

**M/s. BEML LIMITED,
BEML SOUDHA,
SAMPANGIRAMNAGAR,
BENGALURU - 560002**

**Invitation for Expression of Interest (Eoi)
for Joint Venture or Teaming Agreement with BEML
for
Development, manufacturing Autonomous and Artificial
Intelligence (AI) enabled ground equipment,
Unmanned Ground Vehicle (UGV)**

Reference No	: GMBD(Def)/UGV/EOI/2023/03 dated 10 th April 2023
Due closing date	: 10 th May 2023, Time : 17 : 00 Hrs
Eoi response mail ID	: bemleoi@beml.co.in
Contact for	: Mr. N. Ramesh
Clarifications	: General Manager – Business Development (Defence) gmbd@beml.co.in +91 7760999807

Issued by
M/s. BEML, Limited
(Under Ministry of Defence)

1.0 INTRODUCTION:

BEML Limited is a leading multi-technology and multi-location company under the Ministry of Defence operating its business in three verticals viz., Defence & Aerospace, Mining & Construction and Rail & Metro. It offers high-quality products for diverse sectors of economy such as Defence, aviation, coal, mining, steel, limestone, power, irrigation, construction, road building, metro & railways. It has emerged as the forerunner of heavy engineering industry with a track record of growth and revenues for over five decades. For further details please visit our website www.bemlindia.in

2.0 Brief Description

Indian Army presently does not have any ground vehicle to undertake unmanned autonomous capturing of intelligence, delivery of loads/ casualty evacuation & effectively used for surveillance, border patrolling, anti-riots platform, urban warfare and for mounting various types of gun systems. For surveillance of enemy, the Armoured and Mechanised Infantry units currently employ vehicle based Doppler Radars and handheld TI sights manned by 3 to 4 personnel. Being vehicle based and large size/ silhouette, these are easily detected by enemy or are forced to be deployed at standoff distances. Even for casualty evacuation and immediate replenishment of ammunition/ fuel to individual AFVs. Hence, a custom made unmanned tracked/ wheeled agnostic vehicle with capabilities as per the specifications as mentioned below is required to be procured by Indian Army.

3.0 Objectives of the EoI:

To identify global potential partners/OEMs with whom collaboration can be established for Development, manufacturing Autonomous and Artificial Intelligence (AI) enabled ground equipment, Unmanned Ground Vehicle (UGV)

4.0 Specification:

1. The Autonomous Platform/vehicle (UGV) should be designed to operate in a diverse spectrum of environments with fully amphibious capability. UGV should incorporate pure functionality with security and reliability to support and protect personnel.
2. The UGV be equipped with the ability to traverse different terrains. The UGV should be capable to be teleoperated or used autonomously via pre-planned paths and configured with wheels or tracks for the relevant operational needs.
3. It should operate in all types of terrain including Desert, mountains, marshy and rocky areas.
4. The Autonomous system architecture should be using an IP-based vehicle network. This allows for ease of integration with any IP-based communication, such as line of sight (LOS) IP Mesh Radio, 4G connection, or Satellite communication. Furthermore, it allows the client to bond multiple communication links to improve bandwidth and add redundancy.

5. It UGV should be versatile platform capable of performing the following battlefield tasks:-
 - Intelligence – The UGV be capable for use as a method for collecting, organizing, and processing battlefield intelligence, to assist in the forward planning decision making process.
 - Border Surveillance - Capable of carrying out surveillance tasks.
 - Target Acquisition - The UGV should be capable of detecting and identifying potential target's location, in sufficient detail, to permit the effective employment of lethal and non-lethal means.
 - Reconnaissance – The UGV can scout, explore and survey hard to reach areas autonomously, to obtain information about enemy forces, terrain, and other hostile activities.
 - Route Clearance - The UGV can be utilized to clear potentially hazardous routes, set to follow or lead troops and convoys, used in zonal protection and set to autonomously patrol for visual observation and threat detection.
 - Lethal Force – The UGV can be fitted with a Remote weapon station to provide attack support if required.
 - Anti-Drone – The UGV should be capable to be fitted with Anti Drone systems to prevent drone surveillance and attacks.
 - Last Mile Logistics – Capable of Load carrying for resupply, replenishment and med-evac support.
6. The UGV should be capable of being fitted with a wide variety of payloads that are beneficial for border surveillance, anti-drone protection, reconnaissance, soldier support, convoy support, armed support, Anti- mining operations.
7. The UGV should be capable of providing an integrated solution for an existing Command and Control Centre which can control multiple UGV's simultaneously. It should also offer the portable Zeus Pro GCS. The Zeus Pro is a mobile multi-functional GCS that is easily customized and mobilized.

5.0 Presentations on proposed Solution/ Methodology

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

6.0 Eligibility Criteria:

Sl. No. 4, Specification, all the clauses are the mandatory conditions to be fulfilled by the firm with their response with supporting documents were ever necessary while responding to the EoI.

Also, the firm shall provide an undertaking on the company letterhead that they are ready to share complete technical details including software, hardware and engineering details to BEML Ltd for ensuring seamless support to customers. Further firm also shall provide continuous

support to BEML LTD and its customers for the period of minimum 10 years (*i.e Capability to furnish Bank guarantees*), service and spares support for countries under export market.

7.0 General Guidelines:

The following details also to be submitted along with EOI

- a) Company profile, giving details of current activities and management / personnel structure including evidence of incorporation.
- b) Highlight the infrastructure available / modalities to take up the project.
- c) Any other relevant information considered necessary for successful implementation of the proposed scope of work.

8.0 EMERGING OPPORTUNITIES

- For Combat role – 351 nos (Approx.)
- Logistic support – 351 nos (Approx.)
- Export Market

9.0 BENEFITS OF PARTNERING WITH BEML

BEML Ltd has an extensive marketing network and service centers. BEML has good manufacturing, testing and strong R&D working on upgradation, technology observation, emission, certification, indigenisation and manufacture, supply of High Mobility Vehicles for defence application.

10.0 SUBMISSION OF THE EOI

The EOI response to be submitted online through BEML E-mail: bemleoi@beml.co.in, stating compliance to each point, along with the enclosures to be forwarded by interested reputed firms, super scribing " ***Expression of Interest (Eoi) For Joint Venture or Teaming Agreement with BEML for Development, manufacturing Autonomous and Artificial Intelligence (AI) enabled ground equipment, Unmanned Ground Vehicle (UGV)***"

For any Technical Clarifications, Contact

Mr. N. Ramesh

General Manager – Business Development (Defence)

gmbd@beml.co.in

Eoi closing date : 10th May 2023

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