BMC/OTE/25-26/CombTrly

24 Nov 25

INVITATION OF BIDS FOR PROCUREMENT OF COMBINED TROLLEY FOR BRAHMOS ARTICLES

REQUEST FOR PROPOSAL (RFP) No. BMC/OTE/25-26/CombTrly dt 24 Nov 2025

1. Bids in sealed cover under **Two-Bid System** are hereby invited by BrahMos Aerospace Pvt Ltd from the firms for manufacturing and supply of Combined Trolley as brought out in **Part II of this RFP**.

2. The address and contact numbers for sending Bids is given below:

(a) Bids to be addressed to: Abhishek Panigrahi
AGM (Commercial)

(b) Postal address for sending the Bids: BrahMos Aerospace Pvt. Ltd.
16, Cariappa Marg, Kirby Place,
Delhi Cantt, New Delhi-110010
(referred as Buyer)

(c) Contact Nos.: Tel: 011-42285101, 011-42285103
Fax: 011-42285129
Email: contracts@brahmos.com

3. This RFP is divided into 5 Parts as follows:

PART I : General Information
PART II : Essential Details of Items/Services required
PART III : Standard Terms & Conditions of RFP
PART IV: Special Conditions of RFP
PART V : Evaluation Criteria & Price Bid issues

BrahMos Aerospace Pvt Ltd. New Delhi BrahMos

Abhishek Panigrahi
AGM (Commercial - Production Control)
BrahMos Aerospace

PART I – General Information

4. **Last date and time for depositing the Bids:** The sealed Bids under **Two-Bid system (Techno-Commercial Bid & Price Bid)** should reach at the above given address through post / in person latest by **12 Dec 2025, 1100 Hrs**. The responsibility to ensure this lies with the Bidder. **Early submission of the Bids is acceptable to the Buyer**.

5. **Manner of depositing the Bids**: Sealed Bids consisting of Techno-Commercial Bid & Price-Bid to be put in a single envelope with the **'Proforma format'**, as enclosed, pasted on top, should be dropped in the Tender Box marked as **TENDER BOX NO. 2** so as to reach by the due date and time. Late tenders will not be considered.

6. **Location of the Tender Box:** Tender Box is placed in front of Reception area of BrahMos Aerospace HQ, New Delhi. **Only those Bids that are found in the tender box will be considered and opened**. Bids dropped in the wrong Tender Box will be rendered invalid.

7. **Forwarding of Bids:** Bids forwarded by the Bidder shall also include the following documents along with the technical bid, failing which, bids are liable to be rejected: -

(a) Confirmation of their acceptance of the Standard Terms & Conditions of the RFP mentioned below (refer **Appendix-A**).

(b) An unconditional acceptance of all tender terms and conditions of RFP as per **Appendix –B** to be submitted by BIDDER.

(c) Experience Certificate. The firm must have supplied Ground Support Equipment (GSE) to Public / Private sector. The firm must submit the certificates from the procurement agencies.

(d) **For MSME / Start-up**: The companies which have the capability to supply Ground Support equipment may be considered based on Technical Evaluation.

(e) **Annual Turnover** Average Annual Turnover of last three financial year duly audited by a licensed Chartered Accountant.

(f) **UDYOG Aadhar No. for MSME**. UDYAM Certificate printed on or after 01 April 2024 to be clearly indicated along with supporting documents for MSME/SME (i.e MSME/SME registration certificate) should be uploaded along with the tender.

(g) Ministry of MSME have clarified that all Central Ministries/Departments/Central Public Sector Undertakings may relax condition of prior turnover and prior experience with respect to Micro and Small Enterprises in all public procurements subject to meeting of quality and technical specifications. Exceptions for MSMEs/ SMEs can be accepted only if the MSME/SME is registered with tendered items and the validity of their registration as MSMEs should not be expired till opening of Tech Bid.

(h) If the tenderer/bidder is a registered firm or a company under Company Act, such tenderer/ bidder must submit a **certified true copy of the registration deed** along with the tender. When a tender is submitted by a firm, all the partners of the firm shall be required to sign the tender else power of attorney in favour of the signatory is required to be submitted along with the tender. A copy of partnership deed will also be submitted along with the tender. (**duly attested by Notary**).

(j) **PAN Card Number** along with clear and legible photocopy (**Self attested**). **(refer Appendix-C).**

(k) **Photocopy of GST registration certificate clearly specifying the name of the firm/proprietor and GST registration number. Self-attested. (refer Appendix-C)**

(l) The bidder should submit Income Tax Return of last three years. In case of exemption of ITR. The scanned copy of document in support of exemption will have to be uploaded by the bidder along with technical bid, failing which tender is liable to be rejected (**Self attested**).

(m) **Financial Stability Certificate** issued during current financial year (i.e **01 Apr 2024 onwards**) from Scheduled Bank, preferably Nationalised Bank mentioning the approximate value up to which the tenderer is capable of undertaking the contract.

(n) A **latest Power of Attorney** in original (**not more than two years old**) under oath by Oath Commissioner/First Class Magistrate or equivalent (if the tender is not signed by the actual tenderer or the tender is submitted on behalf of a firm) and signature (s) of the signatory (ies) in the tender **duly attested by a Class – I Gazetted Officer or Class-I Magistrate/Notary**.

(o) All bidders are required to submit **Non-Blacklisting** certificate as **per Appendix 'D'** attached with the RFP along with technical bid documents. (**Self Attested**)

(p) Other relevant documents, which the Bidder wishes to submit.

8. **Pre-Bid clarification:**
(a) Prior to preparation of the **Techno-Commercial Bid**, clarifications regarding the technical terms & conditions, if any, be obtained from the **Project Team – Director (Product Support & Design),** mail: design@brahmos.com within **10 working days** from the date of RFP.

(b) Prior to preparation of the **Techno-Commercial Bid and Price Bid**, clarifications regarding the commercial terms, if any, be obtained from **AGM (Commercial), New Delhi,** mail: contracts@brahmos.com within **10 working days** from the date of RFP.

9. **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 e-mail but 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 maybe withdrawn in the interval between the deadline for submission of bids and expiration of the period of bid validity specified.

10. **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**.

11. **Rejection of Bids:** Canvassing by the Bidder in any form, unsolicited letter and post-tender correction may invoke summary rejection. Conditional tenders will be rejected.

12. **Validity of Bids:** The Bids should remain valid till **6 months** from the last date of submission of the Bids.

13. **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.

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PART II – Essential Details of Items/Services required

14. **Scope of Work (SOW):** The Combined Trolley will be manufactured as per the Scope of Work attached at Annexure-I to the RFP. The Bidder is requested to submit the concept design / sketch design of Combined Trolley during the submission of techno commercial proposal.

15. **List of Deliverables:** The vendor has to supply the following items as part of the order:

Table-1

S. No.	Item Description	Quantity
1	Combined Trolley as per attached Technical Specifications document – 1st Trolley (QT Hardware)	01 no.
2	Combined Trolley as per attached Technical Specifications document – 2nd Trolley (AT Hardware)	01 no.
3	Control Panel for Combined Trolley	02 nos. – 1 for each trolley
4	Drawings, models and documents as per Technical Specifications document. Drawings and documents to be submitted in soft copy and hard copy.	01 set
5	Technical, operational and maintenance manual with IETM – soft copy and hard copy	02 sets
6	Tools and spares as per Technical Specifications document	02 sets – 1 set for each trolley
7	Accessories as per Technical Specifications document	02 sets – 1 set for each trolley
8	Manufacturing of Dummy loads for load testing – not to be delivered	01 set

16. **Delivery Schedule and Location:**
(a) 1st trolley to be delivered within 9 months from the date of issue of purchase order.
(b) 2nd trolley to be delivered within 12 months from the date of issue of purchase order.
(c) All other deliverables (as per Table 1) to be made ready along with the respective trolleys and to be delivered along with the trolleys to the delivery location.
(d) The items to be delivered at M/s BAPL, Hyderabad post completion of PDI.
(e) The vendor is responsible for delivery of the items for field trials at end user location and for final delivery at BAPL, Hyderabad.
(f) Vendor shall replace the items damaged during transportation without any cost to BAPL.
(g) The date of delivery will be considered as the date on which items are accepted at BAPL Hyderabad, post successful completion of JRI.

17. **Warranty:**
(a) The supplier should provide warranty for 24 months from the date of delivery of items. If during the aforesaid period of 24 months, the said items be discovered not to conform to description / quality / satisfactory performance or have deteriorated, vendor shall rectify the issues with the items within 21 days of reporting.
(b) Certificate of conformance and Warranty certificate shall be issued by the vendor at the time of JRI.

18. **Quality**: The items supplied must of latest manufacture & should conform to current production standards. For details, refer Scope of Work attached at Annexure-I to the RFP

19. **Inspection Agency**: BAPL nominated rep shall be the inspection agency for the deliverables. The inspection will be carried out as per the Acceptance Test Procedure (ATP) shared by rep of BAPL. On successful completion of inspection, Certificate of Completion will be issued by rep of BAPL.

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20. **Nodal Agency for execution**: AGM (Design) will be the nodal agency to decide on the quantity and quality of supply made by the Supplier.

PART III –STANDARD TERMS & CONDITIONS

The Bidder is required to give confirmation of their acceptance of the Standard Terms & Conditions of the RFP mentioned below (refer **Appendix-A**) 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. **Failure to do so may result in rejection of the Bid submitted by the Bidder**.

21. **Law:** The Contract shall be considered and made in accordance with the laws of the Republic of India. The contract shall be governed by and interpreted in accordance with the laws of the Republic of India.

22. **Effective Date of the Contract:** The contract shall come into effect on the date of placement of Purchase Order and shall remain valid until the completion of the obligations of the parties under the contract. The deliveries and supplies shall commence from the effective date of the contract.

23. **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 construction or performance, which cannot be settled amicably, may be resolved through arbitration.

24. **Penalty for use of Undue influence:** The Seller shall undertake 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 Contracts or forbearing to show favour or disfavour to any person in relation to the present Contract or any other Contract with the Buyer. Any breach of the aforesaid undertaking by the Seller or any one 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 any one employed by him or acting on his behalf, as defined in the Bhartiya Nyaya Sanhita (BNS), 2023 or the Prevention of Corruption Act, 1988 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.

25. **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.

26. **Termination of Contract:** The Buyer shall have the right to terminate this Contract in part or in full in any of the following cases:

(a) The delivery of the material is delayed for causes not attributable to Force Majeure for more than **02 months** after the scheduled date of delivery.
(b) The Seller is declared bankrupt or becomes insolvent
(c) The delivery of material is delayed due to causes of Force Majeure by more than **02 months** provided Force Majeure clause is included in contract.
(d) As per decision of the Arbitration.

27. **Notices:** Any notice required or permitted by the contract shall be written in the 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.

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28. **Transfer and Sub-letting:** The Seller shall have 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 present Contract or any part thereof.

29. **Risk and Expense Clause:**

(a) Should the stores or any instalment thereof not be delivered within the time or times specified in the contract documents, or if defective delivery is made in respect of the stores or any instalment thereof, the Buyer shall after granting the Seller 45 days to cure the breach, be at liberty, without prejudice to the right to recover liquidated damages as a remedy for breach of contract, to declare the contract as cancelled either wholly or to the extent of such default.

(b) In case of a material breach that was not remedied within 45 days, the BUYER shall, having given the right of first refusal to the SELLER be at liberty to purchase, manufacture, or procure from any other source as he thinks fit, other stores of the same or similar description to make good:-

(i) Such default

(ii) In the event of the contract being wholly determined the balance of the stores remaining to be delivered thereunder.

30. **Force Majeure clause:** Should any Force Majeure circumstances arise, each of the contracting party shall be excused for the non-fulfillment or for the delayed fulfillment 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. **A meeting with reps of BUYER and SELLER will be conducted before invoking Force Majeure Clause.**

31. **Packing and Marking:** The deliverables shall be packed in standard containers / packets as recommended by the manufacturer for storage and transportation. The packing of the item shall conform to the requirements of specifications and standards in force in India.

PART IV – SPECIAL TERMS & CONDITIONS

The Bidder is required to give confirmation of their acceptance of Commercial Terms & Conditions of the RFP mentioned below (refer **Appendix-A**) 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. **Failure to do so may result in rejection of Bid submitted by the Bidder**.

32. **Payment Terms:** 100% of the order value plus applicable GST will be paid only after satisfactory delivery duly certified by BAPL rep & submission of Invoice in Original.

33. **Invoice Preparation:** All Invoices shall contain the following information:

(a) All Invoices shall be raised and submitted to Sr AGM(Finance), BAPL Hyderabad with a copy to AGM(Commercial), BAPL, New Delhi. The address of BAPL Hyderabad is:

BrahMos Aerospace Pvt. Ltd.
BrahMos Complex,
Near DRDL Complex Rear Gate,
Kanchanbagh PO
Hyderabad - 500058.

In case of any changes in above address, the same will be notified to Bidder in form of Amendment to the Purchase Order.

(b) GSTIN No. for Hyderabad unit is 36AABCR8269E1Z6 and the same shall be mentioned in all invoices as applicable.

34. **Documents to be submitted for claiming payment**: The following documents need to be submitted to Sr AGM (Finance) BAPL Hyderabad by SELLER for claiming payment:

(i) Ink signed copy of Commercial Invoice.
(ii) Copy of Order placed on SELLER by BUYER
(iii) Certificate of Acceptance issued by the Buyer (original) during PDI & JRI forwarded to SELLER

35. **Price:** The price is required to be submitted separately in the Price Bid (**Appendix-E**). Rates will not be indicated in the technical bid and if indicated, then the tender will be considered invalid.

36. **Taxes and Duties:** GST applicable at the time of dispatch will be paid extra by the Buyer. GST will be paid when ITC is available to BAPL in GSTIN site.

37. **Liquidated Damages:** Will be at the rate of 0.5% per week of delay and part thereof subject to maximum of 10% of order value on failure to complete the delivery within the need date as mentioned in the RFP.

PART-V - Evaluation Criteria & Price Bid issues

38. The Bidder is required to submit **detailed Techno-Commercial Bid containing all Terms & Conditions as enumerated at Part II, Part III and Part IV of this RFP** and give confirmation of their acceptance of all Terms & Conditions (refer **Appendix-A**) 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. **Failure to do so may result in rejection of Bid submitted by the Bidder**. The Bidder is also requested to submit the Concept Design / Sketch Design of Combined Trolley along with the Bid.

39. **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. This would be a paper evaluation comprising of scrutiny of all documents, technical literatures, certificates, compliance statements etc submitted by the bidders and any document asked by the TEC. 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**.

40. **Evaluation of Price Bid**. The Price Bids of only those Bidders will be evaluated, **whose technical bids have been cleared by TCEC**. The price negotiation will be carried out by a Price Negotiation Committee (PNC). The Price Bid will be opened in front of TCEC qualified Bidders and negotiation will be carried out with the L1 Bidder. The Price Bids will be evaluated on the basis of total scope and not on line-item wise basis.

41. List of Documents to be submitted by BIDDER / SELLER at various stages of execution of order:

Sl No.	Documents	Reference in RFP	Remarks
1.	Techno-Commercial BID	Para 1 of RFP	
2.	Price BID	Para 1 of RFP & Appendix-E	
3.	Compliance Statement (along with soft copy in excel sheet in .xlsx)	Appendix-A	As part of Techno-Commercial BID
4.	Acceptance of Terms & Conditions of Tender	Appendix-B	
5.	Electronic Payment System Mandate Form	Appendix-C	
6.	Non-Blacklisting Certificate	Appendix-D	
7.	Bidder Registration / Assessment Document	Para 7 of RFP	
8.	Documents for Claiming Payment	Para 34 of RFP	During payment claim

42. Please acknowledge receipt of this RFP.

Thanking You,

Yours sincerely
For BrahMos Aerospace Pvt. Ltd.

Abhishek Panigrahi
Additional General Manager (Commercial)

BrahMos Aerospace Pvt. Ltd. BrahMos New Delhi

Abhishek Panigrahi
AGM (Commercial - Production Control)
BrahMos Aerospace

Annexure-I

SCOPE OF WORK FOR SUPPLY OF COMBINED TROLLEY FOR BRAHMOS ARTICLES

1. **Refer:**
   (a) Technical specification document: BMR/WDC/CT/TS/V1-R0 dated 25 Sep 2025 (Enclosure-I to Annexure-I).

2. **IPR**
   (a) The IPR of the all the fabricated deliverables, their designs and 3D models, manufacturing drawings and documents will solely rest with M/s BAPL.
   (b) All the data shared with the vendor is confidential in nature and must be protected as per the government norms.
   (c) Any sharing of data to any external member without prior written permission of M/s BAPL is not permitted.

3. **Scope of work:**
   The scope of work for Combined Trolley includes:
   (a) Design of Combined Trolley, preparation of 3D model, FEM analysis.
   (b) Manufacturing and supply of 1st Trolley hardware as per Technical Specifications document.
   (c) Manufacturing and supply of 2nd Trolley as per Technical Specifications document.
   (d) Manufacturing and supply of Control Panel for the operation of Combined Trolley as per Technical Specifications document.
   (e) Development of test facility, manufacturing of dummy loads and conduct of tests (such as fitment, Acceptance test, Qualification test and other tests) as per Technical Specifications document and Quality Assurance Plan at OEM ex-works.
   (f) Field trials as per Technical Specifications document and Quality Assurance Plan
   (g) Demonstrations to end user.
   (h) Preparation and supply of models, drawings and documents as per Technical Specifications document.
   (i) Detailed list of deliverables is given in Para 4. All the items need to be delivered as per the list of deliverables given below.

4. **List of deliverables**
   (a) The vendor has to supply the following as part of the order:

S. No.	Item Description	Quantity
1	Combined Trolley as per attached Technical Specifications document – 1st Trolley (QT Hardware)	01 no.
2	Combined Trolley as per attached Technical Specifications document – 2nd Trolley (AT Hardware)	01 no.
3	Control Panel for Combined Trolley	02 nos. – 1 for each trolley
4	Drawings, models and documents as per Technical Specifications document. Drawings and documents to be submitted in soft copy and hard copy.	01 set
5	Technical, operational and maintenance manual with IETM – soft copy and hard copy	02 sets
6	Tools and spares as per Technical Specifications document	02 sets – 1 set for each trolley
7	Accessories as per Technical Specifications document	02 sets – 1 set for each trolley
8	Manufacturing of Dummy loads for load testing – not to be delivered	01 set

Table 1: List of deliverables

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5. Technical Requirements

(a) **Design**

(i) Design should be made to meet the technical specifications as per Technical Specifications document.

(ii) The design to be approved by M/s BAPL prior to initiating manufacturing of trolleys. Design document consisting of design details, BOM, design calculations and FEM analysis reports to be submitted for approval. Native 3D models and FEA models to be submitted for approval.

(b) **Manufacturing drawing**

(i) Manufacturing drawings of final design need to be prepared and submitted for approval by M/s BAPL.

(ii) Soft copy of all manufacturing drawings in AutoCAD format to be submitted to M/s BAPL.

(iii) Manufacturing process sheets to be submitted for approval by M/s BAPL.

(c) **Quality Assurance Plan (QAP)**

(i) Detailed QAP will be jointly prepared by the vendor and M/s BAPL. The QAP will be approved by M/s BAPL.

(ii) QAP should cover raw material checks, heat treatments checks, welding checks, surface treatment checks, painting checks, visual and dimensional checks, functionality checks, Load tests, Pre-delivery inspection and Joint Receipt Inspection.

(iii) QAP should also cover Illustrated List of Spares (ISPL), Manufacturer recommended list of spares (MRLS) and Catalogue of all bought out items - mechanical, electrical, hydraulic, rubbers, chemicals etc.

(iv) Soft copy of Quality Assurance Plan (QAP) to be submitted.

(d) **Manufacturing**

(i) Basic parameters and dimensions: The dimensions and parameters of the assembly/sub-assembly/parts should be as per the technical drawings and any deviation from the drawings is not recommended. However, design / material / QAP amendments, if required, shall be with prior approval and clearance of M/s BAPL.

* M/s BAPL will be the inspection agency for the deliverables.

(ii) Inspection may be carried out by M/s BAPL / BAPL nominated agency at various stages of manufacturing process.

(e) **Painting**

(i) Painting to be as per technical specifications provided. Painting scheme to be prepared by vendor and submitted for approval by M/s BAPL.

(ii) Inspection of the painting will be carried out as per QAP and technical specifications document.

(f) **Quality and AT / QT**

(i) Qualification tests (QT) will be carried out on the 1st Trolley.

(ii) Post clearance of QT of the 1st Trolley, 2nd Trolley will be manufactured.

(iii) Only Acceptance tests (AT) will be carried out on the 2nd Trolley and subsequent trolleys of the same design.

(iv) The infrastructure required for all the tests is in the scope of vendor.

(g) **Reviews and Inspections**

(i) Project reviews may be conducted on regular basis to assess the progress of activities.

(ii) All the test fixtures, tools, gauges, equipment, instrument etc., required for undertaking inspection and testing shall have valid calibration certificates.

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6. Demonstration to end user and PDI

(a) The field trials and demonstration of functionality of the Combined Trolley to end user at end user location will be the responsibility of the vendor.

(b) After completion of all tests as per QAP and demonstrations to the end user, Pre-Delivery Inspection (PDI) will be carried out jointly by M/s BAPL and supplier at vendor premises.

(c) After successful completion of PDI, items will be cleared for dispatch to delivery location.

(d) Above activities will be conducted separately for both the trolleys.

7. Documentation

(a) The documents to be submitted as per the list of deliverables at S. No. 4.

(b) Additionally, a consolidated document consisting of following details shall be submitted to M/s BAPL during final inspection and PDI.

S. No.	Description
1	Test reports as per QAP
2	Material data sheet
3	Material test certificate
4	WPS, PQR, WPQ
5	Electrode & Filler wire certificates
6	Weld inspection reports with photos
7	Final dimensional report
8	Weight and torque tightening reports
9	Certificates of conformance of components
10	Packing list
11	As-built drawings

Table 2: List of documents

8. Marking and Packing

(a) Marking is to be carried out at locations as specified in drawings. The details of the same will be shared during finalization of manufacturing drawings.

(b) The deliverables shall be packed as per Defence standards with highest quality.

(c) Items to be properly latched along suitable supports for storage and transportation.

9. Delivery schedule and location

(a) 1st trolley to be delivered within 9 months from the date of issue of purchase order.

(b) 2nd trolley to be delivered within 12 months from the date of issue of purchase order.

(c) All other deliverables (as per Table 1) to be made ready along with the respective trolleys and to be delivered along with the trolleys to the delivery location.

(d) The items to be delivered at M/s BAPL, Hyderabad post completion of PDI.

(e) The vendor is responsible for delivery of the items for field trials at end user location and for final delivery at M/s BAPL, Hyderabad.

(f) Vendor shall replace the items damaged during transportation without any cost to M/s BAPL. All transportation & insurance cost to be borne by the vendor.

(g) The date of delivery will be considered as the date on which items are accepted at M/s BAPL Hyderabad, post successful completion of JRI.

10. JRI

(a) Post the delivery of the items at M/s BAPL, Hyderabad, Joint Receipt Inspection (JRI) of the items will be jointly carried out by reps of M/s BAPL and supplier.

(b) Post successful completion of JRI, Certificate of completion will be jointly signed by the vendor and M/s BAPL.

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11. Warranty

(a) The supplier should provide warranty for 24 months from the date of delivery of items. If during the aforesaid period of 24 months, the said items be discovered not to conform to description / quality / satisfactory performance or have deteriorated, vendor shall rectify the issues with the items within 21 days of reporting.

(b) Certificate of conformance and Warranty certificate shall be issued by the vendor at the time of JRI.

APPENDIX - A

COMPLIANCE STATEMENT

Sl. No.	Clause	RFP Requirement	Comments by Bidder
	Part I	**General Instructions**	
	Sl. No. of Clause as per RFP	Terms & Conditions as per RFP	Complied (Yes / No) If No, give details
	Part II	**Essential Details of Items / Services required**	
	Sl. No. of Clause as per RFP	Terms & Conditions as per RFP	Complied (Yes / No) If No, give details
	Part III	**Standard Terms and Conditions of RFP**	
	Sl. No. of Clause as per RFP	Terms & Conditions as per RFP	Complied (Yes / No) If No, give details
	Part IV	**Special Terms & Conditions of RFP**	
	Sl. No. of Clause as per RFP	Terms & Conditions as per RFP	Complied (Yes / No) If No, give details
	Part V	**Evaluation Criteria & Price Bid issues**	
	Sl. No. of Clause as per RFP	Terms & Conditions as per RFP	Complied (Yes / No) If No, give details

Based on the requirement the Bidder needs to submit the Compliance to the Bid in excel sheet format (.xlsx) in soft copy.

APPENDIX -B
(refer para 7 of Part -I of RFP)

ACCEPTANCE OF TERMS & CONDITIONS OF TENDER
(To be given on Company Letter Head)

To,
AGM (Commercial)
M/s BrahMos Aerospace Pvt Ltd,
16 Cariappa Marg, Kirby Place,
Delhi Cantt, New Delhi – 110010

ACCEPTANCE OF TERMS & CONDITIONS OF TENDER

Tender Reference No. _____

Name of Tender: _____

Dear Sir,

1. I / We have obtained the tender document(s) for the above mentioned 'Tender/Work' from your office namely: -

_____
_____
_____as per your advertisement / RFP, given above.

2. I / We hereby certify that I / we read entire terms and conditions of the tender documents from Page No.__ to __ (including all documents like annexure(s), schedule(s), etc.,), which form part of the contract agreement and I / we shall abide hereby the terms / conditions / clauses contained therein.

3. The corrigendum(s) issued from time to time by your department / organizations too have also been taken into consideration, while submitting this acceptance letter.

4. I / We hereby unconditionally accept the tender conditions of above mentioned tender document(s) / corrigendum(s) in its totality / entirety.

5. The Tech Bid and its enclosures as submitted in physical form as mentioned in part-I of RFP.

6. In case any provisions of this tender are found violated, your department / organization shall be at liberty to reject this tender / bid absolutely and we shall not have any claim / right against dept in satisfaction of this condition.

Yours Faithfully,

(Signature of the Bidder, with Official Seal)

BrahMos Aerospace Pvt. Ltd. New Delhi

APPENDIX-C
(refer para 07 of RFP)

ELECTRONIC PAYMENT SYSTEM MANDATE FORM

Sl No	Description	Details
1	Name of the Firm & Address	
2	Email ID	
3	PAN No.	
4	Name of the Bank	
5	Name of Branch & Address	
6	Branch IFSC Code	
7	MICR Code	
8	Type of Account	
9	Bank Account No.	
10	Type of EPS	

I, hereby declare that the particulars given above are correct and complete. If the transaction is delayed or not effected at all for reasons of incomplete or incorrect information, I would not hold the institution responsible.

(Signature of the Bidder, with Official Seal)

Date:

Certified that the particulars furnished above are correct as per our records.

Bank Stamp:

Date:

(Signature of Authorized Official from the Bank)

BrahMos Aerospace Pvt. Ltd. New Delhi

APPENDIX-D
(refer para 07 of RFP)

NON BLACK LISTING CERTIFICATE
(To be given on Company Letter Head)

1. I, _____ son of shri _____ age about _____ by profession proprietor/ partner of M/s _____ having registered office at _____ do hereby solemnly affirms and declare as under: -

(c) Undertakes to the effect that the firm/I represent is not blacklisted by any Government Organization.

(d) I am not Proprietor/ Partners/ Director of any other firm or business organization with whom Government has banned/ suspended business dealing.

(e) I do not have any concern/ subsidiaries with any business organization or agency blacklisted by Government Organization.

Company Seal

(Authorised Signatory of Company)

Place:

Dated:

Signature of Bidder & Stamp

APPENDIX – E

FORMAT FOR PRICE-BID

Price-Bid to be submitted as per the format below: -

Sl No.	System Description	Qty	HSN Code	Unit Basic Cost (Rs.)	GST Cost (Rs.)	Total Cost (Rs.)
1.	Development Cost					
1(a)	Combined Trolley as per Technical Specification document – QT Hardware	01 No.				
1(b)	Drawings, models and documents as per Technical Specifications document*.	01 Set				
1(c)	Dummy Loads for Load Testing – not to be delivered	01 Set				
2.	Combined Trolley as per Technical Specification document – AT Hardware	01 No.				
3.	Control Panel for Combined Trolley	02 No.				
4.	Technical, operational and maintenance manual with IETM – soft copy and hard copy	02 Set				
5.	Tools and spares as per Technical Specifications document	02 Set				
6.	Accessories as per Technical Specifications document	02 Set				

Note: (a) BIDDER to submit Price-BID as per the aforementioned format only.
(b) *Drawings and documents to be submitted in soft copy and hard copy.

TECHNICAL SPECIFICATIONS OF COMBINED TROLLEY FOR HANDLING LOADS

I. INTRODUCTION

1. Various types of cylindrical and cuboidal loads are required to be handled by different trolleys. Presently, there are 6 types of loads and 5 different trolleys for handling these loads. These trolleys are designed to perform specific functions with these loads.

2. Now, it is required to develop a trolley named "Combined Trolley". This will be a single multifunction trolley using which it will be possible to handle all 6 types of loads and perform all the functions which were earlier being performed using separate trolleys.

3. The advantages expected by having a single trolley are –

(i) Ease of operations for the user

(ii) Reduction of overall time of operations

(iii) Reduction of inventory

(iv) Reduction of maintenance requirements

(v) Flexibility to the user

4. The document presents the following:

(i) Loads which are required to be handled by the trolley

(ii) Existing trolleys in use and the functions performed by them

(iii) Functions to be performed by the Combined trolley and key features

(iv) Technical specifications of Combined Trolley

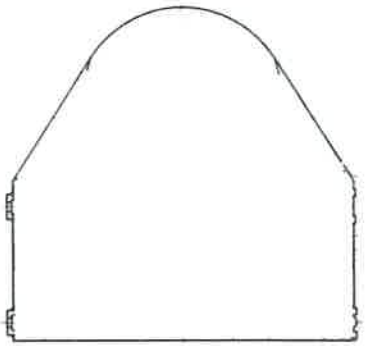
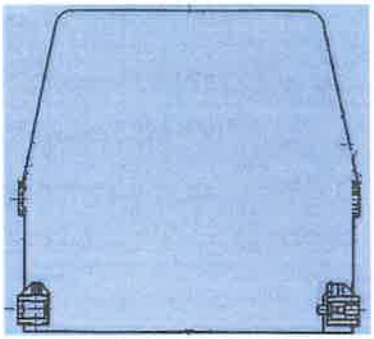
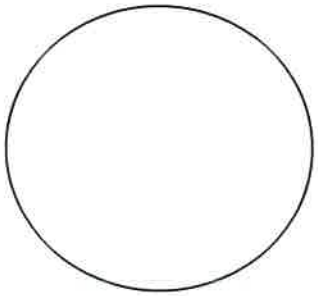
(v) Data to be submitted to BAPL

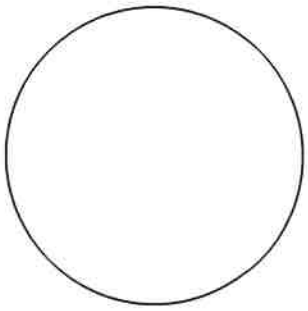
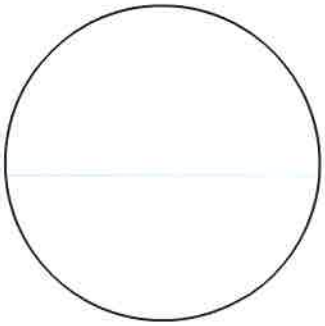
II. LOADS TO BE HANDLED BY THE TROLLEY

1. The loads are majorly cylindrical or cuboidal in shape.

The weight, broad dimensions and broad lever cross-section of loads to be handled by trolley are given below.

The cross-section given will be maintained throughout the length. However, at some locations, there will be variations in the dimensions of the cross-sections. The details of the same will be shared in due course with successful bidders.

Load designation	Weight (Kg)	Length (mm)	Width/ Diameter (mm)	Height/ Diameter (mm)	Cross-section
Load 1	5300 ±5%	9900	1160	1120	
Load 2	4100 ±5%	9900	1160	1095	
Load 3	5800 ±5%	9550	Ø 870	Ø 870	

Load 4	3800 ±5%	8875	Ø 790	Ø 790	
Load 5	2550 ±5%	8500	Ø 648	Ø 648	
Load 6	400 ±5%	2925	402	422	

III. EXISTING TROLLEYS IN USE TO HANDLE ABOVE LOADS

1. Presently the following trolleys are in use to handle the loads:

(i) Magazine Trolley / Universal Magazine Trolley – In storage space
(ii) Traverse Trolley – In storage shed
(iii) Universal Trolley (LV) – To transport Loads from one building to another
(iv) Universal Trolley (AV) – To transport Loads from one building to another

2. Additionally, the following trolley is used for Loads:

(i) Loading Trolley – To transport and lift / lower the Loads under aerial platforms.

3. Existing trolleys and the specific loads they handle:

S. No.	Type of trolley	Intended for Loads
1	Magazine Trolley / Universal Magazine Trolley	(i) Load 1 (ii) Load 2 (iii) Load 3 (iv) Load 4
2	Traverse Trolley	Magazine Trolley / Universal Magazine Trolley + (i) Load 1 (ii) Load 2 (iii) Load 3 (iv) Load 4
3	Universal Trolley (LV)	(i) Load 1 (ii) Load 2 (iii) Load 3 (iv) Load 4
4	Universal Trolley (AV)	(i) Load 5
5	Loading Trolley	(i) Load 5 (ii) Load 6

4. Functions performed using each trolley:

A) Magazine Trolley

1. Magazine Trolley is intended for:

(i) Storage of Load 1 or Load 2 or Load 3 or Load 4, as required, in storage space and
(ii) Moving on rails and getting positioned over the traverse trolley

2. This trolley is capable of:

(i) Storage of Loads.
(ii) Moving in loaded condition with the above-mentioned loads.
(iii) Electric as well as manual operation.

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3. The trolley has rail wheels and moves on rails in the storage space and on the traverse trolley.

4. The Control Panel to operate this trolley is mounted on Traverse Trolley. Cable from the Control Panel is connected to Magazine Trolley for power supply and to operate the trolley electrically.

B) Traverse Trolley

1. The traverse trolley is a Load traversing trolley and is intended for:

   (i) Moving on rails with Magazine trolley and Loads (Load 1 / Load 2 / Load 3 / Load 4) loaded over it.

2. The traverse trolley is capable of:

   (i) Moving with Magazine trolley and loads loaded over it.
   (ii) Electric as well as manual operation.

3. This trolley has rail wheels and moves on rails in the storage shed.

4. To transfer the magazine trolley from the storage space on to the Traverse Trolley, the traverse trolley has rails on the top. The rails on the top of traverse Trolley are aligned with the rails in the storage space. Thereafter, the Magazine Trolley loaded with the Loads is driven from the storage space and moves over the Traverse Trolley.

5. Control Panel to operate this trolley is mounted on the Traverse Trolley itself. Power supply to this trolley is received directly. The cable drags along with the trolley for electrical operation.

C) Universal Trolley (LV)

1. The Universal Trolley (LV) is intended for:

   (i) Transporting all the types of loads (Load 1 / Load 2 / Load 3 / Load 4)

2. The trolley is tyre-wheeled and is towed using a prime mover.

D) Universal Trolley (AV)

1. The Universal Trolley (AV) is intended for:

   (i) Transporting Load 5
   (ii) Rotation of Load 5 by 45 degrees.

2. The trolley is tyre-wheeled and towed using a prime mover.

E) Loading Trolley

1. The Loading Trolley is intended for:

   (i) Transporting Load 5
   (ii) Transporting Load 6
   (iii) Lifting and loading Load 5 on aerial platform – uses scissor lift mechanism for this purpose.

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(iv) Lifting and loading Load 6 on aerial platform – uses scissor lift mechanism for this purpose.

(v) Fine adjustments in all 6 degrees of freedom – roll, pitch, yaw, X, Y, Z.

2. Vertical and pitch motion of the trolley can be done both electrically and manually. All other motions are manual.

3. The trolley is tyre-wheeled and towed using a prime mover.

4. Control Panel for this trolley is mounted on the trolley itself.

IV. REQUIREMENT AND KEY FEATURES OF COMBINED TROLLEY

1. Combined Trolley is a single multifunction trolley using which it will be possible to perform all the functions which were earlier being performed using separate trolleys. The functions are summarised below:

(i) Storage of Loads in Storage Space
(ii) Retrieval of Loads from Storage Space on rail wheels
(iii) Changeover to Tyre wheels
(iv) Transporting Loads from one location to another on roads
(v) Lifting and lowering load to specific heights under aerial platform
(vi) Providing 6 dof motion to Load as per requirements – both coarse and fine adjustments
(vii) Provision of automated (electric) mode of operation as well as mechanical (manual) mode of operation.
(viii) Provision of Control Panel to carry out automated operations.

2. The following are the key features of this Combined Trolley:

(i) Should be able to handle loads in all configurations.
(ii) Should be feasible to keep the loaded trolley for long time periods.
(iii) Should have both rail wheels and tyres.
(iv) It should be feasible to move the trolley on both rails and roads. Suitable mechanism to be present to operate trolley using rail wheels as well as tyre wheels. The mechanism to be integral part of the trolley.
(v) Should have both manual and electric modes of operation.
(vi) Should be provision to tow the loaded trolley with a prime mover.
(vii) Should have scissor lift mechanism which will enable it to lift the load to certain height.
(viii) Should have provision to rotate the Load 5 by 45 degrees.
(ix) Should have provision for 6 DOF movement (within defined limits) of the Load 5 with both fine and coarse movements feasible.
(x) Can have sensors etc. with high level of accuracy to enable autonomous modes of operation.
(xi) Should be low maintenance and fabricated using of indigenous materials / components.
(xii) The functions can be provided using attachments which can be detached or folded as per need to perform the function.
(xiii) The locations, dimensions and configurations of latching points and supports / resting beds for different loads are specific to each load. The supports need to match with the diameter / width of the load. These supports can be foldable. The details for each support will be shared in due course.
(xiv) The time of operation is a critical parameter. It should be feasible to operate the trolley with ease with and without load.
(xv) The components used in trolley should be rugged, corrosion resistant, flame, dust and water resistant. It should be feasible to operate the trolley on iced terrain.

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V. TECHNICAL SPECIFICATIONS OF THE TROLLEY

The Trolley is to be developed to meet the technical specifications given below.

Sl. No.	Requirement	Specification
1.	Design	a) Universal design for all types of loads indicated at Section II with aim to minimise user effort and reduce time to load, unload and transport different loads. b) The trolley frames design must cater for uniform distribution of Load across frames and axles. c) The loads can be rested and latched on trolleys at specific positions only. The details of same will be shared in due course. d) Envelope available for operator or maintainer is 300mm on each side. It should be convenient to operate within this envelope. e) There should be provision to operate the trolley on both rail track and roads. On rail track, it will operate with rail wheels and on road it will operate with tyres. The changeover mechanism from rail wheels to tyres for this purpose should be an integral part of trolley. The changeover should be feasible manually as well as using a push button on Control Panel. f) It should be convenient to move the trolley on undulated roads and iced roads for up to a distance of 10km when on tyres. g) 6dof movement of the cylindrical load to be feasible within specified limits. h) The trolley can have attachments which can be detached or folded. i) Dimensional and weight characteristics of trolley for Loads 1 to 4 i. Max. overall length (excluding detachable elements) – 9900mm ii. Max. platform width (mid-section) – 1250mm j) Dimensional and weight characteristics of trolley for Loads 5 and 6 i. Max. platform length (excluding detachable elements) – 5000mm ii. Max. platform width (mid-section) – 780mm k) Footrests / platform where person can stand. 4 locations – 2 on each side located at the handling positions of the loads. Each footrest will be 1500mm length X 300mm width. l) Storage box to be provided on trolley for storage of tools and accessories m) Spirit Level to be provided in both longitudinal and lateral direction of trolley chassis for levelling on

		ground before loading/ unloading of loads. n) Load 5 and Load 6 need to be lifted / lowered to get docked / undocked with aerial platform. Scissor lift mechanism (or other suitable lifting mechanism) to be present to adjust the height of the trolley for this. o) At a specific time, only one type of load will be loaded on the trolley. The supports / brackets / formats for each load can be foldable or detachable. p) For Load 5 and Load 6: Necessary degrees of freedom for docking/ undocking of loads on aerial platform is required.
2.	Operating Conditions and Environmental & Hazard Protection	**All units of power packs / hydraulic system must be able to serve in all-weather / environmental conditions.** a) Trolley shall operate from (-)40° to (+)70°C for all weather operation. Valves, Oil, O-ring etc. shall be selected accordingly. Vendor shall provide the applicable standards for all hydraulic parts, assemblies and material etc. b) Storage Temperature Range: (-)40 °C to (+)70°C. c) Relative Humidity: 95 % RH d) Altitude – up to 5000 meters above sea level e) Corrosion resistance for unpainted regions of trolley except for moving surface of trolley wheels. f) Environmental & Hazard protection for electrical components: i. Flame proof motor Protection ii. Flame proof wires iii. IP 67– Dust and water proof protection class iv. Over voltage / short circuit protection
3.	Terrain	a) The trolley will be employed for on road and cross country (off road) movement in under mentioned terrain & weather conditions i. Plain and desert terrain ii. High Altitude (up to 5000 meters altitude) / Mountainous terrain including snow bound areas iii. Side slope of terrain up to 25 degrees. iv. Gradient / inclination of terrain up to 10 degrees. b) Trolley should be operational by day & night and in commonly encountered weather conditions in above terrains
4.	Transportability and Handling points	a) Trolley should have necessary handling points across C.G. for lifting using ropes / belts. b) It should be possible to lift the trolley using forklift for loading on transportation trucks. c) Capable of being transported by

		i. Transport aircrafts ii. Military Wagons iii. Rail Wagons iv. Flat-bed trailers v. Ship containers
5.	Critical dimensions for Load 5 and Load 6	a) For Load 5 – Lifting should ensure i. Height of C.G of Load 5 from ground in docked condition with the aerial platform is 1450mm. The diameter of Load 5 is 648mm. ii. Additional 100mm (min) height catered to ensuring docking. iii. Maximum height after collapsing - Load 6 docked on aerial platform shall have minimum clearance of 200mm from Load 5 loaded on trolley. b) For Load 6– Scissor lift should ensure i. Height of top surface of Load 6 from ground in docked condition with the aerial platform is 2070mm. Height of Load 6: 320mm. ii. Additional 100mm (min) height catered to ensuring docking.
6.	Working Load	a) The trolley structure and all its components must be designed for minimum working / rated load of 6T.
7.	Factor of Safety	a) The critical component design of trolley must have minimum Factor of safety of 4 (ultimate stress / working stress). b) Design need to be validated by FEM analysis.
8.	Latching and Locking	a) The trolley design must include the provision for arresting the lateral and longitudinal motion of loads using hard points / latching points to ensure that loads are completely secured with trolley frame.
9.	Ground clearance	a) Ground clearance of trolley (excluding outriggers) shall be ≥ 175mm. b) Ground clearance for outriggers of trolley ≥ 150mm
10.	Power connection	a) Power Input: 415 V, 3 phase, 50 Hz. b) The power cable will travel along the sides of the rails in storage space.
11.	Wiring	a) The wiring on trolley should be flame resistant low smoke (FRLS). There should be no extra wiring on the trolley. b) All electrical equipment of trolley to be kept in enclosures which are water, dust and flame resistant.

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		c) All open connecting wires must be protected in steel pipe or armored sheath. d) All electric wiring diagrams shall be supplied with each trolley.
12.	Motor and Gearbox	a) 415 V, 3Phase, 50 Hz. b) Flame-Proof enclosure Class D or above c) Gear box should preferable have low gear ratios for better torque output. d) Motor and gear box should be suitable for operating and environmental conditions specified. e) Motor and gearbox shall be preferably of same Make for compatibility and ease of maintenance. f) Minimum power to be 0.75HP. Power to be chosen to meet the required speeds with full loads.
13.	Earthing	a) The system must have provision to earth / ground the loads when they are placed on trolley. b) All equipment on trolley must be grounded / earthed.
14.	Alignment with rails	a) The design should focus on swift and precise alignment of trolley wheels with rails. This alignment may be, preferably, sensor based. b) System of manual alignment check of trolley rail wheels with the storage space rails should be additionally available, in case of malfunction or power failure.
15.	Modes of operation	The system must have provision for following modes of operation: a) <u>On Rail Wheels</u> i. <u>Automated (Electric) Mode of operation</u> I. Trolley should operate in automated mode with push of button and when operator releases the button the trolley should stop. II. A VFD based drive system will operate the trolley at variable speeds. III. Provision for micro movement in order to cater for alignment of trolley rails with rails in storage space. ii. <u>Manual/Auxiliary Mode of Operation</u> - Manual movement of trolley (using levers etc.) in case of power failure. b) <u>On tyres</u> i. Provision to tow the trolley using prime mover. ii. Optionally - Battery operated.
16.	Track Gauge	a) <u>Rail track gauge</u> i. 995 ± 5 mm (wheel outer flange to flange

		distance) ii. The design should have advantage of changing the track gauge value within the above-mentioned tolerances at site i.e. flexible track width. b) Width of trolley with tyres and outrigger i. Max. at outriggers = 1700mm ii. Max. at wheels = 1400mm.
17.	Wheels	a) Rail wheels i. Solid Cast Iron / forged wheels with minimum load rating of 3000 kgs. ii. Minimum OD – 180 mm iii. Wheel width (rail contact) – 50 mm (min) iv. Wheels to be connected preferably through cardan shaft coupling / universal couplings to ensure rail contact for smoother operation. v. Minimum 50 % of wheel configuration shall be in driving / powered configuration. vi. The wheels to be selected for use on 105 lbs. (Indian Rail std.). Cross-sectional details of rail placed at enclosure. b) Tyre wheels i. Material – 7.50-16 (16PR) or hard rubber / polyurethane Teflon tyres to sustain load requirements. ii. 4 nos. durable automotive pneumatic tubeless tyre with load bearing drums preferred. iii. Diameter of the wheel shall be around 400mm. Other diameters can also be suggested. iv. The trolley should be provided with one set (Qty Four) Anti-Skid snow chain. v. Run Flat Tyre System - The trolley should be able to run a minimum distance of 10 km on level unmetalled roads on flat tyres with full load.
18.	Outrigger	a) The trolley to rest on outriggers while not in operation, total 4 outriggers to be provided at suitable locations near the corners on long sides of trolley. b) Manual outrigger should have reduction gear mechanism with mechanical advantages for ease / effortless operation. c) Requirement for Load 5 i. Outrigger should be capable to lift the trolley with load 5 and Load 6 manually. ii. Using outrigger, it should be feasible to pitch

		Load 5 up to ±1.5° w.r.t. ground. iii. Provision for engagement / disengagement of outriggers for symmetrical pitching.
19.	Brakes	a) The trolley shall have provision of brakes to stop the movement of loaded trolley while loading, unloading operation and when positioned on road. b) Brakes can be mechanical / hydraulic. c) Brakes should be applied on all the wheels. d) Brakes should be Fail-safe with Anti-Skid Lock Braking System, Hill Hold Assist & Parking Brakes.
20.	Travel speed	a) <u>On rail wheels</u> i. Max. with rail wheels in loaded condition – 10m / min ii. Max. with rail wheels in unloaded condition – 20m / min iii. Provision for Low speed movement of trolley for micro alignment with storage space rails. iv. The travel of trolley shall have provision for gradual speed increase, preferably by use of VFD. b) <u>On tyre wheels</u> i. 15 Kmph max, prime mover towable ii. Turning radius < 5m c) <u>Vertical movement</u> i. Trolley with Load 5 loaded on it to move from fully collapsed condition to maximum height within 1 minute.
21.	Types of motions required using trolley	a) <u>General Requirements when operating trolley on Tyres</u> i. <u>Steering mechanism</u> I. Standard Steering mechanism shall be provided on both end (front and rear) of trolley for easy maneuverability under the aerial platform. II. It is desired to have swiveling wheel pair at the middle in the front side for better steerability. Rear shall have standard steering mechanism on wheels positioned at wheel track distance. III. There should be provision to independently lock front and rear steering mechanism one

		at a time during transportation. IV. Max. steering radius: 5m. Lower steering radius desired. ii. Towing arm I. Trolley shall have Towing arm at Front and Rear. II. Both towing arms shall have the provision of disengagement and engagement as and when required. III. Ground rest wheels (swivel type) are required on both towing bars and side handle are required at towing arms for manual steering under the aerial platform. The wheels shall be foldable type. IV. Towing bars shall have rugged and easily detachable joints to enable transportation of trolley in truck. V. Front tow bar: The tow bar can be telescopic to avoid interference with landing gear. Minimum compressed length of the towing arm shall not be more than 100mm from front of Load 5 when Load 5 is rested on trolley. Maximum extension shall not be less than 1000mm from the front of Load 5 when Load is rested on trolley. VI. Rear towing bar: shall be single piece and shall be rugged for towing and pushing purpose. Length will be approx. 3500mm. This will confirmed based on requirement of loading under aerial platform. b) Requirements specific to Load 5 i. Scissor arrangement may be used for lifting and lowering the Load 5 and Load 6 under the aerial platform. Other mechanisms can also be proposed to meet the requirements. ii. Coarse vertical travel shall be approximately 500mm. iii. Trolley shall have fine adjustment in following directions: I. ±100mm (Lateral Z) II. ±100mm (Vertical Y)

		III. ± 100 mm (Longitudinal X); IV. Pitch angle: Up to ±1.5° (By adjusting hydraulic cylinders independently or by using outriggers i.e. both manual and electric operation to be feasible) V. Roll: ± 6° (degree) - rollers to be provided on the format and there shall be provision for rolling Load 5 manually. The manual effort shall be assisted by a mechanism for ease of rolling the Load. VI. Roll: ± 45° (degree) with trolley in collapsed condition. VII. Yaw angle: Up to ±2° (Achieved by independent saddle movement in z-direction) VIII. For limiting all the movements, mechanical stoppers / limit switches to be present on the trolley. iv. Mode of Vertical Drive I. Trolley shall have provision for manual hydraulic hand pump and a redundant flame proof electrically driven power pack for vertical drive. II. Manual hydraulic pump should have provision for coarse and fine vertical adjustment. III. Power pack shall have Coarse control, fine control, emergency stop knobs, and stroke limiters on single control panel.
22.	Hydraulics	a) All Hydraulic circuit diagrams to be provided in the QAP and the maintenance manuals. b) For Load 5 i. Self-locking drive system to be implemented on hydraulics circuit during vertical lifting. ii. A mechanical lock arrangement to be provided to lock the trolley (scissor mechanism etc.) at docked position for safety of Loads. This is essential in case of failure of hydraulic system. iii. Protection of Hydraulic pipe lines using metal cover to avoid deformation during handling of trolley. Pipeline shall be located internal to the frame. No protrusion below and outside the frame is permitted.

23.	Power Pack:	a) Design of power pack shall be based on available GPU i.e. 28VDC or 3ϕ, 415V,50Hz AC. b) The pump power shall be preferable lower than 1HP. 3 ϕ, 415V is preferred.
24.	Suspension	a) Suitable suspension to be opted for moving the trolley on undulated terrain.
25.	Canopy	a) A detachable canopy to be provided similar to that shown in Enclosure of Universal Trolley (AV). When the Load 5 will be loaded on the trolley, provision to be made to cover the Load 5 with metallic canopy structure.
26.	Materials	a) Trolley shall be made from IS2062 E300C or E275C or E2500C Killed steel with -20° impact strength to ensure required strength and a life of 15 years. Other steel / aluminium materials can be suggested if all the technical and operating conditions can be met. b) Bearings, brake oils, lubes / grease selected for lubrication should function in specified operating and environmental conditions. c) Rope, rollers, bearings, Brake hoses, gaskets, rubber sheets etc. should be selected for sustaining the specified operating and environmental conditions. d) All relative moving elements – Steel sliders, screw jacks, outrigger sliders, hydraulic equipment's, pipelines, rolling surfaces, steering rods, pins and fasteners shall be stainless steel only. e) Bellows to be provided on exposed areas for protection. f) The linkage joints & sliders shall be provided with greasing points. g) Stainless Steel parts shall be passivated only and painting on Stainless Steel parts shall not be carried out. h) For IS2062 steel or equivalent - surface treatments to be followed for corrosion protection as per standard applicable for structures on shore environment.
27.	Welding	a) The welding will be carried out by qualified welders only. b) The weld qualification shall include submission of following for approval: i. WPS, PQR, WPQ ii. Ultrasonic weld test for samples iii. RT / UT / DP test for weld joints.

28.	Maintenance	a) The trolley and its components must have a maintenance free operation. The trolley should be in ready to use condition. b) Details of Oils / Lubricants / Grease to be provided. c) List of Spare parts, tools and accessories to be provided. d) All materials and components of trolley must be easily available in Indian market / fabricated in India.
29.	Service Life	a) The material shall be chosen considering minimum 15 years of operating life of trolley with possibility of life extension by additional 5 years. b) The OEM shall commit support for the trolleys for minimum 20 years from the day of supply of hardware. c) If any upgrades are available, same to be intimated to BAPL as soon as they are available. If any component of trolley is becoming obsolete, same to be intimated to BAPL at least 6 months in advance.
30.	Markings	a) Trolley shall be marked for operations b) All operations to be clearly indicated with caution if any. c) Major parts, points, handle, levers, push buttons to be marked with florescent marker / sticker for night vision. d) All degree of freedom to be marked with florescent marker / sticker for night vision and maximum operational limits to be indicated
31.	Paint and plating	a) Paint: Trolleys to be painted with dove grey color with 2 coat primer and 2 coat paint. b) The paint adhesion to metallic frame will be checked as per ASTM D3359. c) Unpainted regions to be ZN-Ni plated except for interfering / moving surfaces. Coating thickness minimum 10 microns.
32.	Control Panel	a) Handheld Control Panel with the provision to mount the Control Panel on the trolley is desired. b) Input Power Supply: The panel must derive 3 phase power supply from Power sockets. The Power supply available at site is: 415V, 3 Phase, 50 Hz c) Cables and Male and female Connectors for operation of trolley to be suitable opted. d) The input wire cable must be sufficient length with end connector to Flame-proof 5 Pin Plug. 5 Core FRLS Copper flexible cable is recommended. The length of cable to be confirmed with M/s BAPL. 5 Pin

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		FLP male connector recommended. e) Output wire for connection: 6 Core, 1.5 Sq. mm recommended. Cable must be sufficient length with end connector. 6 Pin ATEX female connector recommended. f) Provision to store the cable on the trolley such that it avoids the overhang of wire while being connected to power supply. g) Flame proof Weather proof Industrial Grade Sheet Steel enclosure of reputed make with provision to open panel via lockable hinge door. Enclosure to be Dust and Water Protection: IP 66 (recommended). h) Electrical equipment inside the instrumentation box must ensure following protections: i. Overvoltage ii. Short Circuit iii. Overheat i) The control panel must have buttons which enable – forward, reverse, rail tyre changeover, vertical motion, pitch j) The control panel to have provision for coarse as well as fine movements for vertical and pitch movements k) The control panel to have provision for low, medium and high speed for forward and reverse movement. l) There should be provision to bypass the control panel in case malfunction. m) A RED indicator (Fault) to glow in case of any fault in trolley. The button selected must be of reputable make for longer life. Buttons panel be covered with lid. n) Paint of the Control Panel to be similar to that of trolley. o) Service life of the Control Panel must be same as that of trolley.
33.	Tests and Trials	a) FITMENT TEST – all trolleys and Control Panels. i. Fitment trials with all the Loads. b) Visual, Dimensional and basic functional checks – all trolleys and Control Panels: i. Check for quality of surface finish, presence of corrosion & general workmanship ii. Paint quality iii. Welding checks iv. Radium stickers / labels / markings v. Dimensional checks of trolley as per drawings vi. Checks for conformance to operational requirements

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vii. Rotation angle checks for Load 5 and Load 6.
viii. 45° (degrees) roll check – 10 times
ix. Mechanical stoppers check
x. Limit switches check
xi. Trolley operation times and speed check

c) QUALIFCATION TEST: For First trolley only
   i. STATIC LOAD:
      I. 2 times the weight each of load (load 1 to load 6) while positioned on their respective supports.
      II. No permanent deformation acceptable.

   ii. CYCLIC LOAD – FOR Load 5 and Load 6
      I. Checks for power pack – 55 cycles of Hydraulic lifting and lowering up to working height (1450 mm) with Load 5/ Load 6 with power pack/ prime motor.
      II. Checks for manual pump - 5 cycles of Hydraulic lifting and lowering Hydraulic lifting and lowering up to working height (1450 mm) with Load 5/ Load 6 with manual pump.

   iii. HYDRAULIC STRENGTH TEST
      I. Lift weight of Load 5 up to working height (1450 mm) and hold for 24 hrs.
      II. Max. 5mm collapse permitted.

   iv. ROAD TRIALS
      I. Tyre Pressure checks
      II. Trolley loaded with dummy weights as per all configurations (or maximum weight) to be towed with prime mover at Max speed of 20 km/hr. for 15km.
      III. Tow arm Push test - Tow arm should not buckle when trolley is pushed in reverse direction
      IV. Check for turning radius – turning radius should be less than 5m.
      V. Check the brake system – Tow the weight with prime mover at 5kmph for 5km (5 times) on inclined surface (not more than 6 degree) and test brakes. Apply brakes on inclined surface in standing condition for 15 min.

d) ACCEPTANCE TEST: Second trolley onwards (if there is no major change in design or as decided by BAPL)
   i. STATIC LOAD:

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		I. 1.5 times the weight each of load (load 1 to load 6) while positioned on their respective supports. II. No permanent deformation acceptable. ii. CYCLIC LOAD – FOR Load 5 I. Check for power pack – 17 cycles of Hydraulic lifting and lowering up to working height (1450 mm) with Load 5/ Load 6 with power pack/ prime motor. II. Check for manual pump - 3 cycles of Hydraulic lifting and lowering Hydraulic lifting and lowering up to working height (1450 mm) with Load 5/ Load 6 with manual pump. iii. HYDRAULIC STRENGTH TEST I. Lift weight of Load 5 up to working height (1450 mm) and hold for 3 hrs. No collapse permitted. iv. ROAD TRIALS I. Tyre Pressure checks II. Trolley loaded with dummy weights as per all configuration (or maximum weight) to be towed with prime mover at Max speed of 15 km/hr. for 10km. III. Tow arm Push test - Tow arm should not buckle when trolley is pushed in reverse direction IV. Check the brake system – Tow the weight with prime mover at 5kmph for 5km and test brakes. Apply brakes on inclined surface (not more than 6 degrees) in standing condition for 5 min. V. Check for turning radius – turning radius should be less than 5m. e) DYNAMIC LOAD TEST – For all trolleys: i. Test to be carried out for 1.5 times the maximum rated load for each Load. ii. Manually move the trolley for 1m using emergency lever. No malfunction of components acceptable. This test will be for Load 1 to Load 4 only. iii. Move the trolley using electric power / control panel for 1m. Repeat to and fro motion for 5 times. No malfunction of components acceptable. This test will be for Load 1 to Load 4 only.

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		f) The Functional, Acceptance Tests and Qualification Tests will be performed manually as well as using Control Panel. Detailed QAP with Acceptance Criteria and Qualification Criteria will be formulated jointly with the vendor. g) Loads for load testing will be arranged by OEM. The QT and AT testing will be conducted at OEM ex-works.
34.	Deliverables	a) Trolley and its accessories as per BOM. b) Control Panel and its accessories as per BOM. c) Tarpaulin based protective cover for protection from rain & sunlight – 1 no. per trolley d) Military quality FRP storage box of Volume $1m^3$ - 2 nos. per trolley. Box-1: To secure protective cover. Box-2: For tools, spare parts and accessories. e) Recommended Spares i. Allen Key and spanner set – 1 no. per trolley ii. Grease gun – 1 no. iii. Grease – 1kg. iv. Spare Wheel – 1 no. v. Wheel bearing – 1 set vi. Wheel spanner rod – 1 no. vii. Handle for outrigger – 1 no. viii. Oil - 10 Litres or more as per Power pack. Oil shall comply (-)40°C to (+)70°C operational requirement. ix. Latching belts – 4 nos. per trolley x. Spirit level – 2 nos. per trolley. xi. PCB for VFD – 01 per panel xii. All Push Buttons / Joysticks on the Panel – 01 nos. per panel xiii. MCB – 01 per panel xiv. Multimeter – 01 per panel f) Other Tools and Spares – To be to be mutually decided. g) Drawings, models and documents as per Section VI.
35.	Enclosures	a) Cross-sectional view of rail for movement of magazine trolley b) GA drawing of Universal Magazine Trolley c) GA of Loading Trolley d) GA of Universal Trolley (LV) e) GA of Universal Trolley (AV) f) GA of Traverse Trolley

Notes-

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1. The detailed outer geometry of loads with tolerances, C.G. location of loads, location of resting supports of loads on the trolley will be shared only with successful bidders.

2. For any technical clarifications, please contact Mr. Rajesh Kumar (AGM) / Mr. Sushant Gupta (SSM) via email at rajesh@brahmos.com / sushant@brahmos.com.

VI. DRAWINGS AND DOCUMENTS TO BE SUBMITTED

Following drawings, models and documents are to be generated by the supplier and shared with BAPL for review and approval.

S. No.	Drawing / Document
1	Soft copy and Hard copy of Manufacturing drawings (AutoCAD format) and Bill of Materials
2	Soft copy of detailed 3D model in native formats
3	Soft copy and Hard copy of design document consisting of design calculations, FEA reports. Soft copies of FEA models.
4	Soft copy and Hard copy of Operation manual (also to include wiring diagram and hydraulic ciruits)
5	Soft copy and Hard copy of Maintenance Manual with Illustrated List of Spares (ISPL)
6	Soft copy and Hard copy of Manufacturer recommended list of spares (MRLS)
7	Soft copy and Hard copy of Components Catalogue for bought out items
8	Soft copy and Hard copy of Quality Assurance Plan (QAP) covering raw material checks, heat treatments checks, welding checks, surface treatment checks, painting checks, visual and dimensional checks, functionality checks, Load tests, wiring diagrams, hydraulic circuits, Pre-delivery inspection, JRI
9	Soft copy and Hard copy of Test reports as per QAP (Raw material test reports, WPS/WPQ/PQR, stage wise inspection reports, DP reports, certificates of conformance, dimensional inspection reports, Paint reports, Torque application report, Acceptance test / Qualification test report)
10	Soft copy and Hard copy of CoC and data sheet to be submitted against make and model for all electrical items. CoC of FLP panels and Motors to be submitted as part of documents.

VII. ENCLOSURES

1. Enclosure I – Cross-sectional view of 105lbs rail

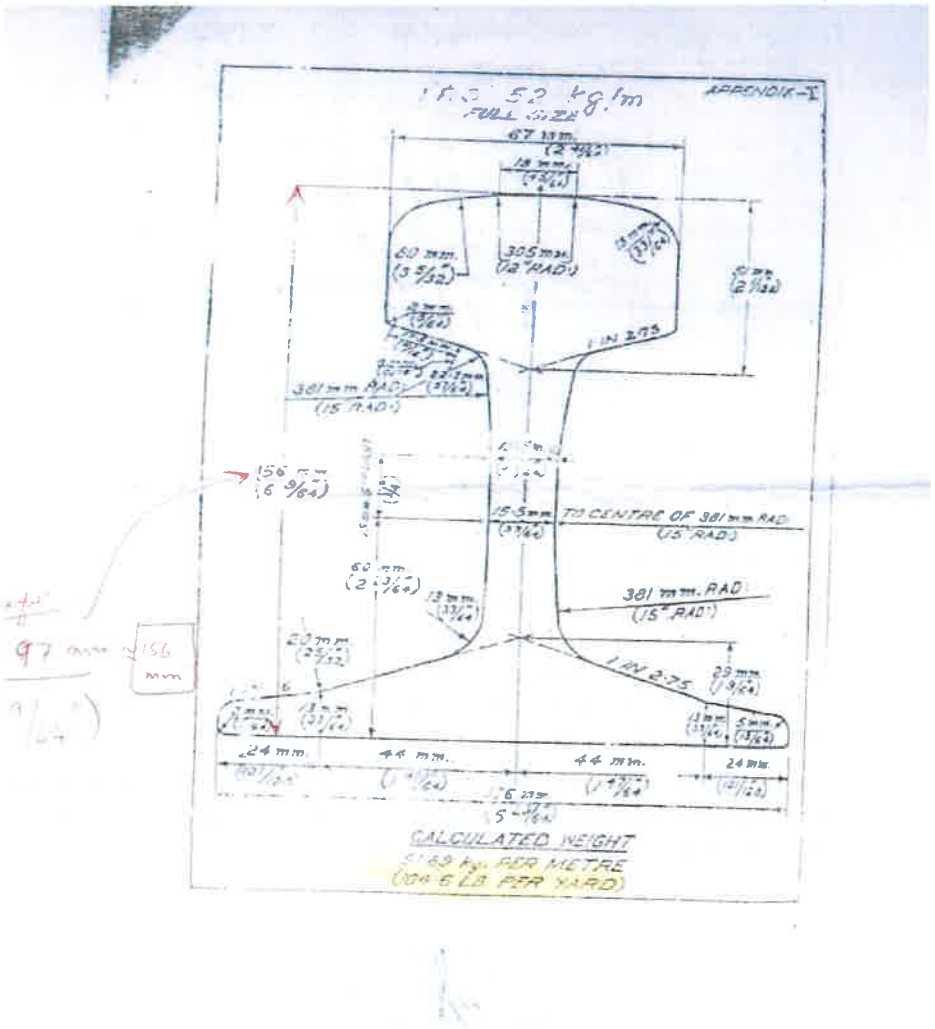
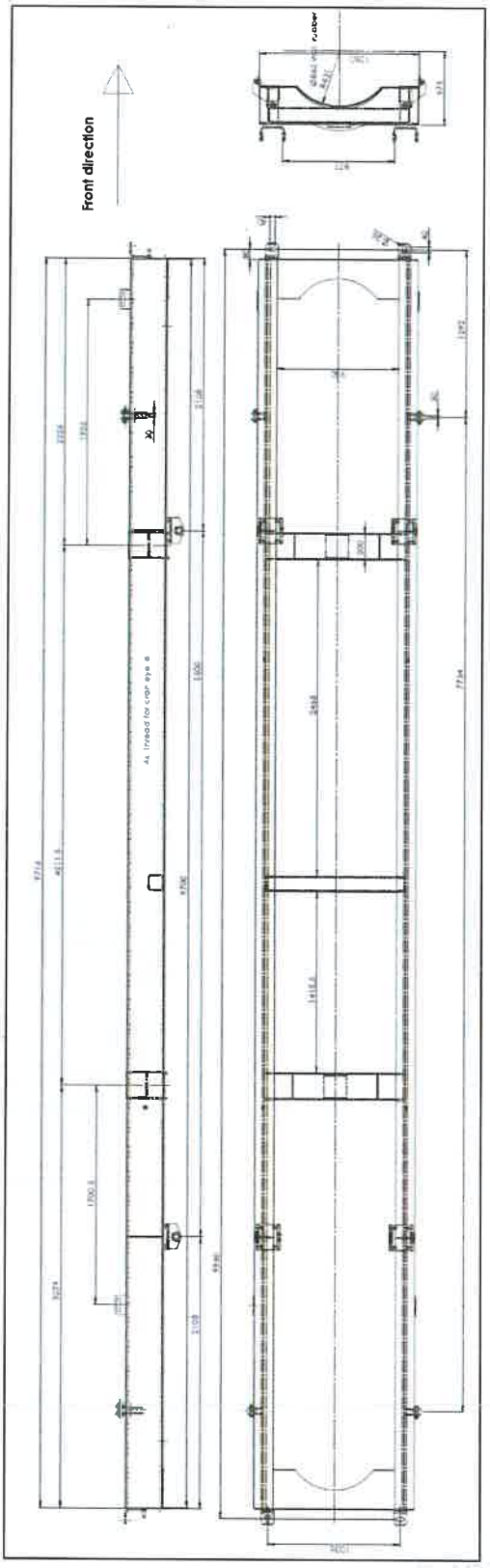
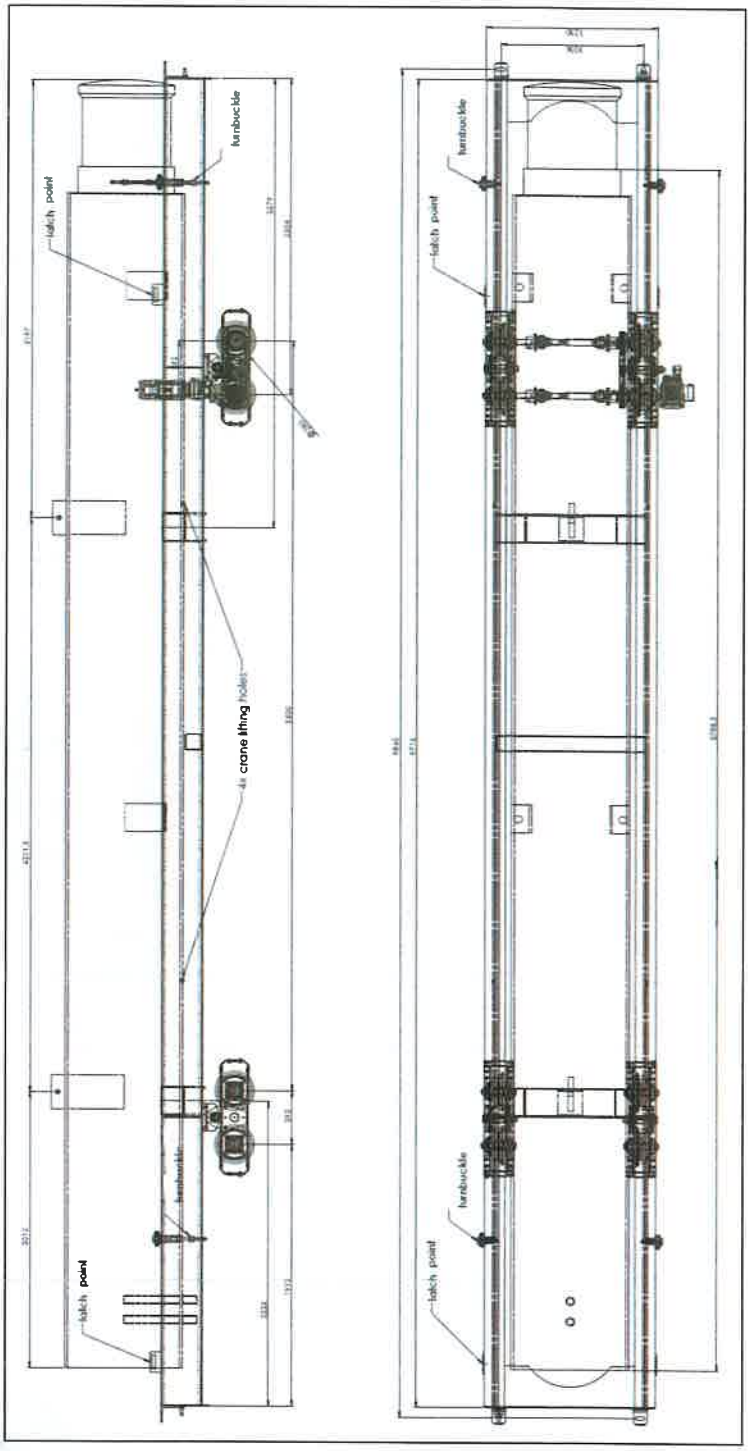


Fig 1: Cross-Sectional view of 105 lbs Rail

2. Enclosure II – Universal Magazine Trolley presently in use

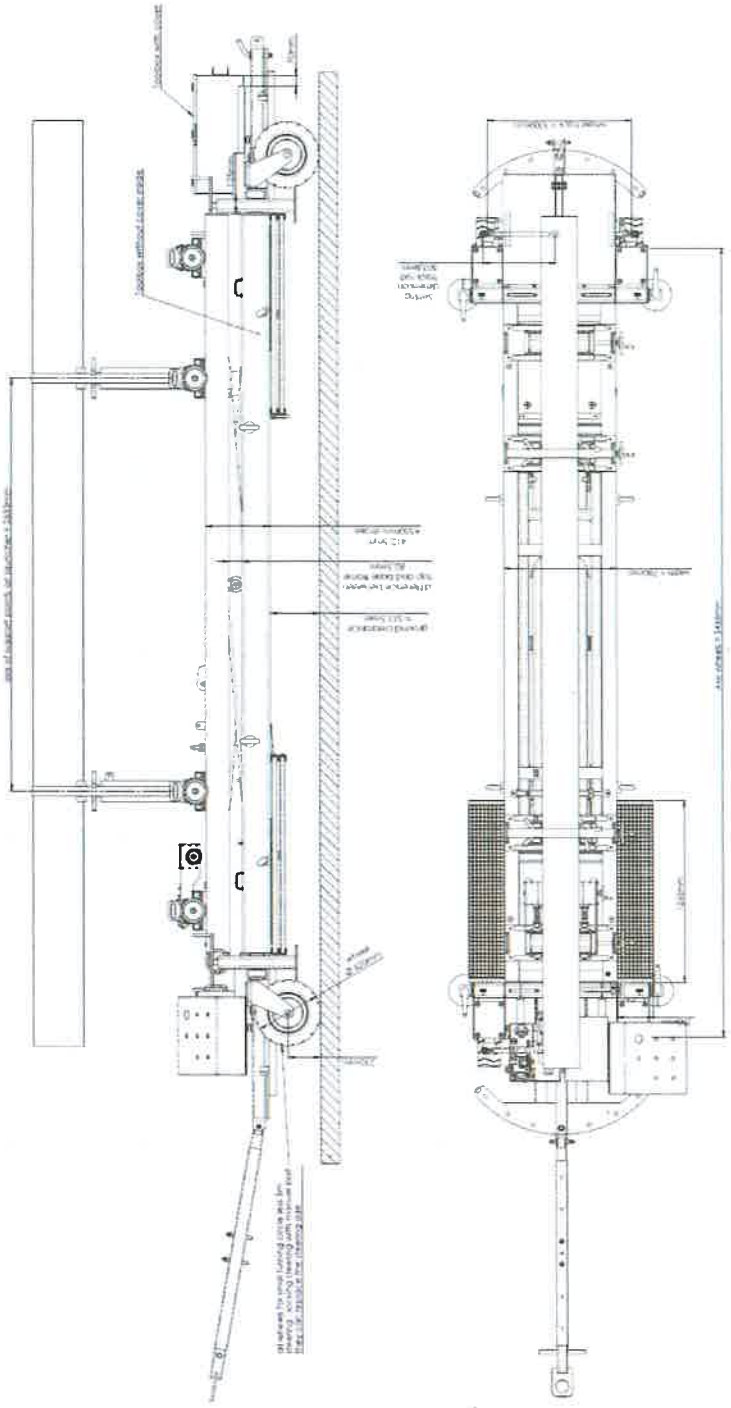
Note - Images not to scale

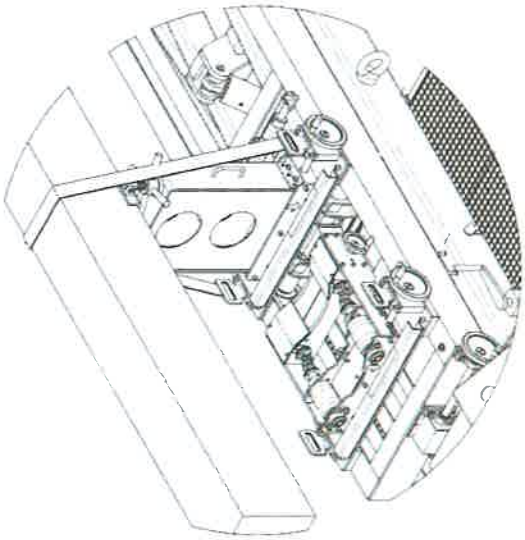


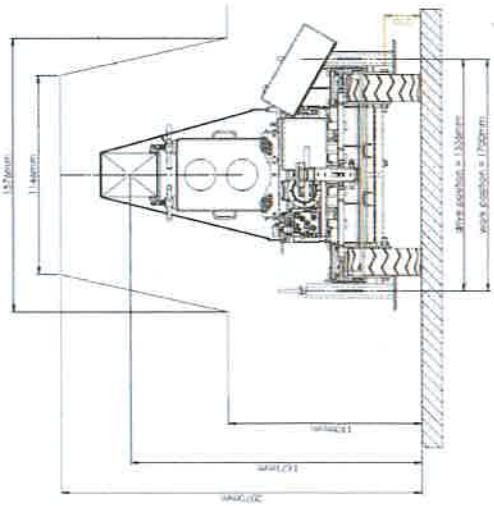


3. Enclosure III – Loading Trolley presently in use

Note - Images not to scale







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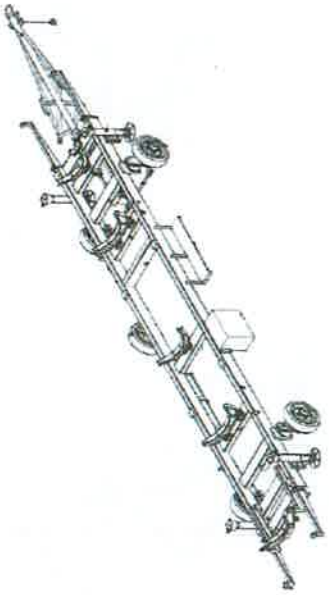
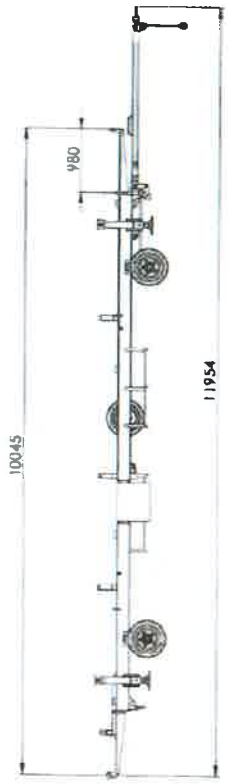
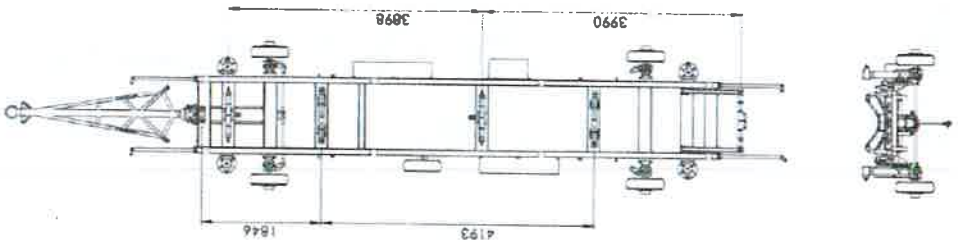
4. Enclosure IV – Universal Trolley (LV) presently in use

Note - Images not to scale

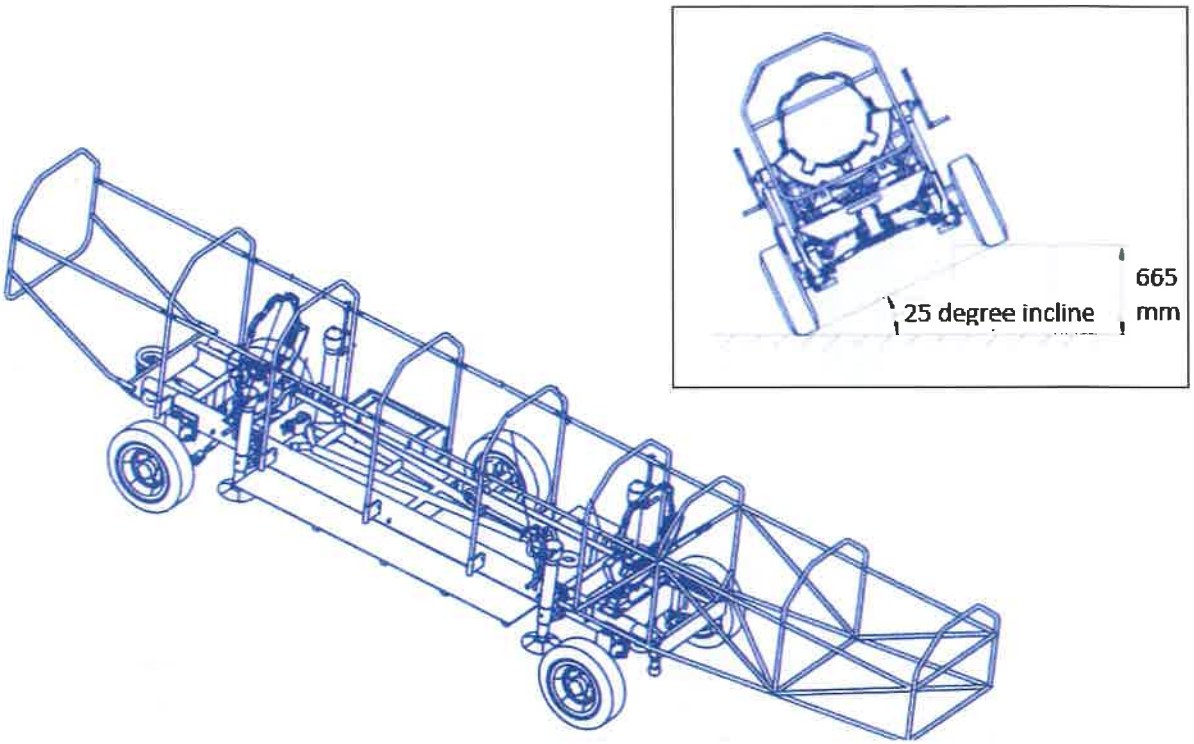


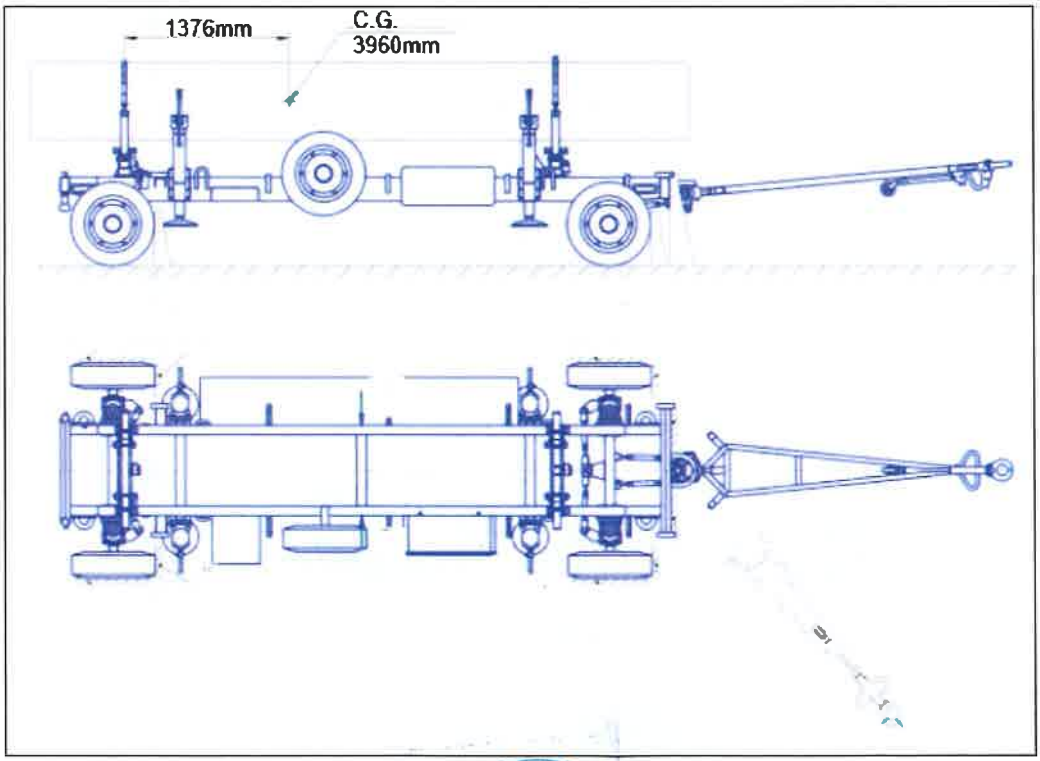




5. Enclosure V – Universal Trolley (AV) presently in use

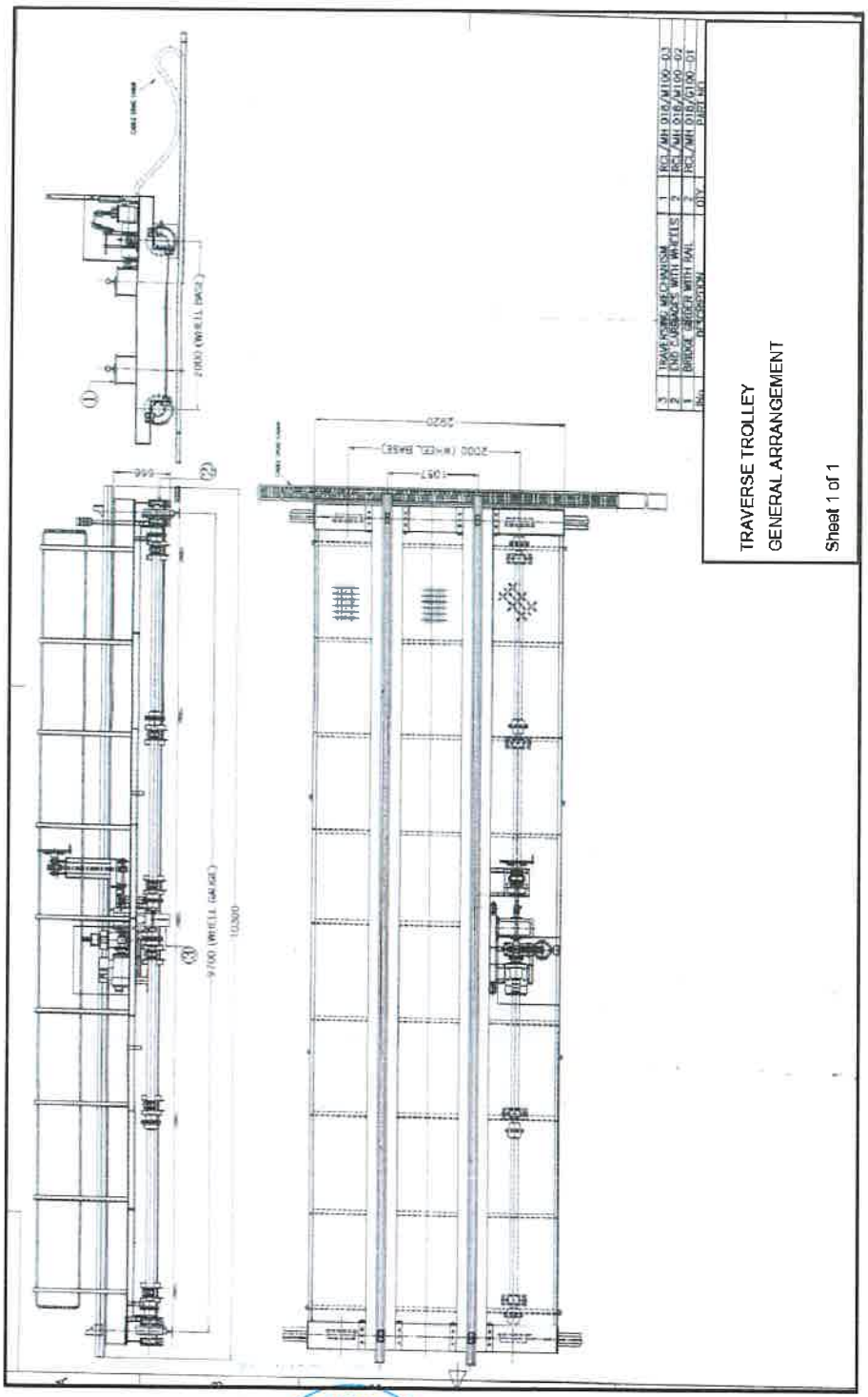
Note - Images not to scale





6. Enclosure VI - Traverse Trolley presently in use

Note - Images not to scale



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2025-00053A

TENDER ID

LAST DATE OF SUBMISSION	
12-Dec-25	**1100 HRS**

TENDER BOX NO. **2**

TENDER FOR

INVITATION OF BIDS FOR PROCUREMENT OF COMBINED TROLLEY FOR BRAHMOS ARTICLES

BrahMos Aerospace Pvt. Ltd. New Delhi

RFP NO. **BMC/OTE/25-26/CombTrly**

RFP DATE **24-Nov-25**

VENDOR

VENDOR SEAL

TENDER OPEN DATE
12-Dec-25
1430 HRS

NOTE: THE BID (SINGLE / 2-BID) SHOULD BE PUT IN ONE ENVELOPE AND THIS PROFORMA SHOULD BE PASTED ON TOP. THE TENDER (SEALED ENVELOPE) SHOULD BE DROPPED IN THE BOX (BOX NO. SHOWN AT THE TOP RIGHT CORNER) ONLY, WITHIN THE LAST DATE OF SUBMISSION.