

Part I – General Information and Instructions

1. **Pre-bid Conference: Not Applicable**
2. **Place of Opening of the Bids: CVRDE, Avadi, Chennai – 600 054.**

The Bidders may depute their representatives, duly authorized in writing, to attend the Technical bid opening on the due date and time. Such authorized representatives should also carry their acknowledgement (generated through e-procurement module) as a proof for their online bid submission. Technical bid opening date will not be postponed due to non-presence of your representative.
3. **Technical Bid:** Along with the Technical bid, the following **applicable** documents are to be furnished by the bidder:-
 - i. Scanned Copy of documents like EMD / Proof of registration with DRDO/MOD/DGS&D/NSIC etc., and ECS details
 - ii. Signed and scanned copy of Tender Acceptance Letter, Price bid undertaking and Compliance sheet as per Appendix 'Z' (as mentioned in Part V of RFP).
 - iii. Scanned Copy of Performa for End User Certificate for Export License.(if applicable)
 - iv. Scanned copy of Technical Literature / Catalogue & Brochures
 - v. Scanned copy of PAN details / GST details, etc.,
 - vi. Any other scanned copy or hard copy of documents as mentioned in the RFP.
4. **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 sought not later than 14 (fourteen) 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 in case of advertised tender enquiry.
5. Indian firms need to quote only in Indian Rupees. 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 their principals and a copy of registration/enlistment with DRDO/Ministry of Defence/ DGS&D as an Indian agent, if registered/enlisted, along with their Techno-Commercial bid, failing which their bid would be disqualified. It would be mandatory for an Indian agent to get registered/enlisted with DRDO/Ministry of Defence/ DGS&D as an Indian agent of OEM prior to evaluation of their Price bid, failing which their bid also would be disqualified.
6. **Validity of Bids:** The Bids should remain valid for **180** days from the last date of submission of the Bids.

7. **Modification and Withdrawal of Bids:** A bidder may modify or withdraw his Bid after submission provided that the written notice of modification or withdrawal is received by the Buyer prior to deadline prescribed for submission of bids. A withdrawal notice may be sent by fax, however, it should be followed by a signed confirmation copy to be sent by post and such signed confirmation should reach the purchaser not later than the deadline for submission of bids. No bid shall be modified after the deadline for submission of bids. No bid may be withdrawn in the interval between the deadline for submission of bids and expiration of the specified period of bid validity. **As per the provisions given in the e-procurement module, the modifications and withdrawal of bids may be followed.**
8. **Earnest Money Deposit:** Bidders are required to submit Earnest Money Deposit (EMD), in favour of **The Director, CVRDE, Avadi, Chennai -54** for an amount of **Rs.1,32,000/-** (Currency in Indian Rupees only) along with their bids. In case of two bid system, EMD shall be enclosed in the envelope containing the Techno-Commercial bid. The EMD may be submitted by Indigenous bidder in the form of Fixed Deposit Receipt 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 Security Deposit from them as called for in the Contract. EMD is not required to be submitted by those Bidders who are registered with the Central Purchase Organizations (e.g. DGS&D), National Small Industries Corporation (NSIC), Micro Small Enterprises (MSE), 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. **(Please refer NIT / NIB for EMD amount)**
9. **Clarification Regarding Contents of the Bids:** During evaluation of bids, the Buyer may, at his discretion, ask the bidder for clarification on his Bid. The request for clarification will be given in writing. No clarification on the initiative of the bidder will be entertained after opening of bid.
10. **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.
11. **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.
12. Bidders must submit Quotation pertaining to themselves only except in cases covered under Para 11 above.
13. Bids of debarred/blacklisted firms will not be considered for evaluation.

Part II – Standard Terms and 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, one month from the date of supply order would be deemed as effective date (or) as agreed by both the parties. This one month includes intimation about the readiness of the order along with a copy of the order to the successful bidder, submission of Performance cum Warranty Bond and order acceptance letter by the successful bidder. 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 by both the parties. The deliveries and supplies and performance of the services shall commence from the effective date of the Contract.
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 the following applicable provision:
 - a) For Central and State PSEs: The case of arbitration shall be referred to the Department of Public Enterprises for the appointment of sole arbitrator by the Secretary to the Government of India in-charge of the Department of Public Enterprises. The Arbitration and Conciliation Act, 1996 shall not be applicable to arbitration under this clause.
 - b) For Defence PSUs: The case of arbitration shall be referred to the Secretary Defence (R&D) for the appointment of arbitrator(s) and proceedings.
 - c) For other Firms: 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 either of the following provisions:

“The case of arbitration may be referred to respective CFA or a person appointed by him who will be sole arbitrator and the proceedings shall be conducted in accordance with procedure of Indian Arbitration and Conciliation Act, 1996.”

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.”

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.”

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:**

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% per annum above (i) Prime Lending Rate of State Bank of India for Indian bidders, and (ii) London Inter Bank Offered Rate (LIBOR) 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

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 non-involvement 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 organization, 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:

- i) Name of the Agent
 - ii) Agency Agreement between the Seller and the agent giving details of their contractual obligation
 - iii) PAN Number, name and address of bankers in India and abroad in respect of Indian agent
 - iv) The nature and scope of services to be rendered by the agent and
 - v) 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. **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).
9. **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.
10. **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 / services 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 / services, supplied / carried out partially within the scope of the order / contract that could not be put to use due to late delivery / execution of the remaining stores / services. However, the maximum quantum of LD would be 10% of the total order value (excluding taxes & duties).
11. **Termination of Contract:** The Buyer shall have the right to terminate the Contract in part or in full in any of the following cases :-
- i) The store/service is not received/rendered as per the contracted schedule(s) and the same has not been extended by the Buyer.
 - ii) The delivery of store/service is delayed due to causes of Force Majeure by more than 6 months provided Force Majeure clause is included in the contract and the delivery period has not been extended by the Buyer.
 - iii) The Seller is declared bankrupt or becomes insolvent.
 - iv) The Buyer has noticed that the Seller has violated the provisions of Para 4 and/or Para 5 above to obtain the Contract.
 - v) As per decision of the Arbitration Tribunal.
12. **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 or registered pre-paid mail/ airmail, addressed to the last known address of the party to whom it is sent.

13. **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.
14. **Use of Patents and other Industrial Property Rights:** The prices stated in the Contract 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.
15. **Amendments:** No provision of the Contract 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.

16. **Taxes and Duties**

i) **In respect of Foreign Bidders: Not Applicable**

ii) **In respect of Indigenous Bidders**

a) **General**

- Bidders must indicate separately the relevant taxes/ duties likely to be paid in connection with delivery of completed goods specified in RFP. In absence of this, the total cost quoted by them in their bids will be taken into account in the ranking of bids.
- If a Bidder is exempted from payment of any duty/ tax upto any value of supplies from them, he should clearly state that no such duty/ tax will be charged by them up to the limit of exemption which they may have. If any concession is available in regard to rate/ quantum of any duty / tax, it should be brought out clearly. In such cases, relevant certificate will be issued by the buyer later to enable the seller to obtain exemptions from taxation authorities.
- Any changes in levies, taxes and duties levied by Central/ State/ Local governments ~~such as excise duty, VAT, Service tax, Octroi/entry tax, etc~~ on final product upward as a result of any statutory variation taking place within contract period shall be allowed reimbursement by the Buyer, to the extent of actual quantum of such duty/ tax paid by the Seller. Similarly, in case of downward revision in any such 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. Section 64-A of Sales of Goods Act will be relevant in this situation.
- * Levies, taxes and duties levied by Central/ State/ Local governments ~~such as excise duty, VAT, Service tax, Octroi/entry tax, etc~~ on final product will be paid by the Buyer on actuals, based on relevant documentary evidence, wherever applicable. Taxes and duties on input items will not be paid by Buyer and they may not be indicated separately in the bids. Bidders are required to include the same in the pricing of their product.
- TDS as per Income Tax Rules will be deducted and a certificate to that effect will be issued by the Buyer.

b) **Customs Duty**

- Custom Duty Exemption Certificate (CDEC) will not be provided for imported items.

Note : As per Government of India procedure in vogue, the following concessional rate of taxes are permissible towards supply of equipments/goods for Research and Development activities of DRDO, Ministry of Defence.

- (i) Notification No. 45/2017 Central Tax (Rate) Dt. 14th Nov 2017
- (ii) Notification No. 47/2017 Integrated Tax (Rate) Dt. 14th Nov 2017
- (iii) Notification No. G.O.No. 161, Commercial Taxes and Registration (B1) Dt. 14th Nov 2017 vide No.II(2)/CTR/917 (e-5)/2017.

17. **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.”

18. **Pre-Integrity Pact Clause: (Not Applicable)**

19. **Undertaking from the Bidders:** An undertaking will be obtained from the Bidder/firm/company/vendor 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.

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 cum Warranty Bond:**

i) **Indigenous Bidder: (Applicable)**

The Seller may be required to furnish a Performance cum Warranty Bond by way of Fixed Deposit Receipt (FDR) / Bank Guarantee (BG), in favour of “The Director, CVRDE, Avadi, Chennai – 54” for a sum equal to **10** % of the Contract value (inclusive of taxes). The Bond submitted by way of FDR / BG should be valid up to 60 days beyond the date of completion of all contractual obligations, including warranty obligation. The specimen of bond can be provided on request.

“ The Performance cum Warranty 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.”

Note : For Govt. organizations/ PSUs, Indemnity Bond is acceptable in place of BG.

ii) **Foreign Bidder: (Not Applicable)**

3. **Option Clause: (Not Applicable)**

4. **Repeat Order Clause: (Not Applicable)**

5. **Tolerance Clause: (Not Applicable)**

6. **Purchase Preference Clause: (Not Applicable)**

7. **Transfer of Technology (ToT): (Not Applicable)**

8. **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 **30 / 45** days from the completion of the activity/supply.

9. **Payment Terms**

a) **For Indigenous Seller: (Applicable)**

The payment will be made as per the following terms:-

(i) 30% of the cost of Sl.No.1 (i) of Part V (Basic cost) will be effected as advance payment on submission of proforma invoice and submission of Bank Guarantee in favour of “The Director, CVRDE, Avadi, Chennai-54” for 110% of advance payment value as indicated at Sl.No. 10 of Part III of RFP. (Note : For Govt. organizations/ PSUs, Indemnity Bond is acceptable in place of BG.)

(ii) Balance 70% payment of Sl.No.1 (i) of Part V with 100% taxes will be effected within 30 days after successful completion of scope of work, scope of supply and submission of relevant reports as per Appendix A against receipt of Invoice & Satisfactory job completion certificate duly signed by rep.of Director, CVRDE.

b) **For Foreign Seller: (Not Applicable)**

10. **Advance Payments:**

Interest free mobilization advance payment of **30% of the cost of Sl.No.1 (i) of Part V of the Contract value** may be made, preferably in not less than two installments, against submission of Bank Guarantee, in favour of The Director (**CVRDE**), (**Avadi**), of 110% of advance payment (from first class bank of international repute in case of foreign seller) by the private firm or against submission of Indemnity Bond by the Govt. organizations/ PSUs. In case of termination of the Contract / extension of the delivery period due to default of the Seller, or where advance taken has not been / could not be used for the purpose of order execution, interest free mobilization advance would be deemed as interest bearing advance, compounded quarterly, at the rate of 2% above (i) Prime Lending Rate of State Bank of India for Indian seller, and (ii) LIBOR rate for the foreign seller. The rates as applicable on the date of receipt of advance will be considered for this.

11. **Part Supply and Pro rata Payment (Not Applicable)**

12. Mode of Payment

- a) **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.
- b) **For Foreign Seller: (Not Applicable)**

13. Documents to be Furnished for Claiming Payment

i) Indigenous Sellers:

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

- a) Ink-signed copy of Contingent Bill.
- b) Ink-signed copy of Commercial Invoice / Seller's Bill.
- c) Bank Guarantee for Advance, if applicable.
- d) Guarantee/ Warranty Certificate.
- e) 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).
- f) Original copy of the Contract and amendments thereon, if any.
- g) Income Tax PAN No along with the Xerox copy of the PAN card
- h) Copy of GST registration certificate
- i) Self certification from the Seller that the GST received under the contract would be deposited to the concerned taxation authority. In this regard, extant Government orders will be applicable as communicated by DRDO HQ.
- j) Any other document/ certificate that may be provided for in the Contract.

ii) Foreign Sellers: (Not Applicable)

14. Exchange Rate Variation (ERV) Clause: (Not Applicable)

15. Force Majeure Clause:

- i) 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.
- ii) 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.
- iii) 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.
- iv) 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.
- v) 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.

16. Buy-Back: (Not Applicable)

17. 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.

18. Free Issue of Material (FIM): (Not Applicable)

19. Terms of Delivery

- **For Foreign Bidder: (Not Applicable)**
- **For Indigenous Bidder:** The delivery of goods shall be on FOR **(CVRDE, Avadi, Chennai)** basis.

20. Packing and Marking Instructions:

- a) 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.
- b) 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.
- c) 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 :
- d) 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.
- e) 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 _____
- f) If necessary, each package shall be marked with warning inscriptions: <Top>, <Do not turn over>, category of cargo etc.
- g) 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.

21. Inspection Instructions:

- i) Raw material inspection **NA**
- ii) Part inspection **NA**
- iii) Stage/Subsystem inspection **NA**
- iv) Pre Delivery Inspection **NA**
- v) Factory Acceptance Test **NA**
- vi) Post Delivery inspection on receipt of store **Refer QT / AT Document**
- vii) **Inspection Authority:** The Inspection will be carried out by a representative of the Lab/Estt duly nominated by the Director.

22. Franking Clause:

- i) **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”.
- ii) **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.”

23. Claims:

- i) 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.
- ii) 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.

24. Warranty:

- a) 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, **18** months from the date of acceptance / installation of the said goods stores/articles. If during the aforesaid period, 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.
- b) ~~“In cases of procurement of software, Seller shall issue/provide upgrades of the software free of cost during the warranty period.”~~

26. Product Support: (Not Applicable)

27. Annual Maintenance Contract (AMC) Clause: (Not Applicable)

27. Price Variation (PV) Clause: (Not Applicable)

28. Intellectual Property Rights (IPR): (Not Applicable)

PART IV- Vendor Qualification Criteria (Not Applicable)

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)	Qty
(i)	Supply & Integration of Hand Held Thermal Imager (HHTI) with LRF in MUNTRA-S Vehicle (Details as per Appendix A)	2 Sets.

2. **Technical Details:**

- a) **Specifications/Drawings: Refer Appendix A**
 - b) Technical details with technical parameters : **Refer Appendix A**
 - c) Requirement of training/on-the-job training : **Not Applicable**
 - d) Requirement of installation/commissioning : **Not Applicable**
 - e) Full Inspection details as per provisions made in Para 21 of Part III of the RFP
 - f) Requirement of Technical Documentation : **Refer QT / AT Document**
 - g) Nature of assistance required after completion of warranty as per provisions made in Para 24 of Part III of the RFP : **Refer Sl.No. 25 (i) of Part III of the RFP**
 - h) Requirement of pre-site inspection : **NA**
 - i) Any other details, as considered necessary : **Nil**
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 case of non-compliance, deviation from RFP to be specified in unambiguous terms. In case of compliance, catalogue/brochure reference, if available, to be indicated)

For Commercially-Off-The-Shelf (COTS) items, it is mandatory to enclose catalogue/technical brochure to support the claims of compliance. Apart from the above, please submit the duly filled in 'Appendix Z' along with the technical bid. Format of Appendix 'Z' is enclosed along with this tender.

4. **Delivery Period:** Expected Delivery Period for supply of items/rendering services would be **10 months** from the Effective Date of the Contract (which includes integration and acceptance by CVRDE). 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. **INCOTERMS for Delivery and Transportation (for Foreign Bidders only): NA**

6. Consignee details:

- Name: The Director
- Address: CVRDE, Avadi, Chennai-600 054, Tamil Nadu
- Contact details:

(i) For Technical Queries :- Contact Person

Smt.Swarna Ramesh , Scientist G, Phone No. 044 – 26364056, E-mail : swarnaramesh@cvrde.drdo.in

Smt.B.Gayethri , Scientist E, Phone No. 044 – 26364044, E-mail : gayethri.b@cvrde.drdo.in

(ii) For Commercial Queries :- Contact Person

Shri.K.Sekar, Scientist G, Phone No. 044 – 26364011, E-mail : sekar.k@cvrde.drdo.in

Dr. K. Srinivasan , Scientist F, Phone No. 044 – 26364010, E-mail : srinivasan.k@cvrde.drdo.in

Part VI – Evaluation Criteria of Bids

1. **Evaluation and Acceptance Process:** The bid will be considered and selected based on instructions contained in Part I of the RFP for further evaluation of bids as per sequence given below:
 - i) **Techno-Commercial Bid Evaluation:** Bids will be evaluated based on vendor qualification requirement as per Part IV of RFP, if applicable, and bids of the qualified bidders will be considered for further evaluation as mentioned in Part V of the RFP.
 - ii) **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 VII of the RFP (lot wise).
2. **Procedure for Cost Comparison:** The basis for comparison of cost in different situations would be as follows:
 - a) If competition is only among Indian bidders, the financial implication should be considered on the basis of FOR prices at destination, after off loading the taxes and duties levied by Central / State / Local government on final product payable by the DRDO Lab/Estt after availing various benefits of exemptions from taxes/duties as applicable to DRDO.
 - ~~b) In import cases, all the foreign quotes will be brought to a common denomination in Indian Rupees by adopting the exchange rate as BC selling rate of the State Bank of India on the date of the opening of Price Bids.~~
 - ~~e) If competition is among foreign bidders, the basis for comparison should be the landed price at the destination (designated port) in accordance with Para 19 of Part III of the RFP.~~
 - ~~d) If competition is amongst Indian and foreign bidders, the CIP/CIF cost quoted by the foreign bidders would be the basis for comparison with the basic cost (FOR) offered by Indian bidders, after off loading the Excise Duty, Custom Duty, Central Sales Tax (CST) / Value Added Tax (VAT) and other local taxes and levies. The term Indian bidders would also include DPSUs and Indian Ordnance Factories.~~
 - ~~e) 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.~~~~
 - ~~f) **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 following formula may be used for calculating NPV of a bid:~~

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

Where

A_t ÷ Expected cash flow at time t

t ÷ Time of expected cash flow

N ÷ Total period

i ÷ Discount rate

- g) ~~Discount rate to be used under the method is to be the Prime Lending Rate of State Bank of India 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.
3. The best acceptable bid will be considered further for placement of the Contract after price negotiation as decided by the Buyer.

Part VII – Price Bid Format

Price bid to be uploaded as per the prescribed format (i.e BoQ_xxxx.xls) provided in the E-Procurement Module

GUIDELINES FOR FILLING THE BOQ EXCEL SHEET IN CPP PORTAL

1. **COLUMN 13:** Please quote the **basic unit rate** of each item in column 13 of the BOQ Excel sheet.
2. In column 15 the GST must necessarily be **quoted in percentage (Not in Rupees)**.

Also check that the total cost without tax and with tax in column 53 and 54 respectively, are correct, as per your calculation .

COMPLIANCE SHEET

Part I : Technical Specification

Sl. No.	Name/Description of Item(s)/Service(s)	Qty	Complied / Not Complied
(i)	Supply & Integration of Hand Held Thermal Imager (HHTI) with LRF in MUNTRA-S Vehicle (Details as per Appendix A)	2 Sets.	

Part II: Techno-Commercial Terms

Sl. No.	Description of the item	Complied / Not Complied
1	Validity of bid - 180 days from the last date of submission of the Bids.	
2	Performance cum Warranty Bond : 10% of the contract value as per SI.No. 2 (i) of Part III of the RFP.	
3	Payment terms: as per SI.No. 9 (a) of Part III of the RFP.	
4	Warranty period : 18 months from the date of acceptance.	
5	LD Clause as per SI.No. 10 of Part II of the RFP.	
6	Registration status / EMD <ul style="list-style-type: none">• If you are registered firm, Please mention the registration details, also attach a copy of the registration certificate• If you enclosed EMD, please give EMD details	
7	Delivery period -Within 10 months from the effective date of contract. (Which includes integration and acceptance by CVRDE)	
8	Acceptance of General Terms and conditions as per Part II of RFP	
9	Acceptance of Special Terms and Conditions as per Part III of RFP	

(Authorized Signatory)

Seal

- Please note that duly filled in Appendix 'Z' signed by Authorized signatory with seal to be enclosed along with technical bid.



Appendix - 'A'

**Supply & Integration of
Hand Held Thermal Imager (HHTI) with LRF
in Unmanned Surveillance Vehicle (MUNTRA-S)**

Table of Contents

Table 1: Table of contents			
Sl. No	Description	Annexure	Page No.
1.	Technical Specifications	Annexure – I	2
2.	Scope of Supply	Annexure - II	6
3.	Scope of Work	Annexure – III	7
4.	QT/AT Document	Annexure - IV	8

RFP for

**“Supply & Integration of
Hand Held Thermal Imager (HHTI) with LRF
in Unmanned Surveillance Vehicle (MUNTRA-S)”**

1 Introduction

This annexure describes the technical specifications of the items to be supplied to CVRDE through this tender “Supply & Integration of Hand Held Thermal Imager (HHTI) with LRF in Unmanned Surveillance Vehicle (MUNTRA-S)”.

The hardware items/systems to be supplied are:

(a) Hand Held Thermal Imager (HHTI) with LRF – 02 sets

The detailed technical specifications of each of this module is given below.

2 Technical Specifications of HHTI with LRF

Table 2: Technical Specifications of HHTI with LRF			
S. NO	Item Nomenclature	Parameter	Specifications
1	PHYSICAL DATA		
(a)	Weight		≤ 3.5 kg including Battery
(b)	Dimensions		≤ 350 x 300 x 125 (in mm)
2	OPTICS		
2.1	THERMAL IMAGER		
(a)	Spectral band width		3-5 μm
(b)	FOV Wide Narrow E-zoom		≥ 6° X 5° ≥ 1.9° X 1.4° 2X
2.2	COLOR CCD		
(a)	FOV (Narrow)		≥ 3° X 1.8°

2.3	EYE PIECE	
(a)	Diopter Adjustment	-4 to -4 Diopter
(b)	Reticule	Horizontal and Vertical Scale, 5 mils graduation
(c)	Parallax	≤ 0.2 Diopter
(d)	Eye relief	25 ± 3 mm
3	Video Output	CCIR of 625 lines
4	POWERSUPPLY	
(a)	Power Source	Lithium Ion Rechargeable battery 14.8V Typical
(b)	Low Voltage Indication	Should be available
(c)	Low Voltage Protection	Should be available
(d)	Reverse Polarity protection	Should be available
(e)	Power Consumption	
(i)	During Cooling	$\leq 30W$
(ii)	After Cool Down	$\leq 25W$
(iii)	Operational life of fully charged battery	4 hours typical
5	Environmental	
(a)	Operating Temperature	$-20^{\circ}C$ to $+50^{\circ}C$
(b)	Storage Temperature	$-20^{\circ}C$ to $+55^{\circ}C$
(c)	A Desiccator to maintain dry environment inside the equipment	
6	LASER RANGE FINDER	
(a)	Range	100m to ≥ 8000 m
(b)	Accuracy	± 5 m
(c)	Measuring Frequency	Min one shot every six seconds
(d)	Discrimination	50 m
(e)	Laser Type	Class I Eye Safe Laser
7	Digital Magnetic Compass (DMC)	
(a)	Resolution	Min 1 deg
(b)	Accuracy	< 1 deg
(d)	Elevation Accuracy	$\leq \pm 0.5$ deg
8	Global Positioning System	a. HHTI with LRF should have integrated GPS with a position

		accuracy (<15m) or have facility to connected external Military GPS (output NMEA 0183 format) b. Data to be displayed: Position and no. of satellites.
9	SYSTEM SERIAL LINK	
(a)	Link type	RS-232
(b)	Settings	Baud rate : 9600, Data bits: 8, Stop bits:1, Parity: None
10	DISPLAY	
(a)	Internal display Type	Colour OLED, Size : 20x16x5 (inmm)
(b)	Data displayed	a. Range to the target b. Azimuth angle of the target w.r.t True North c. Elevation angle of the target d. Horizontal distance, height difference, slope distance
(c)	Video displayed	TI or Colour CCD camera
(d)	External Video Output	CCIR of 625 lines
11	BATTERY	
(a)	Nominal Voltage	14.8V
(b)	Operational discharge	-20°C to +55°C
(c)	Operational charge	0°C to +45°C
12	Accessories	(a) Carrying pack (b) Battery Charger (c) Battery Lithium Ion – 4 Nos (d) Protection Cover (e) Cleaning Set (f) User Manual

3 Technical Description

To integrate Electro-optics in Unmanned Surveillance Vehicle (MUNTRA-S) consisting of indigenous Hand Held Thermal Imager (HHTI) with Laser Range Finder (LRF), for carrying out Teleoperation for Surveillance. HHTI with LRF is an integrated Multifunction Site consisting of Colour CCD, Thermal Imager, LRF and Digital Magnetic Compass (DMC) all in a single enclosure. The equipment will be capable of providing day and night viewing capability, target

range measurement, self-position of observer, and target coordinates during day/night. The sight provides controls for functions like focusing, Field of View change etc.

3.1 SCOPE of RFP

The scope of RFP is to supply and integrate HHTI with LRF in MUNTRA-S. The scope of this RFP is pertaining only to "Supply and Integration of HHTI with LRF in Unmanned Surveillance Vehicle".

The scope for integration of HHTI with LRF in Unmanned Surveillance Vehicle involves fitment of unit (along with supplied cable harness) in MUNTRA-S, completing acceptance testing to evaluate the unit performance as per Scope of Supply and Scope of work.

4 Miscellaneous Requirements

4.1 Warranty conditions

All supplied items will have warranty for 18 months from the date of acceptance by CVRDE.

4.2 Technical support

The firm supplying the hardware and integrating on the vehicle shall provide necessary technical support during the testing and trial activities at CVRDE, Avadi and/or BEL, Machilipatnam and Acceptance Test Procedure (ATP) at CVRDE.

SCOPE OF SUPPLY

This annexure describes the details of the scope of supply for all items of this tender.

The scope of supply for this tender is given below:

Table 3 : Scope of Supply		
S. No	Description of Item	Total Qty Required
I.	<p>“Supply of HHTI with LRF in Unmanned Surveillance Vehicle (MUNTRA-S)”</p> <p>One set comprises of:</p> <ol style="list-style-type: none"> 1. HHTI with LRF – 1 No. 2. HHTI Signal Cable – 02 Nos. 3. HHTI Powering unit Cable – 02 Nos. 4. HHTI Battery Charger – 01 No. 5. HHTI Batteries – 02 Nos. 6. HHTI User Manual – 01 No. 7. Software CDs – 01 No. 8. Soft carrying case – 01 No. 	2 Sets

ANNEXURE-III

SCOPE OF SERVICES

The scope of Services is given below.

Table 4: Scope of Services		
S. No	Description of Item	Total QTY
1	"Integration of HHTI with LRF in Unmanned Surveillance Vehicle" consisting of the following at CVRDE: (a) Completion of bench level ATP and environmental tests, as given in Annexure – IV. :1 Job (b) Mounting and integration of one set of hardware item in MUNTRA-S Vehicle along with all harnesses, completion of integration tests and ATP as given in Annexure – IV :1 Job (c) Technical support for : Necessary technical support during integration and ATP checks at CVRDE. :1 Job	2 Jobs



Annexure – IV

QT / AT Document

Procurement & Integration of Indigenous Electro-Optics

for Teleoperation for Surveillance

Document No.: CV/7.4/Robotics/MUNTRA/Hardware/ATP/01

Revision No.: 1

With Date : 01 Jun 2020

Issue No.: 1

No. of Pages :

Prepared by:

B Gayethri, Sct E

Robotics Division

Reviewed by:

K K Radhakrishnan Sct F

Robotics Division

Approved by

**Swarna Ramesh, Sct 'G'
Addl. Director (Robotics)**

Issue authorized by R&QA

QT / AT Document**1. Introduction :**

This document specifies the acceptance test procedures to be followed for accepting the items delivered through this tender. The QT/AT will be carried out in 3 stages as under :

Ser No	QT/AT stage	Venue of QT/AT
1.	Bench level ATP tests (Given in ATL section – I)	BEL, MC
2.	Environmental Tests (as per JSS 55555 standard as applicable)	BEL, MC
3.	System level tests (Given in ATL section – II)	CVRDE

Note1 : In case any supplied item/component is found to be non functional/faulty during at any stage of any of the above ATP tests, the vendor has to replace it free of cost.

Note 2 :If any item/component is replaced after any test, the replaced item(s) shall undergo all the previous tests.

2. **Specifications** : As given in Annexure I
3. **Technical Description** : As given in Annexure I
4. **List of drawings** : Nil
5. **List of deliverables** : As given in Annexure – II
6. **System Level (Mechanical)** : Not Applicable
7. **Component Level (Electronics)** : The item is factory tested sealed enclosure.
8. **Subsystem Level:**
 - a) **Bench Tests:**
 - i. Visual inspection:

Table 1 : Visual inspection

S. No.	Details of features	Sample size	Acceptance value
1	Hardware should be free from any physical damages and dents.	100%	Should be free from any physical damages and dents

ii) Dimensional Inspection :

Table 2 : Dimensional inspection			
S. No.	Maximum dimension	Sample size	Acceptance value
i.	HHTI with LRF 350 x 300 x 125 mm	100%	Should be within the specified limits

- a. Bench level Functional Test : As per acceptance test leaves - Section-I
 b. Environmental Tests : As per acceptance test leaves - Section-II
 c. System Level : As per acceptance test leaves - Section-III

9. Test procedures :

a) **Test instruments used:** Battery set, multi-meter, the utility software supplied along with the product.

b) **Test set-up (as per figures below)**

c) **Test procedure**

- i. Arrange the test setup for each subsystem.
- ii. Power ON the test setup by connecting from either a battery or a from a DC power supply.
- iii. Ensure that utility software required to carry out the acceptance tests is installed in the base station (laptop)
- iv. Conduct the tests as per the ATL sheets.
- v. Note the performance/readings of the subsystem w.r.t ATL sheets
- vi. Switch off the power to the test setup.

d) **Test evaluation:** As per the Acceptance Test Leaves (ATL) enclosed

e) **Acceptance criterion :** As per the Acceptance Test Leaves (ATL) enclosed

Section-I: Bench level acceptance tests

The unit shall be submitted to test as per ATL procedure. All the relevant test certificates, User manual and calibration certificates in original are required to be submitted before the conduction/demonstration of ATP.

1. General Check list**1. General Check list**

S. No.	Checks	Validation criteria	Remarks
1.	Check for physical damage and missing parts for all items mentioned in the scope of supply,	No physical damage or missing or loose parts shall be observed for any item.	Damaged items or Missing items, if any, shall be replaced by the vendor free of cost.
2.	Check for test and calibration certificates for list of items as per scope of supply.	Test and calibration certificates for all the items mentioned in the scope of supply must be available.	Items without calibration / test certificates shall be subjected to calibration/ test & certificates supplied to CVRDE.
3.	Check for supply of documents as per scope of supply	All specified documents must be supplied.	
4.	Check for the warranty certificate issued by the supplier	Warranty of minimum 18 months is essential.	

2. Testing Plan

- a. Bench level testing shall be conducted at Vendor premises at M/s BEL, Machilipatnam.
- b. Note: IMCTS refers to integrated Multifunction computerised Test Station (facility available at BEL, Machilipatnam).

	Module Name	Validation Criteria	Remarks
a.	CCD camera	<p>a. Verify that the specifications of the CCD camera is as specified.</p> <p>b. Verify whether the CCD camera is integrated with the TI and LRF.</p> <p>c. The CCD video camera must be subjected to calibration tests. Clear, distortion free video should be displayed.</p> <p>d. Performance evaluation of CCD camera as per specification and software should be done.</p> <p>e. Verify that FOV modes of the camera as per specification. Software feature for electronic switch over of CCD/TI and vice versa.</p> <p>f. Check the FOV of the CCD camera NFOV: $\geq 3.0 \times 1.8$ deg</p> <p>g. Verify that the FOV of the CCD camera can be dynamically changed.</p>	

			To be measured using IMCTS station
b.	TI video camera	<p>a. Verify the specification of TI camera as specified in RFP</p> <p>b. Performance evaluation of TI camera as per specification and software should be done. Verify that the video is clear and do not have lines, blind spots or blooming effects.</p> <p>c. Verify that the WFOV and NFOV modes of the camera can be electronically selected.</p> <p>d. FOV of Thermal Imager:</p> <ul style="list-style-type: none">- NFOV: $\geq 1.9 \times 1.4$ deg- WFOV: $\geq 6 \times 5$ deg <p>e. Verify that the TI camera FOV can be dynamically changed.</p> <p>f. Thermal Imager Minimum Resolvable Temperature difference (MRTD) using IMCTS station.</p> <p>1 Cy/mrad : 0.13°C</p> <p>2 Cy/mrad : 0.25°C</p> <p>3 Cy/mrad : 0.35°C</p>	To be measured using IMCTS station.

			To be measured using IMCTS station.
c.	Laser Range Finder	<ul style="list-style-type: none"> a. Check that the LRF uses eye safe laser. b. Check the LRF ranges is atleast 8kms (Target 2.3m x 2.3m at 10% reflectivity and visibility of 23 kms) c. Accuracy: $\pm 5m$ d. Verify the rate of firing is at least 6 LRF shots/minute e. Test the accuracy and consistency of the LRF by firing the targets at known distances (with at least min 6 shots each at different ranges). There should not be any false/multiple echoes. f. Verify that the target discrimination is not more than 50m. g. Verify that the LRF is capable of being remotely fired. h. Verify that the LRF can be electronically switched ON/OFF. 	The test (b) and (c) to be measured on IMCTS station with validated test points.

Section-II: Environmental tests

TESTS	TEST CONDITIONS	OBSERVATION
i) Temperature cycling test	<p>Test No 22, Procedure No 1, Test condition B.</p> <p>(105 minutes at +60°C and 105 minutes at -20°C, 4 defect free cycles. Temp ramp not less than 5°C/min).</p>	<p>System in operating mode for the duration of the test.</p> <p>Performance tests in the last 10 minutes of the last two half cycles.</p>
ii) Vibration test	<p>Test No 28, random vibration test, level 2 for tracked vehicle.</p> <p>(ASD : 10 g²/Hz from 20Hz to 500Hz, falling to 1 g²/Hz at 2000Hz, 1 hour each axis).</p>	<p>Visual inspection and performance check at the end of test.</p>
iii) Sealing Test	<p>At 25 Kpa, drop in pressure not more than 10 Kpa after 30 Minutes</p>	<p>Visual inspection and performance check at the end of test.</p>

Section-III: System level acceptance tests

	Module Name	Validation Criteria	Remarks
a.	HHTI with LRF	<ul style="list-style-type: none">a. Ensure the unit is firmly fitted in the MUNTRA-S vehicle with required mounting pads.b. Check whether the unit is powered by 14.8 V Lithium ion battery inserted in the battery compartment.c. Check whether the utility software is installed in the base station (Laptop).d. Check the operation of various switches in the unit as per User Manual.e. OFF/TI/CCD ON switchf. Push Button I: Target Rangeg. Push Button II: Target Localizationh. Push button III: TI standbyi. 4-way switch No.1 –Focus & FOV controlj. 4-way switch No.II-Menu & DMC calibrationk. Check On-Screen display informationl. The operation of HHTI with LRF is governed by a main menu that includes various functions for target acquisition and localization. Check whether all fields in	

		<p>the main menu are functioning as per user manual.</p> <ul style="list-style-type: none">m. Check DMC calibration for achieving accurate azimuth readings and target data (procedure as indicated in the user manual).n. Using utility software, select CCD video camera and check for clear, distortion free video should be displayed.o. Verify that FOV modes of the camera as per specification.p. Using utility software, select Tland verify that the video is clear and do not have lines, blind spots or blooming effects.q. Verify that FOV modes of the camera as per specification.r. Verify that the FOV of the TI can be dynamically changed.s. Test the accuracy and consistency of the LRF by firing the targets at known distances (with at least min 6 shots each at different ranges). There should not be any false/multiple echoes.	
--	--	---	--



ATP-001882 B.1 Approved

		t. Deploy a target and check the function of CCD, TI and LRF ranging on to the target using utility software.	
--	--	---	--

SPECIMEN BANK GUARANTEE FOR EARNEST MONEY DEPOSIT

(To be executed by the State Bank of India or any other scheduled Bank recommended by Reserve Bank of India on non-judicial stamp paper)

To,

The President of India
Through Director CVRDE,
Avadi, Chennai – 600 054.

Dear Sir / Madam,

Sub:- Earnest Money Deposit in the form of Bank Guarantee in r/o Tender Enquiry No.....Dt.....
for Procurement of – reg.,

1. This deed of Guarantee is executed by *the Bank Name with Address*.....
(herein after referred to as the “ Bank ”) in favour of “The President of India, Through the Director, CVRDE, Avadi, Chennai 600054, India” for an amount not exceeding to Rs...../- (Rupees Only) at the request of the M/s..... (hereinafter referred to as “the bidder ”) in connection with the tender enquiry / RFP No..... Dated for Procurement of (herein after referred to as “Stores”).
2. In accordance with the terms and conditions of the said tender enquiry, we the bank hereby irrevocably and unconditionally undertake and guarantee to pay you without delay on your first written demand for payment of Rs...../- (Rupees Only) without reference to the bidder, against any breach by the bidder on any of the terms & conditions contained in the said tender enquiry (or) the Bidder withdraws, amends, impairs or derogates from the tender in any respect within the validity of the said tender enquiry. Your demand shall be conclusive evidence to us as regards the amount due and payable by the bank under this guarantee. However, liability under this guarantee shall be restricted to an amount not exceeding Rs...../- (Rupees Only). Payment by us to you will be made within three (3) days from receipt of your written request making reference to this guarantee and on demand.
3. We the bank further agree that the guarantee herein contained shall remain in full force and effect up to or the complete conclusion of the obligations of the bidder against the tender enquiry, whichever is later. Notwithstanding anything herein contained, our liability under this warranty is restricted to Rs...../- (Rupees Only) and the guarantee shall remain in force up to (*End date*).....
4. Unless a demand or claim under this guarantee is made on us in writing on or before the aforesaid expiry date as provided above or unless this guarantee is extended by us all your rights under this guarantee shall be proscribed and we shall be discharged by the liabilities hereunder.
5. This guarantee shall not be affected by any change in the constitution of our bank or of the bidder or for any other reason whatsoever.
6. This guarantee shall be governed by and construed in accordance with Indian Laws and only competent courts in India shall have jurisdiction on all matters covered under this guarantee.

NOTWITHSTANDING ANYTHING CONTAINED HERE IN :

1. Our liability under this bank guarantee shall not exceed Rs...../- (Rupees Only)
2. This Bank Guarantee shall be valid up to
3. We the Bank are liable to pay the guarantee amount or any part thereof, under this bank guarantee only and only if you serve upon us a written claim or demand on or before.....

Date:
Place:

Sd.
Bankers
Name with code Number of signatory

Seal of the bank

Witness:

- 1.
- 2.

The Bank Details of the organization is as follows:

Bank Name- State Bank Of India.

Branch- HVF Avadi

IFSC- SBIN0004675