

**M/s. BEML LIMITED,
BEML SOUDHA,
23/1, 4th Main
SAMPANGIRAMA NAGAR,
BENGALURU - 560002
Notice for Inviting
Expression of Interest (Eoi)
for Technology tie-up
For
Active Protection System for T-90 S/SK Tanks for
Ministry of Defence**

Reference No: CTPAM/Eoi/FPIIC/APS/2025/501

Due closing date: 20.05.2025

Eoi response mail ID: bemleoi@bemltd.in

**Contact for
Clarifications:** Mr. Madhusudhan BH,
General Manager(O)-R&D
FPIIC, Bangalore Complex, BEML Ltd.,
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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	01.05.2025
02	Last date of Submission of Eol response	20.05.2025

B. Contact Details related to Eol

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

C. In case any amendment/corrigendum to this Eol is issued, it shall be notified only at www.bemlindia.in which shall form part of this Eol

Note:

Submission of the Eol

The Eol shall be submitted before 20.05.2025 through email only mentioning

Eol reference: CTPAM/Eol/FPIIC/APS/2025/501 dtd 01.05.2025 in Subject to

bemleoi@bemltd.in

Queries if any, may be forwarded to

madhusudhan.bh@bemltd.in and bemleoi@bemltd.in

SECTION-3

About BEML LTD.

- a) BEML Limited (formerly Bharat Earth Movers Limited), a Schedule 'A' company under the Ministry of Defence (MoD), Government of India was established in the year 1964. BEML is a listed company at NSC, wherein Government of India is holding 54% of its equity & having a state-of-the art, well established and dedicated Research & Development, Product Design, Manufacturing Facilities, Assembly Shops for Equipment and Aggregates, Testing facilities etc. The Company is backed with a strong and well experienced skilled manpower in the areas of Defence & Aerospace, Mining & Construction and Rail & Metro equipment.
- b) BEML has three business verticals viz., Defence & Aerospace, Rail & Metro and Mining & Construction which are classified into 12 SBU's & 2 Micro SBU's, with four manufacturing complexes located at Bengaluru, Kolar Gold Fields (KGF), Mysuru and Palakkad. All the manufacturing divisions of BEML have been accredited with ISO 9001 – 2015 and ISO 14001 (HSC) certification. Apart from this, BEML has its own world-class composite R&D establishment for Design & Development of products.
- c) The Company is backed by a strong and well established after Sales & Service network right at the Customers' sites, spread across the length and breadth of India. Marketing Network includes dedicated ware houses at various places and Service Centre facility at strategic locations for extending efficient and quick support to customers. In addition, BEML has a well-established and exclusive International Business Division to cater for export business and has a sizeable market share in export markets with exports to 72 countries across the globe. Over the years this division has exported over 1300 machines covering all the three verticals. More details about BEML's profile and its entire range of product portfolio 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 Active Protection System for T-90 S/SK Tanks for Ministry of Defence 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 Active Protection System for T-90 S/SK Tanks under Buy (Indian-IDDM) Category of Chapter II of Defence Acquisition Procedure (DAP) 2020. Buy (Indian)-IDDM 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 Active Protection System for T-90 S/SK Tanks for Ministry of Defence. The TCA shall enable BEML Ltd., to Design, Engineer, Manufacture, Assemble, Test, Supply, Field Install, Commission, Repair, Service and Retrofit Active Protection System for T-90 S/SK Tanks for Ministry of Defence. 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 Active Protection System (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 Active Protection System (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 Active Protection System for T-90 S/SK Tanks for Ministry of Defence 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 **20.05.2025**

Annexure-1: Indicative Scope of Technology Transfer

Annexure-2: Prospective Collaborator's Experience in the field of Active Protection System for T-90 S/SK Tanks for Ministry of Defence

Annexure-3: General technical specifications of Active Protection System for T-90 S/SK Tanks for Ministry of Defence proposed for TCA

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

Annexure-5: EoI response format.

Annexure-6: Certificate as to Authorized Signatories.

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

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

4.4.2 The response shall necessarily be accompanied with following details:

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

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

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

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

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

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

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

4.4.9 BEML Ltd., shall receive applications pursuant to this Eol in accordance with the terms set forth herein, as 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 which shall form part of this Eol

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

- a) Interested Prospective Collaborator from a country which shares a land border with India will be eligible to respond to this Eol only if interested Prospective Collaborator is registered with Competent Authority (Registration Committee constituted by the Department of Promotion of Internal Trade (DPIIT) of Govt. of India). Such registration should be at least valid for the entire period of Eol due date or any extension thereof.
- b) Interested Prospective Collaborator from a country which shares a land border with India means: a) An entity incorporated, established or registered in such country; or b) A subsidiary of an entity incorporated, established or registered in such country; or c) An entity substantially controlled through

entities incorporated, established or registered in such country; or d) An entity whose beneficial owner is situated in such a country; or e) An Indian (or other) agent of such an entity; or f) A natural person who is a citizen of such a country; or g) A consortium or joint venture where any member of the consortium or joint venture falls under any of the above.

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

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

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

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

4.6 PROCESS TO BE CONFIDENTIAL:

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

4.7 GOVERNING LAWS & JURISDICTION:

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

Annexure-1

Indicative Scope of Technology Transfer

Sl. No.	Description
(a)	Licensing and transfer of state-of-the-art technology relating to Design, Engineer, Manufacture, Assemble, Test, Supply, Field Install, Commission, Repair, Service and Retrofit Active Protection System for T-90 S/SK Tanks for Ministry of Defence.
(b)	Transfer of improvements / modifications / developments / upgradations to be carried out by the Prospective Collaborator(s) during the period of TCA for taking care of new market requirements and obsolescence. Subsequent updates required due to component obsolescence or updates implemented by Prospective Collaborator(s) due to safety consideration would also be provided.
(c)	Assistance in planning & establishing the new manufacturing, assembly and testing facilities & processes / suitable augmentation at BEML Ltd.'s existing facilities / processes by way of expert advice in terms of identifying, sizing & selection and preparation of specification of equipment / machinery required for manufacturing, their layout and foundation etc. 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 Active Protection System for T-90 S/SK Tanks for Ministry of Defence.
(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 Active Protection System for T-90 S/SK Tanks for Ministry of Defence.
(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 Active Protection System
for T-90 S/SK Tanks for Ministry of Defence**

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 Active Protection System for T-90 S/SK Tanks for Ministry of Defence or similar protection system.	
(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 active protection system (broad technical specifications at Annexure-3) and such equipment should have completed at least three (03) years of service as on date of closing of this Eol.</p> <p align="center">OR</p> <p>The Prospective Collaborator should have designed similar Active Protection System (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 Eol.</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 Active Protection System for T-90 S/SK Tanks for Ministry of Defence or similar Active Protection System 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 Active Protection System for T-90 S/SK Tanks for Ministry of Defence 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.	

Signature & Seal:

Authorised Signatory of the Prospective Collaborator

Annexure-3

**General technical specifications of Active Protection System for T-90 S/SK
Tanks for Ministry of Defence proposed for TCA**

S. No.	Specification/Parameter
1	Detection
(i)	Specify the size and ranges of UAS which the APS can be able to detect all type of UAS including First person View (FPV) drones, Swarm drones, Loitering UAVs, Kamikaze drones.
(ii)	Specify the type of sensors (Passive or Active) and their technical description (type of technology used, accuracy, form factor, weight, material used etc.) utilized for detection of incoming threat in terms of UAS and anti-tank projectiles.
(iii)	Describe the minimum and maximum velocity of threats which can be detected by the system.
(iv)	Specify the methodology of APS providing warning (audio/ visual) on being lased or on being engaged by a hostile platform.
(v)	Specify if the detection of threat will be continuous in the specified Azimuth or elevation or based on a revisit time and describe the coverage in degrees for Azimuth & Elevation and what will be the revisit time.
(vi)	Define the minimum reaction time required between detection of threat and activation of suitable countermeasure.
2	Soft Kill
(i)	Specify the type of soft kill system envisaged as part of APS and enumerate if the APS is able to degrade/ defeat in-coming laser/ GPS/ IR/ Radar guided missiles & all types of UAS by soft kill measures.
(ii)	On being targeted or lased, indicate whether the APS system is able to use decoy smoke for anti lasing and camouflage against acquisition and detection of own platform.
(iii)	Specify if the APS utilizes existing Smoke Grenade Launchers mounted on tank or indicate if any additional system will be required.
(iv)	Describe the coverage in degrees for Azimuth & Elevation of soft kill system.
(v)	Specify if the soft kill system disrupts any function of the tank in terms of radio communication, navigation system, missile firing or any other electronic system.
(vi)	Define the maximum number of threats that APS will be to simultaneously disrupt from multi-direction.
3	Hard Kill
(i)	Define the countermeasures utilized to destroy/ degrade/ deflect incoming CE & KE projectiles and UAS (as mentioned above). Confirm whether it will be blast or fragmentation type or any other
(ii)	Specify the number of countermeasure launchers and munitions which will be fitted on the tank as part of APS.

(iii)	Indicate if the APS would provide a protective arc in azimuth and elevation. Specify the coverage (in degrees) in Azimuth and elevation. Also specify if it can also cater for top attack threat.
(iv)	Indicate if the APS system would be able to deflect or destroy hostile attacks to protect against threats from guided missiles, RPG/ RL and anti-tank projectiles.
(v)	Define at what distance from the tank is the threat being neutralized.
(vi)	Elaborate the reload mechanism and time required for reloading countermeasure munitions.
(vii)	Define the maximum velocity of incoming projectile that, your system can detect and defeat.
(viii)	Specify if the APS can be able to detect CE & KE incoming projectile from more than one direction of attack in case of a near simultaneous hostile threat and neutralize up to two threats. In case it can neutralize two threats specify the time difference between engagements.
(ix)	Indicate the probability of defeat of various types of anti tank projectiles.
(x)	After activation of countermeasures against anti-tank threat, indicate if there will be any residual penetration due to splinters/ debris on the tanks surface. If the answer is yes, then please provide, the minimum residual penetration (in mm) that will be achieved.
4	Safety
(i)	Enumerate the safety measures incorporated in your system.
(ii)	Indicate the STANAG level protection will the components have, which are fitted outside the tank or on top of tank platform.
(iii)	Specify if the Radiation waves from the system be safe for humans as per laid down international safety standards for human.
(iv)	Describe if your system requires major cutting of armour for installation / fitment. Indicate if this cutting compromises NBC protection and fording capability of T-90 tank.
(v)	Specify if the subsystems fitted externally be water proof for fording.
(vi)	Specify if the APS be resistant to jamming.
(vii)	Indicate if the APS has high safety against accidental activation by false projectiles such as small arms fire, artillery, splinters etc.
(viii)	Specify the danger zone for dismounted troops operating in the vicinity of the tank.
5	Upgradation
(i)	Elaborate if APS System have an open architecture which will enable integration with additional sensors and countermeasure system.
(ii)	Specify if the APS system has provision for future upgrades.
6	Test Standards

(i)	List out the Internationally accepted Quality Standards be provided with your APS system. (In terms of Environmental and durability)
(ii)	Indicate if you APS system be of MIL – STD grade.
(iii)	EMI/ EMC. List out the EMI/EMC standards your APS system adheres to.
7	Equipment Life
(i)	Enumerate the shelf life and service life of APS.
8	Operating Temperature Range
(i)	Specify the maximum operating temperature range for your system.
(ii)	Specify the minimum operating temperature range for your system.
9	Reliability: Specify the MTBF and MTTR of APS.
10	Maintainability: Specify the maintainability aspects for your APS system.
11	Miscellaneous Parameters
(i)	Indicate if APS system would be modular and fitment is feasible without removing the existing fitment items in the crew compartment. However, if relocated, specify if the APS system will not compromise the operation of relocated fitment items of the tank.
(ii)	Enumerate the overall weight of APS system and components. Indicate whether it will adversely affect the agility /mobility of the Active Protection System.
(iii)	Specify if the APS system be installed and integrated in the T-90 S/SK tanks without interfering with the existing tank systems or functioning of the crew. (aa) Not obstruct vision through vision devices. (ab) Not interfere with loading of rotary conveyor. (ac) Not hinder 360° movement of the gun in manual or in stabilized mode.
(iv)	Indicate whether the fitting of LRUs of APS system be feasible within the height of the existing Anti-Aircraft Machine Gun bracket. If not, then specify the height increase of tank T-90 after the APS system is fitted. Elaborate the APS system would change the overall silhouette of the tank when viewed from the front and broad side.
(v)	Indicate whether the APS would function when static or on the move and be capable of all-weather day and night operations .
(vi)	Define the peak power consumption (excluding peaks) of APS and will the operating voltage of the system be compatible with the available power source of Tank T-90.
(vii)	Specify if APS can be able to function continuously for at least eight hours of operations.
(viii)	Indicate if the system is safe to operate when the crew is operating with open hatches.
(ix)	Specify the storage temperature range for APS and its storage life.
12	Repair and Maintenance

(i)	Post warranty, describe the engineering/ maintenance support for the equipment provided to in house maintenance agency for complete full life cycle of the product being procured. For this the vendor should plan and develop suitable repair/ engineering support packages (ESP) comprising of readily available spare parts, assemblies or sub-assemblies, test jigs, maintenance tools and technical literature. Specify if the system be easily repairable on account of design and construction mentioned above and after suitable training of in-house repair agency technicians. Provide details of Engineering Support Package to include MRLS, List of Spares, SMTs, STEs, Test Jigs, training, training aggregates and technical literature will be provided which can be checked during MET.
13	SMT, STE and Test Jigs
(i)	Indicate if you could develop all SMT, STE and Test jigs for the equipment to support diagnostics. Specify your repair philosophy for the system.
14	Technical Literature
(i)	Describe all technical literature which will be provided regarding APS.
15	Training and training Aggregates
(i)	Provide the details if your firm be able to undertake training of user, EME personnel for maintenance and Ordinance personnel.
(ii)	Specify all training aggregates for conduct of training of User, Maintaining and Quality Assurance personnel's will be provided by the company.
16	Model of Production
(i)	Enumerate the method of manufacturing which will be adopted by your company in India. (a) JV with Indian Company (b) Co Production (c) Licensed Production or through own subsidiary
(ii)	Mention the Indian firm with whom the company will be undertaking JV/Co Production or Licensed production.
(iii)	Indicate the production model which will be followed. (a) FF/ SKD/ CKD and then Indigenous Manufacturing production or (b) Complete production in India from the beginning of the project.
(iv)	Detail the timelines for submission of product for Trials post issue of RFP.
(v)	Mention if the product is readily available or not. If readily available, enumerate the time of the supply be started. If not, then specify the time lines of supply of product to IA.
(vi)	Enumerate the yearly production capacity. Specify if the production can be scaled up. If yes mention the duration and what time frame.
(vii)	Provide the warranty details for the product to be provided.
(viii)	List out the LRUs for APS system being envisaged by your company to meet IA requirement.

17	ToT & IPR
(i)	Mention the extent of ToT transfer with Indian Firm. Whether it will be 'Built to Print' or 'complete Know How' of product with Indian Vendor will exist.
(ii)	List the components for which the ToT will still be with OEM and not transferred to Indian partner.
(iii)	Specify if the ToT facilitate production of raw materials in India.
(iv)	Specify if the ToT be transferred for detection system to incl all LRUs.
(v)	Specify if the ToT be transferred for LRUs being utilized for Soft Kill measures.
(vi)	Specify if the ToT be transferred for counter munition utilized for Hard Kill.
(vii)	Specify if the ToT be transferred for software and central computing unit for the APS system.
(viii)	Specify if the ToT be transferred for the sensors being utilized for detection of incoming projectile/ UAS.
(ix)	Indicate if the design of APS be shared or not with Indian firm.
(x)	If design is not shared, then indicate whether the IPR will be held with Indian firm or OEM.
(xi)	If LRUs IPR is not given then specify if the IPR for integration of APS on tank T-90 as a System be with Indian vendor.
(xii)	List all technologies which will be transferred in range and depth for manufacture of components by Indian Entity.
(xiii)	Specify if the Indian entity hold license to manufacture or handle/ transport explosives.
(xiv)	Specify if the ToT be comprehensive, covering all aspects of design/development, manufacturing know-how and detailed technical information which will enable the Indian Production Agency to manufacture components.
(xv)	Provide the details of Post transfer of technology will Indian vendor be able to provide support for equipment management.
(xvi)	Please specify the following: (i) Items, for which complete ToT will be transferred to Indian Vendor. (ii) Items which will be manufactured by the OEM's Agents. (iii) The items for which the ownership of Design and Manufacturing Documentation is available with the OEM, and not willing to transfer the technology to the Indian Production Agency.

(xvii)	List all documents which will be provided with transfer of technology. (a) Engineering documents (b) Software documentation (c) Manufacturing documents (d) Test documents (e) Technical Manuals (f) General documentation (g) Additional documents
18	MOU (in case of JV with Indian Vendor)
(i)	In case the JV is based on an MoU, specify if you will be able to provide copy of the MoU and at what stage.
(ii)	Describe the work share between Indian vendor & FOEM.
(iii)	Indicate if all the components of the APS will be manufactured in India.
(iv)	Specify if the manufacturing of Counter munitions would be guided by a license linked to the quantity that can be produced in India.
(v)	In case quantity to be produced in India is linked to a license, specify the quantity that can be produced in India.
(vi)	Indicate if the manufacturing of all the components being done in India by Indian vendor plant or through own subsidiary. Specify component wise details.
(vii)	Specify if all the components (including software source code) of the APS be manufactured in India on completion of Transfer of Technology.
19	Manufacturing of Various Components
(i)	Provide details of the LRUs that will be manufacture by Indian Vendor and FOEM for various components of APS.
(ii)	List the sources of raw materials for various components including the counter munitions and its explosive.
(iii)	Mention the time frame will the APS be provided post a supply order is placed.
(iv)	Mention the timeline by which the APS can be provided for trials post issue of directions.
20	Method of Manufacturing
(i)	Specify if the initial quantity of APS be in FF/CKD/SKD followed by indigenous development.
(ii)	Enumerate if the company has manufacturing plant in India (to include manufacturing of all electronic & hardware components & counter munition). If yes please provide the details of same
21	Indigenization Content & Plan
(i)	Mention the IC content of the APS system as a whole. During (aa) Prototype Stage (when being offered for Trials) (ab) FOPM stage (ac) Completion of Delivery of APS

(ii)	Enumerate the IC of the APS component wise. Please specify component wise details.
(iii)	Provide the roadmap (year on year) for indigenization of components/ software being sourced to Indian vendor.
(iv)	(aa) Mention the Indian firm which will be undertaking the manufacturing of LRUs. (ab) Mention the Firm which will be undertaking the manufacturing of Counter munitions. (ac) Mention the Firm which will be undertaking the development of Software. (ad) Indicate from where the integrated chips are sourced.
(v)	Mention the IC content component wise that will be achieved by your firm as per time lines given below: (aa) 2 yrs. (ab) 4 yrs. (ac) 6 yrs. (ad) 8 yrs.
(vi)	Enumerate the critical technologies which will have to be imported and what is the indigenization plan for the same.
22	MOQ
(i)	Provide the minimum quantity economically viable for initial procurement. (aa) FF (ab) SKD (ac) CKD (ad) Indian Manufactured (IM)
(ii)	Provide the quantity Industry can offer for trials on No Cost No Commitment basis.
23	Anticipated Cost
(i)	Define the approximate cost of each APS system manufactured in India.
(ii)	In case the production is being undertake progressively then provide anticipated cost of each APS system for the following: (aa) FF (ab) SKD (ac) CKD (ad) Indian Manufactured (IM).
24	Miscellaneous
(i)	Elaborate the R& D Capability existing with your company.
(ii)	Provide the preferred categorization of procurement as per DAP 2020.

(iii)	Specify if the design documents would be available with Indian vendor to include: (aa) Process of design (core technology). (ab) Mathematical and analytical details in support of design. (ac) Engineering design, tech specifications, circuit designs, Logic of design and relevant standardization. (ad) Manufacturing process to be involved.
(iv)	Mention the delivery timelines for FF, SKD, CKD, ToT to Indian vendor.
(v)	Indicate if you are willing to set-up an ecosystem of indigenous vendors/ manufacturers for sustenance of the equipment in terms of repairs of systems, sub-systems, assemblies, components, etc. as also testing facilities.
(vi)	Layout the range and depth of ToT transfer that will be undertaken with Indian vendor.
(vii)	Specify if the ToT for maintenance enable Indian entity the following capability: (aa) Ensure Indian entity is able to support operation and deployment of the platform/equipment on sustainable basis. (ab) Ensure Indian entity is self-sustainable to provide 'Intermediate', 'Depot' and 'Overhaul' level repairs, maintenance and upgrade for entire life cycle of equipment. (ac) Set-up requisite test facilities/infrastructure for undertaking testing/ certification for the entire life cycle of the equipment. (ad) Set-up an ecosystem for manufacture of sub-systems, assemblies, components, spares, materials, etc, in India

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 Active Protection System for T-90 S/SK Tanks for Ministry of Defence or similar Active Protection System was supplied	No. of unit supplied	Year of Supply

Annexure-5

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

Eoi RESPONSE FORMAT

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

Dear Sir,

Ref: Expression of Interest to Partner with BEML Limited for Notice Inviting Expression of Interest (Eoi) for Technology tie-up for Active Protection System for T-90 S/SK Tanks for Ministry of Defence

Having examined the Expression of Interest (Eoi) document dated _____, downloaded from the BEML website, i.e., www.bemlindia.in, we, the undersigned, intend to submit an Eoi in response to the aforesaid Eoi document.

We attach hereto the Eoi and response as required by you, which constitutes our Eoi.

Primary and Secondary contacts for our company are:

	Primary Contact	Secondary Contact
Company Name:		
Name:		
Title:		
Address:		
Phone :		
Mobile:		
Fax :		
E-mail :		

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

We fully understand and agree to comply that on verification, if any of the information provided herein is found to be misleading the short-listing process, we are liable to be disqualified / rejected from the selection process or termination of the contract after the execution of the contract, besides other action as may be required as per the BEML Purchase Manual.

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

It is hereby confirmed that I / We are entitled to act on behalf of our company/ corporation/ firm / organization and empowered and authorised to sign this document as well as such other documents, which may be required in this connection.

Dated this

(Signature)

(In the capacity of)

(Name)

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

(Name and Address of Entity/Firm/Company) Seal / Stamp of Entity

Witness Signature:

Witness Name: Witness

Address:

Annexure-6

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

CERTIFICATE AS TO AUTHORIZED SIGNATORIES

I, , the Company Secretary
of certify that
..... Who signed the above EoI
floated by BEML for Technology tie-up for Active Protection System for T-90 S/SK
Tanks for Ministry of Defence is authorized to do so and bind the company by
authority of its board / governing body.

Date :

Signature :

(Company Seal)

Annexure-7

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

DECLARATION BY THE PROSPECTIVE COLLABORATOR

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

Signature of Prospective Collaborator

(with Seal /Company Seal)

Annexure-8

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

DECLARATION BY THE PROSPECTIVE COLLABORATOR

This is to certify that _____ (Name of the Entity/Firm/Company) has not been banned / black listed / debarred from Trade by any BEML / Central / State Govt. Dept. / Autonomous Institution / PSUs in India at the time of bid submission.

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

Signature with date of Authorized signatory

Name: _____

Designation: _____

Firm's Seal: _____