

SPECIAL ARMORED VEHICLE



EOI Ref: GAT/SAV/EOI/2020/1004 Date: 13.01.2020

Expression of Interest for collaboration with BEML Limited for Development and Supply of Special Armored Vehicle (SAV) on 4x4 and 6x6 variants.

A. Introduction:

- 1) BEML Limited is a leading multi-technology and multi-location Mini-Ratna category-I company under the Ministry of Defence offering high quality products for diverse sectors of economy such as Defence, coal, mining, steel, cement, power, irrigation, construction, road building, metro & railways and aviation. BEML Limited keeps the Indian Army and other defence forces abreast with state-of-the-art military equipment. The company manufactures variants of BEML Tatra vehicle for all terrain operations including Bridge Layer, Field Artillery Tractor, Medium & Heavy Recovery Vehicle, Pontoon Mainstream Bridge Systems, Crash Fire Tenders, Mobile Mast Vehicle, etc. BEML also supplies Engineering Mine Ploughs, Tank Transportation Trailers, Weapon Loading equipment, Armoured Recovery Vehicle, Mil-rail Coaches and Wagons. BEML plays a stellar role in the country's Integrated Guided Missile Development Project by supplying ground support vehicles. It 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

- 2) Special Armored Vehicle (SAV) are required for fast movements and intense engagements over all types of terrain on borders with fluid and rapidly changing situations, urban warfare and asymmetric threats from terrorists and/or hostile states. Huge potential exists for this product in India.

B. Objectives of the Eoi:

To identify potential OEM with whom collaboration can be established for development of Special Armoured Vehicle on 4x4 and 6x6 RHD platforms and its variants to meet the requirement of customers.

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C. Scope of the collaboration

- a) Development of a vehicle through technical assistance of OEM by localizing to the maximum extent
- b) BEML will front end all the tenders in India and export market for the Indian variant product with Techno-commercial assistance of the OEM
- c) Participation in User trials
- d) Provide spares & maintenance, training, warranty and other support services for the product till the service life.

Note: The configuration details of OEM's product vis-à-vis desired specification shall be provided as per [Annexure-1](#). Separate Annexures may be prepared for more than one products recommended.

D. Eligibility Criteria: for responding to this EOI

The following are the mandatory conditions to be fulfilled by the OEM for responding to the Eoi.

- a. Should be a registered OEM with global reputation not placed on the restricted list by Indian MoD. Dealers / distributors / agents / representatives need not respond to this Eoi.
- b. The OEM should have demonstrated / supplied Special Armoured Vehicles to its own country's military or other reputed countries military and should have been accepted / in-service.
- c. Should have demonstrable experience of more than 5 years in developing / customizing Armoured Vehicles for military applications.
- d. The OEM shall be willing to customize their proposed SAV equipment in BEML's plant in India meeting Customer requirement
- e. The OEM shall be interested to localise the product to offer a very competitive price
- f. The OEM should be able to get the export clearance from its government for local production in BEML and supply of the equipment to Indian Customers.

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- g. The OEM shall note that Indian Customer will be acquiring this equipment only through a competitive tender process. One equipment has to be offered to the Indian Customer for trial testing on No-Cost-No-Commitment (NC-NC) basis to prove the product in Indian Conditions. The firm shall be agreeable to offer one equipment with indigenous content (as per Tender conditions) along with BEML.
- h. BEML will have the exclusivity to market the product in India for military / Para Military and others customers and export on mutual consent for exports to friendly neighbouring countries.
- i. The OEM shall be willing for co-branding / local branding of the product.

The OEM shall fill & submit the Eligibility Criteria while responding to this EOI enclosed at [Annexure-2](#) with supporting document/certificate.

E. Presentations on proposed Solution/ Methodology

The OEMs shortlisted based on the eligibility criteria may be invited / video conference to make a presentation at a date, time and location notified by BEML. The purpose of the presentation would be to allow the OEM to present its solution / methodology, experience, capabilities, infrastructure, and other key points, if any.

F. Submission of the EOI

The EOI response on company's letter head along with above described Annexures, brochures and certificates, shall be submitted in a sealed cover on or before 14:00 hours of 12.02.2020. The sealed cover should be sent to the following address super scribing the EOI reference and closing date to the following address.

General Manager –Corporate Materials
BEML Limited, BEML Soudha, Room No.2
23/1, 4th main, S R Nagar, Bangalore-560 027, Karnataka, India.
Tel (Off): +91-80-22963179, Email: gmcm@beml.co.in

For any technical clarifications, please contact the following official:

Name : Lingaraj VV
Designation : DGM (PMG)
Email : defpmg@beml.co.in
Contact No : 080-22963506

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## Annexure-1

| Sl. No. | Technical parameter                       | OEM product specification                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1       | Vehicle Configuration and Characteristics | <ul style="list-style-type: none"> <li>- 4 x 4 and 6x6 Right hand drive</li> <li>- Prerequisites of Mobility, provision for Firepower and protection for Reconnaissance.</li> <li>- Provision for observation, surveillance and communication equipment.</li> <li>- Modular Design</li> <li>- Stretch potential to incorporate imperative upgrades and retain functional superiority.</li> </ul>                                |
| 2       | Number of crew                            | <ul style="list-style-type: none"> <li>- Upto 10 (Including Driver and commander)</li> </ul>                                                                                                                                                                                                                                                                                                                                    |
| 3       | Survivability / Protection                | <ul style="list-style-type: none"> <li>- Blast and Ballistic : STANAG I and above</li> <li>- Blast attenuated seats with three / four point seat belt for crew</li> <li>- Equipped with Instant Fire detection &amp; Suppression system</li> <li>- Smoke Grenade Dischargers for all round</li> <li>- Smoke screen</li> <li>- Integral ventilation system capable of producing overpressure and requisite detectors.</li> </ul> |
| 4       | Body Type                                 | <ul style="list-style-type: none"> <li>- Welded of steel armoured plates / composites of single volume, multi door configuration</li> </ul>                                                                                                                                                                                                                                                                                     |
| 5       | Vehicle dimensions                        | <ul style="list-style-type: none"> <li>- (LxWxH) Max: specify separately for 4x4 and 6x6</li> </ul>                                                                                                                                                                                                                                                                                                                             |
| 6       | Gross vehicle weight                      | <ul style="list-style-type: none"> <li>- &lt; 12 T for 4x4 Configuration</li> <li>- &lt; 25 T for 6x6 Configuration</li> <li>- Lesser GVW is preferred</li> </ul>                                                                                                                                                                                                                                                               |
| 7       | Transportability                          | <ul style="list-style-type: none"> <li>- Transportable by Air, Rail and Sea by in-service craft. No special preparations should be required for loading onto such carrier or craft.</li> </ul>                                                                                                                                                                                                                                  |
| 8       | Power to weight ratio                     | <ul style="list-style-type: none"> <li>- 20 hp/tonne</li> <li>- Higher P/W is preferred</li> </ul>                                                                                                                                                                                                                                                                                                                              |

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### *Annexure-1*

| Sl. No. | Technical parameter                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | OEM product specification |
|---------|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| 9       | Transmission                          | – Automatic                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                           |
| 10      | Power train                           | <ul style="list-style-type: none"> <li>– Multispeed transfer case with locking interaxle differential.</li> <li>– Final drive with locking cross-axle differential</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                            |                           |
| 11      | Suspension                            | – All-wheel independent suspension                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                           |
| 12      | Mobility & Cross country capabilities | <ul style="list-style-type: none"> <li>– Ground clearance: 300mm or better</li> <li>– Trench: 0.5m or better</li> <li>– Vertical obstacle: 0.4m or better</li> <li>– Angle of Approach / Departure: 35° / 30°</li> <li>– Slide slope: 20° or better</li> <li>– Fording: 0.8m or better without preparation and self recovery.</li> <li>– Power Steering</li> <li>– Capable of achieving speeds over 100 Kmph (0 to 80 Kmph in less than 30 seconds)</li> <li>– Fuel consumption: 4km/litre or better</li> <li>– Range of operation on road / Cross country: 500/300 km on integral fuel tanks</li> </ul> |                           |
| 13      | Brakes                                | <ul style="list-style-type: none"> <li>– Main Brake: Air over hydraulic with ABS preferred</li> <li>– Parking Brake: Sufficient enough to hold the vehicle with full payload on 25° or better</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                 |                           |
| 14      | Wheels                                | <ul style="list-style-type: none"> <li>– Tires: Pneumatic, radial tube-type with directed tread pattern preferred.</li> <li>– CTIS enabled with ECU</li> <li>– Run Flat system meeting FINABLE Standards.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                     |                           |
| 15      | Self recovery                         | – Electric Winch has to suitable fitted generating >4T pull having a rope length of 20m or better.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                           |
| 16      | Electronics / Surveillance            | – Fitted with sensor module mounted on a retractable mast/telescopic arm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                           |

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### *Annexure-1*

| Sl. No. | Technical parameter                 | OEM product specification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |                                     | <ul style="list-style-type: none"> <li>- The module should comprise a thermal imager and a day camera with min recognition ranges of 4.5/2.5 Km for vehicles/group of personnel</li> <li>- Module should be capable of full 360° Traverse and - 10 to +25° elevation</li> <li>- Space for carriage and facilitate functioning of an in-service Battle Field Surveillance Radar (BFSR).</li> <li>- Antennae mast to be provided for BFSR.</li> </ul>                                                                                                            |
| 17      | Navigation                          | <ul style="list-style-type: none"> <li>- Should be provided with GPS based inertial navigation system.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 18      | Communications                      | <ul style="list-style-type: none"> <li>- Capable of integrating min 02 Nos in-service radio sets with provision of antennae mounts.</li> <li>- Adequate lead length of 20 m to be provided for communication.</li> <li>- Intercommunication among the crew</li> </ul>                                                                                                                                                                                                                                                                                          |
| 19      | Electrical System                   | <ul style="list-style-type: none"> <li>- Single wire, 24V with battery ground cable attached to the vehicle body, 12 V transformer for maximum load of 20A</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                          |
| 20      | Power Management System and Cabling | <ul style="list-style-type: none"> <li>- Vehicle with engine idle should be capable of providing electrical power to all integral vehicle sub systems and on board systems.</li> <li>- With engine off – capable of providing continuous rechargeable power to all systems for min 02 Hours.</li> <li>- Equipped with generator set so configure to remain connected to vehicle when mounted and of adequate rating to run on-board systems when engine is switched off.</li> <li>- Easy mounting/dismounting for operation independent of vehicle.</li> </ul> |

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### Annexure-1

| Sl. No. | Technical parameter        | OEM product specification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 21      | Provisioning for firepower | <ul style="list-style-type: none"> <li>- Should have weapon mount integration</li> <li>- for one 12.7 mm Machine gun with min</li> <li>- 180° swivel / traverse (+90° to -90°) and elevation / depression of +30° -10°.</li> <li>- Weapon mount should have housing for an ammunition belt box of 75 to 100 rounds and stowage for not less than 1000 additional rounds of belted ammunition.</li> <li>- The gunner while firing to be protected from front.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                       |
| 22      | Other Systems              | <ul style="list-style-type: none"> <li>- Environmental Control: Provided with an environmental control unit to maintain an inside vehicle temp of 25± 5° while operating with hatches closed.</li> <li>- Towing/ Lifting Hooks – Adequate Nos to be provided.</li> <li>- Stowage/ Brackets/mountings – vehicle design to incorporate min 1500 litres of stowage space configured inside and outside the vehicle.</li> <li>- Adequate number of brackets and mountings to be provided both inside and outside for personal weapons of crew and other tools and accessories.</li> <li>- Crew shelter to be provided as an accessory.</li> <li>- 02 Fire Fighting bottles in the crew compartment.</li> <li>- First aid kit to be provided.</li> <li>- Camera for reversing should be integrated with the control and display system.</li> </ul> |
| 23      | Operation & Maintenance    | <ul style="list-style-type: none"> <li>- Modular in construction for ease of maintenance and replacement of assemblies in field.</li> <li>- Suitable spares, materials and</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

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## *Annexure-1*

| <b>Sl. No.</b> | <b>Technical parameter</b>                                                                                                                                                                                                                                                                            | <b>OEM product specification</b> |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
|                | accessories to be provided. <ul style="list-style-type: none"><li>- Testing and warning facilities should be built in.</li><li>- Emission norms and noise levels CMVR norms at delivery</li><li>- Environmental Conditions: Relevant JSS 55555</li><li>- EMI/ EMC Capability- Mil Std 461 E</li></ul> |                                  |
| 24             | Rough order of magnitude cost of the proposed product in USD                                                                                                                                                                                                                                          |                                  |



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### *Annexure-2*

#### **Compliance for Eligibility Criteria**

| <b>Sl No</b> | <b>Eligibility Criteria</b>                                                                                                                                                                                                                                                                                                                                                                           | <b>OEM response with supporting document / Certificates</b> |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| 1            | Should be a registered OEM with global reputation not placed on the restricted list by Indian MoD. Dealers/ distributors/ agents/ representatives need not respond to this Eoi.                                                                                                                                                                                                                       |                                                             |
| 2            | The OEM should have demonstrated / supplied the TSTC equipment to its own country's military or other reputed countries military and should have been accepted / in-service.                                                                                                                                                                                                                          |                                                             |
| 3            | Should have experience of more than 5 years in developing/customizing Armoured Vehicles for military applications.                                                                                                                                                                                                                                                                                    |                                                             |
| 4            | The OEM shall be willing to customize their proposed SAV equipment in BEML's plant in India meeting Customer requirement                                                                                                                                                                                                                                                                              |                                                             |
| 5            | The OEM shall be interested to localise the product to offer a very competitive price                                                                                                                                                                                                                                                                                                                 |                                                             |
| 6            | The OEM should be able to get the export clearance from its government for local production in BEML and supply of the equipment to Indian Customers.                                                                                                                                                                                                                                                  |                                                             |
| 7            | The OEM shall note that Indian Customer will be acquiring this equipment only through a competitive tender process. One equipment has to be offered to the Indian Customer for trial testing on No-Cost-No-Commitment (NC-NC) basis to prove the product in Indian Conditions. The firm shall be agreeable to offer one equipment with indigenous content (as per Tender conditions) along with BEML. |                                                             |
| 8            | BEML will have the exclusivity to market the product in India for military / Para Military and others customers and export on mutual consent for exports to friendly neighbouring countries.                                                                                                                                                                                                          |                                                             |
| 9            | The OEM shall be willing for co-branding / local branding of the product.                                                                                                                                                                                                                                                                                                                             |                                                             |
| 10           | Brief description on company profile covering below aspects with supporting documents:<br>1. Products profile.<br>2. Annual turnover of the company in the last 3 years.<br>3. Board of directors.<br>4. Head Quarters.                                                                                                                                                                               |                                                             |

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## *Annexure-2*

### **Compliance for Eligibility Criteria**

| <b>SI No</b> | <b>Eligibility Criteria</b>                        | <b>OEM response with supporting document / Certificates</b> |
|--------------|----------------------------------------------------|-------------------------------------------------------------|
|              | 5. Subsidiaries / JVs in India                     |                                                             |
|              | 6. Contact details of the Single Point of Contact. |                                                             |