

**BEML LIMITED,  
BEML SOUDHA,  
23/1, 4<sup>th</sup> Main  
SAMPANGIRAMA NAGAR,  
BENGALURU - 560027**

**Notice Inviting  
Expression of Interest (Eol)  
for Technology tie-up  
For  
Armoured Recovery Vehicle (ARV) for Indian Army**

**Reference No: CTPAM/Eol/FPIIC/ARV/2025/303**

**Due closing date: 22.04.2025**

**Eol response mail ID: [bemleoi@bemltd.in](mailto:bemleoi@bemltd.in)**

**Contact for  
Clarifications: Mr. Madhusudhan BH,  
General Manager(O)-R&D  
FPIIC, Bangalore Complex, BEML Ltd.,  
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Mobile: +91-7406897591**

**Issued by**

**BEML LIMITED**

**(Schedule 'A' Company under Ministry of Defence, Govt. of India)**

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## SECTION-1

### **Disclaimer**

The information contained in this Expression of Interest (Eol) document provided to the Prospective Collaborator(s), by or on behalf of M/s BEML Ltd., or any of its executives or advisors, is provided to the Prospective Collaborator(s) on the terms and conditions set out in this Eol document and all other terms and conditions subject to which such information is provided.

1. The purpose of this Eol document is to provide the Prospective Collaborator(s) with information to assist the formulation of their proposal. This Eol document does not purport to contain all the information each Prospective Collaborator may require. This Eol document may not be appropriate for all persons, and it is not possible for BEML Ltd., its executives or advisors to consider the business/investment objectives, financial situation and particular needs of each Prospective Collaborator who reads or uses this Eol document. Each Prospective Collaborator should conduct his own investigations and analysis and should check the accuracy, reliability and completeness of the information in this Eol document and where necessary obtain independent advice from appropriate sources.
2. BEML Ltd., its executives and advisors make no representation or warranty and shall incur no liability under any law, statute, rules or regulations as to the accuracy, reliability or completeness of the Eol document.
3. BEML Ltd., may, in its absolute discretion, but without being under any obligation to do so, modify, amend or supplement the information in this Eol document.
4. The issue of this Eol does not imply that BEML Ltd., is bound to select and shortlist any or all the Prospective Collaborator(s). Even after selection of suitable Prospective Collaborator, BEML Ltd., is not bound to proceed ahead with the Prospective Collaborator and in no case be responsible or liable for any commercial and consequential liabilities in any manner whatsoever.
5. The Prospective Collaborator(s) shall bear all costs associated with the preparation, technical discussion/presentation and submission of response against this Eol. BEML Ltd., shall in no case be responsible or liable for these costs regardless of the conduct or outcome of the Eol process.
6. Canvassing in any form by the Prospective Collaborator(s) or by any other agency on their behalf shall lead to disqualification of their Eol.

7. Notwithstanding anything contained in this Eol, BEML Ltd., reserves the right to accept or reject any application and to annul the Eol process and reject all applications, at any time without any liability or any obligation for such acceptance, rejection or annulment and without assigning any reasons, thereof. In the event that BEML Ltd., rejects or annuls all the applications, it may at its discretion, invite all eligible Prospective Collaborators to submit fresh applications.
8. BEML Ltd., reserves the right to disqualify any applicant during or after completion of Eol process, if it is found there was a material misrepresentation by any such applicant or the applicant fails to provide within the specified time, supplemental information sought by BEML Ltd.,
9. BEML Ltd., reserves the right to verify all statements, information and documents submitted by the applicant in response to the Eol. Any such verification or lack of such verification by BEML Ltd., shall not relieve the applicant of his obligations or liabilities hereunder nor will it affect any rights of BEML Ltd.,

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## SECTION-2

### Schedule of Eol process & Contact details

#### A. Schedule of Eol process

The schedule of activities during the Eol Process shall be as follows -

| SI. No. | Description                             | Date       |
|---------|---|------------|
| 01      | Issue of Eol Document                   | 21.03.2025 |
| 02      | Last date of Submission of Eol response | 22.04.2025 |

#### B. Contact Details related to Eol

**Mr. Madhusudhan BH,**

General Manager(O)-R&D  
FPIIC, Bangalore Complex, BEML Ltd.,  
Bengaluru, Karnataka, INDIA  
Email: [madhusudhan.bh@bemltd.in](mailto:madhusudhan.bh@bemltd.in)  
Mobile: +91-7406897591

Note:

Submission of the Eol

The Eol shall be submitted **before 22.04.2025 through email only** mentioning Eol reference: CTPAM/Eol/FPIIC/ARV/2025/303 dtd 21.03.2025 in Subject to [bemleoi@bemltd.in](mailto:bemleoi@bemltd.in)

Queries if any, may be forwarded to [madhusudhan.bh@bemltd.in](mailto:madhusudhan.bh@bemltd.in) and [bemleoi@bemltd.in](mailto:bemleoi@bemltd.in)

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### **SECTION-3**

#### **ABOUT BEML LIMITED**

- a. BEML Limited is a leading multi-technology and multi-location company under the Ministry of Defence operating under three major Business verticals viz., Mining & Construction, Defence & Aerospace and Rail & Metro which are classified into 12 SBU's & 2 Micro SBU's. The three verticals are serviced by manufacturing units at four locations viz Bengaluru, Kolar Gold Fields (KGF), Mysuru and Palakkad.
- b. BEML offers high-quality products for diverse sectors of economy such as Defence, aviation, coal, mining, steel, limestone, power, irrigation, construction, road building, metro & railways.
- c. BEML has emerged as the forerunner of heavy engineering industry with a track record of growth and revenues for over Six decades. For further details please visit our website [www.bemlindia.in](http://www.bemlindia.in)

More details about the entire range of BEML's products and operations can be viewed by visiting our web site [www.bemlindia.in](http://www.bemlindia.in)

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## **SECTION-4**

### **Details of Expression of Interest (Eol)**

#### **4.1 Introduction:**

BEML invites Expression of Interest (Eol) from the Prospective Collaborator(s), who are willing to associate with BEML Ltd., through a License & Technology Collaboration Agreement (**TCA**) for joint development of Armoured Recovery Vehicle (ARV) for Indian Army to enable BEML Ltd., to Design, Engineer, Manufacture, Assemble, Test, Supply, Field Install, Commission, Repair, Service and Retrofit. Ministry of Defence, Govt of India intends to procure Armoured Recovery Vehicle (ARV) under Buy (Indian-IDDMM) Category of Chapter II of Defence Acquisition Procedure (DAP) 2020. Buy (Indian)-IDDMM Category refers to the acquisition of from an Indian vendor for the products that have been indigenously designed, developed and manufactured with a minimum of 50% Indigenous Content (IC) on cost basis of the base contract price i.e., total contract price less taxes and duties.

The latest version of DAP 2020 can be accessed on GOI, MoD website: <https://mod.gov.in/dod/defence-procurement-proc--dap>.

#### **4.2 Scope of Cooperation:**

BEML Ltd., is seeking Expression of Interest(s) from Prospective Collaborator(s) through TCA for joint development of Armoured Recovery Vehicle (ARV) for Indian Army. The TCA shall enable BEML Ltd., to Design, Engineer, Manufacture, Assemble, Test, Supply, Field Install, Commission, Repair, Service and Retrofit Armoured Recovery Vehicle (ARV) for Indian Army. The Prospective Collaborator(s) meeting the Pre-qualification requirements (PQR) as specified in clause 4.3 below are invited to submit their response to this Eol, as per indicative scope of technology transfer given in **Annexure-1**. Upon receipt of response(s) against this Eol, BEML Ltd., will review the response(s) to ascertain suitability of the offer and shortlist Prospective Collaborator(s) for further discussions. Detailed discussions on commercial and other terms and conditions to finalize the TCA shall be held with shortlisted Prospective Collaborator(s). The detailed terms and conditions for said TCA shall be mutually agreed upon.

### 4.3 Pre-qualification requirements (PQR)

The Prospective Collaborator(s) shall meet following qualification requirements as on the date of submission of EoI (to be substantiated by a documentary evidence):

1. The Prospective Collaborator should have designed, engineered, manufactured, tested, supplied and commissioned similar vehicle (broad technical specifications at Annexure-3) and such equipment should have completed at least three (03) years of service as on date of closing of this EoI.

OR

2. The Prospective Collaborator should have designed similar vehicles (broad technical specifications at Annexure-3) and their designed equipment should have completed at least three (03) years of service as on date of closing of this EoI.

#### Note:

Prospective Collaborator (s) shall take the responsibility for transfer of know how in the area of Design, Engineer, Manufacture and testing of Armoured Recovery Vehicle (ARV) to BEML Ltd., within the specified timeframe.

### 4.4 Instructions:

**4.4.1** The interested Prospective Collaborator(s) should submit their response(s) along with enclosed annexures on or before **22.04.2025**.

**Annexure-1:** Indicative Scope of Technology Transfer.

**Annexure-2:** Prospective Collaborator's Experience in the field of Armoured Recovery Vehicle (ARV) for Indian Army.

**Annexure-3:** General technical specifications of Armoured Recovery Vehicle (ARV) for Indian Army proposed for TCA.

**Annexure-4:** Reference List: The Prospective Collaborator's major supplies in last 15 years.

**Annexure-5:** EoI response format.

**Annexure-6:** Certificate as to Authorized Signatories.

**Annexure-7:** Declaration by the Prospective Collaborator regarding litigation.

**Annexure-8:** Declaration by the Prospective Collaborator regarding blacklisting.



**4.4.2** The response shall necessarily be accompanied with following details:

1. Company background
2. Product Profile
3. Technical details
4. Reference list of customers
5. Annual Audited financial reports for last 3 (three) years.

**4.4.3 Language:** All correspondences and documents related to the Eol response shall be in English language, provided that any printed literature furnished by the Prospective Collaborator(s) may be written in another language, as long as such literature is accompanied by a translation of its pertinent passages in English language in which case, for purposes of interpretation of the bid, the English translation shall govern, provided that in case the English translation is found to be incorrect at a later stage, BEML Limited will have right to take appropriate action against the Prospective Collaborator as may be deemed fit.

**4.4.4** The Prospective Collaborator(s) shall abide by the terms & conditions, as applicable, of the Eol.

**4.4.5** All pages of the response against this Eol shall be duly signed by the authorised signatory. Over writing should be avoided. Copies of the credentials/ documents which are to be annexed must be self-attested and bear the signature and seal of the authorized signatory / authorised representative of the interested Entity/Firm/Company. The interested Entity/Firm/Company will be requested to produce the originals of all information / documents as and when so required by BEML.

**4.4.6** Multiple proposals from the same Prospective Collaborator should not be submitted.

**4.4.7** BEML Ltd., at its discretion shall inspect the Prospective Collaborator's works/office/reference site premises for the purpose of evaluation, as deemed necessary before selection of Collaborator. BEML Ltd., decision in this regard shall be final.

**4.4.8** Any Prospective Collaborator which has been declared insolvent, bankrupted, debarred/blacklisted by Central/State Governments of India or by any entity controlled by Central/State Governments of India from participating in any of their project, as on date of submission of Eol, shall not be eligible to submit the Eol.

**4.4.9** BEML Ltd., shall receive applications pursuant to this Eol in accordance with the terms set forth herein, as may be modified, altered, amended and clarified from time to time by BEML Ltd., and all applications shall be submitted in accordance with such terms on or before the date specified in this Eol for submission of applications.

*In case any amendment/corrigendum to this Eol is issued, it shall be notified only at [www.bemlindia.in](http://www.bemlindia.in). which shall form part of this Eol*

**4.4.10** Restrictions on Prospective Collaborator from a Country which shares a Land Border with India:

- a) Interested Prospective Collaborator from a country which shares a land border with India will be eligible to respond to this Eol only if interested Prospective Collaborator is registered with Competent Authority (Registration Committee constituted by the Department of Promotion of Internal Trade (DPIIT) of Govt. of India). Such registration should be at least valid for the entire period of Eol due date or any extension thereof.
- b) Interested Prospective Collaborator from a country which shares a land border with India means:
  - a) An entity incorporated, established or registered in such country; or
  - b) A subsidiary of an entity incorporated, established or registered in such country; or
  - c) An entity substantially controlled through entities incorporated, established or registered in such country; or
  - d) An entity whose beneficial owner is situated in such a country; or
  - e) An Indian (or other) agent of such an entity; or
  - f) A natural person who is a citizen of such a country; or
  - g) A consortium or joint venture where any member of the consortium or joint venture falls under any of the above.

**4.5 REJECTION:** An Expression of Interest is liable to be rejected for any of the following conditions:

4.5.1 The Expression of Interest is not accompanied by required documentation and has failed to provide clarifications related thereto, when sought by BEML.

4.5.2 Misrepresentation, lack of proper documentation, fraud, coercion, undue influence, canvassing etc.

4.5.3 The Expression of Interest is received after the closing time and date. If any information which would have entitled BEML to reject or disqualify the applicant becomes known after the applicant has been qualified, it reserves the right to reject the applicant at that time or at any time after such information becomes known to BEML.

**4.6. PROCESS TO BE CONFIDENTIAL:**

Information relating to the examination, clarification, evaluation and comparison of Eol and recommendations shall not be disclosed to Prospective Collaborator(s). Any effort by Prospective Collaborator(s) to influence BEML Ltd., in processing of Eol or selection decisions may result in the rejection of the response against Eol.

**4.7 GOVERNING LAWS & JURISDICTION:**

The Eol process shall be governed by, and construed in accordance with the laws of India and the Courts at Bangalore (India) shall have exclusive jurisdiction over all disputes arising under, pursuant to and / or in connection with the Eol process. Foreign entity interested for collaboration with BEML for Armoured Recovery Vehicle (ARV) must have necessary clearance from their Govt. for Technology Sharing/ Transfer & Collaboration.

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**Annexure-1**

**Indicative Scope of Technology Transfer**

| SI. No. | Description   |
|---------|---|
| (a)     | Licensing and transfer of state-of-the-art technology relating to Design, Engineer, Manufacture, Assemble, Test, Supply, Field Install, Commission, Repair, Service and Retrofit Armoured Recovery Vehicle (ARV) for Indian Army.   |
| (b)     | Transfer of improvements / modifications / developments / upgradations to be carried out by the Prospective Collaborator(s) during the period of TCA for taking care of new market requirements and obsolescence. Subsequent updates required due to component obsolescence or updates implemented by Prospective Collaborator(s) due to safety consideration would also be provided.   |
| (c)     | Assistance in planning & establishing the new manufacturing, assembly and testing facilities & processes / suitable augmentation at BEML Ltd.'s existing facilities / processes by way of expert advice in terms of identifying, sizing & selection and preparation of specification of equipment / machinery required for manufacturing, their layout and foundation etc.<br><br>Deputation of Collaborator's expert for commissioning of the manufacturing facilities, design of special tools and dies, jigs & fixtures etc. |
| (d)     | Support through engineering services from Collaborator's design office / manufacturing facilities for licensed products.  |
| (e)     | Training of BEML Ltd., engineers to Design- know-how knowledge transfer, Engineer, Manufacture, Assemble, Test, Supply, Field Install, Commission, Repair, Service and Retrofit the Armoured Recovery Vehicle (ARV) for Indian Army.  |
| (f)     | Deputation of Collaborator's experts to assist BEML Ltd., in absorbing the technology for licensed products.  |
| (g)     | Transfer of applicable Proprietary software / computer programs including logics and source code, if any.   |
| (h)     | During the field trials and regular operation, if any modifications / updates are carried out to improve the performance / reliability of the system the same shall also be transferred to BEML Ltd., with complete know-how.   |
| (i)     | Technology being proposed should be the latest / state-of-the-art being marketed by the Prospective Collaborator.   |
| (j)     | Transfer of information to enable BEML Ltd., to source/procure those items, which Prospective Collaborator sources from other vendors (as these are not manufactured by the Prospective Collaborator) for use in Armoured Recovery Vehicle (ARV) for Indian Army.   |
| (k)     | Manufacturing 2D drawings of all the developed components are to be prepared.<br>Installation or Mounting drawings of off-the-shelf or proprietary components drawing may be received from the respective suppliers. 2D layout drawings are   |

|     |  |
|-----|--|
|     | to be prepared for all sub assembly of components including system wise. Casting and forging drawings are to be prepared only for critical components. |
| (l) | Deputation of BEML engineers to work with collaborator design team in order to absorb the technology/process being followed for licensed products.     |
| (m) | Collaborator should enter in to a joint agreement on Intellectual Property Rights (IPR) with BEML Ltd.   |

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**Annexure-2**

**Prospective Collaborator's Experience in the field of Armoured Recovery Vehicle (ARV) for Indian Army**

| Sl. No | Requirement  | Prospective Collaborator's response YES/NO and remarks, if any |
|--------|--|--|
| (a)    | Whether the Prospective Collaborator is an Original Equipment Manufacturer (OEM) of proposed Armoured Recovery Vehicle (ARV) for Indian Army or similar Vehicle.   |  |
| (b)    | Whether documentary evidence to substantiate the below PQRs has been submitted by Prospective Collaborator.  |  |
| (c)    | The Prospective Collaborator should have designed, engineered, manufactured, tested, supplied and commissioned similar vehicle (broad technical specifications at Annexure-3) and such equipment should have completed at least three (03) years of service as on date of closing of this Eol.<br><br>OR<br><br>The Prospective Collaborator should have designed similar vehicles (broad technical specifications at Anenxure-3) and their designed equipment should have completed at least three (03) years of service as on date of closing of this Eol. |  |
| (d)    | Whether information on market share has been enclosed.   |  |
| (e)    | Whether Prospective Collaborator's detailed reference list have been enclosed.   |  |
| (f)    | Whether Prospective Collaborator's annual audited financial reports for last 3 years have been enclosed.   |  |
| (g)    | Whether the Armoured Recovery Vehicle (ARV) for Indian Army or similar Vehicle offered for technology collaboration is the latest being marketed by the Prospective Collaborator.  |  |
| (h)    | Whether customers (end users) letters / documentary evidence for satisfactory operation of model for Armoured Recovery Vehicle (ARV) for Indian Army which is being offered to BEML Ltd., under this Eol have been enclosed.   |  |

|     |  |  |
|-----|--|--|
| (i) | Whether the Prospective Collaborator owns the IPRs for the technology being proposed for transfer under the Technology Collaboration Agreement (TCA) or have an unencumbered right from the owner of the IPRs to sub-license the technology, if applicable. If yes, whether list of such IPRs is enclosed. |  |
|-----|--|--|

**Signature & Seal:**

Authorised Signatory of the Prospective Collaborator

**Annexure-3**

**General technical specifications of Armoured Recovery Vehicle (ARV)  
for Indian Army proposed for TCA**

|                                 |   |
|---------------------------------|---|
| <b>Terrain Conditions</b>       | Employed for cross country (off road) operations in under mentioned terrain conditions:<br><br>(i) Plain, semi-desert and desert terrain as occurring along Western borders of India.<br><br>(ii) High Altitude (up to 5000 meters altitude) / Mountainous terrain as occurring along Northern Borders (Eastern Ladakh / Central Sector / North Sikkim) of India.   |
| <b>Weather Conditions</b>       | Operational by day & night and in commonly encountered weather conditions including snowy, rainy, dusty and sandy conditions in the above terrains.   |
| <b>Operating Temperature</b>    | (a) Plain and Desert Terrain<br><ul style="list-style-type: none"> <li>• Minimum Operating Temperature: Between 0° to 05° C.</li> <li>• Maximum Operating Temperature: Between 40° to 45° C.</li> </ul> (b) High Altitude & Mountain Terrain<br><ul style="list-style-type: none"> <li>• Minimum Operating Temperature: Between (-)35° to (-)10° C.</li> </ul> Maximum Operating Temperature: up to 40° C.                    |
| <b>Operational Requirements</b> | (i) Required to provide repair and recovery cover to disabled Armoured Fighting Vehicles (AFVs) during operations under hostile conditions.<br><br>(ii) Required to possess adequate cross-country mobility and protection.<br><br>(iii) Required to have the utility equipment to include Crane, Dozer, Winches, General Tools and Special Maintenance Tools, ancillary equipment etc to undertake repair and recovery role. |
| <b>Chassis</b>                  | Tracked chassis.  |
| <b>Crew</b>                     | At least 06 persons (including Driver and Commander).   |
| <b>Service Life</b>             | At least 32 years with maximum one overhaul / major repair intervention.  |
| <b>Transportability</b>         | Capable of being transported by existing In-service tank transporter vehicles of the Indian Army, transport aircrafts of the Indian Air Force and broad-gauge railway military bogey (Bogey Well Type Wagon).   |
| <b>Dimensions</b>               | Required to meet operational, transportability and other technical requirements. Provide the length, width and height of the ARV.   |
| <b>Weight</b>                   | Gross Vehicle Weight to be 45-50 Ton including carriage capacity of minimum 2 Ton of spares / equipment on the loading platform.  |
| <b>Power to Weight Ratio</b>    | At least 22-25 HP/Ton with all systems functioning including HVAC.  |



|                                     |   |
|-------------------------------------|---|
| <b>Obstacle Crossing Capability</b> | <ul style="list-style-type: none"> <li>(i) Gradient: <math>\geq 30^\circ</math>.</li> <li>(ii) Side slope: <math>\geq 25^\circ</math>.</li> <li>(iii) Vertical Step: <math>\geq 0.85</math> meters.</li> <li>(iv) Trench Width: <math>\geq 2.5</math> meters.</li> <li>(v) Ground Clearance: <math>\geq 350</math> mm.</li> </ul>   |
| <b>Engine</b>                       | <ul style="list-style-type: none"> <li>(i) Diesel fuel – based engine / power pack turbocharged system preferably rear mounted with low thermal and acoustic signature.</li> <li>(ii) <b>Engine Service Life:</b> 800 – 1000 hours.</li> <li>(iii) <b>Starting Mechanism:</b> At least two methods of starting engine including electric start with main battery and air start. In addition to these, combined starting, provision of slave start &amp; tow start to be provided for use in case the main starting systems fails.</li> <li>(iv) Should be provided with a suitable system for starting in sub-zero conditions.</li> </ul> |
| <b>Transmission</b>                 | Manual / Automatic Transmission systems with reduction gear for extra power.  |
| <b>Steering System</b>              | Highly reliable power steering and provide precise control of the vehicle to the driver at various speeds, terrain conditions and load levels and provide capability for pivot turn.  |
| <b>Suspension</b>                   | <ul style="list-style-type: none"> <li>(i) Provide stable platform while on move and general comfort of all persons inside during cross country move.</li> <li>(ii) Provision for suspension lock during crane operations.</li> </ul>   |
| <b>Armament</b>                     | <ul style="list-style-type: none"> <li>(a) One Remote Controlled Weapon Station (RCWS) with In-service 12.7 mm Anti – Aircraft Machine with following specification: <ul style="list-style-type: none"> <li>(i) Traverse - <math>360^\circ</math>.</li> <li>(ii) Elevation - <math>75^\circ</math>.</li> <li>(iii) Depression – <math>(-5^\circ)</math>.</li> </ul> </li> <li>(b) Provision of carrying minimum of 720 rounds of machine gun.</li> <li>(c) Capable to lay smoke screens (fuel generated exhaust smoke).</li> <li>(d) Provision of Smoke Grenade Discharger. Specify the number of launchers / tubes.</li> </ul>           |
| <b>Protection</b>                   | (a) <b>Armour Protection:</b> Vehicle should provide following protection against HEAT, HE & FSAPDS:  |

|  |  |
|--|--|
|  | <p>(i) Front: STANAG 4569 Level IV<br/>(ii) Side: STANAG 4569 Level III<br/>(iii) Top, Bottom &amp; Rear: STANAG 4569 Level II</p> <p>(b) <b>CBRN Protection System:</b> Capable to detect all known types of Chemical Agents &amp; Nuclear Radiations and provide protection to the crew, stick and sub systems against CBRN contamination for at least six hours continuously.</p> <p>(c) <b>Protection Against Fire:</b> An Instantaneous Fire Detection &amp; Fire Suppression System must be provided to automatically extinguish all kinds of fire inside crew &amp; engine compartments. Additionally, qty 04 of manual fire extinguishing equipment should also be provided for extinguishing fire outside the ARV and within crew compartments.</p> |
| <b>Water, Moisture &amp; Dust Protection</b>           | All sights, sensors & sub systems which are mounted on the exterior of ARV should be water, moisture & dust proof. No water and dust should enter into the crew and engine compartments when all hatches are shut.   |
| <b>Vision Devices</b>                                  | Driver and Commander to be provided with Thermal Imager based vision devices. Suitable Day sights/ periscopes also to be provided for situational awareness.   |
| <b>Driver's Sight</b>                                  | <p>(a) Provide the details of the sight to drive ARV in all terrain and light conditions.</p> <p>(b) Provide the details of TI sight (if provided) like the range of TI sight, cooled or un-cooled technology used, generation of TI sight.</p>  |
| <b>Communication</b>                                   | <p>(a) In-service radio sets (BNE) to be installed.</p> <p>(b) A suitable Digital Control Harness (DCH) for voice communication between the crew members to be provided.</p> <p>(c) Hand held VHF sets to be provided for communication between the crew when carrying out recovery operations.</p>  |
| <b>Navigation</b>                                      | (a) Compatible with IRNSS and DSM.   |
| <b>Heating Ventilation and Air Conditioning (HVAC)</b> | <p>Heating Ventilation and Air Conditioning to maintain temperature of <math>25 \pm 5^\circ</math> centigrade inside the crew compartment, throughout ambient temperature range of (-)20 to <math>45^\circ</math> centigrade.</p> <p>(a) Provide the power consumption and performance parameters of HVAC.</p> <p>(b) Specify the source of electric &amp; mechanical power for functioning.</p> <p>(c) Indicate the maximum duration of continuous operation of Temperature Control System.</p>   |

|                                   |  |
|-----------------------------------|--|
|                                   | (d) Specify if the HVAC can be functioned on APU and indicate the duration.  |
| <b>Auxiliary Power Unit (APU)</b> | <p>Should be provided which can power the following system when the ARV engine is switched off:</p> <ul style="list-style-type: none"> <li>(a) Arc Welding</li> <li>(b) Operation of power tools</li> <li>(c) External lighting</li> <li>(d) Battery charging</li> </ul> <p>(i) Indicate the duration of uninterrupted welding which can be carried out and specify the type of fuel used by the APU.</p> <p>(ii) Specify the type of fuel used by APU.</p>  |
| <b><u>Utility Portion</u></b>     |  |
| <b>Crane</b>                      | <p>Telescopic Crane with minimum 15 Ton lift capacity at working radius of 3 meters and capability to slew 360°.</p> <ul style="list-style-type: none"> <li>(a) Specify the type of crane and the number of sections in the telescope crane.</li> <li>(b) Indicate the crane boom length in fully retracted and fully extended condition if the crane is hydraulically operated.</li> <li>(c) Provide the details if the crane has a provision for emergency operation in case of hydraulic failure, for the load to be lowered and crane stowed.</li> <li>(d) Provide the details if the crane has the facility to lock in the position to avoid collateral damage.</li> <li>(e) Specify if the crane can be operated through an external portable console.</li> <li>(f) Indicate the slewing angle so as to facilitate easy removal / fitment of powerpack, turret and other major unit assemblies.</li> <li>(g) Specify if the crane has a protection against overloads. If yes, specify details warning devices to prevent the overloading of the crane.</li> <li>(h) Indicate if auto lubrication of the winch ropes and the crane ropes is catered.</li> <li>(i) Indicate if the crane is provided with safety device to correct layering of rope during winding over crane winch rope drum to avoid overlapping.</li> </ul> |

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|                        | <p>(j) Specify if the provision of suspension lock for locking suspension during lifting of heavy loads are provided. In addition to this, provide the type of suspension lock, whether it is mechanical or hydraulic.</p> <p>(k) Indicate if the lock is provided on which all wheel bogie stations.</p>   |
| <b>Main Winch</b>      | <p>Direct pull of at least 30 Ton and usable rope length of at least 180 m. Should be able to pull at least 90 Ton with 3:1 tackle layout.</p> <p>(a) Indicate if there are any warning device(s) / mechanism to indicate overloading.</p> <p>(b) Indicate if there is any portable control provided for winch operations in addition to fixed controls.</p> <p>(c) Specify if there is a guiding system in the main winch drum for easy winding / unwinding of the rope to avoid entangling and breakage.</p> <p>(d) Specify if there is a facility for auto cleaning of main winch rope while winding to avoid dirt being carried into the winch drums provided.</p> <p>(e) Provide if there is any indication on control panel end of main winch rope (during un-winding) with an audio (or/and) visual warning signal.</p> <p>(f) Specify if there is provision of Hours Meter to indicate operation of main winch which shall switch 'ON' automatically as soon as the Main Winch is engaged.</p> <p>(g) Specify if there is any provision of ropes winding /unwinding at various speeds.</p> <p>(h) Specify if there is any provision on the Main Winch for mechanical overload protection system to cut off winching operations in case of overloading.</p> <p>(i) Specify if there is any provision to unwind the Main Winch rope without the requirement of engaging the main winch drive (i.e., free unwinding) should exist.</p> <p>(j) Specify if there is any provision of hydraulic oil pressure gauge indicator with low- &amp; high-pressure audio and visual warning for Main Winch.</p> |
| <b>Auxiliary Winch</b> | <p>Direct pull of at least 2 Ton and usable rope length of at least 360 m. The rope must be capable of carrying the main winch rope.</p> <p>(a) Provide the details if it can it pull out the main winch rope</p>   |

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|                                     | <p>towards the casualty.</p> <p>(b) Provide if there is any indication on control panel end of auxiliary winch rope (during un-winding) with an audio (or/and) visual warning signal.</p> <p>(c) Specify if there is a facility for auto cleaning of auxiliary winch rope while winding to avoid dirt being carried into the winch drums provided.</p>   |
| <b>Fixed &amp; Flexible Tow</b>     | Specify if the ARV has the provision to tow Armoured Fighting Vehicles with both fixed and flexible tow.   |
| <b>Dozer</b>                        | Provide anchorage of at least 90 Ton and limited dozing capabilities.  |
| <b>Ancillary Equipment</b>          | <p>(i) Provision of arc welding with up to 6 mm welding / cutting rods and at least 300 Amp current capacity and gas welding.</p> <p>(ii) Provision for Oxy Acetylene gas welding. Acetylene and oxygen cylinders, hose and torches to be provided.</p> <p>(iii) Provide if there is state of art photo-chromatic welding helmets to undertake electric arc welding/cutting provided.</p> <p>(iv) Indicate how long can uninterrupted welding be carried out.</p> <p>(v) Indicate the capacity of acetylene and oxygen gas cylinders and how many cylinders provided</p> <p>(vi) Specify if there is suitable space for carrying the gas cylinders catered.</p> <p>(vii) Specify if there are cylinders capable of being refilled through gas charging nozzles as available in India.</p> <p>(viii) Describe the minimum length of each hose.</p> <p>(ix) Specify if gas cutting torch / nozzles are provided.</p> |
| <b>Power Tools</b>                  | Provision for a heavy-duty Drilling machine up to 19 mm bits and Angle grinder up to 230 mm.   |
| <b>Loading Platform and Stowage</b> | <p>(i) A loading platform to accommodate one engine along with few MUAs and other miscellaneous items of In-service AFVs over engine/ powerpack compartment. The loading platform capable to accommodate a load of minimum 2 Ton.</p> <p>(ii) Provision in the form of proper bins/boxes should be made available in the ARV for the 'Complete Consolidated Equipment Schedule', Spares Parts, Tools and Accessories (SPTA).</p>   |

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|                                       | <p>(iii) Specify the load carrying capacity of loading platform.</p> <p>(iv) Provision of flexible ropes onboard for securing load on loading platform. The rope should be provided with eye ends.</p>   |
| <b>Repair Shelter and Bench</b>       | <p>(i) A repair shelter of appropriate size to act as a work area for technicians. Shelter material should be water proof and fire retardant.</p> <p>(ii) Easily removable vice and table capable of being stowed inside / outside of ARV.</p>   |
| <b>Recovery Tools and Accessories</b> | <p>(i) Provision for recovery tools and accessories for anchoring, lifting, pulling and other recovery tasks.</p> <p>(ii) Fixed and flexible towing attachments to pull disabled In-service AFVs (Same or lower weight class).</p> <p>(iii) Fastening and lifting slings, pulleys and 'D' shackles for capacities to lift 15 Ton and 3:1 tackle layout (90 Ton).</p> <p>(iv) Two jacks each of 30 tons capacity and towing attachments including rigid drawbars.</p>   |
| <b><u>Miscellaneous</u></b>           |  |
| <b>Crew Compartment</b>               | A door / hatch for access to the stowage compartment should be provided in addition to hatches for Driver and Commander on one side of the ARV and from the top.   |
| <b>Water Storage</b>                  | <p>Provision for 200 liters of drinking water should be provided in ARV at same temperature that is existing inside crew Compartment. Suitable inlets, outlets, drainage, plumbing and provisions for cleaning should be provided.</p> <p>(a) Specify the number of water tanks with their capacity and location that can be provided.</p> <p>(b) Indicate if the facility for manually replacing empty tanks with filled ones in quick time-frame without need of any special tools be provided.</p> <p>(c) Indicate if inlets for quick filling of water in tanks be provided.</p> |
| <b>Ergonomics</b>                     | <p>(a) Specify the orientation of each crew and stick member while seated.</p> <p>(b) Specify if the door / hatch for access to the stowage compartment in addition to hatches for Driver and Commander on one side and top of the ARV.</p>  |
| <b>Recovery Tools</b>                 | (a) Specify the Items that are recommended as Complete   |

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| <p><b>and Accessories</b></p> | <p>Consolidated Equipment Schedule'(CCES) of the ARV.</p> <p>(b) Provision for recovery tools and accessories for anchoring, lifting, pulling and other recovery tasks available with ARV.</p> <p>(c) Provision for Fixed and flexible towing attachments to pull disabled In-service AFVs (less MBT Arjun).</p> <p>(d) Provision for Push bars to push disabled in-service AFVs (less MBT Arjun).</p> <p>(e) Provision for Fastening and lifting slings, pulleys and 'D' shackles, of capacities to lift 15 Ton and 3:1 tackle layout.</p> <p>(f) Provision for two jacks each of 30 tons capacity and towing attachments including rigid drawbars.</p> <p>(g) Specify if there is a provision for a wooden roller log of length equal to the width of ARV to enable self- extrication of ARV</p> <p>(h) Provide the diameter of the wooden log</p> <p>(i) Provision of Working light with minimum 50m length cable and portable search lights</p> <p>(j) Specify if the Special Maintenance tools and Special Test Equipment as mentioned in EME Regulations to carry out repair and maintenance tasks for Tank T-72/ T 90 and ICV BMP II be provided if part numbers are made available. If yes, the stowage plan on ARV to be shared.</p> |
| <p><b>Maintainability</b></p> | <p>(a) Modular systems &amp; sub-systems to be provided to enable quick replacements &amp; repairs at field workshop level. Maintenance Transfer of Technology (MToT) for sustenance of ARV should be provided.</p> <p>(b) Maintenance, Repair &amp; Overhaul philosophy should be aligned to following levels of repairs (refer Appendix B to Schedule I to Chapter II DAP):</p> <p>(i) <b>Unit (Organizational 1 (O1) Level):</b> Repairs carried out in the unit holding the equipment, involving replacement of minor components/ subassemblies, which do not require any Special Maintenance Tools (SMTs).</p> <p>(ii) <b>Field (Organizational 2 (O2) Level):</b> Repairs by a field workshop, involving replacement of components/ major sub-assemblies, which may require Special Maintenance Tools (SMTs) supported by diagnostics using Special Test</p>  |



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|                                 | <p>Equipment (STEs)/ Test Jigs/ Built In Test Equipment (BITE) facility.</p> <p>(iii) <b>Intermediate (I) Level:</b> Repairs beyond the scope of field workshop, which require sophisticated Special Test Equipment (STEs)/ Test Jigs for diagnostics. These include repairs to rotables/ sub-assemblies through repairs/ replacements of PCBs/ modules/ components.</p> <p>(iv) <b>Base (Depot (D) Level):</b> Base repair capability is established to avoid dependence on manufacturer in terms of factory repairs. These repairs include component level repairs of rotables/ assemblies, which may be Major Unit Assembly (MUA)/ modules/ PCBs.</p> <p>(c) Provide the Expected Mean Time Before Failure (MTBF) and Mean Time Taken to Repair (MTTR) based on current level of experience in exploitation of equipment (for major critical sub systems including engines).</p> <p>(d) Provide the details of equivalent Lubricants and Oils used in the vehicle.</p> |
| <p><b>Quality Assurance</b></p> | <p>ARV and all system should be robust in construction &amp; comply to following:</p> <p>(a) JSS: 55555 applicable to the ARV</p> <p>(b) MIL STD – 461E and MIL STD – 461C/D for EMI / EMC parameters.</p>  |
| <p><b>Training Aids</b></p>     | <p>(a) Simulator for training driver. In addition to this, provide the details of proposed strength of personnel and time frame of training for repair &amp; maintenance and overhauls at separate levels (operational, field and base).</p> <p>(b) Sectionized working models and cut models of all major and minor assemblies.</p> <p>(c) AR / VR and Computer Based training packages for honing skills to operate, maintain and repair all automotive &amp; Utility Portion sub-systems.</p> <p>(d) Provide the details on the technical literature and training aids available in the form of Interactive Electronic Technical Manual (IETM) for repairs to be carried out up to component level.</p>  |
| <p><b>Miscellaneous</b></p>     | <p>(a) Specify if the vehicle is provided with a socket for slave starting (electrically) other AFVs in case of an emergency?</p>   |



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|  | <p>(b) Specify if the vehicle has adequate stowage arrangements for carrying its own Consolidated Complete Equipment Schedule (CCES)/Table of Tools and equipment (TOTE) items and special maintenance tools (SMTs)/Special Test Equipment (STEs)?</p> <p>(c) Specify if the vehicle has space for additional recovery equipment and administrative stores (Cooking utensils, drinking water tanks, electric heater, electric kettle, sleeping bags, stretcher (for casualty evacuation), first aid box etc.)?</p> <p>(d) Provision for carrying additional two fuel barrels (200 ltrs each) with proper securing facilities.</p> <p>(e) Provide the details of Availability of Intellectual Property Right (IPR) documentation/ Patents/ Design registrations/ copyright/ NATO Stock Number (NSNs) with reference to systems/sub-systems, wherever applicable.</p> <p>(f) <b>Product Support Codification:</b> The bidders acceptance to either provide existing NATO Stock Number (NSNs) of the OEM or codify the items supplied under the contract as per part list (including MRLS) in consultation with the MoD/ Directorate of Standardization in a time bound manner</p> <p>(g) Provide the details of INCOTERMS 2020 are suitable/ preferred and the reasons.</p> |
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**Signature & Seal:**

Authorised Signatory of the Prospective Collaborator

**Annexure-4**

**Reference List: The Prospective Collaborator shall furnish a summary of their product reference as detailed below for major supplies in last 15 years**

| SL No | Name of Country where Armoured Recovery Vehicle (ARV) for Indian Army or similar Vehicle was supplied | No. of unit supplied | Year of Supply |
|-------|---|----------------------|----------------|
|       |   |                      |                |
|       |   |                      |                |
|       |   |                      |                |
|       |   |                      |                |

**Annexure-5**

*{To be printed and submitted on Prospective Collaborator's official letterhead}*

**Eol RESPONSE FORMAT**

To,  
Corporate Purchase  
BEML Limited  
SR Nagar, Bangalore 560027  
E-mail: bemleoi@bemltd.in

Dear Sir,

Ref: **Expression of Interest to collaborate with BEML Limited for Notice Inviting Expression of Interest (Eol) for technology tie up for Armoured Recovery Vehicle (ARV) for Indian Army**

Having examined the Expression of Interest (Eol) document dated \_\_\_\_\_, downloaded from the BEML Limited website, i.e., [www.bemlindia.in](http://www.bemlindia.in), we, the authorised signatories of the Prospective Collaborator, intend to submit the response/proposal to the aforesaid Eol document.

We attach hereto the response/proposal to Eol as required as per the Eol document, which constitutes our response to Eol.

Primary and Secondary contacts for our company are:

|               | <b>Primary Contact</b> | <b>Secondary Contact</b> |
|---------------|------------------------|--------------------------|
| Company Name: |                        |                          |
| Name:         |                        |                          |
| Title:        |                        |                          |
| Address:      |                        |                          |
| Phone:        |                        |                          |
| Mobile:       |                        |                          |
| Fax:          |                        |                          |
| E-mail:       |                        |                          |

We confirm that the information contained in this response or any part thereof, including its exhibits, and other documents and instruments delivered or to be delivered to BEML Limited are true, accurate, verifiable and complete. This response includes all information necessary to ensure that the statements therein do not in whole or in part mislead BEML Limited in its short-listing process nor suppressed any material facts.

We fully understand and agree that on verification, if any of the information provided herein is found to be false /misleading, our response / proposal is liable to be disqualified / rejected from the selection process or termination of the definitive agreement, if the Prospective Collaborator is selected, besides other action as may be required as per the BEML Limited Purchase Manual.

We agree to the unconditional acceptance of all the terms and conditions set out in the EoI document.

It is hereby confirmed that I / We are entitled and duly authorised to act on behalf of the Prospective Collaborator and empowered and authorised to sign this document as well as such other documents, which may be required in this connection.

Dated this

(Signature)

(In the capacity of)

(Name)

Duly authorized to sign the EoI Response for and on behalf of:

(Name and Address of the authorised representative/signatory with Seal / Stamp of the Prospective Collaborator)

Witness Signature:

Witness Name:

Witness Address:

**Annexure-6**

{To be submitted in the letter head of the Prospective Collaborator}

**CERTIFICATE AS TO AUTHORIZED SIGNATORIES**

I, ....., the Company Secretary  
of ....., the  
Prospective Collaborator herein do hereby certify that Mr./Ms  
..... Who signed the EoI floated by  
BEML for technology tie up for Armoured Recovery Vehicle (ARV) for Indian Army is  
authorized to do so and bind the company by authority of its board / governing body.

Date:

Signature:

(Company Seal)

**Annexure-7**

{To be submitted in the letter head of the Prospective Collaborator}

**DECLARATION BY THE PROSPECTIVE COLLABORATOR**

This is to certify that we, \_\_\_\_\_, the Prospective Collaborator herein do not have any litigation, arbitration cases or any litigation against BEML Ltd pending before any Court / Arbitrator in connection with any contract / tender issued by BEML Ltd.

Signature of Prospective Collaborator  
(with Seal /Company Seal)

**Annexure-8**

{To be submitted in the letter head of the Prospective Collaborator}

**DECLARATION BY THE PROSPECTIVE COLLABORATOR**

This is to certify we \_\_\_\_\_ have not been banned /  
black listed / debarred by BEML / Central / State Govt. Dept. / Autonomous  
Institution / PSUs in India at the time of bid submission.

I / we hereby certify that all the information given above are true and correct.

Signature with date of Authorized signatory

Name: \_\_\_\_\_

Designation: \_\_\_\_\_

Firm's Seal: \_\_\_\_\_