

Expression of Interest for collaboration with BEML Limited for Development & Supply of Indian Variant of Wheeled Infantry Combat Vehicle (WhICV)

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) The Indian Army is planning to procure quantity of 198 no's Wheeled Infantry Combat Vehicle (WhICV) for Mechanised infantry Battalions in the next 4 years. BEML would be participating in this programme with its capability and capacity to localise in collaboration with potential partners.

B. Objectives of the Eoi:

To identify potential OEM with whom collaboration can be established for development of a customized Indian Variant, meeting Indigenous criteria of MoD procurement, in-house testing, participation in Users trials on No Cost No Commitment (NC-NC) basis and on Techno-commercial qualification, supply of full quantity of WhICV to Indian Army for deployment in R & Sp (Wh) Battalions and thereafter provide Warranty and after Sales support

Develop and market variants on this version for various customers in India and abroad.

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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](#).

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 for arms import by Indian MoD. Dealers/distributors/agents/representatives need not respond to this Eoi.
- b. The OEM should have demonstrated / supplied the WhICV equipment to its own country's military or other reputed countries military and should have been accepted / in-service or shortlisted.
- c. Should have demonstrable experience of more than 5 years in developing/customizing Armoured Combat Vehicles for military applications.
- d. The OEM shall be willing to customize their proposed WhICV 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 obtain the export clearance from its government for local production in BEML and supply of the equipment to Indian Customers.
- 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

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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 for 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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# Wheeled Infantry Combat Vehicle (WhICV)



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## Annexure-1

| <b>Product Specification</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                   |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>SI No</b>                 | <b>Technical parameter</b>                                                                                                                                                                                                                                                                                                                                                                                                        | <b>OEM product specification</b>                                                  |
| 1                            | Configuration: 8x8 Wheeled.                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                   |
| 2                            | Engine: Single unit diesel engine                                                                                                                                                                                                                                                                                                                                                                                                 | Specify Make, Model, Power rating, Torque rating, Emission Norms and accessories. |
| 3                            | Overall dimensions and aggregate specification                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                   |
| 3.1                          | Length: Less than or equal to 8.0 meters.                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                   |
| 3.2                          | Over all Height of the vehicle: Less than or equal to 3.0 meters including vision devices and ATGM Launcher.                                                                                                                                                                                                                                                                                                                      |                                                                                   |
| 3.3                          | Width: Less than or equal to 3.0 meters.                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                   |
| 3.4                          | Gross Vehicle Weight (GVW)                                                                                                                                                                                                                                                                                                                                                                                                        | Specify the Gross Vehicle Weight of the Product and payloads                      |
| 3.5                          | Ground Clearance: Not less than 400 mm with a maximum variation of 5% when fully laden.                                                                                                                                                                                                                                                                                                                                           |                                                                                   |
| 3.6                          | Transportability: Transportable by service aircraft (IL-76, C-130 & C-17) and in-service rail wagons (Bogie Open Military, Military Bogie Well Type).                                                                                                                                                                                                                                                                             |                                                                                   |
| 3.7                          | Power to Weight Ratio: minimum 25 hp/tonne (Better engine performance and a higher power to weight ratio is desirable).                                                                                                                                                                                                                                                                                                           |                                                                                   |
| 3.8                          | Carriage of crew: Crew of 4 persons.                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                   |
| 3.9                          | Speed: Road and Cross country with speeds up to >80Kmph & >30 Kmph respectively. Reverse speed >20 Kmph on road.                                                                                                                                                                                                                                                                                                                  |                                                                                   |
| 3.10                         | Obstacle Crossing <ul style="list-style-type: none"> <li>• Gradient: &gt; 30°</li> <li>• Side Slope: &gt; 20°</li> <li>• Vertical Step: Minimum 0.5 m</li> <li>• Trench Width: Minimum 1.8 m</li> <li>• Amphibious:                             <ul style="list-style-type: none"> <li>– Floatation speed &gt; 10 Km/Hour in static water.</li> <li>– Capability to negotiate Current speed up to 3 Knots.</li> </ul> </li> </ul> |                                                                                   |
| 3.11                         | Cruising Range: minimum 500 Km on road and 250 Km in                                                                                                                                                                                                                                                                                                                                                                              |                                                                                   |

# Wheeled Infantry Combat Vehicle (WhICV)



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## *Annexure-1*

### **Product Specification**

| <b>SI No</b> | <b>Technical parameter</b>                                                                                                                                                                                                                                                                           | <b>OEM product specification</b> |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
|              | cross country.                                                                                                                                                                                                                                                                                       |                                  |
| 3.12         | Transmission: Automatic Transmission with provision to select 8x8/8x4 internally from driver's cabin.                                                                                                                                                                                                |                                  |
| 3.13         | Suspension: Independent suspension for all wheels.                                                                                                                                                                                                                                                   |                                  |
| 3.14         | Steering: Power steering with front 4 wheels steerable.                                                                                                                                                                                                                                              |                                  |
| 3.15         | Braking System: Dual Fail safe brake system.                                                                                                                                                                                                                                                         |                                  |
| 3.16         | Tyres: All terrain suitable tyres with 'Run Flat' and 'Central Tyre Inflation System'.                                                                                                                                                                                                               |                                  |
| 3.17         | Self Recovery: Independent self-recovery Mechanism with motor assisted winch must be provided (capable of self-wincing from a minimum dist of 15m).                                                                                                                                                  |                                  |
| 4            | <b>Armament</b>                                                                                                                                                                                                                                                                                      |                                  |
| 4.1          | Two twin Ir ATGM with capability of fire and forget, tandem warhead to achieve a min penetration of 650mm of RHA beyond ERA day & night firing capability, hit probability of more than 90%, minimum achievable range not more than 500m and maximum range not less than 4 km in direct firing mode. |                                  |
| 4.2          | In top attack mode, the minimum achievable range not more than 1100m and maximum range not less than 4 km.                                                                                                                                                                                           |                                  |
| 4.3          | Provision of a man portable ground ATGM launcher in addition to the vehicle mounted ATGM, capable of firing same ATGM as mounted on the WhICV. Provision of a portable launcher to fire same missile by dismounted troops.                                                                           |                                  |
| 4.4          | Provision to be made for internal stowage of eight additional missiles                                                                                                                                                                                                                               |                                  |
| 4.5          | Main Gun & Secondary Armament. 30mm Cannon with 7.62mm Coaxial Machine Gun (both weapons should be capable of firing in service ammunition). (Remote Controlled Weapon Station is desirable). Internal Stowage of 500 rounds of 30 mm ammunition & 2000 rounds of 7.62 mm ammunition                 |                                  |
| 4.6          | Provision of Six tubes of Smoke Grenade Discharger, Three each on both sides of the Turret. Capable of firing in-service 81MM Smoke Grenades.                                                                                                                                                        |                                  |
| 5            | <b>Protection</b>                                                                                                                                                                                                                                                                                    |                                  |

# Wheeled Infantry Combat Vehicle (WhICV)



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*Annexure-1*

## Product Specification

| SI No | Technical parameter                                                                                                                                                                                                                                                                    | OEM product specification |
|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| 5.1   | Sides & Top: STANAG Level II Ballistic (Additional protection of STANAG III in the frontal arc and sides of WhICV by means of removable armour panels).                                                                                                                                |                           |
| 5.2   | Wind Screen & Glasses: STANAG Level II.                                                                                                                                                                                                                                                |                           |
| 5.3   | Belly: STANAG Level II B Blast.                                                                                                                                                                                                                                                        |                           |
| 5.4   | CBRN: Capable of detection of all types of CBRN contamination and protection of the crew.                                                                                                                                                                                              |                           |
| 5.5   | Active Protection System : An integral Active & Passive Protection System to effectively counter attacks from ATGM, Rocket Propelled Grenades and KE ammunition should be provided                                                                                                     |                           |
| 5.6   | Provision of a Laser Detection and Warning System capable of suitably activating the smoke grenades to counter incoming laser. The system should also provide audio visual warning to the Commander and Gunner.                                                                        |                           |
| 6     | <b>Night Enablement:</b> should have following Day night sights (TI / Dual Technology).                                                                                                                                                                                                |                           |
| 6.1   | Driver vision: Front Sight to have a Min Detection range of 500m by day & night with a LCD/ LED unit for display in the Driver cabin. Display of rear view with a detection range of 50 m both by day & night.                                                                         |                           |
| 6.2   | Gunner vision: Fully stabilised day & night TI sight integrated with FCS, GCE & Automatic Target Tracker. Minimum ranges achieved Detection: 8 km, Recognition: 05 km & Identification: 4 Km for T 72 Tank targets in frontal profile.                                                 |                           |
| 6.3   | Commander vision: Should be an independent combined Day & Ni TI Fully Stabilised Panoramic Sight integrated with FCS, GCE & Automatic Target Tracker. Minimum ranges achieved Detection: 8 km, Recognition: 05 km & Identification: 4 Km for T 72 Tank Target in Frontal Profile.      |                           |
| 7     | Gun Control Equipment: <ul style="list-style-type: none"> <li>– Fully integrated with the fire control and sighting system to permit firing of all weapon systems of the WhICV (R &amp; Sp) including the ATGM.</li> <li>– Provide full over ride control to the commander.</li> </ul> |                           |
| 8     | Fire Control System: Fully integrated with all weapon and sighting systems the fire control system should have the following capabilities. <ol style="list-style-type: none"> <li>I. Automatic Target Tracker integrated with the ATGM &amp;</li> </ol>                                |                           |

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**Annexure-1**

## **Product Specification**

| <b>SI No</b> | <b>Technical parameter</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>OEM product specification</b> |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
|              | <p>Main Gun.</p> <p>II. Laser range finder with a max range of 10 Km.</p> <p>III. Inputs of the FCS should be integrated into the sight display unit panel for both gunner &amp; commander.</p>                                                                                                                                                                                                                                                                                                         |                                  |
| 9            | <p>Communications: Each WhICV should be fitted with up to three in-service radio equipment</p> <p>I. Digital control harness (DCH) to connect the crew, tactical and section commanders. It should be based on military grade OFC.</p> <p>II. The crew to be provided with a suitable headgear/helmet mounted cordless communication system with range up to 500 meters from the WhICV.</p> <p>III. Provided with one Hand Held VHF radio set of at least 800m range compatible radio set of WhICV.</p> |                                  |
| 10           | <p>Navigation: Satellite and Inertial Navigation System with an accuracy of <math>\pm 10\text{m}</math> in Satellite Mode and <math>\pm 1\%</math> of distance travelled in Inertial Navigation mode. Navigation system should function with the IRNS (Indian Regional Navigation System) (AS AND WHEN INTRODUCED) and be compatible to the DSM (Defence Series Maps).</p>                                                                                                                              |                                  |
| 11           | <p>Power backup: Capable of supplying power for working of all on board systems, when engine is switched off for minimum 6 hrs (without temperature control system working)</p>                                                                                                                                                                                                                                                                                                                         |                                  |
| 12           | <p>Fire Fighting System: WhICV should have an inbuilt fire detection and suppression system capable of controlling all types of fires in the equipment.</p>                                                                                                                                                                                                                                                                                                                                             |                                  |
| 13           | <p>Temperature Control System: The vehicle should be equipped with a temperature control system capable of maintaining an inside vehicle temperature of <math>24^{\circ}\text{C} + 4^{\circ}</math>.</p>                                                                                                                                                                                                                                                                                                |                                  |
| 14           | <p>Entry / Exit for Crew:</p> <p>I. WhICV should have individual hatches for commander gunner &amp; driver.</p> <p>II. Top hatches with appropriate manual system for loading of ATGM on to the launcher by one single person while standing.</p> <p>III. WhICV should have a power assisted ramp in the rear for entry, exit by the crew and loading of ammunition.</p>                                                                                                                                |                                  |
| 15           | <p>Stowage: In addition to specified ammunition and individual battle loads, adjustable modular racks for internal stowage</p>                                                                                                                                                                                                                                                                                                                                                                          |                                  |

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### *Annexure-1*

#### **Product Specification**

| <b>SI No</b> | <b>Technical parameter</b>                                                                                                                                                                       | <b>OEM product specification</b> |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
|              | must be provided.                                                                                                                                                                                |                                  |
| 16           | Water Storage: Not less than 200 litres of drinking water storage capacity.                                                                                                                      |                                  |
| 17           | Camouflage: Anti IR Camouflage Paint.                                                                                                                                                            |                                  |
| 18           | Smoke Generation: The vehicle should have the capability to produce engine generated smoke by an integral system for preventing detection by observation.                                        |                                  |
| 19           | EMI/EMC Compatibility: The vehicle should be compliant to:-<br>I. The entire vehicle system should be Military Standard 464C compliant.<br>II. EMI/EMC compliance as per Military Standard 461E. |                                  |
| 20           | Service Life of Vehicle and Engine:<br>I. Vehicle service life of 32 yrs.<br>II. Engine service life of 1000 hrs.                                                                                |                                  |
| 21           | Operating temperature of the vehicle: minimum 0° to +05°C and maximum 40° to 45° C.                                                                                                              |                                  |
| 22           | Rough Order of Magnitude (ROM) cost of the 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 for arms import by Indian MoD. Dealers/distributors/agents/representatives need not respond to this EoI.                                                                                                                                                                                                          |                                                             |
| 2            | The OEM should have demonstrated / supplied the WhICV equipment to its own country's military or other reputed countries military and should have been accepted / in-service or shortlisted.                                                                                                                                                                                                          |                                                             |
| 3            | Should have demonstrable experience of more than 5 years in developing/customizing Armoured Combat Vehicles for military applications.                                                                                                                                                                                                                                                                |                                                             |
| 4            | The OEM shall be willing to customize their proposed WhICV 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 obtain 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.                                                                                                                                                                                                                                                                                                                             |                                                             |

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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> |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| 10           | <p>Brief description on company profile covering below aspects with supporting documents:</p> <ol style="list-style-type: none"><li>1. Products profile.</li><li>2. Annual turnover of the company in the last 3 years.</li><li>3. Board of directors.</li><li>4. Head Quarters.</li><li>5. Subsidiaries / JVs in India</li><li>6. Contact details of the Single Point of Contact.</li></ol> |                                                             |