



BrahMos

An India-Russia Joint Venture

BrahMos Aerospace Private Limited

BrahMos Complex, Adj. to DRDL Rear Gate, Kanchanbagh,
Hyderabad – 500 058, INDIA, Email: purchasehyd@brahmos.com
Tel: 91-40-2408 7043, 7051 Fax: 91-40-24087045, 2408 7173

Dated 17 Oct 2025

**REQUEST FOR SUBMISSION OF TECHNO-COMMERCIAL & PRICE BID FOR
FUELING SYSTEM AND ACCESSORIES**

Dear Sir/ Madam,

1. BrahMos Aerospace Private Limited, hereinafter referred to as **Buyer**, intends to procure **Fueling System and Accessories** and seek participation of the procurement process from prospective Bidders subject to requirements of succeeding paragraphs.
2. This RFP is divided into 7 Parts as follows:

PART I	:	General Information & Instructions for the Bidders
PART II	:	Scope of Work
PART III	:	Evaluation Criteria of Bids
PART IV	:	Special Terms & Conditions of RFP
PART V	:	Standard Terms & Conditions of RFP
PART VI	:	Format for Price Bids
PART VII	:	Compliance Statement
3. This RFP is neither an agreement and nor an offer by Buyer to the prospective Bidders or any other person. The purpose of this RFP is to provide interested parties with information that may be useful to them in submitting their proposals pursuant to this RFP. This RFP includes statements, which reflect various assumptions and assessments arrived at by Buyer in relation to the Project. This RFP document and any assumptions, assessments and statements made herein do not purport to contain all the information that each Bidder may require. The Bidder shall bear all its costs associated with or relating to the preparation and submission of proposal pursuant to this RFP. Wherever necessary, Buyer reserves the right to amend or supplement the information, assessment or assumptions contained in this RFP. Buyer reserves the right to withdraw the RFP or foreclose the procurement case at any stage. The issuance of this RFP does not imply that Buyer is bound to shortlist a Bidder for the Project. Buyer also reserves the right to disqualify any Bidder should it be so necessary at any stage on grounds of National Security.
4. The receipt of the RFP may please be acknowledged.

Thanking you.

*FOR BrahMos Aerospace Private Limited*

S. Srinivasa Rao
S. Srinivasa Rao
GM (CMM)

S Srinivasa Rao
General Manager (CMM)
BrahMos Aerospace Pvt.Ltd.
Near DRDL Rear Gate
Kanchanbagh, Hyderabad-500058.

PART-I: GENERAL INFORMATION AND INSTRUCTIONS FOR THE BIDDERS

5. The salient aspects and timelines of the acquisition are tabulated below. In case of any variation in the details furnished below or in any Annexures(s) with that mentioned in the RFP, information furnished in the main body of the RFP at referred Paragraph is to be followed.

- (a) The address and contact numbers for sending Bids is given below:

Bids to be addressed to:	S. Srinivasa Rao, General Manager (MM) Kind Attn.: Rupali Pandey, Sr. Manager (CMM)
Postal address for sending the Bids	BrahMos Aerospace, BrahMos Complex Near DRDL Complex Rear Gate Kanchanbagh PO, Hyderabad – 500058
Contact Nos. & E-mail	Mobile: 040-24087239 Email: purchasehyd@brahmos.com ; rupali@brahmos.com

- (b) **LAST DATE AND TIME FOR DEPOSITING THE BIDS:** The sealed Bids under **TWO-BID SYSTEM (I.E (A) TECHNO-COMMERCIAL BID & (B) PRICE BID IN TWO SEPARATE SEALED ENVELOPES)** should reach at the above given address through post/in person latest by **09 Nov 2025**. The responsibility to ensure this lies with the Bidder. **Early submission of the Bids is acceptable to the Buyer. E-mail quotes shall not be entertained and will be considered as rejected.**

- (c) **FORWARDING OF BIDS:** Bids shall be forwarded by the Bidder under their original memo/letter pad inter alia furnishing details like GST number, Bank address with EFT Account, if applicable, etc. and complete postal & e-mail address of their office. The Techno-Commercial and the Price Bids should be put in two separate envelopes and then be put in a single envelope with the 'Bidder Details, RFP No., Last Submission Date' pasted on top.

- (d) **PRE-BID CLARIFICATION:**

- (i) Prior to preparation of the Techno-Commercial Bid, clarifications regarding the technical terms & conditions be obtained from **Mr. Sampat Singh, Systems Engineer-Production, Contact Details: +91-8950474564** within 05 working days from the date of RFQ.
- (ii) Prior to preparation of the Techno-Commercial Bid and Price Bid, clarifications regarding the commercial terms may be obtained from Rupali Pandey, Sr. Manager (CMM), 040-24087190, Hyderabad within 05 working days from the date of RFP.
- (iii) Un-willingness of the Bidder to participate in Bid may be communicated to GM (MM), Hyderabad purchasehyd@brahmos.com / rupali@brahmos.com within 05 working days of receipt of RFP.

- (e) **CLARIFICATION REGARDING CONTENTS OF THE BIDS:** During evaluation and comparison of Bids, the Buyer may, at its discretion, ask the Bidder for clarification of his Bids. The request for clarification will be given in writing and no change in prices or substance of the Bids will be sought, offered or permitted. No post-Bid clarification on the initiative of the Bidder will be entertained.

- (f) **CONDITIONS UNDER WHICH THIS RFP IS ISSUED:** This RFP is being issued with no financial commitment. The Buyer reserves the right to withdraw the RFP and change or vary any part thereof or foreclose the procurement case at any stage. The Buyer also reserves the right to disqualify the Bidder, should it be so necessary at any stage.

- (g) **VALIDITY OF BIDS:** The Bids should remain valid till 04 months from the last date of submission of the Bids.



PART-II: SCOPE OF WORK

1. Manufacture & supply of ONE set of Fueling system along with spares/ accessories as per "TECHNICAL SPECIFICATIONS AND QA PLAN" requirements. The scope includes:

- Procurement of all the related raw materials & components;
- Development, manufacturing & testing of sub-systems at vendor's place;
- Delivery, installation, commissioning, testing and demonstration by the vendor at BrahMos Lucknow.
- Warranty for 2 years from the date of acceptance of system

2. Detailed scope of work/ Technical details is placed at **Enclosure-I**

Note: - Relevant Drawings i.e Fuel Analysis System Drawings and Fuel Filling System Drawings may be collected against submission of Non-Disclosure Agreement (NDA - available in BrahMos website) from BAPL, Hyderabad.

PART-III: EVALUATION CRITERIA OF BIDS

6. The Bidder is required to submit detailed Techno-Commercial Bid containing all Terms & Conditions as enumerated at Part II, Part III, Part IV, Part V, Part VI and Part VII of this RFP and give confirmation of their acceptance of all Terms & Conditions which will automatically be considered as part of the Contract concluded with the successful Bidder (i.e., Seller in the Contract) as selected by the Buyer. The deviations, if any, may be clearly indicated in the Techno-Commercial Bid along with the Compliance Statement in the format enclosed at Part-VIII. Failure to do so may result in rejection of Bid submitted by the Bidder.
7. Only those Bids will be evaluated, which are found to be fulfilling all the eligibility and qualifying requirements of the RFP, both technically and commercially. The bidder, whose price is arrived as lowest as per Evaluation criteria given in this Appendix, will be declared as L-1 bidder by Buyer.
8. **EVALUATION OF TECHNO-COMMERCIAL BID:** The Techno-Commercial Bid forwarded by the Bidders will be evaluated by a Techno-Commercial Evaluation Committee (TCEC) to confirm that the items being offered meet the requirement. The TCEC will examine the extent of variations/differences, if any, in the technical characteristics of the items offered by Bidder. The Bidder, if required, may also be called for the TCEC meeting for clarification on the Techno-Commercial Bid submitted by them.
9. **EVALUATION OF PRICE BID:**
 - (a) The Price Bids of only those Bidders will be opened and evaluated, whose technical bids have been cleared by TCEC. The unopened Price Bids will be returned back to the Bidders by the Buyer on request by the Bidders. The Price Bids will be evaluated on the basis of complete scope and not individual line-item wise basis.
 - (b) 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 shall prevail and the total price shall be corrected.
 - (c) If there is a discrepancy between words and figures, the amount mentioned in words shall prevail.
10. **PROCEDURE FOR COST COMPARISON:**
 - (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) The financial comparison should be considered on the basis of FOR BAPL, Lucknow prices excluding statutory levies, taxes and duties payable on final product.



PART-IV: SPECIAL TERMS & CONDITIONS OF RFP

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.

11. **BANK GUARANTEE FOR PERFORMANCE:** A BG from an Indian nationalized bank OR Axis/HDFC/ICICI/Kotak Bank for 10% of the P.O value valid up to the entire delivery period plus claim period of 03 (Three) months is to be submitted on receipt of Purchase Order.
12. **OPTION CLAUSE:** Not Applicable
13. **REPEAT ORDER CLAUSE:** Not applicable
14. **TOLERANCE CLAUSE:** Not applicable.
15. **INTELLECTUAL PROPERTY RIGHT (IPR):** The rights of Intellectual Property developed under the Contract will be either the property of the Buyer or jointly owned by Buyer and the Seller. The holding of rights of intellectual property will be decided by the Buyer based on the merits of the case. Even where the IPR is jointly held, Buyer will have the marching rights on IPR i.e. the Seller will have to give technical know-how/ design data for production of the item to the designated Agency nominated by Buyer. The Seller will, however, be entitled to license fee/ royalty from the Agency as per agreed terms and conditions. The Seller will also be entitled to use these intellectual properties for their own purpose, which specifically excludes sale or licensing to any third party.
16. **PURCHASE PREFERENCE CLAUSE:** Purchase preference will be granted as per Public Procurement (Preference to Make in India), Order – 2017 as amended, issued by DPIIT/Ministry of Commerce and Industry.
17. **PERMISSIBLE TIME FRAME FOR SUBMISSION OF INVOICE:** To claim payment (part or full), the Seller shall submit the bill(s) along with the relevant documents within 30 days from the completion of the activity/ supply.
18. **PAYMENT TERMS:** 100% on receipt and acceptance of items FOR BAPL, Hyderabad against Bank Guarantee for warranty valid for warranty period + 03 months claim period.

-Balance 10% on commissioning on site against Work Completion Certificate by BAPL, Lucknow.
19. **INVOICE PREPARATION:** All original documents for payments including invoices are to be raised on and submitted to the BAPL, Hyderabad. GSTIN No. for the unit is 36AABCR8269E1Z6 and the same shall be mentioned in all invoices as applicable.
20. **EXCHANGE RATE VARIATION CLAUSE:** Not applicable
21. **PRICE BENCHMARKING CLAUSE:** Not applicable
22. **BUY-BACK:** Not applicable
23. **FREE ISSUE MATERIAL:** Not applicable
24. **TERMS OF DELIVERY/ DELIVERY PERIOD:** FOR BrahMos Aerospace Facility, Lucknow. All items to be delivered and commissioned at BAPL, Lucknow by **31 March 2026**.
25. **TRANSPORTATION & TRANSIT INSURANCE:** The equipment(s) / material(s) will be packed, loaded onto transportation vehicle(s) as per the classification of category & class of goods and transported to



BAPL, Lucknow. Necessary transportation & transit insurance to the destination shall be the responsibility of Seller.

26. PACKING AND MARKING INSTRUCTIONS: 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. 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.

- (a) Item Code, Item Description along with other technical details as applicable are to be marked/ engraved on items being delivered by the Suppliers.
- (b) Items being delivered should be packed in good quality wood and transport worthy packing conditions for ease of handling and storage.
- (c) One type of items should be packed in one box for ease of receipt, storage and issue.

27. QUALITY & INSPECTION CLAUSE:

- (a) **YEAR OF PRODUCTION:** The items should be of the latest manufacture and conform to the current production standards.
- (b) **QUALITY:** The quality of the items shall correspond to the technical conditions and standards enumerated in the RFP.
- (c) **INSPECTION & ACCEPTANCE:** Inspection at production/acceptance stage will be carried out by Buyer's representatives. The Inspection Agency or their nominated agency shall have the right to conduct quality trials during the production/ acceptance of the items or at any later stage. Stores rejected will be collected and replaced by the Seller at his own cost.
- (d) **TESTING:** Carrying out all the tests as specified in the Technical Specification/ shall be the responsibility of the Seller.

28. WARRANTY: The Seller will declare that the stores 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 would continue to conform to the description and quality for a period of 24 months from the date of acceptance of the system/ installation of the said goods/ stores. 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 to the Buyer. In cases of procurement of software, Seller shall issue/provide upgrades of the software free of cost during the warranty period.

29. PRODUCT SUPPORT: The Seller agrees to provide product support for the stores, assemblies/ subassemblies, fitment items, spares and consumables, Special Maintenance Tools (SMT)/Special Test Equipment (STE) for a minimum period of 15 years including 02 years of warranty period after the delivery. In the event of any obsolescence during the said period of product support in respect of any component or sub-system, mutual consultation between the Seller and Buyer will be undertaken to arrive at an acceptable solution including additional cost, if any.

30. ANNUAL MAINTENANCE CONTRACT (AMC): Not applicable



31. **TECHNICAL DOCUMENTATION:** 01 Set each of finalized Documents for each item/equipment in soft & hard copies will be provided along with the first item/equipment of each type. The draft documents will also be submitted 01 months in advance for pre vetting by Buyer. The improvements/changes suggested by Buyer will be duly incorporated and the final copies will be made.
32. **TRAINING OF MANPOWER:** Operator/ Maintenance level training for 01 batches/ groups comprising of 05 Members will be provided by the Seller. The duration and syllabus of training will be mutually decided by the Buyer and Seller within 15 Days ~~months~~ from the date of signing the Contract and should be carried out along with commissioning of Equipment at BAPL Lucknow Unit.
33. **SUPPORT DURING JOINT RECEIPT INSPECTION (JRI):** The Seller shall carry out periodic maintenance during warranty period as per maintenance schedule provided in user manual/driver's manual. The Seller has to provide the list of such items to be utilized for maintenance during the integration of mounted equipment at Buyer/its vendor's premises, prior to delivery to end user.
34. **PROGRESS REVIEW COMMITTEE (PRC):** Not applicable
35. **MODIFICATIONS (CHANGE IN SCOPE OF WORK), IF ANY:**
- (a) Should Buyer desire any modifications or improvements, additions or alterations to the design, drawings, specifications, place of delivery etc., the same shall be carried out by the firm.
 - (i) Without additional payments: If the modifications or improvements are of minor in nature and are intimated before undertaking of the job as per existing specifications has been carried out.
 - (ii) On payment of additional Expenses and extension of delivery schedule on mutual agreement, if modifications or improvements are major in nature.
 - (b) The recommendations of Committee / PRC will be considered as the basis for both Minor and Major modifications and for determining the requirements of additions/ reduction in expenditure and time for the contractor.
36. **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.
37. **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.



PART-V: STANDARD TERMS & CONDITIONS OF RFP

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.

38. **EFFECTIVE DATE OF THE CONTRACT:** Date of placement of order will be considered as the Contract Effective Date. The performance of the Contract shall commence from the Effective Date of the Contract/Supply Order.
39. **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.
40. **DISPUTES:** All disputes or differences arising out of or in connection with the present Contract including the ones connected with the validity of the present contract or any part thereof, shall be settled by bilateral discussions. Both, Buyer and Seller, will make every effort to resolve the dispute if any, in a mutually acceptable manner.
41. **ARBITRATION:** In the event of any controversy, disputes or differences arising out of or in the interpretation of any of the terms and conditions of this agreement or on breach by any of the parties shall bring the said reason to the notice of each other, and shall amicably try to settle any such issues within 30 days of such notice. In the event of the parties' failure to reach amicable settlement as mentioned herein, all unresolved controversies, disputes or arbitration in accordance with Indian arbitration and conciliation Act, 1996.
42. **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 favor or disfavor 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 favor 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.
43. **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 to the relevant financial documents/ information/ Books of Accounts.
44. **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 tender 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.

45. **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.
46. **FORCE MAJEURE CLAUSE:** Should any Force Majeure circumstances arise, each of the contracting party shall be excused for the non-fulfilment or for the delayed fulfilment of any of its contractual obligations, if the affected party within 30 (Thirty) days of its occurrence informs in a written form the other party. Force Majeure shall mean fires, floods, natural disasters or other acts, that are unanticipated or unforeseeable, and not brought about at the instance of, the party claiming to be affected by such event, or which, if anticipated or foreseeable, could not be avoided or provided for, and which has caused the non-performance or delay in performance, such as war, turmoil, strikes, sabotage, explosions, quarantine restriction beyond the control of either party. A party claiming Force Majeure shall exercise reasonable diligence to seek to overcome the Force Majeure event and to mitigate the effects thereof on the performance of its obligations under this contract.
47. **LIQUIDATED DAMAGES:** The Buyer may deduct from the Seller, as agreed, liquidated damages at the rate of 0.5% per week/part thereof, of value basic cost (excluding taxes and duties on final product) of the delayed stores which the seller has failed to deliver within the period agreed for delivery in the contract subject to maximum of 10% of the total order value (excluding taxes and duties on final product). In cases where partial delivery does not help in achieving the objective of the contract, LD shall also be levied on the total cost (excluding taxes and duties on final product) of the ordered quantity delivered by the vendor. This will also include the store(s) supplied within the delivery period that could not be put to use due to late delivery subject to a maximum of 5% of the total order value (inclusive of taxes and duty) of the Contract.
48. **TERMINATION OF CONTRACT:** The Buyer shall have the right to terminate the Contract in part or in full if the store/service is not received/rendered as per the contracted schedule(s) and the same has not been extended by the Buyer.
49. **NOTICES/ CORRESPONDENCES:** Any notice/correspondence 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, addressed to the last known address of the party to whom it is sent.
50. **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.
51. **COMPETENCE OF PERSONNEL:** Bidder to ensure the following:
 - (a) Necessary Competence of personnel, who involving in the execution of work
 - (b) Their Contribution to product / service conformity & importance towards ethical behaviour.



- (c) Competence to detect or prevent the counterfeit parts, monitoring and reporting of the same during execution of contract.
52. **CURRENT MANUFACTURE:** The equipment supplied will be of latest manufacture and will confirm to current production standards including the specified material and its equivalent.
53. **COUNTERFEIT PARTS:**
- (a) Seller shall evolve necessary verification and test methodologies to detect the counterfeit Parts.
 - (b) Seller to ensure to prevention of counterfeit parts / products including from their sub-vendors, if any.
 - (c) Seller to ensure that only non-counterfeit parts / products shall be delivered to Buyer.
 - (d) Further to prevent inadvertent use of counterfeit parts, Seller shall only procure directly from the OEM (Original Equipment Manufacturer) or their authorized distribution chain unless approved by Buyer in writing.
 - (e) Seller also to ensure the necessary traceability of parts / components belonging to OEM and the same shall be provided to Buyer to eliminate the delivery of counterfeit parts.
 - (f) Seller to obtain the approval of Buyer in writing to source the inputs from Non-Franchised Distributors and also to ensure parts that were procured are legitimate, authentic, non-counterfeit parts, if applicable.
 - (g) In case of detection of counterfeit parts / products upon inspection, same will not be accepted by Buyer and returned to Seller as they are and will be handled as per the policies of Buyer.
54. **SECRECY:** Any Information of classified nature obtained, acquired during the manufacture, test and trails is not to be passed on to any Third party by you or your subcontractor(s). This clause shall survive on termination or completion of this order.
55. **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.
56. **TAXES AND DUTIES:** Only GST will be paid extra by the Buyer. The Bidders are required to indicate the unit & total costs of the items/services with and without GST, GST % with HSN/SAC separately as per the format enclosed. GST claimed by the Seller shall be released by the Buyer only after it appears in the Buyer's GST Input Credit Register of GSTIN Online Portal.
57. **DENIAL CLAUSE:** Denial clause informs Seller that the Buyer reserves the right to admit additional payment due to upward revision of statutory levies beyond the original delivery schedule in case Seller fails to deliver the goods as per schedule. 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.
58. **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. organization and that there is no enquiry going on by CBI/ED/any other Govt. agency against them.



59. DOCUMENTS TO BE FURNISHED FOR CLAIMING PAYMENT:

- (a) The payment of bills will be made on submission of the following documents by the Seller to the Buyer:
- Ink-signed copy of Invoice.
 - Performance Warranty Bond/ Indemnity Bond, if applicable.
 - 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).
 - Copy of the Purchase Order and amendments thereon, if any.
 - Any other document/ certificate that may be provided for in the Contract.

60. CLAIMS:

- (a) 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.
- (b) 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.

61. LIABILITY CLAUSE:

- (a) 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.
- (b) 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.
- (c) Either party would provide reasonable assistance to resolve the claim of other Party to mitigate loss or damage.
- (d) 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.
- (e) The Buyer shall not be liable for any compensation in any manner to the Seller for whatsoever reason.
- (f) 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.

- 62. FALL CLAUSE:** The prices charged for the stores supplied under the agreement by the Seller shall in no event exceed the lowest price at which the Seller sells the items of identical description to any other person/organization during the period till performance of all supply orders placed during the currency of the agreement is completed. If, at any time, during the said period, the Seller reduces the sale price of such stores or sells stores to any other person/organization at a price lower than the price chargeable under the agreement, he shall forthwith notify such reduction or sale to the authority which has concluded the RC/PA; and the price payable under the agreement for the stores supplied after the date of coming into force of such reduction or sale shall stand correspondingly reduced.

- 63. NON-DISCLOSURE:** The Bidding documents, including this RFP and all attached documents provided by Buyer, are and shall remain or become the property of Buyer. These are transmitted to the Bidders solely for the purpose of preparation and the submission of a proposal in accordance herewith. Bidders are to treat all information as strictly confidential and shall not use it for any purpose other than for preparation and submission of their proposal. The provisions of this Para shall also apply mutatis



mutandis to Bids and all other documents submitted by the Bidders, and Buyer will not return to the Bidders any proposal, document or any information provided along therewith (except unopened Commercial Bid as relevant). Information relating to the examination, clarification, evaluation and recommendation for the Bidders shall not be disclosed to any person who is not officially concerned with the process, or concerning the Bidding Process. Buyer will treat all information, submitted as part of the Bid, in confidence and will require all those who have access to such material to treat the same in confidence. Buyer may not divulge any such information unless it is directed to do so by any statutory entity that has the power under law to require its disclosure or is to enforce or assert any right or privilege of the statutory entity and/ or Buyer or as may be required by law or in connection with any legal process.

64. **ACCESS TO CLASSIFIED DOCUMENTS/ SYSTEMS:** The Seller will be allowed to access pertinent classified details/documentation in the interest of execution of task. Association of the Seller will be desirable for effective rectification of design defects, if any, during trials of systems/ sub-systems, being developed as part of the contract. In all such cases, the Seller and his employees, connected with the assigned task, will be subject to the provisions contained in the Indian Official Secrets Act and required to render certificate to that effect.
65. **ACQUIRING MANUFACTURING DRAWINGS AND ASSOCIATED HARDWARE:** The manufacturing drawings & other documents prepared during the development phase shall be the property of the Buyer and will be handed over to Buyer whenever required. Further, these will also not be used by the Seller for any purpose other than stated in the contract, without the written consent of Buyer. All dies/ tools/die sets/ jigs/ fixtures/ moulds fabricated under the contract which are charged separately will be returned to Buyer unless specified otherwise in the contract.
66. **RETURN OF DOCUMENTS:** Documents, specifications, drawings, CD in encrypted format issued to Seller or prepared by them are "RESTRICTED" in nature and property of Buyer. In the interest of National Security these will be returned in as issued condition without any duplication and / or photocopying. A certificate to the effect that required documents have been received in Buyer would be furnished by the Project Team. Any loss or damage to these documents shall be recovered from the Seller.
67. **CONFIDENTIALITY OF INFORMATION:** No party shall disclose any information to any 'Third Party' concerning the matters under this RFP generally. In particular, any information identified as 'Proprietary' in nature by the disclosing party shall be kept strictly confidential by the receiving party and shall not be disclosed to any third party without the prior written consent of the original disclosing party. This clause shall apply to the sub-contractors, consultants, advisors or the employees engaged by a party with equal force.
68. **UNDERTAKING BY BIDDERS:** The Bidder will submit an undertaking that they are currently not banned/ debarred / suspended from doing business dealings with Government of India / any other government organization and that there is no investigation going on by MoD against them. In case of ever having been banned / debarred / suspended from doing business dealings with MoD/any other government organization, in the past, the Bidder will furnish details of such ban / debarment along with copy of government letter under which this ban / debarment / suspension was lifted / revoked. The Bidder shall also declare that their sub-contractor(s)/Seller(s)/technology partner(s) are not Suspended or Debarred by Ministry of Defence. In case the sub-contractor(s)/Seller(s)/ technology partner(s) of the Bidder are Suspended or Debarred by Ministry of Defence, the Bidder shall indicate the same with justification for participation of such sub-contractor(s)/ Seller(s)/ technology partner(s) in the procurement case. Subsequent to submission of bids if any sub-contractor(s)/Seller(s)/ technology partner(s) of the Bidder is Suspended or Debarred by Ministry of Defence, the Bidder shall intimate the Ministry of Defence regarding Suspension or Debarment of its sub-contractor(s)/ Seller(s)/ technology partner(s) within two weeks of such order being made public.



69. **GOVERNMENT REGULATIONS:** It may be confirmed that there are no Government restrictions or limitations in the country of the Bidder or countries from which subcomponents are being procured and/or for the export of any part of the deliverables being supplied.
70. **PATENT RIGHTS:** The Bidder should confirm that there are no infringements of any Patent Rights in accordance with the laws prevailing in their respective countries.
71. **RECORD OF QUALITY RELATED DOCUMENTS:** To be maintained for a minimum period of 15 yrs.
72. **AUDIT OF STORES:** All products and records are subjected to audit by BrahMos Aerospace at any juncture during production at Seller's premises or after receipt at BrahMos Aerospace, Hyderabad.



[Handwritten Signature]
16-10-2025

S Srinivasa Rao
General Manager (CMM)
BrahMos Aerospace Pvt.Ltd.
Near DRDL Rear Gate
Kanchanbagh, Hyderabad-500058.

PART-VI: FORMAT FOR PRICE BID

Sl. No.	Description	Qty	Unit Price	Amount (w/o GST)	HSN/ SAC Code	GST (in %age)	Remarks
A	Fueling System comprising of						
1	(a) Degasification & storage tank (01 no)	01 set					
	(b) Pressurization system (01 no)						
	(c) Sampling & Analysis Panel (01 no)						
	(d) Weighbridges (02 no)						
	(e) Hydraulic system (01 no)						
	(f) PLC based automatic control system (01 no)						
2	LCM30 GOST Contamination monitor & Accessories comprising of:- - UCC LCM30 GOST portable monitor 01 no. - Data download software & USB cable: 1 no - Flow control needle valve assy + Extn hose with adapter: 1 no - Rechargeable battery pack : 1 no - 18V Power supply : 1 no - Printer paper roll : 1 no - Carrying case : 1 no - Industrial sensor STI144.100 : 1 no	01 set					
3	Turbine type flow meter	02 set					
4	Weighbridge load test setup	01 set					
5	Standard weights (5, 2, 1 & 0.5 kg) (01 set of 1 no each)	02 set					
6	Linear link transmitter with display	01 no					
7	Roots pumping station	01 set					
8	Charging devices 5351.0046.00.000	04 nos					
9	Article front and rear stands (310-PJ-1049.000)	01 set					
10	Low pressure regulator	02 nos					
B	Spares (01 set comprising of): - Industrial sensors STI144.100 : 1 no. - Printer paper UC.B.84.702 (Each set of 5 rolls): 2 set - Printer ribbon UC.P.843702 : 2 sets - 25, 5 & 2μ size filter elements: 2 Nos each	1 set					
TOTAL OF DELIVERABLES (A+B) (EXCLUSIVE OF GST)							
B	Cost of Installation & Commissioning.	01					
C	Cost of Training - 01 Batch	01					
D	Any other cost (to be specified).						
TOTAL OF SERVICES (excluding GST)							
Grand Total (Deliverables+ Services)							

- Total Cost (exclusive of GST): _____ (In Rs.)

- Total Cost (Inclusive of GST): _____ (In Rs.)

Note:-

- Details furnished in above table will determine the L1 vendor.

- Cost Breakup of each deliverable/ services needs to be provided as annexure to the above table in Price Bid.

- **ONLY PRICE** needs to be mentioned in the **PRICE BID** in separate sealed envelope.

- Price in any manner **SHOULD NOT BE MENTIONED** in the **TECHNO-COMMERCIAL BID**, else the bid will be treated as rejected.

- All other **Terms and Conditions/ Exclusions/ Deviations** from RFP terms needs to be brought out clearly in the **TECHNO-COMMERCIAL OFFER**.



PART-VII: COMPLIANCE STATEMENT

COMPLIANCE STATEMENT			
Sl. No.	Clause	RFP Requirement	Comments by Bidder
	Part-I	GENERAL INFORMATION AND INSTRUCTIONS	
	Sl. No. of Clause as per RFP	Terms & Conditions as per RFP	Complied (Yes / No) If No, give details
	Part-II	SCOPE OF WORK	
	Sl. No. of Clause as per RFP	Terms & Conditions as per RFP	Complied (Yes / No) If No, give details
	PART-III	EVALUATION CRITERIA OF BIDS	
	Sl. No. of Clause as per RFP	Terms & Conditions as per RFP	Complied (Yes / No) If No, give details
	Part-IV	SPECIAL TERMS & CONDITIONS	
	Sl. No. of Clause as per RFP	Terms & Conditions as per RFP	Complied (Yes / No) If No, give details
	Part-V	STANDARD TERMS & CONDITIONS	
	Sl. No. of Clause as per RFP	Terms & Conditions as per RFP	Complied (Yes / No) If No, give details
	PART-VI	PRICE BID FORMAT	
	Sl. No. of Clause as per RFP	Terms & Conditions as per RFP	Complied (Yes / No) If No, give details

- The Bidder shall submit a Clause-by-Clause Compliance Statement as per the above format. There should be no discrepancy between the details mentioned in the Techno-Commercial Bid and the Compliance Statement.
- In case of any such discrepancies, the terms & conditions mentioned in the RFP and their compliances as mentioned in either of the two documents shall prevail.
- DEVIATIONS if any from the RFP Technical Terms and Commercial Terms need to be brought out clearly as per below format:-**

DEVIATION LIST (From RFP Scope/ Technical and Commercial Conditions)			
RFP Part No Para No.	RFP Requirement	Deviation	Reason/ Justification if any
Technical Deviations			
Commercial Deviations			



CONFIRMATION OF PRICE QUOTED / NOT QUOTED

TABLE TO BE INCLUDED IN THE TECHNO-COMMERCIAL OFFER

Sl. No.	Description	Qty	Quoted/ Not Quoted	Remarks (if any)
A. Fueling System comprising of:				
1	(a) Degasification & storage tank (01 no)	01 set		
	(b) Pressurization system (01 no)			
	(c) Sampling & Analysis Panel (01 no)			
	(d) Weighbridges (02 no)			
	(e) Hydraulic system (01 no)			
	(f) PLC based automatic control system (01 no)			
2	LCM30 GOST Contamination monitor & Accessories comprising of:- - UCC LCM30 GOST portable monitor 01 no. - Data download software & USB cable: 1 no - Flow control needle valve assy + Extn hose with adapter: 1 no - Rechargeable battery pack : 1 no - 18V Power supply : 1 no - Printer paper roll : 1 no - Carrying case : 1 no - Industrial sensor STI144.100 : 1 no	01 set		
3	Turbine type flow meter	02 set		
4	Weighbridge load test setup	01 set		
5	Standard weights (5, 2, 1 & 0.5 kg) (01 set of 1 no each)	02 set		
6	Linear link transmitter with display	01 no		
7	Roots pumping station	01 set		
8	Charging devices 5351.0046.00.000	04 nos		
9	Article front and rear stands (310-PJ-1049.000)	01 set		
10	Low pressure regulator	02 nos		
B	Spares (01 set comprising of): - Industrial sensors STI144.100 : 1 no. - Printer paper UC.B.84.702 (Each set of 5 rolls): 2 set - Printer ribbon UC.P.843702 : 2 sets - 25, 5 & 2µ size filter elements: 2 Nos each	1 set		
C	Cost of Installation & Commissioning.	01		
D	Cost of Training -01 Batch	01		



Enclosure-I

1. SCOPE OF WORK:

The vendor shall develop, manufacture & supply ONE set of Fuelling system along with spares as per "TECHNICAL SPECIFICATIONS AND QA PLAN" requirements. The scope includes

- Procurement of all the related raw materials & components;
- Development, manufacturing & testing of sub-systems at vendor's place;
- Delivery, installation, commissioning, testing and demonstration by the vendor at BrahMos Lucknow.
- Warranty for 2 years from the date of acceptance of system

(A) DELIVERABLES/ Services:

S. No.	Description	Qty
B. Fueling System comprising of:		
1	(a) Degasification & storage tank (01 no)	01 set
	(b) Pressurization system (01 no)	
	(c) Sampling & Analysis Panel (01 no)	
	(d) Weighbridges (02 no)	
	(e) Hydraulic system (01 no)	
	(f) PLC based automatic control system (01 no)	
2	LCM30 GOST Contamination monitor & Accessories comprising of:- - UCC LCM30 GOST portable monitor 01 no. - Data download software & USB cable: 1 no - Flow control needle valve assy + Extn hose with adapter: 1 no - Rechargeable battery pack : 1 no - 18V Power supply : 1 no - Printer paper roll : 1 no - Carrying case : 1 no - Industrial sensor STI144.100 : 1 no	01 set
3	Turbine type flow meter	02 set
4	Weighbridge load test setup	01 set
5	Standard weights (5, 2, 1 & 0.5 kg) (01 set of 1 no each)	02 set
6	Linear link transmitter with display	01 no
7	Roots pumping station	01 set
8	Charging devices 5351.0046.00.000	04 nos
9	Article front and rear stands (310-PJ-1049.000)	01 set
10	Low pressure regulator	02 nos
B	Spares (01 set comprising of): - Industrial sensors STI144.100 : 1 no. - Printer paper UC.B.84.702 (Each set of 5 rolls): 2 set - Printer ribbon UC.P.843702 : 2 sets - 25, 5 & 2µ size filter elements: 2 Nos each	1 set
C	Installation & Commissioning.	01
D	Training - 01 Batch	01

**(B) TECHNICAL SPECIFICATIONS:**

- The Fueling system shall be developed as per the schematic shown in Fig. 1. (Refer Drawing).
- The detailed technical specifications of each sub-system are mentioned below:

A. Degasification & storage tank:

(a) Vendor shall design and fabricate a tank meeting following specification:

- Material of Construction : AISI316L vacuum grade
- Shape : Cylindrical with elliptical/hemispherical/tori spherical Domes/ends.
- Internal volume : 2500 lit
- Max Internal Differential Pressure : 5 kgf/cm²
- Max External Differential Pressure : 1 kgf/cm²
- Bottom side of the chamber shall have a welded and fixed dome. The top side of chamber shall be fitted with the top dome using threaded fasteners with metallic gasket / seal to ensure leak proofness.
- The tank shall be designed to withstand the above-mentioned pressure loads according to the ASME pressure vessel code section VIII division 1 & any other applicable standards.
- The inner surface of the chamber shall avoid contamination of the stored fuel and enable creation of required vacuum level (10^{-1} Torr) inside the tank. For this purpose, the chamber internal surfaces shall be treated accordingly to achieve good uniform surface finish at least of order 15-micron finish.
- The chamber shall be hermetically sealed under both pressure as well as vacuum conditions.
- Two nos. of sprayers shall be provided inside the tank. Both the sprayers shall be circular pipe ring of diameter 40 mm. Holes of 1-2 mm diameter shall be drilled in the pipe for the exit of fuel and nitrogen gas. Before mounting, both sprayers shall be calibrated for determining the pressure drop vs flow rate.
- Baffles shall be provided to restrict the movement of the liquid from top because of evacuation.
- Dimensions of the tank shall be in accordance to the height of the room while considering the valves, piping & skid heights. Weight of 2000 lit fuel filled inside the tank shall also be taken into consideration. The cylindrical portion of the tank shall have a volume of atleast 1500 lit.
- A transparent acrylic sight glass with graduations along the cylindrical portion shall be provided on the tank with graduation marks having least count of 1 lit. The level gauge shall be provided with ball valves while connecting with the tank & shall be leak proof under both vacuum & pressure conditions.
- The chamber shall have proper support structure for easy mounting or erection at user place and easy maintenance thereafter.
- The vendor shall generate detailed engineering drawings after understanding and discussing the user requirements related to port sizes & their locations.
- Degasification tank shall be manufactured and qualified along with NDT inspection according to provisions of the ASME std. After successful meeting requirements of QA plan only, it can be supplied as sub-system of Fuelling system.
- The design of the tank shall be verified by a Certification Agency like Bureau Veritas (India) Private Ltd. or Equivalent Other Agency. The certified appraisal report of the agency shall be submitted to BAPL. In case of no adverse finding, BAPL will accord permission for initiation of fabrication works.
- Specifications of Vacuum pump (VP) for the evacuation of Degassification as well as Sampling & Analysis system.
 - Make: Pfeiffer, Germany or other reputed make
 - Model no: ACP 120G
 - Outlet of the pump shall be exhausted outside the Processing Bay.
 - Dedicated chilling water system & Air flow lines shall be provided along with the pump for its safe operation. Pneumatic line from the facility air receiver with a low-pressure regulator (Make: Festo) shall be provided by the vendor.

B. Pressurisation system: Vendor shall fabricate the Pneumatic panel as per the following specifications:

- Working pressure of the system is 150 kgf/cm².
- Specifications of Pressure gauge PG:
 - Range: 0 - 210 kgf/cm²
 - Make: Wika or other Reputed make
 - Type: Bourdon tube gauge



- Size: 4" dial
- Accuracy: $\pm 1\%$ of FSD
- Make of filter PF1 & PF2 is Pall of SS316 material. The filters shall have the provision of cleaning/replacement of the element.
- Specifications of Programmable Electronic Pressure Regulator EPR
 - Make: Tescom or other Reputed make
 - Outlet Pressure range: 0 – 6.9 bar
 - Inlet pressure range: 150 kgf/cm²
 - Series: ER-5000 / equivalent
 - $C_v=0.1$
 - Self-venting type
- Specifications of Ball valves BV1 – BV4
 - Make: Swagelok/Parker or other Reputed make
 - Operating pressure: 210 kgf/cm²
 - Size: ½" BSP
 - Material of construction: AISI 316L
 - Operating medium: Nitrogen gas
- Inlet connection to the Pneumatic panel shall be provided outside the room to facilitate connection of Nitrogen gas cylinders. A manifold with 4 nos. of flexible hoses with dust covers for connecting the gas cylinders shall be provided outside the room. Provision for fixing the cylinders using chain link to the walls shall be made.
- All the components of the pneumatic panel shall be located on the skid platform, on which the entire fuelling system shall be mounted.
- The seamless piping system shall be of SS316 material with 12 mm ID.
- Gas cylinders at a pressure of 150 kgf/cm² will be provided by BAPL The cylinders shall be connected to the manifold using flexible hoses of ID 12 mm. Supply of flexible hoses (3 m long with SS braiding) shall be in vendor's scope.

C. Sampling & Analysis panel

- The schematic layout of the Sampling & Analysis panel is shown in fig. 2. (Refer Drawing)
- The system shall be mounted on a stand for convenient and accurate reading of the scale marked on the level gauges L_A and L_B .
- Specifications of Needle valves (NV1-NV18)
 - Operating medium: Aviation kerosene and Nitrogen gas
 - Working pressure: (-1) to 20 kgf/cm²
 - Allowable leakage: No leakage allowed in pressure as well as in vacuum (10^{-1} mbar)
 - Make: Swagelok/Parker or other Reputed make
 - Size: ¼" BSP
 - Material of construction: AISI 316L
- Specifications of Vessel A - 2 nos
 - Dimensions: $\varnothing 75 \times 300$ mm
 - Material of construction: AISI 316L
- Specifications of Vessel B - 2 nos
 - Dimensions: $\varnothing 40 \times 40$ mm
 - Material of construction: AISI 316L
- Specifications of Level gauges – 5 nos.
 - L_A - 2 nos., 350 mm length
 - L_B - 2 nos., 500 mm length
 - L_T - 1 no., 400 mm length
 - Material of construction: Acrylic transparent tube
 - Internal diameter: $\varnothing 5 - 8$ mm
 - Transparent marked scale with a resolution of 1 mm.
- Specifications of Piping system
 - Material of construction: AISI 316L
 - Internal diameter: $\varnothing 5 - 8$ mm (It shall be the same as the internal diameter of the level gauges).



- All bend radii: 50 mm.
- No sharp bends are permitted.
- Seamless pipes
- Specifications of Accumulator tank -1 no
 - Dimensions: Ø 250 x 400 mm
 - Material of construction: AISI 316L
- The working pressure of the system is 10^{-2} mbars in vacuum and 5 kgf/cm² in pressure.
- The surfaces of vessels A & B shall be clean & smooth (surface roughness shall be of the order of 1.6 microns finish) without any dents/scratches for faster evacuation.
- Circuit layout on a metallic plate shall be fixed on the system.
- The vendor shall supply two sets of acrylic transparent tube consisting of 2 tubes of 350 mm, 2 tubes of 500 mm and one tube of 400 mm length along with graduated markings as spares with each fuelling system.
- Two pockets shall be made inside the vessel A for mounting of K type thermocouples. The pocket along with the thermocouples shall be filled with Aluminum powder & properly sealed.
- The temperature output from the thermocouples shall be displayed on the Sampling panel.

D. Weighbridges:

- Two nos. of weighbridges shall be provided along with the system
- Capacity of each weighbridge shall be 3T.
- Make of weighbridges shall be Mettler Toledo (Model: PBK9 series) or equivalent meeting readability & repeatability specifications.
- Readings from both the weighbridges shall be totaled and displayed on the display unit. The unit shall have inbuilt memory to record the last weight reading in case of power failure.
- Digital display of the weighbridge shall be provided in the Charging Bay. The weighbridge output shall be interfaced with the PLC panel (using Siwarex-FTA for eg) as an input for the PLC program. The PLC readings shall be checked for its consistency with the weighbridge display.
- Resolution of the weighbridges shall be 0.5 kg and shall display two digits after decimals. Four nos. of load cells may be provided at the four corners of each platform.
- For periodic calibration of the weighbridges, a hydraulic actuator with reaction frame having a load application capacity of 5 T shall be provided. Provision for load application in steps of 10 kg shall be provided in the actuator. A load cell for indicating the load applied shall be provided by the vendor.
- Standard weights of 5, 2, 1 & 0.5 kg (2 Nos each) shall additionally be provided for weighbridge calibration.
- The reaction frame for actuator mounting above the two weighbridges shall be removable type and shall be fixed to the Facility floor using detachable fasteners during calibration. The bolts required for fixing the reaction frame shall be provided underground with suitable covers and shall flush with the floor surface.
- Size of the weighbridge platform shall have a usable space of 1000 x 600 mm.
- Both the weighbridges shall be provided with automated synchronized hydraulic jack arrangement for raising/lowering of the weighbridges avoiding continuous loading of the load cells.
- Hydraulic panel for the operation of the hydraulic jacks & actuator shall be provided by the vendor along with sufficient quantity of oil. The operation of the hydraulic jacks & actuator shall be controlled from the PLC panel.
- The weighbridge display shall be provided with UPS backup to avoid resetting of weight readings on failure of power.

E. Hydraulic system

- Filtration of the fuel shall be carried out in three stages by 25, 5 & 2 μ filters sequentially. Filter elements shall be wire mesh type from PALL or other reputed make.



- Housing of the filter shall allow easy maintenance / replacement of the element with provision of suitable non-electrical clogging indicator. 2 sets of spare filter elements of each size shall be provided by the vendor.
- A Contamination monitoring system (Model No. UCC LCM30 GOST, Make: Parker, UK or equivalent) compatible with Aviation kerosene along with standard items & accessories shall be provided along with the system.
- The following shall be the deliverables of Contamination monitoring system:
 - UCC LCM30 GOST portable monitor : 1 No
 - Data download software & USB cable : 1 No
 - Flow control needle valve assy + Extn hose with adapter : 1 No
 - Rechargeable battery pack : 1 No
 - 18V Power supply : 1 No
 - Printer paper roll : 1 No
 - Carrying case : 1 No
 - Industrial sensor STI144.100 : 1 No
- Specifications of the contamination monitor are as follows:
 - a. The principle of operation of the contamination monitor shall be optical scanning analysis and measurement of actual particulates.
 - b. The unit shall be capable of giving contamination levels in terms of number of 2+, 5+, 10+, 15+, 20+, 25+, 50+, and 100+ microns size particles.
 - c. The unit shall be able to give analysis results in accordance with NAS 1638, ISO 4406 and GOST 17216-2001 standards.
 - d. The vendor shall ensure that the unit is calibrated by accepted online methods confirmed by ISO 4402 procedures.
 - e. The unit shall have the compatibility with mineral oil and petroleum-based fluids..
 - f. The maximum working pressure the unit can withstand shall be 420 bars and temperature from 5 to 80°C.
 - g. The unit shall be capable of handling fluids with a viscosity range of 2 to 100 centistokes (upto 500 CSt when single point sampler is used).
 - h. The test completion time shall be less than 90 sec.
 - i. The contamination monitor shall be operable using 6 batteries of 1.5V each or 12V DC supply. For overload protection, 1-amp fast blow fuse shall be provided.
 - j. The unit shall be computer compatible using RS232 interface connection along with an integral 16-column printer facility for hard copy data.
 - k. The unit shall have memory storage of upto 300 test results (scrolling memory) with data retrieval facility.
 - l. A 32 characters' alphanumeric data entry facility shall be provided for proper identification of each test.
- One set of Flow metering system of make: Flow Technology Inc, USA or equivalent shall be provided along with Fuelling system to measure the fuel flow rate and total flow.
- One set of the system shall comprise of:
 - Turbine type flow meter: 2 Nos (1 No as spare)
 - Linear link transmitter with display & interconnecting cable: 1 No.
- Specifications of the flow metering system are as follows:
 - a. **TURBINE FLOW METER**
 - Model No: FT-10NEXSBLEG-2
 - Flow rates from 0.05 to 0.5 lps
 - Working pressures upto 40 bar
 - Pickoff shall be magnetic with MS connector
 - Material of construction for housing, rotor & shaft shall be Stainless steel
 - Material of construction of journal bearing shall be Ceramic (Ceramic shaft & sleeve).
 - Repeatability of $\pm 0.05\%$ of readings
 - Linearity of $\pm 0.5\%$ of reading
 - Linearity of $\pm 0.1\%$ with linearizing electronics
 - Calibration accuracy $< \pm 0.05\%$ of reading (NIST)
 - End fitting shall be NPT external thread



- Operating medium of the flowmeters is Aviation kerosene
- Operating medium for calibration is DM water
- Temperature of working fluid: 40°C

b. LINEAR LINK TRANSMITTER WITH DISPLAY

- Analog output voltage of 0-10 VDC for flow rate
 - Shall be compatible with the two flowmeter sensors supplied
 - Shall display both flow rate & total flow with flame proof enclosure
 - Shall linearise the outputs to $\pm 0.1\%$ of the reading over the range of the flowmeter.
 - The display unit shall be interfaced with the PLC
 - Connectors for flow meter & display along with cable of sufficient length shall be provided for connecting the display (inside the PLC panel) with the flowmeter.
- Both LCM30 and flowmeter sensors shall be mounted in the circuit as per fig.1. (Refer Drawing), A flowmeter dummy shall also be provided to replace the actual sensor during idle periods.
 - A sight glass for viewing the fuel flow shall be provided in the system.
 - 2 nos. of electric pumps along with their spares shall be provided along with the system. Specifications of the pumps shall be:
 - It shall develop pressure head of the order of 5 kgf/cm².
 - Pump delivery shall be of the order of 10 – 15 lpm
 - Input power to the pump shall be 220V.
 - Pump body shall be of Stainless steel with flame proof electric motor
 - Anti-vibration pads shall be provided for the pump for minimizing the vibration & noise levels.

F. PLC Based Automatic Control System: Vendor shall design, develop and integrate a PLC Based Automatic Control System for fully automatic operation of Fuelling system. The system shall have the following specifications: -

- Make of the PLC system shall be GE/Siemens/ABB/Honeywell or any reputed brand in consultation with BAPL.
- The system shall be equipped with high end CPU, Hard Disks, UPS, keyboard & mouse for collecting data, analyzing it and modifying programmes. It shall have a good quality 22" size touchscreen display (of reputed make) with user interactive options for entering user instructions.
- It shall facilitate both automatic control & manual override control for entire system.
- It shall have both pre-programmed levels for user specified tests as well as programmable parameters.
- Safety interlocks shall be inbuilt in the system. It shall also make audio warnings for safety related issues.
- The system shall have password protection to allow the operation only by Authorized persons.
- The entire code shall be handed over to user with full authorization.
- It shall have all interfaces/channels required for receiving input signals from all sensors like pressure transmitters, limit switches etc and to issue command for operation of control valves.
- The operational logic for the development of PLC shall be explained to the vendor at the time of Pre bid meeting. All the electro-pneumatic ball valves, Vacuum & hydraulic pumps & Electronic pressure regulator shall be controlled from the panel. Readings from the pressure, flow, vacuum & temperature sensors and weighbridges shall be used as feedback for process control.
- Provision for shutdown of the fuelling system in case of power failure shall also be built in the system.
- Status of all the valves, pumps etc shall be displayed on the HMI according to the operational status.
- The display panel shall have pressure transmitter displays (PT, CPT1-CPT4), vacuum gauge displays (CVT & PRN), temperature display, flow meter display, status of hydraulic & vacuum pumps and all the valves with LED indication, operation selection menu, circuit layout & weighbridge display etc. An emergency switch shall also be provided to halt the operation in progress.



- The weighbridge display shall be interfaced with the PLC system as an input to operate the PLC programme. Stable weighbridge reading shall be displayed on the HMI and shall match with the weighbridge display readings.
- The flowmeter display & signal conditioner blocks shall also be mounted on the same panel. Sufficient cable length shall be catered by the vendor between the flowmeter & its display. Flowmeter display also shall be interfaced with the PLC program.
- PLC programmer shall also be present during the testing of the system at BrahMos Lucknow to carry out minor modifications in the program as per user's requirements. All the modules of the program shall be re-checked at BrahMos Lucknow along with BAPL representatives.
- Software support during the warranty period of the system shall be provided by the vendor. Any bugs observed during the usage of the software shall be corrected by the programmer.
- The PLC program shall be checked for its completeness & fail-safe operation to ensure safety of the entire system.
- All the electric connections shall terminate inside this display panel. Routing of the electric cables shall be neat & properly encapsulated.
- A second wall mounted display panel provided outside the processing bay shall include Weighbridge display and CVT display.
- The user shall be able to retrieve all the fueling data stored (as per PLC logic) based on the Article no. entered.
- **Specifications of the capacitance vacuum transmitter (CVT) shall be:**
 - Make: Pfeiffer, Germany or other reputed make
 - Model: CMR 363 with DN 16 ISO-KF
 - Series: Active Line
 - Pressure (max) : 2 bar
 - Range: $1 \cdot 10^{-3}$ to 11 mbar
 - Resolution: 0.003% F.S.
 - Accuracy: $\pm 0.2\%$ FSD
- **Specifications of Pirani vacuum transmitter**
 - Make: Pfeiffer, Germany or other reputed make
 - Model: TPR280 (80° C)
 - Series: Active Line
 - Range: $5 \cdot 10^{-4}$ to 1000 mbar
 - Resolution: 1% of reading
 - Accuracy: $\pm 15\%$
- **The pressure transmitters shall have the following specifications:**
 - Range: PT: 0 to 200 kgf/cm²
CPT1 & CPT2: (-1) to 6 kgf/cm²
CPT3 & CPT4: (-1) to 16 kgf/cm²
 - Make: Wika, Germany or other reputed make
 - Model: S-10
 - Operating medium: Aviation kerosene & nitrogen gas
 - Accuracy: $\pm 0.5\%$ of FSD
- **Specifications of compound pressure gauges:**
 - Range: CG1, CG2, CG5, CG6, CG7 & CG8: (-1) to 5 kgf/cm²
CG3 & CG4: (-1) to 16 kgf/cm²
 - Make: Wika, Germany or other reputed make
 - Type: Bourdon tube gauge
 - Size: 4" dial
 - Operating medium: Aviation kerosene & nitrogen gas
 - Accuracy: $\pm 0.5\%$ of FSD
- **Specifications of Electro-pneumatic operated ball valves**
 - Working pressure: EBV1: 172 kgf/cm²
EBV2 – EBV15: (-1) to 20 kgf/cm²
 - Make: Swagelok or other reputed make
 - Size: EBV1-EBV8, EBV14-EBV15: ½"
EBV9-EBV13: 1"



- Type: Instrumented 2-way Ball Valve With Factory Fitted Pneumatic Actuator, Solenoid Valve & Limit Switches
- Series: 45 Series Ball Valve with ISO 5211 Compliant A30 Series Actuator And Solenoid Valve (2-way Double Acting /Energized To Open Type) With Limit Switches.
- Working medium: Aviation kerosene & Nitrogen gas
- **Specification of Proportional safety relief valve**
 - Make: SWAGELOK or other reputed make
 - Opening Pressure: 5.5 kgf/cm²
 - End connection: ½" (SRV1) & 1" (SRV2) NPT threads
 - Series: RL4
 - Operating medium: Nitrogen gas & aviation kerosene
- **Specifications of Ball valve BV5**
 - Make: Swagelok/Parker or other reputed make
 - Operating pressure: 20 kgf/cm²
 - Size: 1" BSP
 - Material of construction: AISI 316L
 - Operating medium: Aviation kerosene
- **Specification of Non return valve**
 - Make: SWAGELOK or other reputed make
 - End connection: ½" (NRV1) & 1" (NRV2) NPT threads
 - Operating medium: Nitrogen gas (NRV1) & aviation kerosene (NRV2)
 - Operating pressure: 172 kgf/cm² (NRV1) & (-1) to 20 kgf/cm² (NRV2)
- **Specifications of Needle valve (NV19)**
 - Operating medium: Aviation kerosene
 - Working pressure: (-1) to 20 kgf/cm²
 - Allowable leakage: No leakage allowed in pressure as well as in vacuum (10⁻¹ mbar)
 - Make: Swagelok/Parker or other reputed make
 - Size: ¼" BSP
 - Material of construction: AISI 316L
- For the evacuation of the missile fuel tank, the following **roots pumping station (RPS) mounted on a movable trolley** shall be supplied by the vendor:
 - Make: Pfeiffer, Germany or other reputed make
 - Model: WU 452 (Duo 65 + Okta 500a)
 - A suitable SS reducer & solenoid actuated DN40 ISO-KF angle valve (through PLC program) for connecting the pump inlet with the Fuelling system shall be provided.
 - Switching of the RPS & operation of the angle valve shall be controlled using the PLC panel.
- A 10 lit tank with DN40 ISO-KF adapter (2 Nos) shall be provided in the interconnecting line from D4 & F3 ports of the charging devices. The tank shall be capable of withstanding a pressure differential of 5 kgf/cm².
- Pfeiffer make DN40 size corrugated Stainless Steel flexible bellows (Approx 2m each) shall be used between the 10 lit tank & charging devices along with a DN40 ISO-KF Tee. Same size bellow shall connect the tank with RPS. Centring rings, Clamps & SS Stoppers for all the DN40 fittings shall be provided by the vendor.
- Size of the piping system shall be as mentioned in fig. 1 (Refer Drawing). Seamless stainless-steel pipes as per ASTM A269 TP 316L shall be used for the complete system.
- Leak testing of the complete system shall be checked with Air (90%) + Helium (10%) mixture by 'Sniffer' method at the place of installation in presence of vendor representatives. Leak exceeding 10⁻⁵ mbar l/s is not allowed from the pipe joints.
- Steel braided flexible lines shall be used for connecting the Charging device ports D3 (1½"), F2 (1") & F4 (1½") with Fuelling system. Suitable end connectors for mating with the Charging device shall be provided by the vendor.



- It is the responsibility of the vendor to arrange for the necessary tools, machines, electric equipment & manpower during installation & commissioning of the system. BAPL will only provide electric power & Nitrogen gas supply during the installation & commissioning of the systems.
- The vendor shall generate detailed layout, engineering drawings & part list for all the systems and submit to BAPL for approval before commencement of any manufacturing / procurement activity. The layout shall be designed in a manner to maximize the compactness of the total system. The vendor shall design for skid mounting of the entire fuelling system barring the weighbridges & RPS.
- All the calibration, in process test reports, certificates of conformance, performance characteristics curves, operational & maintenance manuals for the Fuelling system shall be supplied by the vendor to BAPL in two copies.
- All the tools, spares & consumables required for the efficient operation & maintenance of the system for two years shall be supplied by the vendor.
- All the pipe joints shall be detachable welded connector joints.
- All the weld joints in the system shall be TIG welded. Routing of pipelines and shall be proper & neat. Adequate support of Mild steel / Structural steel shall be provided for the pipelines.
- All the electrical cables shall be properly encapsulated & routed inside conduits between the skid & PLC panel. Proper sealing of the cable paths shall be ensured to avoid any contact with kerosene / water.
- The vendor shall fabricate the following items and supply along with the fuelling system (Drawings shall be collected by the vendor at the time of pre-bid meeting):
 - Charging devices (5351.0046.00.000 – 4 nos)
 - Article stand (310-PJ-1049.000 – 1 set including front & rear stands)
- Suitable fire extinguishers for fuel fires shall be provided on the skid frame.
- Pneumatic supply connections for control of all the valves is in the Vendor' scope. Outlet from a pressure receiver located outside the Fuelling complex shall be provided for the operation of the valves. Vendor shall have to provide rigid pipe connections for pneumatic supply to the system. The plumbing work shall be done in a professional manner and shall impart aesthetic look to the system.
- Two low pressure manual regulator shall be provided for operation of electro-pneumatic ball valves and ACP120G vacuum pump. Specifications of the regulator are:
 - Make: Festo (LR Pressure Regulator) or equivalent
 - Design: Diaphragm Sensed
 - Series: D series
 - Model: Maxi
 - Size: 3/8"
 - Max. Inlet Pressure: 10 kgf/cm²
 - Outlet Pressure Range: 0.5 - 7 kgf/cm²
 - Venting: Yes
- The electric components of all the valves shall be located at a remote location for safety purpose. Only the pneumatic actuator with the ball valve shall be mounted on the pipelines.
- Numbering of all the valves shall be done on steel plates & glued to the valve body for easy identification. The complete system layout drawing with identification shall be printed on an A0 laminated paper and fixed on the facility wall.
- All the panels, mountings & tank shall be externally coated with two layers of high-quality anti-corrosion metal primer conforming to IS2074 shall be applied as per procedure laid down in IS1477 (part-II). After complete drying of primer, the surfaces shall be painted with two coats of grey color enamel paint of Berger make. The sub-assembly names to be painted using black color paint of same make powder coated/painted. Painting scheme shall be approved by BAPL.
- The manufacturer can attach the insignia of the company on the degasification tank
- Layout of the Fuelling facility is as shown in fig. 3. The vendor shall design the system to match the facility layout.



4. LIST OF SPARES:

- | | |
|--|--------------|
| ○ Industrial sensors STI144.100 | : 1 no. |
| ○ Printer paper UC.B.84.702 (Each set of 5 rolls) | : 2 sets |
| ○ Printer ribbon UC.P.843702 | : 2 sets |
| ○ 25, 5 & 2μ size filter elements | : 2 Nos each |

5. QUALITY ASSURANCE (QA) PLAN:

- i. The vendor shall submit the design document along with the drawings of Fueling System to obtain clearance for manufacturing from BAPL after confirmation of supply order.
- ii. List of all the bought-out items shall be submitted to BAPL prior to procurement. Any discrepancy in the procured items or equivalent make of the items shall be approved by BAPL during pre-bid meeting.
- iii. Manufacturer's certificate of compliance shall be provided along with the bought-out items.
- iv. The documents and drawings submitted by the vendor will be the property of BrahMos Aerospace.
- v. Modification/Alteration/Suggestion for the system may be given after submission of documents.
- vi. Inspection of the system will be carried out by BAPL representative at various stages mutually agreed upon by the vendor & user.
- vii. The following certificates shall be provided by the vendor
 - Filters:
 - Filter size
 - No. of elements
 - Operating pressure limit
 - Hydraulic test pressure
 - Working temperature limit
 - Material certificate
 - Relief valves
 - Set pressure value
 - Hydraulic test pressure value
 - Valve material construction
 - Piping system, degasification tank & its unit (like tank with both end dishes, baffles, atomizer & end connections)
 - Material certificate
 - Chemical composition & Mechanical strength
 - Dimensional inspection
 - Radiography & DP test reports
 - Proof pressure & leak test reports
- viii. All the weld joints shall be TIG welded and cleared after confirmation of
- ix. Visual inspection
- x. RDP test as per IS 3658
- xi. Radiography test (whenever applicable)
- xii. Hydraulic test at twice the working pressure as per IS 5456
- xiii. No leak is allowed with duration of hold of 1 hr.
- xiv. Leak test by Helium-Air mixture at site
- xv. The performance of the pressure regulators shall be confirmed for absence of creep within 24 hrs duration
- xvi. The vendor shall ensure that all pipes shall be free from corrosion and rusting before assembly.
- xvii. The vendor shall be responsible for ensuring the leak tightness of the total system using Air-Helium mixture at a pressure of 5 kgf/cm² (gauge) and at a vacuum level of 10⁻¹ mbar.
- xviii. Material used for seals shall be compatible with Aviation kerosene / Air/ Nitrogen / Helium. Necessary material certificates shall be provided.
- xix. Performance guarantee for the system shall be provided by the vendor for 24 months from the date of acceptance.
- xx. All the spares & accessories required for failure free operation of the complete system including vacuum pumps shall be supplied by the vendor. Operational manuals & performance characteristics for the complete system and the components also shall be provided for final clearance.



- xxi. Factory calibration certificates of all the measuring instruments shall be submitted to BAPL at the time of supply.
- xxii. The vendor shall permit BAPL representatives to observe/monitor the manufacture of the item at the vendor's works during the execution of the supply order.
- xxiii. All the information related to the PLC system including wiring diagrams, component & connection details, compliance certificates, operation & fault rectification manuals etc. shall be provided by the vendor.
- xxiv. Final acceptance authority of the complete system shall be with BAPL Lucknow.

