BMC/OTE/25-26/EOI/TCIL/INST-SER 09 Apr 26

INVITATION FOR EXPRESSION OF INTEREST FOR INSTALLATION OF VERTICAL LAUNCHER UNIT (VLU) AND TWIN CANISTER INCLINED LAUNCHER (TCIL) SYSTEM ONBOARD NAVAL PLATFORM

1. **About BrahMos Aerospace**:

BrahMos Aerospace Private Limited is a Joint Venture Company of DRDO, Ministry of Defence. We are inviting interests from firms to provide services for installation of Vertical Launcher Unit (VLU) and Twin Canister Inclined Launcher (TCIL) system on board Naval platforms. Brief description and scope of work for Services for Installation of VLU & TCIL system onboard Naval Platform is placed as **Enclosure-I**.

2. The interested firms shall submit the **Vendor Assessment Form** (available at BrahMos website) along with the following documents against the requirements projected below:

SN	Selection Criteria	Applicability
1	Technical Criteria	(1) Refer para 5-7 of Enclosure I
2	Past Experience	(1) Firms should have provided similar services in Ministry of Defence / DRDO / Public Sector Enterprises of similar nature in terms of both Size and Scale. (2) Firms enlisted in the above must forward their Certificate of Enlistment along with the Vendor Registration cum Assessment Form. If not the above, the firm must have all the facilities as outlined at Enclosure I.
3	Financial Commitment	(1) Firms should submit Average Annual Turnover of last three financial year duly audited by a licensed Chartered Accountant.
4	Taxation	(1) The firms must provide GST registration and Valid PAN Number. (2) If the firm is MSME, the firm needs to forward the details as per the Vendor Registration cum Assessment form
5	Disqualified Candidates	Firms debarred by Government of India or any allied departments will be automatically debarred from the Selection Process.

3. **Evaluation Criteria**: The evaluation of responses will be based on the Evaluation of BAPL w.r.t the Technical capabilities, Financial stability and Experience as per the documents submitted against the requirements mentioned in para 2. The decision regarding the selection / rejection will be at the sole discretion of procuring entity i.e. Brahmos Aerospace Private Limited.

4. **Confidentiality**: All information provided in response to this EOI will be treated as confidential and may be subject to non-disclosure agreements.

5. **Last Date of Submission of EOI**: Interested firms shall forward their responses / queries by email to design@brahmos.com latest by **01 May 2026**. The officer can be contacted on 01142285222 / 223.

6. **Disclaimer**: This EOI does not constitute a commitment for placement of Contract / Purchase Order and BAPL reserves the right to accept or reject any or all the responses.

Enclosure-I

BRIEF DESCRIPTION AND SCOPE OF WORK FOR INSTALLATION OF VLU & TCIL SYSTEM ON-BOARD NAVAL PLATFORMS

1. VLU Configuration

VLU ensures storage and operation of 08 cylinders in 4x2 configuration. VLU is capable of being installed on any ship without major changes to the main sub-systems. It is possible to install VLU in different orientations (Athwart or Longitudinal) with respect to the center line of the ship. VLU needs electric power supply for running its dedicated hydraulic power pack which is used to operate the hatch covers installed on its top structure. Approx. 20kw power used by the system is drawn from ship's power supply system.

1.1 Principal Parameters:

(a) VLU has 8 cells. Each cylinder is housed in its individual cell.

(b) Dimensions of frame structure of VLU unit are 4020 (Length) x 2060mm (width) x 9304mm(height) approx.

(c) Total weight of one VLU with its cylinders is 50 Ton approx.

(d) VLU can be installed on a carrier with its length along fore and aft line of ship or perpendicular to it. The modules are generally oriented in such a way that the module is placed symmetrical about fore-aft axis. However, the modules can be placed in any convenient way if the ship structure can withstand the reactions.

(e) Electrical supply to the equipment of VLU is drawn from ship's general electrical supply.

1.2 Constituents

VLU has following principal constituents: (refer fig 1.1 and 1.2)

(i) VLU Structure

(ii) Hydraulic Power Pack

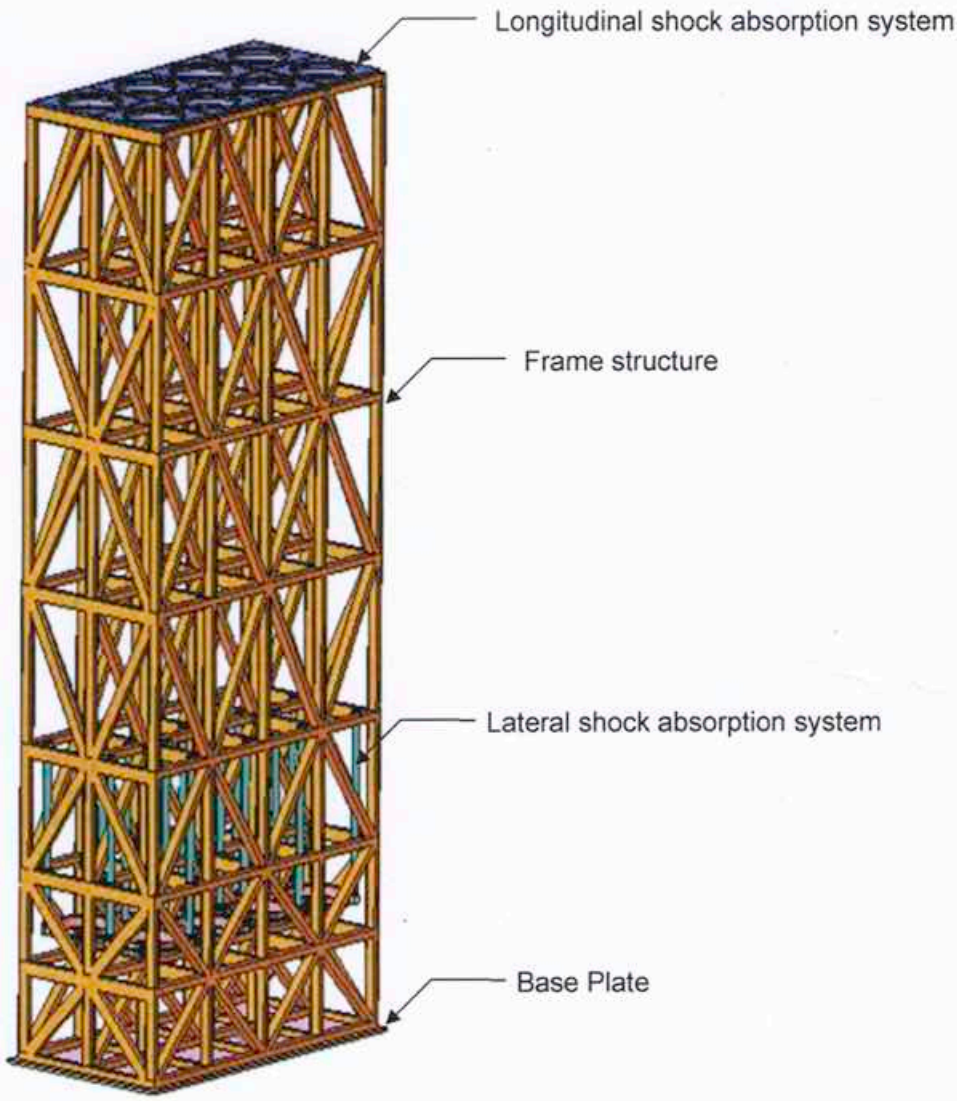

Fig 1.1 VLU Structure with Assembled Sub systems

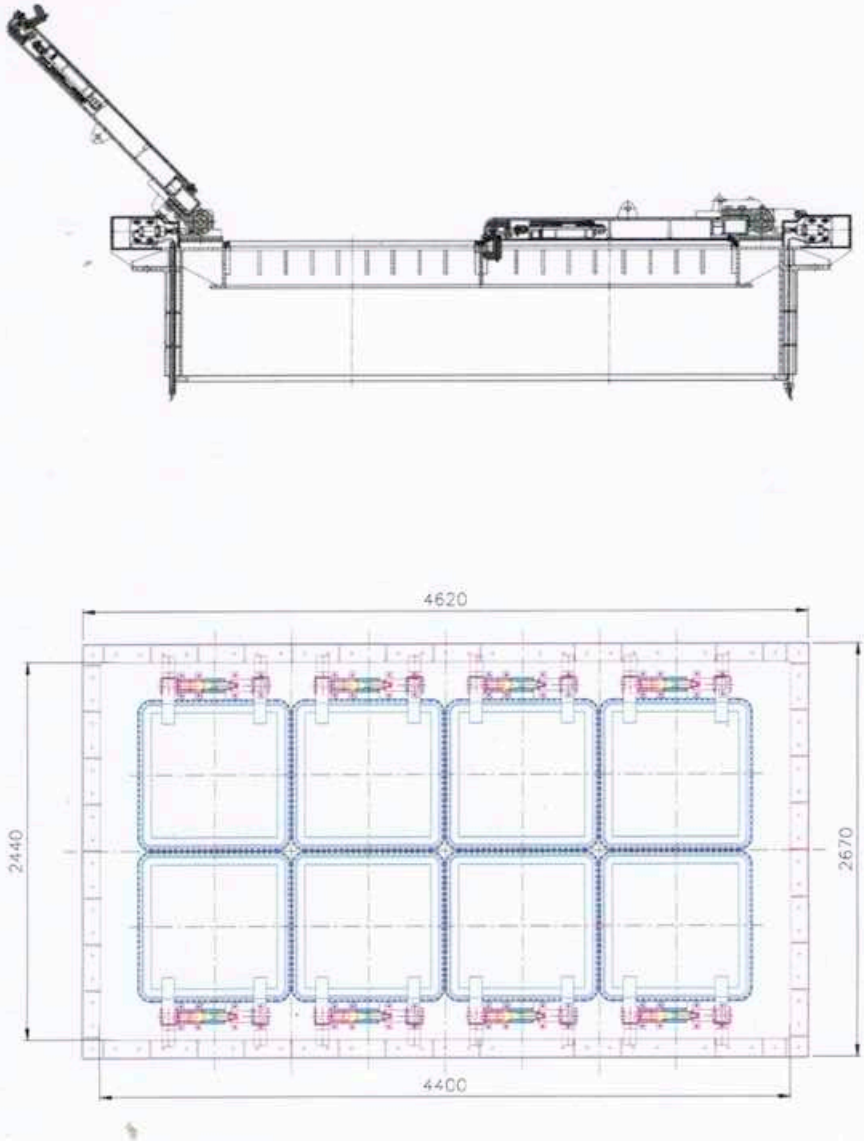

Fig 1.2 Top Support Structure

2. TCIL CONFIGURATION

The Twin Cylinder Inclined Launcher is for ensuring storage and operation of two cylinders in inclined positioning. The TCIL has to be suitably installed to the ship deck. TCIL is capable of being installed on any ship without major changes to the main sub-systems.

2.1 Principal Parameters:

(f) TCIL has 2 cells in inclined position. Each cylinder is housed in its individual cell.

(g) Dimensions of frame structure of TCIL unit are 10 m (Length) x 2 m (width) x 3.5 m (height) approx.

(h) Total weight of one TCIL with its cylinders is 17 Ton approx.

(i) TCIL can be installed on a carrier with its length along fore and aft line of ship on both side port / starboard side with some specified offset distance. The TCILs are generally oriented in such a way that they are placed symmetrical about fore-aft axis with suitable ship structure so that can withstand the reactions.

2.2 Constituents

TCIL has following principal constituents:

(a) Launcher Structure

(b) Clamp Assembly (3, 5 and 7)

(c) Base Structure

(d) Bottom Resting Unit (BRU)

(e) Thrust Bearing Structure (TBS)

(f) Hood Assembly

(g) Bulkhead Connector Box

2.2.1 Launcher Structure: - Launcher structure is welded structure constructed out of the box section. The launcher has eight supported legs, which are bolted permanently to the base structure. The structure is provided with clamping arrangements at three places of TLC. The Clamp assemblies are permanently bolted to the launcher structure. This structure supports two cylinders.

2.2.2 Clamp Assembly (3, 5 and 7): - The cylinders are placed on the launcher through the clamp assy. There are three clamp assemblies which are bolted to the Launcher structure. Clamp assembly can support two cylinders. This assembly has two halves which are removable. The measuring instruments are mounted on this assembly to measure the alignment of the cylinders with respect to the ship axes.

2.2.3 **Base Structure:** - This structure forms the interface between the launcher structure and the ship structure. The thrust Block is welded at the end of the base structure. All the loads are transferred through these structures to the ship structure.

2.2.4 **Bottom Resting Unit (BRU):** - This component interfaces the bottom of cylinder and the TBS. This structure is in two parts, cylindrical shell and dish end. The cylindrical shell will be assembled with the cylinder first and then umbilical connector is connected to the canister and finally dish end will be bolted with the cylindrical shell. The BRU rest against thrust bearing structure.

2.2.5 **Thrust Bearing Structure (TBS):-** This structure is welded to the aft side of base structure and deck structure with proper alignment. Reaction load of cylinders are transferred through this to the ship structure.

2.2.6 **Hood assembly:** - Hood is a cover mounted on the TCIL to conceal the cylinder while loaded on the launcher and provide protection to launcher from external weather. Hood assembly has mounting pads which remain permanently bolted to the launcher frame structure.

2.2.7 **Bulkhead Connector Box:** This structure is welded behind the TBS structure. The male and female connectors of cables from cylinder and cables from the control system are mounted on this structure.

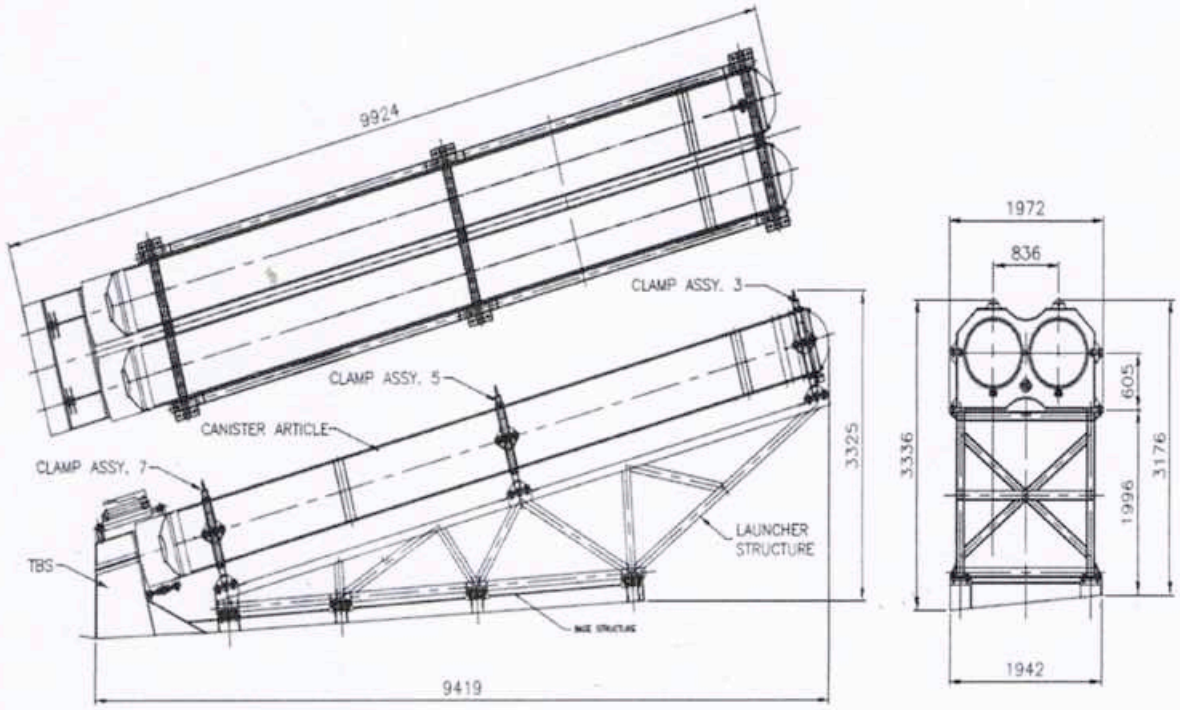

Fig 2.1 - TCIL Assembly

3. **Power Supply**

In automatic mode, 24V supply is fed from control system while in manual mode, it is available locally.

System needs following power supply for its operation

Supply Volt	415 V / 380 V ± 5%, 3ø AC
	230V± 5%, 1ø AC
Frequency	50 Hz ± 5%
Supply Volt	28 V DC

The power supply shall be configured to suit specific platform.

Total power consumed by Hydraulic circuit is approx. 20 KW.

4. **Cabling & Connectorisation**

The electrical connectors at the bottom of each cell are wired and connected to ship borne control system for all cells along with proper earthing followed by checkwire.

5. **Scope of work for VLU system installation on-board ship**

A) Structural modification (in the vicinity of VLU installation)

- 3D Mapping of existing ship structure earmarked for VLU installation.
- Preparation of detailed structural drawings of bottom to top deck structures, super structures, deck profiles, height measurement between decks, bulkhead detailing, shell expansion plan, cross-sectional frame station with relevant ship firefighting system and piping details.
- Site support for undertaking de-lagging of relevant deck/bulkhead structures
- Detail engineering of Top and Bottom foundations based on guidance drawings provided by BAPL. Vendor should cater sufficient lead time for procurement of raw material of foundations.
- The manufacturing of foundations should be as per BAPL approved QAP and no waiver can be envisaged during production/installation because of stringent dockyard dry-dock schedule.
- Manufacturing of working platform and ladders at required position in magazine room.
- Earthing and bonding of the VLU Structure

B) Detail engineering, manufacture & supply of foundations for the following:

- VLU and TSS structure.
- Hydraulic power & control units,
- BFCS units

C) Preparation of system equipment layout drawings inside ship's compartments, required for installation of following sub-systems:

- FCS system
- HCS system
- MLS
- TSS
- Hydraulic Piping
- Cabling and Connectorisation

D) Top and bottom foundation installation based on limiting/permissible parameters shared by BAPL. Final QA plan for installation of system will be prepared by vendor based on inputs (draft QAP) by BAPL.

E) Process sheet and manufacturing drawings to be prepared by vendor and submitted to BAPL for approval. The process sheet should be prepared for every line activity from drawing generation to system lowering and installation. The process sheet should bring out general engineering requirement and logistic support with procedure to undertake the respective activity.

F) Vendor to provide necessary manpower and logistic support in dockyard to BAPL/ BAPL designate agency for undertaking stage alignment activities and QC checks.

G) Hydraulic piping installation from designated hydraulic room of ship to TSS. The system flushing is required post completion of hydraulic system installation.

H) Mounting of shock-mounts and placement of units (mock units/ real units) as per Installation Control Document (ICD)/ guidelines of BrahMos.

I) Equipment maintenance, covering and protection from the dust/environment till the time installation/STW/commissioning is in progress.

J) Cabling, connectorisation and check wire of electrical equipment. Connectorisation of each cell followed by check wire/ validation.

K) The system to be offered to BAPL for installation inspection (II)/ Setting to work (STW). Vendor shall provide support during sea trials for acceptance of system by end user.

L) Vendor support required during conduct of HATs/SATs/Flight trials for system maintenance and efficiency. This includes loading of cylinder into individual cell for system configuration and checks.

M) Support during on job training to Indian Navy officer/crew members.

6. Scope of work for TCIL system installation on-board ship

A) Structural modification (in the vicinity of TCIL installation)

- 3D Mapping of existing ship structure earmarked for TCIL installation.
- Preparation of detailed structural drawings of top deck structures, super structures, deck profiles, height measurement between decks, bulkhead detailing, shell expansion plan, cross-sectional frame station with relevant ship firefighting system and piping details.
- Site support for undertaking de-lagging of relevant deck/bulkhead structures
- Detail engineering of underdeck strengthening and Base Structure based on guidance drawings provided by BAPL. Vendor should cater sufficient lead time for procurement of raw material of foundations.
- The manufacturing of foundations should be as per BAPL approved QAP and no waiver can be envisaged during production/installation because of stringent dockyard dry-dock schedule.
- Manufacturing of working platform and ladders at required positions
- Earthing and bonding of the TCIL Structure.

B) Detail engineering, manufacture & supply of foundations for the following:

- TCIL (as mentioned above)
- BFCS units

C) Preparation of system equipment layout drawings inside ship's compartments, required for installation of following sub-systems:

- FCS system
- TCIL
- Cabling and Connectorisation

D) Base foundation installation based on limiting/permissible parameters shared by BAPL. Final QA plan for installation of system will be prepared by vendor based on inputs (draft QAP) by BAPL.

E) Process sheet and manufacturing drawings to be prepared by vendor and submitted to BAPL for approval. The process sheet should be prepared for every line activity from drawing generation to system lowering and installation. The process sheet should bring out general engineering requirement and logistic support with procedure to undertake the respective activity.

F) Vendor to provide necessary manpower and logistic support in dockyard to BAPL/ BAPL designate agency for undertaking stage alignment activities and QC checks.

G) Mounting of shock-mounts and placement of units (mock units/ real units) as per Installation Control Document (ICD)/ guidelines of BrahMos.

H) Equipment maintenance, covering and protection from the dust/environment till the time installation/STW/commissioning is in progress.

I) Cabling, connectorisation and check wire of electrical equipment. Connectorisation of each cell followed by check wire/ validation.

J) The system to be offered to BAPL for installation inspection (II)/ Setting to work (STW). Vendor shall provide support during sea trials for acceptance of system by end user.

K) Vendor support required during conduct of HATs/SATs/Flight trials for system maintenance and efficiency. This includes loading of cylinder into individual cell for system configuration and checks.

L) Support during on job training to Indian Navy officer/crew members.

7. VENDOR QUALIFICATION CRITERIA FOR INSTALLATION AND COMMISSIONING SERVICES

A) Expertise in 3D modelling, layout generation for Naval platform, production drawing and associated sub-assembly drawings generation in Auto-Cad. The industry should share CAD model/ Auto-CAD drawings of assembly/manufacturing drawings with BAPL in soft and hard copies for approval. IPR for drawings/ model should rest solely with BAPL.

B) Vendor should share the details of sub-vendors on whom subsequent orders of component/assembly will be placed.

C) Vendor with experience in working in Naval Dockyard is preferred.

D) Logistic arrangement (Mobile Crane/ Hydra and other load lifting equipment) in Naval establishment.

E) Packing and delivery of equipment with Def. standard.

F) Vendors with past experience in installing weapon/system complex on Naval platforms will be preferred.

G) Vendor should have following ISO certification, preferably:

- ISO 3834: Certification for welding quality system.
- ISO 9001: Quality management systems- requirements
- ISO 14001: Environmental management systems
- ISO 45001: Occupational health and safety management system.

H) Vendors should follow NABL accredited labs verified reports as per QA plan.

I) Arrangement of Optical alignment measurements equipment like theodolite, clinometers, porro-prism, stands.