

**M/s. BEML LIMITED,
BEML SOUDHA,
23/1,4th Main
SAMPANGIRAMA NAGAR,
BENGALURU - 560002
Notice for Inviting
Expression of Interest (Eol)
for Technology tie-up
For**

**Futuristic Infantry Combat Vehicle {FICV(Tracked)} Gun
Version for Indian Army**

Reference No: NBDD(Def)/FICV/2024

Due closing date: 10.04.2024 (10th April 2024)

Eol response mail ID: bemleoi@bemltd.in

**Contact for
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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.,

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 -

Sl.No.	Description	Date
01	Issue of Eol Document	26.02.2024
02	Last date of Submission of Eol response	10.04.2024 (10th April 2024)

B. Contact Details related to Eol

Chief of Vendor Development Cell

23/1, 4th Main SR Nagar

BEML Soudha

BEML Ltd.,

Bangalore-560027

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SECTION-3
About BEML LTD.,

BEML Limited (formerly Bharat Earth Movers Limited) was established in May 1964 as a Public Sector Undertaking for manufacture of Rail Coaches & Spare Parts and Mining Equipment at its Bangalore Complex. The Company operates under three major Business verticals viz., Mining & Construction, Defence and Rail & Metro. The three verticals are serviced by nine manufacturing units located at Bangalore, Kolar Gold Fields (KGF), Mysore, Palakkad. The products manufactured under the three Business Verticals are mentioned below.

DEFENCE & AEROSPACE	MINING & CONSTRUCTION	RAIL & METRO
Tatra based High Mobility Trucks	Bull Dozers	Integral Rail Coaches
Recovery Vehicles	Excavators	Metro Cars
Bridge Systems	Loaders	AC EMUs
Vehicles for Missile Projects	Pipe Layers	OHE Cars
Tank Transportation Trailers	Wheeled Dozers	Steel and Aluminium Wagons
Milrail Wagons	Tyre Handlers	Track Laying Equipment
Mine Ploughs	Shovels	Utility Vehicles
Crash Fire Tenders	Dumpers	Treasury Vans
Snow Cutters	Water Sprinklers	Spoil Disposal Units
Aircraft Towing tractors	Motor Graders	Broad gauge Rail bus
Aircraft Weapon Loading Trolley	Underground Mining Equipment	

More details about the entire range of BEML's products and operations can be viewed by visiting our web site www.bemlindia.in

SECTION-4

Details of Expression of Interest (Eol)

4.1 Introduction:

This Expression of Interest (Eol) seeks response from the Prospective Technology Collaborator(s), who are willing to be associated with BEML Ltd., through a license & technology collaboration agreement for joint development of Futuristic Infantry Combat Vehicle (Tracked) Gun Version 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 Futuristic Infantry Combat Vehicle (Tracked) Gun Version 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) for Technology Collaboration Agreement (TCA) for joint development of Futuristic Infantry Combat Vehicle (Tracked) Gun Version for Indian Army. The TCA shall enable BEML Ltd., to Design, Engineer, Manufacture, Assemble, Test, Supply, Field Install, Commission, Repair, Service and Retrofit Futuristic Infantry Combat Vehicle (Tracked) Gun Version for Indian Army. Interested Parties meeting the PQR requirement 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 Technology Collaboration Agreement (TCA) shall be held with shortlisted Prospective Collaborator(s). The detailed

terms and conditions for such a paid-up license agreement 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 combat 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 combat 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 Futuristic Infantry Combat Vehicle (Tracked) Gun Version for Indian Army 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 26.03.2024 (26th March 2024)

Annexure-1: Indicative Scope of Technology Transfer

Annexure-2: Prospective Collaborator's Experience in the field of Futuristic Infantry Combat Vehicle (Tracked) Gun Version for Indian Army

Annexure-3: General technical specifications of Futuristic Infantry Combat Vehicle (Tracked) Gun Version for Indian Army proposed for TCA

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

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.

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.

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 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 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

4.5 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.

4.6 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.

Annexure-1

Indicative Scope of Technology Transfer

Sl.No.	Description
(a)	Licensing & transfer of state of the art technology relating to Design, Engineer, manufacture, Assemble, Test, Supply, Field Install, Commission, Repair, Service and Retrofit Futuristic Infantry Combat Vehicle (Tracked) Gun Version for Indian Army.
(b)	Transfer of improvements/modifications/developments/up gradations 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. 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 Futuristic Infantry Combat Vehicle (Tracked) Gun Version 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 Futuristic Infantry Combat Vehicle (Tracked) Gun Version for Indian Army.
(k)	Manufacturing 2D drawings of all the developed components are to be prepared. 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.,

Annexure-2

**Prospective Collaborator's Experience in the field of Futuristic Infantry Combat Vehicle
(Tracked) un Version 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 Futuristic Infantry Combat Vehicle (Tracked) Gun Version for Indian Army or similar Combat Vehicle.	
(b)	Whether documentary evidence to substantiate the below PQRs has been submitted by Prospective Collaborator:	
	<p>The Prospective Collaborator should have designed, engineered, manufactured, tested, supplied and commissioned similar combat 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.</p> <p>OR</p> <p>The Prospective Collaborator should have designed similar combat 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 EoI.</p>	
(c)	Whether information on market share has been enclosed.	
(d)	Whether Prospective Collaborator's detailed reference list have been enclosed.	
(e)	Whether Prospective Collaborator's annual audited financial reports for last 3 years have been enclosed.	
(f)	Whether the Futuristic Infantry Combat Vehicle (Tracked) Gun Version for Indian Army or similar Combat Vehicle offered for technology collaboration is the latest being marketed by the Prospective Collaborator.	
(g)	Whether customers (end users) letters / documentary evidence for satisfactory operation of model for Futuristic Infantry Combat Vehicle (Tracked) Gun Version for Indian Army which is being offered to BEML Ltd.,under this EoI have been enclosed.	

(h)	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.	
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Signature & Seal:

Authorised Signatory of the Prospective Collaborator

Annexure-3

General technical specifications of Futuristic Infantry Combat Vehicle (Tracked)

Gun Version for Indian Army proposed for TCA

Operating Temperature	<p>(a) Plain and Desert Terrain</p> <ul style="list-style-type: none"> ○ Minimum Operating Temperature: Between 0° to 05° Celsius ○ Maximum Operating Temperature: Between 40° to 45° Celsius. <p>(b) High Altitude & Mountain Terrain</p> <ul style="list-style-type: none"> ○ Minimum Operating Temperature: Between (-)20° to (-)10° Celsius. ○ Maximum Operating Temperature: up to 40° Celsius
Weight	≤ 25 Ton with Combat Load
Power to Weight Ratio	30 HP/Ton
Chassis	Tracked (Steel based tracks fused with rubber/ synthetic pads / bands for driving on tarmac roads)
Amphibious/Floatation capability	Hydro-jet type propulsion system to be provided.
Crew + Infantry Stick	03 + 08 members
Turret	<p>(a) 360° Traverse unlimited times in both directions preferably crewless. Option should be available for manned turret operation.</p> <p>(b) Integrate Main Gun, Co-axial Machine Gun, Anti-Tank Guided Missile, Remote Controlled Weapon Station and Sighting Systems</p>
Main Gun	<p>(a) Calibre ≥ 30 mm with co-axial Machine Gun ≥ 7.62 mm calibre</p> <p>(b) Automatic cannon with at least two-axis stabilisation on turret of FICV(Tr) and capable of single shot and burst firing</p> <p>(c) Max Elevation: at least 60°, Max Depression: at least 05° from level position</p> <p>(d) Type of Ammunition</p> <ul style="list-style-type: none"> ○ Armour Piercing Fin Stabilised Discarding Sabot with Tracer (APFSDS-T) ○ High Explosive Fragmentation Tracer with Impact Fuze (HEF-T) with self-destruct system ○ Target Practice with Tracer (TP-T) for APFSDS-T ammunition <p>(e) Maximum Range of Aimed Fire</p> <ul style="list-style-type: none"> ○ APFSDS-T: 2000m ○ HEF-T: 4000m
Firing Mode of Main Gun	<p>(a) Single Shot: 01 round with every press of trigger</p> <p>(b) Burst Fire: 03 rounds on one continuous press of trigger</p> <p>(c) Rapid Fire: At least 200 rounds per minute, Max of 40-60 rounds to be fired in one continuous press of trigger</p> <p>(d) Dual Fire Mode: In case of failure of main electric circuit, alternate means of firing should be provided to crew to fire in above three modes</p>

<p>Hit Probability of Main Gun</p>	<p>(a) APFSDS-T: At least 80% in Single Shot mode when fired at ranges between 1000m and 2000 m including when Target or Futuristic Infantry Combat Vehicle (Tracked) is moving laterally at a speed of at least 05 km/Hr.</p> <p>(b) HEF-T: At least 50% in Single Shot mode when fired at ranges between 2000m and 4000 m including when Target or FICV(Tr) is moving laterally at a speed of at least 05 km/Hr.</p>
<p>Anti-tank Guided Missile (ATGM) Launcher</p>	<p>(a) 02 Launchers with 04 reserve Anti-Tank Guided Missile (ATGM)</p> <p>(b) ATGM system to be integrated on turret</p> <p>(c) ATGM Capability: 'Lock-on-Before Launch' with 'Direct' & 'Top-Attack'</p> <p>(d) Hit Probability of ATGM at least 90%</p> <p>(e) Maximum Range of ATGM: not less than 4000 m</p> <p>(f) Minimum Range of ATGM: not more than 500 m</p> <p>(g) Minimum range of Top-attack of ATGM: not more than 1100m</p> <p>(h) Rate of Fire of ATGM: Gunner / Commander to be able to launch second ATGM within 15 seconds of firing first ATGM in same Field of View</p>
	<p>(a) 12.7 mm Machine Gun on Remote Control Weapon Station</p> <p>(b) At least two-axis stabilised RCWS mounted on turret of Futuristic Infantry Combat Vehicle (Tracked)</p> <p>(c) 360° unlimited traverse in both directions, independent from Main Gun</p> <p>(d) Max Elevation: at least 60°, Max Depression: Aimed fire up to at least 50 meters from Futuristic Infantry Combat Vehicle (Tracked)</p>
<p>Communication</p>	<p>02 x Radio Sets</p>
	<p>(a) On-board Auxiliary Power Unit</p> <p>(b) Based on Diesel (fuel may be drawn from vehicle), Fuel-Cell technology or Battery (battery may be charged from vehicle electric system)</p>
<p>Armour Protection</p>	<p>Any type / combination of armour / composite material to provide following protection: -</p> <p>(a) Frontal 120° Arc: Ballistic protection against at least 14.5 mm in service ammunition fired from 200 meters</p> <p>(b) Sides and Rear: Ballistic protection against at least 7.62 mm PKT in service AP ammunition fired from 30 meters</p> <p>(c) Top: Ballistic protection against at least 7.62 mm in-service rifle ammunition fired from 30 meters</p> <p>(d) Belly: Blast protection against at least 06 Kg explosive under center</p> <p>(e) Under Tracks: Blast protection against at least 08 Kg explosive under track</p> <p>(f) Provision for fitting add-on panels for additional protection</p>

Situational awareness System	An electro-optic based distributed system integrated to Fire Control System to provide day & night 360° vision around Futuristic Infantry Combat Vehicle (Tracked) under closed hatches to Commander, Driver and Stick Compartment independently.
Fire Control System (FCS)	(a) Computer based Fire Control System (b) Integrate all Armaments, Sights, Remote Control Weapon Station, Laser Range Finders, Ballistic Computer, Ballistic Data of all ammunition, Automatic Target Tracker (ATT), Control Units for Anti-Tank Guided Missile, Gun Control Equipment, Armament Stabilisers, Meteorological Sensors, Vehicle parameters including speed, Navigation System, Situational Awareness System, Communication System, Laser Warning & Protection System (LWPS) and Active Protection System (APS) and display analysed / intelligent data on Visual Display Units
Gun Control Equipment (GCE)	(a) Electro-mechanical / electro-hydraulic powered Gun Control Equipment with manual back-up (b) Integrated with Fire Control System, Sights and Visual Display Units (c) Independent control device to both gunner and commander (d) Common Firing switch/ button for all armaments to be integrated on control device (e) Commander control device to have additional switch/buttons for operation of Remote-Control Weapon Station and Over-ride Control
	(a) Protection against incoming Direct & Top-Attack ATGMs, Drones, LM and Rocket Propelled Grenades. (b) All round (360°) including Top-Attack (hemispherical) protection.
Sighting Systems	(a) Electronic Sights (b) Military Grade sights and Display Units. (c) Water and dust proof Protection (d) De-fogging and self-cleaning system
Product Support/Service life	At least 32 years with no comprehensive/ complete overhaul interventions at vehicle level in first 16 years / 4000 km whichever is earlier.

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 Futuristic Infantry Combat Vehicle (Tracked) Gun Version for Indian Army or similar Combat Infantry Vehicle was supplied	No. of unit supplied	Year of Supply

Note :

Submission of the EOI

The Eol shall be submitted **before 17:00 hours of 10.04.2024** through email only mentioning Eol reference : NBDD(Def)/FICV/2024 in e mail Subject **bemleoi@bemltd.in**

Technical queries if any, may be forwarded to **madhusudhan.bh@bemltd.in** with cc to **bemleoi@bemltd.in**
Contact Ph: 7406897591