. In the absence of same, it will be presumed that the prices include all such charges and no claim for the same will be entertained.
- b) If reimbursement of any Duty/Tax is intended as extra over the quoted prices, the Bidder must specifically say so. In the absence of any such stipulation it will be presumed that the prices quoted are firm and final and no claim on account of such duty/tax will be entertained after the opening of tenders.
- c) If a Bidder chooses to quote a price inclusive of any duty/tax and does not confirm that duty/tax so included is firm and final, he should clearly indicate the rate of such duty/tax and quantum of such duty/tax included in the price. Failure to do so may result in ignoring any request for change of duty/tax at a later date due to any reason whatsoever.
- d) Any addition to duty/tax and change in any duty/tax upward/downward as a result of any statutory variation in duty/tax taking place within contract terms shall be allowed to the extent of actual quantum of such variation of duty/tax paid by the supplier. Similarly, in case of downward revision in any duty/tax, the actual quantum of reduction of such duty/tax shall be reimbursed to the Buyer by the Seller. All such adjustments shall include all reliefs, exemptions, rebates, concession etc., if any, obtained by the Seller.
- e) TDS as per Income Tax Rules will be deducted and a certificate to that effect will be issued by the Buyer/ Buyer's paying authority.

#### B. Customs Duty

Custom duty exemption Certificate will not be issued by the Buyer for components/ raw material imported by the Bidder. Bidder shall quote amount inclusive of Custom Duty as applicable.

#### C. GST

- a. GST rates will be considered as per the published rates by GST Authorities as amended from time to time.
- b. Unless otherwise specifically agreed to in terms of the Contract, the Buyer shall not be liable for any claim on account of fresh imposition and/or increase of GST on raw materials and/or components used directly in the manufacture of the contracted stores taking place during the pendency of the contract.
- c. Bidders are advised to specifically mention the rate of GST payable to facilitate correct evaluation of quotes. In the absence of such explicit declaration regarding %age of tax rate, it would be deemed that quoted prices include applicable GST.

#### D. Local Taxes

- a. Normally, materials to be supplied to Government Departments against Government Contracts are exempted from levy of Town Duty, Terminal Tax and other levies of local bodies. The local Town/Municipal Body regulations at times, however, provide for such exemption only on production of such exemption



certificate from any authorized officer, Seller should ensure that stores ordered against contracts placed by this office are exempted from levy of Town Duty, Terminal Tax or other local taxes and duties. Wherever required, firm should obtain the exemption certificate from the Buyer, to avoid payment of such local taxes or duties.

b. In case where the Municipality or other local body insists upon payment of these duties or taxes, the same should be paid by the Seller to avoid delay in supplies and possible demurrage charges. After the issue of exemption certificate by the Buyer, the Seller may get the reimbursement from the local authority. In case of any difficulty, the receipt obtained for such payment should be forwarded to the Buyer without delay together with a copy of the relevant act or by-laws/notifications of the Municipality of the local body concerned to enable this office to take up the case for refund with the concerned bodies if admissible under the said acts or rules.

#### 15.2 In respect of Foreign Bidders

All taxes, duties, levies and charges which are to be paid for the delivery of stores/services, including advance samples, shall be paid by the parties under the Contract in their respective countries. However, the corporate/individual income tax, if applicable, will continue to be paid by the concerned party/individual.

DRDO is a public funded research institution and has been exempted from the payment of Customs Duty, as per the description of stores and conditions thereon, under Customs Notification No. 51/96 as amended and Notification No. 39/96 as amended, However, if required, Basic Custom duty applicable cess is to be paid as per prevailing notification. [Applicable where INCOTERMS is DDP (destination)]

#### **16. Denial Clause**

Variations in the rates of statutory levies within the original delivery schedule will be allowed if taxes are explicitly mentioned in the contract/ supply order and delivery has not been made till the revision of the statutory levies. Buyer reserves the right not to reimburse the enhancement of cost due to increase in statutory levies beyond the original delivery period of the supply order/ contract even if such extension is granted without imposition of LD.

#### **17. Undertaking from the Bidders**

Bidder/firm/company/vendor will submit an undertaking that in the past they have never been banned/debarred for doing business dealings with Ministry of Defence/Govt. of India/any other Govt. organisation and that there is no enquiry going on by CBI/ED/any other Govt. agency against them.

#### **18. Purchase Preference Policy**

Make in India: This RFP complies with Public Procurement (Preference to Make in India), order 2017 by Department of Industrial Policy and Promotion, Ministry of Commerce and Industry Government of India issued vide letter No. P-45021/2/2017-B.E-II dated 15th June 2017 and as amended (for updated details please refer to [www.dipp.gov.in](http://www.dipp.gov.in))

#### **19. Purchase preference to Micro and small enterprises (MSEs)**

Purchase preference to Micro and small enterprises (MSEs) will be given to MSEs as per provisions of Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012 as amended (for details please refer [www.dcmsme.gov.in](http://www.dcmsme.gov.in)).

#### **20. Documents to be Furnished for Claiming Payment**

##### 20.1 Indigenous Sellers

The payment of bills will be made on submission of the following documents by the Seller to the Buyer.

20.1.1 Any other document / certificate that may be provided for in the Contract.

20.1.2 Ink-signed copy of Contractor's Bill.

20.1.3 Ink-signed copy of Commercial Invoice / Seller's Bill.

20.1.4 Bank Guarantee for Advance, if applicable.

20.1.5 Guarantee/ Warranty Certificate.

20.1.6 Details for electronic payment viz. Bank name, Branch name and address, Account Number, IFS Code, MICR Number (if these details are not already incorporated in the Contract).

20.1.7 Original copy of the Contract and amendments thereon, if any.

20.1.8 Self certification from the Seller that the GST/ applicable taxes as received under the contract would be deposited to the concerned taxation authority.

##### 20.2 Foreign Sellers

In case of payment through Letter of Credit (LC), paid shipping documents are to be provided to the Bank by

the Seller as a proof of dispatch of goods as per contractual terms /LC conditions so that the Seller gets payment from LC. The Bank will forward these documents to the Buyer for getting the goods/stores released from the Port/Airport. However, where the mode of payment is DBT, the paid shipping documents are to be provided to the paying authority by the Buyer. Documents will include :

20.2.1 Insurance Policy of 110% value in case of CIF/ CIP contract.

20.2.2 Certificate of Conformity and Acceptance Test at PDI, if any.

20.2.3 Phyto-sanitary/ Fumigation Certificate, if any.

20.2.4 Clean on Board Airway Bill/Bill of Lading.

20.2.5 Original Invoice

20.2.6 Packing List

20.2.7 Dangerous Cargo Certificate, if applicable.

20.2.8 Certificate of Origin from Seller`s Chamber of Commerce, if any.

20.2.9 Certificate of Quality and year of manufacture from OEM.

## **21. Franking Clause**

### 21.1 In Case of Acceptance of Store(s)

The fact that the goods have been inspected after the delivery period and passed by the Inspecting Officer will not have the effect of keeping the contract alive. The goods are being passed without prejudice to the rights of the Buyer under the terms and conditions of the Contract.

### 21.2 In Case of Rejection of Store(s)

The fact that the goods have been inspected after the delivery period and rejected by the Inspecting Officer will not bind the Buyer in any manner. The goods are being rejected without prejudice to the rights of the Buyer under the terms and conditions of the contract.

## **22. Claims**

22.1 The quantity claims for deficiency of quantity and/ or the quality claims for defects or deficiencies in quality noticed during the inspection shall be presented within 45 days of completion of inspection

22.2 The Seller shall collect the defective or rejected goods from the location nominated by the Buyer and deliver the repaired or replaced goods at the same location, within mutually agreed period, under Seller`s arrangement without any financial implication on the Buyer.

## **23. Liability Clause**

23.1 Any damage caused to the property or suffered by the personnel of Buyer during the execution of Contract shall remain the liability of the Buyer. Such liability shall be fixed on Seller in case of grossly negligent act or omission on the part of Seller.

23.2 This provision is limited to the relations between the Parties. It is without prejudice to the rights and actions to which the victims of damage, or any Social Security Organizations could prevail themselves legally.

23.3 Either party would provide reasonable assistance to resolve the claim of other Party to mitigate loss or damage.

23.4 Neither, the Seller shall be liable to the Buyer, nor shall the Buyer be liable to the Seller for any immaterial, punitive, indirect, special, incidental, or consequential loss or damage. This will hold good irrespective of whether such liability is based or claimed to be based on any breach of a Party`s obligation under the Contract, or any negligent act or omission of a Party, its employees, servants, appointed representatives, sub-contractor or professional consultants, or such liability arises otherwise out of or in connection with the Contract.

23.5 The Buyer shall not be liable for any compensation in any manner to the Seller for whatsoever reason.

23.6 The Seller shall be liable to the Buyer for any compensation in any manner for whatsoever reasons for a sum not exceeding value of the Contract.

## **24. Risk and Expense Purchase**

In case Seller fails to honor the contractual obligations within the stipulated delivery period and as amended, Buyer may procure the said contracted goods/services through a fresh supply order/contract and the defaulting Seller has to bear the excess cost incurred, if any.

**25. INCOTERMS for Delivery and Transportation (for Foreign Bidder only)**

Unless otherwise specifically agreed to by the Buyer and the Seller and incorporated in the Contract, the applicable rules and regulations for transportation of goods from foreign countries will be as per the contemporary version of International Commercial Terms (INCOTERM 2020) evolved by International Chamber of Commerce, Paris.

**26. Procedure for Cost Comparison**

26.1 The basis for comparison of cost in different situations would be as follows :

a) The financial bids of the qualified bidders will be compared on the basis of price quoted in the price bid format of the RFP/Bid document.

b) If the competition is only among Indian bidders, the financial comparison should be considered on the basis of FOR destination prices including statutory levies, taxes and duties payable on final product.

c) If the competition is among Indian and foreign bidders, the CIP/CIF cost quoted by the foreign bidders at destination port loaded with Custom Duty (CD) & GST (as applicable) which are to be paid extra as per actuals and a charge @ 1% of CIP/CIF cost will be basis of comparison with the basic cost (FOR destination basis) offered by Indian bidders including statutory levies, taxes and duties payable on final product.

d) If competition is only among foreign bidders, the basis for comparison should be the CIF/CIP price (designated port). If CIF/CIP price is not available, additional 10% of FCA/FOB cost over and above quoted FCA/FOB cost to be loaded for comparison purpose only

e) In import cases, all the foreign bids would be brought to a common denomination in Indian Rupees by adopting the base exchange rate as BC selling rate of the State Bank of India on the day of last date of submission of bids.

f) The Buyer reserves the right to evaluate the offers received by adopting Discounted Cash Flow (DCF) method with a discounting rate in consonance with the existing Government borrowing rate.

DCF method would be used for evaluation of bids in the following cases:

i) To compare different payment terms, including advance payments and progressive stage payments so as to bring them to a common denomination for determining lowest bidder.

ii) To deal with cases where entering into AMC for period in excess of one year is a part of the contract for evaluation of the bid.

g) Discount rate to be used under the method is to be the Government borrowing rate on the Date of Opening of Price Bids.

h) If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price will prevail and the total price will be corrected accordingly.

i) If there is a discrepancy between words and figures, the amount in words will prevail for calculation of price.

j) The best acceptable bid will be considered further for placement of the Contract after price negotiation as decided by the Buyer.

k) Net Present Value (NPV) : NPV method is a variant of DCF method which may be used for evaluation of tenders. The NPV of a contract is equal to the sum of the present values of all the cash flows associated with it. When choosing among the various bids, the bid with the lowest NPV will be selected. The as in fig.(1)

formula may be used for calculating

$$NPV = \sum_{t=0}^N \frac{A_t}{(1+i)^t}$$

Where

$A_t$  : Expected cash flow at time t

t : Time of expected cash flow

N : Total period

i : Discount rate

fig.(1)

#### 27. Handling of Classified Information by Indian Licensed Defence Industry

Any classified document/information/ equipment being shared with Indian Licensed Defence Industries will be protected/ handled to prevent unauthorized access as per provisions of Chapter 5 of Security Manual for Indian Licensed Defence Industries issued by MoD (Department of Defence Production).

#### 28. Support to Start-ups

This RFP complies with Ministry of Finance, Department of Expenditure, Public Procurement Division OM No. F.20/212014-PPD dtd 25.07.2016 and subsequent clarifications dtd 20.09.2016; 27.07.2019; 29.06.2020 and provides following support to Start-ups (as defined by the Department of Promotion and Industrial and Internal Trade - DPIIT) :

- a. Exemption from submission of Bid Security.
- b. Relaxation in prior Turnover and Experience: The Lab reserves its right to relax the condition of prior turnover and prior experience for Start-up enterprises subject to meeting of quality and technical specifications. The decision of the procuring entity in this regard shall be final.

#### 29. Restrictions on procurement from bidders from a country or countries, or a class of countries under 144 (xi) of the General Financial Rules 2017

We certify as under:

“We 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, and solemnly certify that we fulfill all requirements in this regard and are eligible to be considered”.

We certify that:

- a) We are not from such a country or, if from such a country, we are registered with the Competent Authority (copy enclosed). And;
- b) We shall not subcontract any work to a contractor from such countries unless such contractor is registered with the Competent Authority.

## PART-II(B) - INSTRUCTIONS FOR ONLINE BID SUBMISSION

1. The bidders are required to submit soft copies of their bids electronically on the Defence eProcurement Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the Defence eProcurement Portal, prepare their bids in accordance with the requirements and submitting their bids online on the Defence eProcurement Portal.

2. More information useful for submitting online bids on the Defence eProcurement Portal may be obtained at: <https://defproc.gov.in>

### 3. REGISTRATION

3.1 Bidders are required to enroll on the e-Procurement module of the Defence eProcurement Portal (URL: <https://defproc.gov.in>) by clicking on the link ``Online bidder Enrollment`` on the Defence eProcurement Portal which is free of charge.

3.2 As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.

3.3 Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the Defence eProcurement Portal.

3.4 Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India with their profile.

3.5 Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSC`s to others which may lead to misuse.

3.6 Bidder then logs in to the site through the secured log-in by entering their user ID / password and the password of the DSC / e-Token.

### 4. SEARCHING FOR TENDER DOCUMENTS

4.1 There are various search options built in the Defence eProcurement Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, Organization Name, Location, Date, Value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as Organization Name, Form of Contract, Location, Date, Other keywords etc. to search for a tender published on the Defence eProcurement Portal.

4.2 Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective `My Tenders` folder. This would enable the Defence eProcurement Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.

4.3 The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

### 5. PREPARATION OF BIDS

5.1 Bidder should take into account any corrigendum published on the tender document before submitting their bids.

5.2 Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.

5.3 Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF/JPG formats. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.

5.4 To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use ``My Space`` or ``Other Important Documents`` area available to them to upload such documents. These documents may be

directly submitted from the ``My Space`` area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

## **6. SUBMISSION OF BIDS**

- 6.1 Bidder should log into the site well in advance for bid submission so that they can upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.
- 6.2 The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.
- 6.3 Bidder has to select the payment option as ``offline`` to pay the EMD as applicable and enter details of the instrument. Tender Fee can be paid through e-MRO portal of SBI or through offline mode.
- 6.4 Bidder should prepare the EMD as per the instructions specified in the tender document. The original should be posted/couriered/given in person to the concerned official, latest by the last date of bid submission or as specified in the tender documents. The details of the DD (Demand draft) /any other accepted instrument, physically sent, should tally with the details available in the scanned copy and the data entered during bid submission time. Otherwise the uploaded bid will be rejected.
- 6.5 Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. If the price bid has been given as a standard BOQ format with the tender document, then the same is to be downloaded and to be filled by all the bidders. Bidders are required to download the BOQ file, open it and complete the white coloured (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BOQ file is found to be modified by the bidder, the bid will be rejected.
- 6.6 The server time (which is displayed on the bidders` dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.
- 6.7 All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology. Data storage encryption of sensitive fields is done. Any bid document that is uploaded to the server is subjected to symmetric encryption using a system generated symmetric key. Further this key is subjected to asymmetric encryption using buyers/bid openers public keys.
- 6.8 The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
- 6.9 Upon the successful and timely submission of bids (ie after Clicking ``Freeze Bid Submission`` in the portal), the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.
- 6.10 The bid summary has to be printed and kept as an acknowledgement of the submission of the bid. This acknowledgement may be used as an entry pass for any bid opening meetings.

## **7. ASSISTANCE TO BIDDERS**

- 7.1 Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.
- 7.2 Any queries relating to the process of online bid submission or queries relating to Defence eProcurement Portal in general may be directed to the 24x7 Defence eProcurement Portal Helpdesk.

## PART-III - SPECIAL TERMS AND CONDITIONS

The Bidder is required to give confirmation of their acceptance of Special Terms and Conditions of the RFP mentioned below which will automatically be considered as part of the Contract concluded with the successful Bidder as selected by the Buyer. Failure to do so may result in rejection of Bid submitted by the Bidder

### 1. Apportionment of Quantity

Not Applicable

### 2. Performance Security Bond

The Performance Security Bond will be forfeited by the Buyer, in case the conditions regarding adherence to delivery schedule and/or other provisions of the Contract/ SO are not fulfilled by the Seller.

Performance Security Bond should be for an amount equal to 3-5% of the contract value (inclusive of taxes and duties) in favour of the Director HEMRL, Pune for safeguarding the Buyer's interest in all respects during the currency of the contract. The BG should be valid upto 60 days beyond the scheduled date of delivery as per the terms of the contracts. In case the execution of the contract is delayed beyond the contracted period and the Buyer grants the extension of delivery period, with or without liquidated damages, the Seller must get the Bond revalidated, if not already valid. The specimen of bond can be provided on request.

#### 2.1 Indigenous Bidder

They may be accepted in the form of Bank Draft, Fixed Deposit Receipt or a Bank Guarantee. Indemnity Bond acceptable in case of DPSUs / PSUs and Govt. Departments in lieu of BG.

#### 2.2 Foreign Bidder

They may be accepted in the form of Bank Guarantee or Stand-by Letter of Credit from an internationally recognized first class bank.

### 3. Warranty Bond

The Warranty Bond will be forfeited by the Buyer, in case the conditions regarding warranty provisions of the contract are not fulfilled by the Seller.

Warranty Bond for an amount of 10% percent of the contract value (inclusive of taxes and duties) would be obtained from the seller prior to return of performance security bond. Warranty bond should remain valid for a period of sixty days beyond the date of completion of all warranty obligations. Warranty bond would be returned to the Seller on successful completion of warranty obligations, under the contract. The specimen of bond can be provided on request.

#### 3.1 Indigenous Bidder

They may be accepted in the form of Bank Draft, Fixed Deposit Receipt or a Bank Guarantee. Indemnity Bond acceptable in case of DPSUs / PSUs and Govt. Departments in lieu of BG.

#### 3.2 Foreign Bidder

They may be accepted in the form of Bank Guarantee or Stand-by Letter of Credit from an internationally recognized first class bank.

### 4. Option Clause

Not Applicable

### 5. Repeat Order Clause

Not Applicable

### 6. Tolerance Clause

Not Applicable

### 7. Purchase Preference Clause

This RFP is covered by Public Procurement (Preference to Make in India), Order-2017, Order no. P-45021/2/2017-B.E-II dtd 15 June 2017 (as amended) by DPIIT/Ministry of Commerce and Industry. (For latest updates please refer to [www.dipp.gov.in](http://www.dipp.gov.in)). Purchase preference will be granted as detailed below. Contents of the MII Order-2017 (as amended) other than not listed below to be interpreted as per the Order.

7.1 Bidders are divided into three categories based on Local Content. Local Content is 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:

- `Class-I local supplier`: Local content equal to or more than 50 % minimum, if not prescribed.
- `Class II Local Supplier`: Local content equal to or more than 20 % minimum, if not prescribed.
- `Non Local supplier`: Local content less than that applicable for Class II Local supplier.

Note: If Nodal Ministry/Department has prescribed Local content higher than as mentioned above, the same will be applicable.

7.2 Margin of Purchase preference shall be 20%.

### 7.3 Purchase preference (s)

a. 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` as per following procedure:

- Among all qualified bids, lowest bid is termed as L1. If L1 is `Class-I local supplier`, the contract for full quantity will be awarded to L1.

- If L1 is not `Class-I local supplier` then 50% of the Order quantity shall be awarded to L1. Thereafter, the lowest bidder among the `Class-I local supplier` will be invited to match the L1 price for the remaining 50% quantity subject to the `Class-I local supplier`s quoted price falling within the margin of purchase preference, 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 supplier`s, then such balance quantity may also be ordered on the L1 bidder.

b. 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 following procedure:

- Among all qualified bids, the lowest bid is termed as L1. If L1 is `Class-I local supplier`, the contract will be awarded to L1.

- If L1 is not `Class-I local supplier`, the lowest bidder among the `Class-I local supplier`s, will be invited to match the L1 price subject to Class-I local supplier`s 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.

- 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.

### 7.4 Information to be provided by vendor for verification of local content

a. 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 term 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.

b. 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 the 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.



- c. A supplier who has been debarred by any procuring entity for violation of this order shall not be eligible for preference under this Order for procurement by any other procuring entity for the duration of the debarment.
- d. False declarations will be in breach of the code of integrity under Rule 175(1)(i)(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.

#### **8. Transfer of Technology (ToT)**

Not Applicable

#### **9. Permissible Time Frame for Submission of Bills**

To claim payment (part or full), the Seller shall submit the bill(s) along with the relevant documents within 15 days from the completion of the activity / supply

#### **10. Payment Term**

##### 10.1 For Indigenous Seller

The Accounting and Payment currencies shall be in INR

The payment will be made as per the following terms, on production of the requisite documents :

- 10.1.1 100% payment within 30 days after receipt, satisfactory installation and acceptance of stores/equipment in good condition or the date of receipt of the bill whichever is later.

##### 10.2 For Foreign Seller

- 10.2.1 100% payment within 30 days after receipt, satisfactory installation and acceptance of stores/equipment in good condition or after receipt of necessary documents warranted by delivery terms.

#### **11. Advance Payment**

- 11.1 No advance payment will be made.

#### **12. Part Supply and Pro-rata Payment**

Part Supply and Pro-rata Payment terms are as follows:

##### 12.1 Part Supply

Part Supply will not be acceptable.

##### 12.2 Pro rate payment

Pro rata payment will not be made for the part supplies of the store(s) made.

#### **13. Mode of Payment**

##### 13.1 For Indigenous Sellers

It will be mandatory for the Bidders to indicate their bank account numbers and other relevant e-payment details to facilitate payments through ECS/EFT mechanism instead of payment through cheque, wherever feasible

##### 13.2 For Foreign Seller

13.2.1 The payment will be arranged through Letter of Credit from Reserve Bank of India/State bank of India/any other Public Sector Bank, as decided by the Buyer, to the Bank of the Foreign Seller as per mutually agreed terms and conditions. The Letter of Credit will preferably be opened with validity of 90 days from the date of its opening, on extendable basis by mutual consent of both the parties. Letter of Credit opening charges in India will be borne by the Buyer. However, the extension charges, if any, will be borne by the party responsible for the extension.

13.2.2 For contracts costing up to US \$ 100,000 (or equivalent) or the payment of Training/ Installation & Commissioning/ AMC charges, preferable mode of payment will be by Direct Bank Transfer (DBT). DBT payment will be made within 30 days of receipt of clean Bill of Lading/ AWB/ Proof of shipment and such other documents indicating completion of the contractual obligation on part of the Seller as provided for in the contract, but such payments will be subject to the deductions of such amounts as the Seller may be liable to pay under the agreed terms of the Contract.

#### **14. Exchange Rate Variation (ERV) Clause**

Not Applicable

#### 15. Buy-Back

Not Applicable

#### 16. Export License

The Bidder is required to furnish full details and formats of End Use Certificate required for obtaining export clearance from the country of origin. This information will be submitted along with Techno-Commercial bid. In the absence of such information, it would be deemed that no document is required from the Buyer for export clearance from the country of origin.

#### 17. Free Issue of Material (FIM) as raw material

Not Applicable

#### 18. Terms of Delivery

##### 18.1 For Foreign Bidder

Foreign bidders are required to quote both on CIF/CIP (Destination) and FCA/FOB (Gateway) basis.

##### 18.2 For Indigenous Bidder

The delivery of goods shall be on FOR HEMRL basis.

#### 19. Packing and Marking Instructions

19.1 A label in English shall be pasted on the carton indicating the under mentioned details of the item contained in the carton. The cartons shall then be packed in packing cases as required.

- i) Part Number :
- ii) Nomenclature :
- iii) Contract annex number :
- iv) Annex serial number :
- v) Quantity contracted :

19.2 One copy of the packing list in English shall be inserted in each cargo package, and the full set of the packing lists shall be placed in Case No.1 painted in a yellow colour.

19.3 The Seller shall mark each package with indelible paint in English language as follows:-

- i) Contract No. :
- ii) Consignee :
- iii) Port / airport of destination :
- iv) Ultimate Consignee :
- v) Package No. :
- vi) Gross / Net Weight :
- vii) Overall dimensions / volume :
- viii) The Seller's marking :

19.4 If necessary, each package shall be marked with warning inscriptions: "Top", "Do not turn over", category of cargo etc.

19.5 The Seller shall provide packing and preservation of the equipment and spares/goods contracted so as to ensure their safety against damage in the conditions of land, sea and air transportation, transshipment, storage and weather hazards during transportation, subject to proper cargo handling. The Seller shall ensure that the stores are packed in containers, which are made sufficiently strong. The packing cases should have provisions for lifting by crane/fork lift truck. Tags with proper marking shall be fastened to the special equipment, which cannot be packed.

19.6 The packing of the equipment and spares/goods shall conform to the requirements of specifications and standards in force in the territory of the Seller's country.

19.7 Should any special equipment be returned to the Seller by the Buyer, the latter shall provide normal packing, which protects the equipment and spares/goods from damage or deterioration during transportation by land, air or sea. In such case the Buyer shall finalize the marking with the Seller.

#### 20. Inspection Instructions

20.1 As per the spec.

20.2 QAP Doc / Specification No : HEMRL/QARD/2022/SPEC/TAM/186

20.3 Inspection Agency

Director or his nominated Rep

20.4 Inspection Authority

The Inspection will be carried out by Director HEMRL or his nominated Rep.

**21. Warranty**

21.1 The Seller will declare that the goods, stores articles sold/supplied shall be of the best quality and workmanship and new in all respects and shall be strictly in accordance with the specifications and particulars contained / mentioned in the contract. The Seller will guarantee that the said goods/stores/articles would continue to conform to the description and quality for a period of, 24 months from the date of acceptance / installation of the said goods stores/articles. If during the aforesaid period of 24 months, the said goods/stores are discovered not to conform to the description and quality aforesaid, not giving satisfactory performance or have deteriorated, the Buyer shall be entitled to call upon the Seller to rectify the goods/stores/articles or such portion thereof as is found to be defective by the Buyer within a reasonable period without any financial implication on the Buyer.

21.2 If the defective part/subsystem/system needs to be taken by the Seller outside Buyer's premises to rectify the defect, Seller shall provide a comprehensive (during transit & storage insurance for repair period) insurance cover of the equivalent amount to the Buyer to cover for the time taken to rectify the defective goods and deliver the repaired or replaced goods at the same location without any financial implications on Buyer.

21.3 In cases of procurement of software, Seller shall issue/provide up grades of the software free of cost during the warranty period.

**22. Product Support**

22.1 The Seller agrees to provide Product Support for the stores, assemblies / subassemblies, fitment items, Spares and consumables, Special Maintenance Tools (SMT)/Special Test Equipment's (STE) for a minimum period of 7 years after the warranty Period / delivery, whichever is later.

22.2 The Seller agrees to undertake a Maintenance Contract for a minimum period of 84 Months years/months. The seller is required to quote the price for both comprehensive and non-comprehensive maintenance of the equipment after the expiry of warranty period in the price bid.

22.3 Besides mandatory period, the Seller would be bound to give at least two years notice to the Buyer prior to closing the production line so as to enable a life time buy of spares before closure of the said production line.

**23. Annual Maintenance Contract (AMC) Clause**

Not Applicable

**24. Price Variation (PV) Clause**

Not Applicable

**25. Intellectual Property Rights (IPR)**

Not Applicable

**26. Minimum Order Quantity**

Bidder may indicate the applicable minimum order quantity (MOQ) if the quantity demanded by the buyer is less than MOQ.

**27. Pre-Contract Integrity Pact Clause [for Cases more than 20 Crore]**

Not Applicable

**28. Independent External Monitors (IEM)**

Not Applicable

**29. Evaluation and Acceptance Criteria of Bids**

The bid will be considered and selected based on instructions contained in Part I and Part II of the RFP for

further evaluation of bids as per sequence given below:

#### 29.1 Techno-Commercial Bid Evaluation

Bids will be evaluated based on vendor qualification requirement as per Part IV of RFP or as per specifications, if applicable, and bids of the qualified bidders will be considered for further evaluation as mentioned in Part V of the RFP.

#### 29.2 Price Bid Evaluation

The Price bid of those bidders whose Techno-Commercial bid (if applicable) has been accepted will be opened and comparative statement will be prepared. The best acceptable bid will be decided upon the lowest price quoted by the particular Bidder as per the Price Format given at Part VI of the RFP. The Price Bid will be evaluated Lot wise.

### **30. Fall Clause**

Not Applicable

### **31. Certificate in respect of Fall Clause**

31.1 While submitting his bills for the goods supplied against the Rate Contract/Price Agreement, the Contractor shall give the following certificate also:

``I/We certify that the stores of description identical to the stores supplied to the Government under the contract herein have not been offered/sold by me/us to any other person/ organization up to the date of bill/the date of completion of supplies against supply orders placed during the currency of the RC/PA, at a price lower than the price charged to the Government under the contract.``

31.2 If the Contractor sells any goods at lower than the contract price, except covered by any of the three exceptions indicated above as per para 30 (c) of this part, such sales have also to be disclosed in the aforesaid certificate to be given by the Contractor to the Government. The obligations of the Contractor in this regard will be limited with reference to the goods identical to the contracted goods sold or agreed to be sold during the currency of the contract.

31.3 The successful bidder shall maintain stocks at the station and shall make deliveries against supply orders from such stocks within the specified period.

### **32. Force Majeure Clause**

32.1 Neither party shall bear responsibility for the complete or partial non-performance of any of its obligations, if the non-performance results from such Force Majeure circumstances as Flood, Fire, Earth Quake and other acts of God as well as War, Military operations, blockade, Acts or Actions of State Authorities or any other circumstances beyond the parties control that have arisen after the conclusion of the present contract.

32.2 In such circumstances the time stipulated for the performance of an obligation under the Contract is extended correspondingly for the period of time commensurate with actions or circumstances and their consequences.

32.3 The party for which it becomes impossible to meet obligations under the Contract due to Force Majeure conditions, is to notify in written form to the other party of the beginning and cessation of the above circumstances immediately, but in any case not later than 10 (Ten) days from their commencement.

32.4 Certificate of a Chamber of Commerce (Commerce and Industry) or other competent authority or organization of the respective country shall be considered as sufficient proof of commencement and cessation of the above circumstances.

32.5 If the impossibility of complete or partial performance of an obligation lasts for more than 6 (six) months, either party hereto reserves the right to terminate the Contract totally or partially upon giving prior written notice of 30 (thirty) days to the other party of the intention to terminate without any liability other than reimbursement on the terms provided in the agreement for the goods received.

32.6 A PARTY claiming Force Majeure shall exercise reasonable diligence to seek to overcome the Force Majeure event and to mitigate the effects there of on the performance of its obligations under this Contract.

### **33. Acquiring Manufacturing Drawings and Associated Hardware:**

Not Applicable

**34. Return of Documents**

Not Applicable

**35. Selection of Development cum Production Partner (DcPP(s)) / Production Agency (PA(s))**

Not Applicable

**36. Any Other Additional Terms and Conditions**

Not Applicable

## PART-IV - VENDOR QUALIFICATION CRITERIA

### 1. Technical Capabilities:

- The firm must be an OEM or authorized dealer of the OEM dealing with the system. Authorized dealer must submit the authorization certification from OEM valid up to 31/12/2025.
- In case of foreign OEM, the firm should have authorized support service in India. Documentary evidence for the same is to be provided.

### 2. Financial Capabilities:

- The annual turnover of the firm shall be minimum 2 cr. in any 2 financial years out of last 3 years. The audited statement of accounts indicating the same shall be furnished.

## PART-V - ESSENTIAL DETAILS OF ITEMS/SERVICES REQUIRED

### 1. Schedule of Requirements

List of items / services required are as follows:-

Sl. No.	Name / Description of Item(s) / Service(s)	Required Quantity
1	TAM (THERMAL ACTIVITY MONITOR) WITH ACCESSORIES as per spec no HEMRL/QARD/2022/SPEC/TAM/186	1 No.
<b>Total number of Items : 1 only</b>		

### 2. Technical Details

#### 2.1 Specifications/Drawings

Specifications/Drawings will be made available to the interested bidders by the RFP issuing authority. Specifications/drawings supplied by this office are to be returned with the Techno-Commercial Bid.

#### 2.2 Technical details with technical parameters

#### 2.3 Requirement of training/on-the-job training

#### 2.4 Requirement of installation/commissioning

#### 2.5 Full Inspection details as per provisions made in in Para 23 of Part III of the RFP.

#### 2.6 Requirement of Technical Documentation

#### 2.7 Nature of assistance required after completion of warranty as per provisions made in Para 25 of Part III of the RFP

#### 2.8 Requirement of pre-site inspection

#### 2.9 Any other details, as considered necessary

3. Bidders are required to furnish clause by clause compliance of specifications bringing out clearly the deviations from specification, if any. Bidders are advised to submit compliance statement for the technical parameters separately in the following format along with the Techno-Commercial Bid:

Para of RFP Specifications (Item-wise)	Specifications of Item offered	Compliance to RFP Specifications - whether Yes / No	Remarks /n (In case of non-compliance deviation from the RFP to be specified in unambiguous terms. In case of compliance, brochure reference, if available, to be indicated)

3.1 For Commercially-Off-The-Shelf (COTS) items, it is mandatory to enclose/provide catalogue / technical brochure to support the claims of compliance.

### 4. Delivery Period

Expected Delivery Period for supply of items/rendering services would be 6 Month from the Effective Date of the Contract. Please note that the Contract can be cancelled unilaterally by the Buyer in case items are not received within the contracted delivery period. Extension of contracted delivery period with/ without LD clause will be at the sole discretion of the Buyer.

### 5. Period of AMC

Not Applicable

### 6. Consignee details

Name: The Director HEMRL

Address: Sutarwadi, Pune - 411021

Contact details

Telephone No: 25912241,25869371

E-mail ID:mmd.hemrl@gov.in





**High Energy Materials Research Laboratory, Sutarwadi – 411 021.**  
**COMMERCIAL TERMS STATEMENTS (FOR FOREIGN BIDDER ONLY)**

**IMPORTANT NOTE**

THIS STATEMENT SHOULD BE DULY FILLED AND ENCLOSED WITH TECHNO-COMMERCIAL BID  
 NON RECEIPT OF THIS STATEMENT OR INCOMPLETE DETAILS PROVIDED  
 WILL LEAD TO REJECTION OF TENDER

Tender / RFP No. : HEMRL/25FET001/EP Dated : 10/02/2025

Sr. No.	Terms & Conditions	HEMRL General Commercial Terms	Terms Accepted / Offered by Firm (To be filled by the firm)
1	Delivery Terms	Foreign bidders are required to quote both on CIF/CIP (destination) and FCA/FOB (Gateway) basis.	
2	Freight & Insurance	Please specify	
3	Delivery schedule	6 Month from the Date of Placement of Order / Effective Date of Contract.	
4	Packing & Forwarding charges, Freight charges and Transit Insurance	Please specify	
5	Customs Duty	As mentioned in Tender / R. F. P. (Part – II (A) Sr. No. 15.2)	
6	Installation/Commissioning and Training (if required)	Please specify	
7	Warranty	24 months from the date of acceptance / installation of the said goods stores / articles.	
8	Certificate of Origin	To be provided alongwith the supply from Country's Chamber of Commerce	
9	Certificate of Conformance	To be submitted before shipment by the Firm	
10	Certificate of Manufacturing	To be submitted alongwith the supply by the Firm confirming that the store is as per current manufacturer's lot.	
11	Port of Shipment	To be mentioned	
12	Inspection & Acceptance	The Inspection will be carried out by Director HEMRL or his nominated Rep.	
13	Earnest Money Deposit (EMD)	As mentioned in Tender / R. F. P. (Part - I(A) Sr. No. 14)	
14	Payment terms	100% payment within 30 days after receipt and satisfactory installation and acceptance of stores / equipment in good condition or after receipt of necessary documents warranted by delivery terms.	
15	Currency of Payment	Please specify	
16	LC Opening	As mentioned in Tender / R. F. P (Part - III Sr. No. 13.2)	
17	Banking Charges	In India Bank charges will be borne by HEMRL, Pune and outside India will be borne by beneficiary.	
18	Performance cum Warranty Bond	5% of Contract Cost in the form of Bank Guarantee (BG) in favour of The Director, HEMRL valid upto 60 days beyond warranty period to be submitted by the successful bidder only.	
19	Liquidated Damages	As mentioned in Tender / R. F. P. (Part II (A) Sr. No. 9)	
20	Export License	The Supplier will obtain necessary Export license, wherever required at their own cost before shipment of the units to India.	
21	Validity of Quotation	The Bid should remain valid for 180 days from the date of opening of Bids.	
22	Compliance to Point 11 of Part – I(A)	Please specify	
23	Compliance to all applicable parts and paras in the RFP	R.F.P No. & Date : HEMRL/25FET001/CP Date : 10/02/2025.	
24	Name & Address of the firm:		
25	Signature & Name of the Authorised Signatory with Stamp of the firm:		
26	Order to be placed on		

## High Energy Materials Research Laboratory, Sutarwadi – 411 021.

IMPORTANT COMMERCIAL TERMS STATEMENTS (To be filled by Indian Bidders)Tender / R.F.P. No. : HEMRL/25FET001/KP  
Date : 10/02/2025

(Please respond to all queries and strike out whichever is not applicable)

Sr. No.	TERMS & CONDITIONS	HEMRL Commercial Terms	RESPONSE OF FIRM M/s.	
1.	Delivery Terms	Free at HEMRL, Pune		
2.	Packing Charges	Charges if any, to be mentioned separately. Not to be mentioned as inclusive		
3.	Forwarding charges		If any to be specified	
4.	Transportation Charges		If any to be specified	
5.	Transit Insurance		If any to be specified	
6.	Percentage of GST	Please specify clearly the percentage of GST applicable (No GST concessional Certificate will be provided)		
7.	Erection, Installation & Commissioning, if applicable	Charges if any to be specified separately & not as inclusive		
8.	Delivery Schedule	6 Month from the Effective date of the Supply Order /Contract.		
9.	Training, if required	Charges if any, to be specified		
10.	Warranty	24 months from the date of acceptance / installation of the said goods/stores/ articles.		
11.	AMC after warranty period	Provided / Not provided If yes, provide AMC cost in % of basic cost.		
12.	Earnest Money Deposit (EMD)	As mentioned in Tender / R. F. P. (Part -- I (A) Sr. No. 14)		
13.	Registration No. with Govt. Dept./DGS&D/DRDO/HEMRL/Others	Photocopy to be enclosed		
14.	Payment Terms	100% payment within 30 days after receipt and satisfactory installation and acceptance of stores / equipment in good condition or the date of receipt of the bill whichever is later.		
15.	Performance cum Warranty Bond	5% of total cost in the form of Bank Guarantee (BG) in favour of The Director, HEMRL valid upto 60 days beyond warranty period to be submitted by the successful bidder only.		
16.	Liquidated Damages	As mentioned in Tender / R. F. P. (Part II (A) Sr. No. 9)		
17.	GST Registration No.	Please indicate		
18.	Income Tax PAN No.	Please indicate		

19.	Bifurcation of Imported and indigenous items/components is term of % of Total Price.	Please indicate Imported: ____ % Indigenous: ____ %	
20.	Name of Foreign Firm/Original Equipment Manufacturer(OEM) represented by the Indian Agent/Representative	Please Provide details	
21.	Authorization letter/Agency Agreement	Photocopy to be provided	
22.	Nature of Services to be rendered by Indian Agent/Representative. Authorization letter from OEM	Please indicate (Sales, After Sales Service, etc)	
23.	Percentage Commission Payable to the Indian Agent /Representative by the OEM as per the agency agreement.	Please indicate	
24.	Name & Address of the firm for placement of Supply Order	Please specify	
25.	Currency for Payment	Please indicate	
26.	Validity of Quotation	The Bids should remain valid for 180 days from the date of opening of Bids.	
27.	Compliance to Point II of Part – I(A)	Please specify	
28.	Compliance to all applicable Parts and Paras of the R. F. P.	R.F.P. No. : HEMRL/25FET001/CP Dated 10/02/2025.	
29.	Samples, if any		
(a)	Advance		
(b)	With Quotation		
(c)	During TCEC	Not applicable	
(d)	Before Bulk manufacture		
(e)	Part Supply		
(f)	Full Supply		
30.	Any other point relevant to the context	May be mentioned	
31.	Signature & Name of the Authorized Signatory with Stamp of Vendor	Specify authority of Signing - Sole Proprietor - Partner - Company - Director (Agreement or Power of Attorney)	

**SPECIFICATION FOR TAM (THERMAL ACTIVITY  
MONITOR) WITH ACCESSORIES as per spec no.  
HEMRL/QARD/2022/SPEC/TAM/186**

**Scope of Supply**

Supply, delivery, installation, commissioning, and training of fully integrated thermal activity monitor comprising of thermostat, Mini/multicalorimeter, nanocalorimeter, UPS, humidifier cum dehumidifier unit, glass beads, consumables, branded PC with software, data management system and necessary accessories as per the specification and demonstration of functioning of the equipment at HEMRL.

**Purpose of TAM**

The equipment should be capable of measuring the amount of energy released during decomposition of all types of explosives and propellants to find out the real ageing of the same as per STANAG 4515, 4582, 4147 and MIL 175IA. Apart from the above test, the said equipment will be used to perform the following.

- a) Stability test of propellants, explosives and pyrotechnics.
- b) Ascertain compatibility study of all types of explosives, propellants, pyrotechnics and igniters with explosive and non-explosive ingredients.
- c) Quality control of all kinds of explosives, propellants, pyrotechnics and igniters.
- d) Vacuum thermal stability test for propellants and explosives.

**Thermostat Specifications**

Thermostat TAM-IV, 4 channel (100/240 VAC; 50/60 Hz)

- Temperature range: 4-150 °C
- Temperature accuracy:  $< \pm 0.1$  °C
- Long term stability:  $< \pm 100$   $\mu$  °C/24h
- Scanning rate:  $< \pm 2$  °C/h

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Thermostat must include at least 4 positions, which can accommodate different calorimeters, ampoules, accessories by adding calorimeters to the thermostats for simultaneous measurements and up to 14 simultaneous calorimetric measurements.

Thermostats should contain basic minimum configuration needed for the applications of RH perfusion calorimetry, liquid perfusion calorimetry, gas perfusion calorimetry, vacuum/pressure calorimetry, solution calorimetry and STANAG 4582 by adding calorimeters, ampoules and accessories.

Required calorimeters for the thermostats should contain the following.

- A. **2 Nanocalorimeters:** For isothermal or temperature scanning experiments with the highest heat flow sensitivity. Nanocalorimeter should be able to configure with RH perfusion calorimetry with 1 mL and 4 mL reaction vessels. Possible applications should include amorphicity assessment by vapor induced crystallization, for stability and compatibility testing and effect of humidity or other vapor activities and for all applications where the atmosphere over the sample needs to be controlled.
- B. **12 MINI/6 multicalorimeters:** An array of minicalorimeters, each providing microcalorimeter - level sensitivity, configured in the groups of 6 (depending on the sample volume) in the available 2 channels in the calorimeter. Multicalorimeter should be able to be configured with multi sample calorimetry in closed ampoules. Possible applications should include for stability and compatibility, for amorphicity assessment and polymorphism, for curing and safety assessment as STANAG 4582.

## Calorimeter Specifications

### 1. Nanocalorimeter:

Calorimeter must conform to the following minimum specifications. Data must be included to the demonstrate performance.

- Dynamic range:  $\pm 10$  milliwatt
- Short term noise:  $< \pm 10$  nanowatt
- Baseline Drifts:  $< 40$  nanowatt/24 h
- Accuracy:  $< 2\%$
- Precision:  $\pm 100$  nanowatt

*Ann*

The calorimeter must be true isothermal system, not adiabatic. As such, the temperature of the sample does not change more than  $\pm 0.0001$  °C. [Adiabatic calorimeters allow the temperature of the sample to change during a process; they are not equivalent technology.]

The calorimeter must operate in either heat flow (heat flux), dynamically corrected or powered compensation (feedback) modes of detection.

The heat flow response of the calorimeter must be calibrated using a fixed calibration heater.

The calorimeter must accommodate removable sample ampoules, up to 5 mL in volume, 1 mL or 4 mL preferably. Fixed cell design is not acceptable due to lack of flexibility and inherent issues with cleaning.

One calorimeter version of the nanocalorimeter should include two external pressure transducer (0 to 10 bar) and two 4 mL stainless steel vacuum – pressure ampoules for simultaneous heat flow and pressure measurement during energetic material (i.e. igniters, pyrotechnics, propellants, explosives) analysis.

Calorimeter must accommodate a wide variety of accessories and ampoules including the following:

### **RH Perfusion Accessories**

RH perfusion accessory interface module for communication and control of auxiliary equipment used with TAM. The auxiliary equipment should include precision syringe pump, gas flow control kit, pump control module and voltage I/O module. Ampoule RH perfusion made of stainless steel having capacity of 4 mL also, with O-ring cap and disposable Teflon disc has to be supplied.

#### **Specific for RH Perfusion:**

Description	Quantity
Nanocalorimeter, 4mL TAM-IV	2
Ampoule, RH perfusion, stainless steel, 4 mL	1
Ampoule, stainless steel, 4 mL, with circlip cap (pkg of 1)	1
Ampoule, RH perfusion, glass, 1 mL	2
Ampoule, RH perfusion, glass, 1 mL, with circlip cap (pkg of 1)	2
Ampoule, RH perfusion, glass, 4 mL	2
Ampoule, RH perfusion, glass, 4 mL, with circlip cap (pkg of 1)	2
Ampoule, RH perfusion, stainless steel, 1 mL	1

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Ampoule, RH perfusion, stainless steel, 1 mL with circlip cap (pkg of 1)	1
Ampoule, RH perfusion, Hastelloy, 4 mL, with circlip cap (pkg of 1)	2
Ampoule, RH perfusion, Hastelloy, 1 mL, with circlip cap (pkg of 1)	2
Reaction vessel, RH perfusion, Hastelloy, 4 mL	2
Reaction vessel, RH perfusion, Hastelloy, 1 mL	2
Gas flow control kit, for RH perfusion	1

**Specific for Gas Perfusion:**

Description	Quantity
Ampoule, perfusion, stainless steel, 4 mL	1
Ampoule, perfusion, stainless steel, 4 mL, with circlip cap (pkg of 1)	1
Ampoule, perfusion, stainless steel, 1 mL	1
Ampoule, perfusion, stainless steel, 1 mL, with circlip cap (pkg of 1)	1
Reaction vessel, perfusion, glass, 4 mL	2
Ampoule, perfusion, glass, 4 mL, with circlip cap (pkg of 1)	2
Reaction vessel, perfusion, glass, 1 mL	2
Ampoule, perfusion, glass, 1 mL, with circlip cap (pkg of 1)	2
Reaction vessel, perfusion, Hastelloy, 4mL	2
Ampoule, perfusion, Hastelloy, 4 mL, with circlip cap (pkg of 1)	2
Reaction vessel, perfusion, Hastelloy, 1 mL	2
Ampoule, perfusion, Hastelloy, 1 mL, with circlip cap (pkg of 1)	2
Gas flow control kit, for gas perfusion	2
Hygrostat, perfusion, Micro, 0.2 mL, for 4 mL disposable glass ampoules (pkg of 100)	5

**2. 4 mL Mini/Multicalorimeter**

Heat flow calorimeter system must accommodate multiple simultaneous differential measurements.

This can be accomplished through a multicalorimeter array of 6 Minicalorimeter.

Each calorimeter provides performance as defined in the below:

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- Dynamic range:  $\pm 25$  milliwatt
- Short term noise  $< \pm 100$  nanowatt
- Baseline drift  $< 200$  nanowatt/24h
- Accuracy  $< 5\%$
- Precision  $\pm 200$  nanowatt

The heat flow response of the calorimeter must be calibrated using a fixed calibration heater. The calorimeter must accommodate removable sample ampoules, up to 5 mL in volume. Fixed cell design is not acceptable due to lack of flexibility and inherent issues with cleaning.

### Start-up Kit

Suitable start-up kit with glass ampoules, caps, crimping tool, cap adjustment tool, decapper tool etc. to be supplied with TAM.

The multicalorimeter must accommodate a wide variety of ampoules and accessories, including the following:

Description specific for multicalorimeter	Quantity
Multicalorimeter, 4 mL, (8.4 J/K), 6ch TAM-IV	2
Start up kit, 4 mL (with 12 eyelets)	1
Vial decapper, 3 & 4 mL pressure release lifters, TAM, (pkg of 1)	1
Pressure release lifter, start up kit, 4 mL, TAM (pkg of 3)	4
Cap, crimping tool, ampoules, 3 & 4 mL	1
Clamping tool with safety lock	1
Decapper tool: A dual decapper tool for removing lids from the 3, 4 (13mm) and 20 (20mm) mL disposable glass ampoules used in TAM-III, TAM-IV and TAM-Air	1
Ampoule, stainless steel, 4 mL with threaded cap (pkg of 2)	1
Ampoule, Hastelloy, 4 mL, with threaded cap (pkg of 2)	1
Ampoule, stainless steel, 4 mL, with thread/O-ring cap (pkg of 1)	1
Ampoule, Hastelloy, 4 mL, with thread/O-ring cap (pkg of 1)	1
Ampoule, stainless steel, 1 mL, with circlip clip (pkg of 1)	1

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**Sample ampoules:**

Description	Quantity
Ampoules, glass, disposable, 4 mL (pkg of 485)	1
Aluminum caps, sealing discs, glass ampoules, 4 mL (pkg of 100)	5
Ampoule, Hastelloy, 4 mL, with threaded cap (pkg of 2)	6
Ampoule, stainless steel, 4 mL, with threaded cap (pkg of 2)	6
Ampoule, stainless steel, 1 mL, with circlip cap (pkg of 1)	6
Ampoule, Hastelloy, 1 mL, with circlip cap (pkg of 1)	6
Lifting eyelet, ampoule, 1 mL	12

**Vacuum Thermal Stability (VTS) Test Rearrangements**

The vacuum thermal stability (VTS) test rearrangements should have the facility of nanocalorimeter 4 mL. It should have the facility to permit measurement of sample heat flow and pressure. The pressure data should be collected using TAM assistance software. This ampoule should provide the ability to evacuate air above the sample prior to a measurement. It should have pressure transducer, calorimeter lid to collect the pressure transducer cable to TAM.

For VTS rearrangement must include the following:

Description specific for Vacuum Thermal Stability (VTS)	Quantity
Ampoule, vacuum/pressure, 4 mL, TAM-IV	2
Ampoule, VTS, stainless steel, 4 mL, with circlip cap (pkg of 1)	2
Ampoule, VTS, stainless steel, 4 mL, with thread/O-ring cap (pkg of 1)	1
Evacuation station	2
Extension cable for use with the 4 mL or 20 mL vacuum/pressure ampoules	2
Digital block heater 220 V (accepts the 4 mL, 20 mL & 100 mL block inserts)	1

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Block insert, VTS, 4 mL [used with digital block heater 110 VAC or digital block heater 220 VAC	2
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**Warranty:**

Lifetime support plan (LSP) for TAM-IV Heat flow calorimeter	2 years
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**Computer Hardware**

1. Computer System

- i. All in one branded PC compatible with the TAM and other accessories; latest configuration of i7 processor with 8 GB RAM, 1 TB HDD, Windows 10 or latest version, 24" LED monitor and latest version of office with per petual license preloaded and activated.
- ii. USB port for TAM, USB ports for the RH perfusion accessories and USB ports for printer, mouse & key board.

2. Printer: A4 size laserjet color printer.

**Software:**

- I. System controller and display system. Controller and display to visualize the heat flow and other instrument functions should be built in.
- II. TAM software. Software should be latest, genuine and original from TAM manufacture.
- III. Single point control. Single control for complete system including all modules, acquire, process, and reproduce the data.
- IV. Report generation. Multi data processing and report compiling and generation in single report.
- V. Windows Office & operating system. Required Windows office & operating system compatible with TAM should be provided.
- VI. Software should be capable of programming methods for all possible experiments possible with TAM and the analysis of each data generated. Should also have capability of analysis of kinetics, Arrhenius and other advanced applications.

**UPS requirements**

Dedicated UPS with pure sine wave has to be provided as per the details.

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- I. UPS for computer. 3 hours power back-up unit for with full load of the system.
- II. UPS for TAM. 3 hours power back-up unit for with full load of the system.
- III. UPS for humidifier cum dehumidifier unit. 1 hour power back-up unit for with full load of the system.

#### **Analytical Balance**

Suitable analytical balance up to 5 decimal points for weighing the propellants and explosive should be provided.

#### **Digital Block Heater**

Digital block heater with block inserter for heating ampoules (size: 4 mL) from room temperature up to 90 °C with temperature stability of 0.1 °C.

#### **Evacuation Station**

Station should preferably be used with a block heater to permit evacuation at a desired experimental temperature.

Air conditioner with precision temperature controller and humidification/dehumidification unit should be supplied.

#### **Acceptance criteria:**

- The equipment must perform satisfactorily as per general and technical specification as mentioned above and a detailed acceptance criteria have been enclosed within.

#### **General points:**

- The installation, commissioning and demonstration of the operation of the equipment and necessary accessories such as unit with dehumidifier cum humidifier have to be carried out by the firm at HEMRL, Pune.
- Training for four persons for minimum five days at HEMRL. The supplier should provide free of cost training on operation & maintenance of the equipment to the laboratory & maintenance personnel at destination site of installation for a period of minimum one week deputing their experts. The training should include basic as well as advance theory of TAM, practical applications and related softwares.

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- During warranty period every year, a refresher course on TAM and related softwares should be provided.
- Inspection and acceptance: to be carried out at HEMRL, Pune.
- Assurance of after sale service: seven years after completion of warranty period.
- Equipment should be supplied with operating and maintenance manuals, standard operating procedures and application notes.
- Assurance of availability of spare parts for next seven years after warranty period.
- CD/DVD of measurement software, manuals and operating system along with instrument.

*Anuabirami S*

(Dr. (Ms.) ANU ABIRAMI S)  
Sc. 'F', QARD

*RB Pawar*

(Dr. RB Pawar)  
Sc 'G'  
DH QARD

*C. Gururaja Rao*

C. Gururaja Rao

Sc 'G'

TD, Quality

Techno-commercial check list

Sr. No.	Description of Item/spec.	Vendor Response	
		Yes	No
<b>A. Technical</b>			
1.	<p>Supply, delivery, installation, commissioning, and training of fully integrated thermal activity monitor comprising of thermostat, Mini/multicalorimeter, nanocalorimeter, UPS, humidifier cum dehumidifier unit, glass beads, consumables, branded PC with software, data management system and necessary accessories as per the specification and demonstration of functioning of the equipment at HEMRL.</p> <p><b>Purpose of TAM</b></p> <p>The equipment should be capable of measuring the amount of energy released during decomposition of all types of explosives and propellants to find out the real ageing of the same as per STANAG 4515, 4582, 4147 and MIL 175IA. Apart from the above test, the said equipment will be used to perform the following.</p> <ol style="list-style-type: none"> <li>Stability test of propellants, explosives and pyrotechnics.</li> <li>Ascertain compatibility study of all types of explosives, propellants, pyrotechnics and igniters with explosive and non-explosive ingredients.</li> <li>Quality control of all kinds of explosives, propellants, pyrotechnics and igniters.</li> <li>Vacuum thermal stability test for propellants and explosives.</li> </ol> <p><b>Thermostat Specifications</b></p> <p>Thermostat TAM-IV, 4 channel (100/240 VAC; 50/60 Hz)</p> <ul style="list-style-type: none"> <li>Temperature range: 4-150 °C</li> <li>Temperature accuracy: <math>&lt; \pm 0.1</math> °C</li> <li>Long term stability: <math>&lt; \pm 100</math> <math>\mu</math> °C/24h</li> <li>Scanning rate: <math>&lt; \pm 2</math> °C/h</li> </ul> <p>Thermostat must include at least 4 positions, which can accommodate different calorimeters, ampoules, accessories by adding calorimeters to the thermostats for simultaneous measurements and up to 14 simultaneous calorimetric measurements.</p>		

Thermostats should contain basic minimum configuration needed for the applications of RH perfusion calorimetry, liquid perfusion calorimetry, gas perfusion calorimetry, vacuum/pressure calorimetry, solution calorimetry and STANAG 4582 by adding calorimeters, ampoules and accessories.

Required calorimeters for the thermostats should contain the following.

- A. **2 Nanocalorimeters:** For isothermal or temperature scanning experiments with the highest heat flow sensitivity. Nanocalorimeter should be able to configure with RH perfusion calorimetry with 1 mL and 4 mL reaction vessels. Possible applications should include amorphicity assessment by vapor induced crystallization, for stability and compatibility testing and effect of humidity or other vapor activities and for all applications where the atmosphere over the sample needs to be controlled.
- B. **12 MINI/6 multicalorimeters:** An array of minicalorimeters, each providing microcalorimeter - level sensitivity, configured in the groups of 6 (depending on the sample volume) in the available 2 channels in the calorimeter. Multicalorimeter should be able to be configured with multi sample calorimetry in closed ampoules. Possible applications should include for stability and compatibility, for amorphicity assessment and polymorphism, for curing and safety assessment as STANAG 4582.

## 2. Calorimeter Specifications

### 1. Nanocalorimeter:

Calorimeter must conform to the following minimum specifications. Data must be included to demonstrate performance.

- Dynamic range:  $\pm 10$  milliwatt
- Short term noise:  $< \pm 10$  nanowatt
- Baseline Drifts:  $< 40$  nanowatt/24 h
- Accuracy:  $< 2\%$
- Precision:  $\pm 100$  nanowatt

The calorimeter must be true isothermal system, not adiabatic. As such, the temperature of the sample does not change more than  $\pm 0.0001$  °C. [Adiabatic calorimeters allow the temperature of the sample to change during a process; they are not equivalent technology.]

The calorimeter must operate in either heat flow (heat flux), dynamically corrected or powered compensation (feedback) modes of detection.

The heat flow response of the calorimeter must be calibrated using a fixed calibration heater.

The calorimeter must accommodate removable sample ampoules, up to 5 mL in volume, 1 mL or 4 mL preferably. Fixed cell design is not acceptable due to lack of flexibility and inherent issues with cleaning.

One calorimeter version of the nanocalorimeter should include two external pressure transducer (0 to 10 bar) and two 4 mL stainless steel vacuum – pressure ampoules for simultaneous heat flow and pressure measurement during energetic material (i.e. igniters, pyrotechnics, propellants, explosives) analysis.

Calorimeter must accommodate a wide variety of accessories and ampoules including the following:

### **RH Perfusion Accessories**

RH perfusion accessory interface module for communication and control of auxiliary equipment used with TAM. The auxiliary equipment should include precision syringe pump, gas flow control kit, pump control module and voltage I/O module. Ampoule RH perfusion made of stainless steel having capacity of 4 mL also, with O-ring cap and disposable Teflon disc has to be supplied.

#### **Specific for RH Perfusion:**

<b>Description</b>	<b>Quantity</b>
Nanocalorimeter, 4mL TAM-IV	2
Ampoule, RH perfusion, stainless steel, 4 mL	1
Ampoule, stainless steel, 4 mL, with circlip cap (pkg of 1)	1
Ampoule, RH perfusion, glass, 1 mL	2
Ampoule, RH perfusion, glass, 1 mL, with circlip cap (pkg of 1)	2
Ampoule, RH perfusion, glass , 4 mL	2
Ampoule, RH perfusion, glass, 4 mL, with circlip cap (pkg of 1)	2
Ampoule, RH perfusion, stainless steel, 1 mL	1
Ampoule, RH perfusion, stainless steel, 1 mL with circlip cap (pkg of 1)	1
Ampoule, RH perfusion, Hastelloy, 4 mL, with circlip cap (pkg of 1)	2
Ampoule, RH perfusion, Hastelloy, 1 mL, with circlip cap (pkg of 1)	2
Reaction vessel, RH perfusion, Hastelloy, 4 mL	2
Reaction vessel, RH perfusion, Hastelloy, 1 mL	2

Gas flow control kit, for RH perfusion	1
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**Specific for Gas Perfusion:**

Description	Quantity
Ampoule, perfusion, stainless steel, 4 mL	1
Ampoule, perfusion, stainless steel, 4 mL, with circlip cap (pkg of 1)	1
Ampoule, perfusion, stainless steel, 1 mL	1
Ampoule, perfusion, stainless steel, 1 mL, with circlip cap (pkg of 1)	1
Reaction vessel, perfusion, glass, 4 mL	2
Ampoule, perfusion, glass, 4 mL, with circlip cap (pkg of 1)	2
Reaction vessel, perfusion, glass, 1 mL	2
Ampoule, perfusion, glass, 1 mL, with circlip cap (pkg of 1)	2
Reaction vessel, perfusion, Hastelloy, 4mL	2
Ampoule, perfusion, Hastelloy, 4 mL, with circlip cap (pkg of 1)	2
Reaction vessel, perfusion, Hastelloy, 1 mL	2
Ampoule, perfusion, Hastelloy, 1 mL, with circlip cap (pkg of 1)	2
Gas flow control kit, for gas perfusion	2
Hygrostat, perfusion, Micro, 0.2 mL, for 4 mL disposable glass ampoules (pkg of 100)	5

**3. Calorimeter Specifications**

**2. 4 mL Mini/Multicalorimeter**

Heat flow calorimeter system must accommodate multiple simultaneous differential measurements.

This can be accomplished through a multicalorimeter array of 6 Minicalorimeter.

Each calorimeter provides performance as defined in the below:

- Dynamic range:  $\pm 25$  milliwatt
- Short term noise  $< \pm 100$  nanowatt
- Baseline drift  $< 200$  nanowatt/24h
- Accuracy  $< 5\%$
- Precision  $\pm 200$  nanowatt



as mentioned above and a detailed acceptance criteria have been enclosed within.

**General points:**

- The installation, commissioning and demonstration of the operation of the equipment and necessary accessories such as unit with dehumidifier cum humidifier have to be carried out by the firm at HEMRL, Pune.
- Training for four persons for minimum five days at HEMRL. The supplier should provide free of cost training on operation & maintenance of the equipment to the laboratory & maintenance personnel at destination site of installation for a period of minimum one week deputing their experts. The training should include basic as well as advance theory of TAM, practical applications and related softwares.
- During warranty period every year, a refresher course on TAM and related softwares should be provided.
- Inspection and acceptance: to be carried out at HEMRL, Pune.
- Assurance of after sale service: seven years after completion of warranty period.
- Equipment should be supplied with operating and maintenance manuals, standard operating procedures and application notes.
- Assurance of availability of spare parts for next seven years after warranty period.
- CD/DVD of measurement software, manuals and operating system along with instrument.

Seal & date

Signature of Supplier with

\*Note : The above confirmation shall be binding on the supplier as a legal compliance.

8.	<p><b>Software:</b></p> <ol style="list-style-type: none"> <li>I. System controller and display system. Controller and display to visualize the heat flow and other instrument functions should be built in.</li> <li>II. TAM software. Software should be latest, genuine and original from TAM manufacture.</li> <li>III. Single point control. Single control for complete system including all modules, acquire, process, and reproduce the data.</li> <li>IV. Report generation. Multi data processing and report compiling and generation in single report.</li> <li>V. Windows Office &amp; operating system. Required Windows office &amp; operating system compatible with TAM should be provided.</li> </ol> <p>Software should be capable of programming methods for all possible experiments possible with TAM and the analysis of each data generated. Should also have capability of analysis of kinetics, Arrhenius and other advanced applications.</p>	
9.	<p><b>UPS requirements</b></p> <p>Dedicated UPS with pure sine wave has to be provided as per the details.</p> <ol style="list-style-type: none"> <li>I. UPS for computer. 3 hours power back-up unit for with full load of the system.</li> <li>II. UPS for TAM. 3 hours power back-up unit for with full load of the system.</li> <li>III. UPS for humidifier cum dehumidifier unit. 1 hour power back-up unit for with full load of the system.</li> </ol>	
10.	<p><b>Analytical Balance</b></p> <p>Suitable analytical balance up to 5 decimal points for weighing the propellants and explosive should be provided.</p>	
11.	<p><b>Digital Block Heater</b></p> <p>Digital block heater with block inserter for heating ampoules (size: 4 mL) from room temperature up to 90 °C with temperature stability of 0.1 °C.</p>	
12.	<p><b>Evacuation Station</b></p> <p>Station should preferably be used with a block heater to permit evacuation at a desired experimental temperature.</p> <p>Air conditioner with precision temperature controller and humidification/dehumidification unit should be supplied.</p>	
13.	<p><b>Acceptance criteria:</b></p> <ul style="list-style-type: none"> <li>• The equipment must perform satisfactorily as per general and technical specification</li> </ul>	

	Ampoule, Hastelloy, 1 mL, with circlip cap (pkg of 1)	6																		
	Lifting eyelet, ampoule, 1 mL	12																		
5.	<p><b>Vacuum Thermal Stability (VTS) Test Rearrangements</b></p> <p>The vacuum thermal stability (VTS) test rearrangements should have the facility of nanocalorimeter 4 mL. It should have the facility to permit measurement of sample heat flow and pressure. The pressure data should be collected using TAM assistance software. This ampoule should provide the ability to evacuate air above the sample prior to a measurement. It should have pressure transducer, calorimeter lid to collect the pressure transducer cable to TAM.</p> <p>For VTS rearrangement must include the following:</p> <table border="1"> <thead> <tr> <th>Description specific for Vacuum Thermal Stability (VTS)</th> <th>Quantity</th> </tr> </thead> <tbody> <tr> <td>Ampoule, vacuum/pressure, 4 mL, TAM-IV</td> <td>2</td> </tr> <tr> <td>Ampoule, VTS, stainless steel, 4 mL, with circlip cap (pkg of 1)</td> <td>2</td> </tr> <tr> <td>Ampoule, VTS, stainless steel, 4 mL, with thread/O-ring cap (pkg of 1)</td> <td>1</td> </tr> <tr> <td>Evacuation station</td> <td>2</td> </tr> <tr> <td>Extension cable for use with the 4 mL or 20 mL vacuum/pressure ampoules</td> <td>2</td> </tr> <tr> <td>Digital block heater 220 V (accepts the 4 mL, 20 mL &amp; 100 mL block inserts)</td> <td>1</td> </tr> <tr> <td>Block insert, VTS, 4 mL [used with digital block heater 110 VAC or digital block heater 220 VAC</td> <td>2</td> </tr> </tbody> </table>				Description specific for Vacuum Thermal Stability (VTS)	Quantity	Ampoule, vacuum/pressure, 4 mL, TAM-IV	2	Ampoule, VTS, stainless steel, 4 mL, with circlip cap (pkg of 1)	2	Ampoule, VTS, stainless steel, 4 mL, with thread/O-ring cap (pkg of 1)	1	Evacuation station	2	Extension cable for use with the 4 mL or 20 mL vacuum/pressure ampoules	2	Digital block heater 220 V (accepts the 4 mL, 20 mL & 100 mL block inserts)	1	Block insert, VTS, 4 mL [used with digital block heater 110 VAC or digital block heater 220 VAC	2
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7.	<p><b>Computer Hardware</b></p> <p>1. Computer System</p> <ol style="list-style-type: none"> <li>i. All in one branded PC compatible with the TAM and other accessories; latest configuration of i5/i7 processor with 8 GB RAM, 1 TB HDD, Windows 10 or latest version, 24" LED monitor and latest version of office with per petual license preloaded and activated.</li> <li>ii. USB port for TAM, USB ports for the RH perfusion accessories and USB ports for printer, mouse &amp; key board.</li> </ol> <p>2. Printer: A4 size laserjet color printer.</p>																			

The heat flow response of the calorimeter must be calibrated using a fixed calibration heater.  
 The calorimeter must accommodate removable sample ampoules, up to 5 mL in volume. Fixed cell design is not acceptable due to lack of flexibility and inherent issues with cleaning.

4. **Start-up Kit**

Suitable start-up kit with glass ampoules, caps, crimping tool, cap adjustment tool, decapper tool etc. to be supplied with TAM.

The multicalorimeter must accommodate a wide variety of ampoules and accessories, including the following:

Description specific for multicalorimeter	Quantity
Multicalorimeter, 4 mL, (8.4 J/K), 6ch TAM-IV	2
Start up kit, 4 mL (with 12 eyelets)	1
Vial decapper, 3 & 4 mL pressure release lifters, TAM, (pkg of 1)	1
Pressure release lifter, start up kit, 4 mL, TAM (pkg of 3)	4
Cap, crimping tool, ampoules, 3 & 4 mL	1
Clamping tool with safety lock	1
Decapper tool: A dual decapper tool for removing lids from the 3, 4 (13mm) and 20 (20mm) mL disposable glass ampoules used in TAM-III, TAM-IV and TAM-Air	1
Ampoule, stainless steel, 4 mL with threaded cap (pkg of 2)	1
Ampoule, Hastelloy, 4 mL, with threaded cap (pkg of 2)	1
Ampoule, stainless steel, 4 mL, with thread/O-ring cap (pkg of 1)	1
Ampoule, Hastelloy, 4 mL, with thread/O-ring cap (pkg of 1)	1
Ampoule, stainless steel, 1 mL, with circlip clip (pkg of 1)	1

**Sample ampoules:**

Description	Quantity
Ampoules, glass, disposable, 4 mL (pkg of 485)	1
Aluminum caps, sealing discs, glass ampoules, 4 mL (pkg of 100)	5
Ampoule, Hastelloy, 4 mL, with threaded cap (pkg of 2)	6
Ampoule, stainless steel, 4 mL, with threaded cap (pkg of 2)	6
Ampoule, stainless steel, 1 mL, with circlip cap (pkg of 1)	6