Copy No : 03

INVITATION FOR EXPRESSION OF INTEREST (EoI) FOR PROCUREMENT OF 3RD GENERATION ANTI TANK GUIDED MISSILE SYSTEM FOR INDIAN ARMY

References : Defence Procurement Procedure-2016 (DPP-2016) (incorporating all the amendments upto 01 Nov 2019).

Appendices :

Appendix A : Appreciated Timelines & Milestones for 3rd Gen ATGM Sys as a Make-II Project.

Appendix B : Preliminary Service Qualitative Requirements for 3rd Generation Anti-Tank Guided Missile System.

Appendix C : Format for Intellectual Property Rights Agreement.

Appendix D : Commercial Evaluation Criteria.

Appendix E : Technical Evaluation Criteria.

Appendix F : Information Performa.

Appendix G : Confidentiality Agreement.

Appendix H : Correctness Certificate.

Annexures :

Annexure to Appendix D : Technical Evaluation Compliance Matrix.

Introduction

1. The terrain along our borders lends itself to conduct of large scale mechanized operations and the belligerence of our adversaries on the borders necessitate that our capabilities are adequately built up to overmatch the threat. The present anti-tank capability with infantry is based on a variety of MILAN and KONKURS ATGMs which are 2nd Generation systems and have been in service for more than three decades. These systems are deficient in advanced technologies, primarily, the guidance parameters and capability to fight both during day and night. Globally, the armed forces have now equipped the infantry with 3rd Generation ATGM systems. In comparison, these systems have better accuracy, enhanced lethality, a higher kill probability, day and night operation capability and ensure better survivability for the operating crew.

Objective

2. The objective of this invitation of Expression of Interest (EoI) is to seek responses from eligible Indian Vendors for development of prototype and further procurement of the 3rd Generation Anti-Tank Guided Missile System (3rd Gen ATGM Sys).

Layout

3. The EoI has been covered under the following parts:-

(a) Part I : General Information.

(b) Part II : Scope of Project.

(c) Part III : Evaluation Criteria.

(d) Part IV : Procedure for Submission of Response to the EoI.

(e) Part V : Miscellaneous.

4. The nodal officer for this project for all queries/ clarifications/ coordination will be **Secretary, Project Facilitation Team (PFT), 3rd Gen ATGM System Project**. Address and contact details of the nodal officer are given at **Paragraph 28 of the EoI**.

PART I: GENERAL INFORMATION

5. **Categorisation**. In accordance with **Para 25 of Chapter IIIA, DPP-2016 (incorporating all amendments upto 01 Nov 2019)** the **design and development of the system must be indigenous**. The project is further categorised as under:-

(a) **Prototype Development Phase**. **'Make-II (Industry Funded)'** in accordance with Para 6 of Chapter III-A of DPP-2016.

(b) **Procurement Phase**. **'Buy (Indian-IDDM)'** in accordance with Para 5 of Chapter III-A of DPP-2016.

6. **Quantities**. The quantities sought for the project are:-

(a) **Prototype Development Stage**. Following equipment to be supplied by the DA(s):-

(i) Launchers- 01 (one).

(ii) Missiles- 06 (six) including 02 (two) with warheads.

(iii) Simulators-01(one) System.

(b) **Procurement Stage**. 101 Launchers, 2330 Missiles (with warheads) and 06 Simulator systems.

7. Make-II Procedure, duly amended upto 01 Nov 2019, is available at Chapter IIIA of DPP-2016. **DPP-2016 (incorporating all the amendments upto 01 Nov 2019), will be referred to hereinafter in the case and a copy of the same** is available at https://www.mod.gov.in/dod/sites/default/files/UVDPP201611119.pdf

8. **Appreciated Timelines**. Tentative timelines for the project are as given at **Appendix 'A'**.

PART II: SCOPE OF THE PROJECT

3rd Generation Anti-Tank Guided Missile System

9. The weapon system is required for anti-tank and anti-structure engagements in conventional operations. A 3rd Generation ATGM system will enhance the potential of Infantry to counter mechanized threat in select sectors and also employment in anti-structure role. Induction of the 3rd Gen ATGM capability will augment anti-tank deterrence against armour threat on defensive positions and strengthen the anti-tank potential of Infantry Battalion in mechanized offensive operations.

10. **Preliminary Service Qualitative Requirements (PSQR) of the Proposed System**. PSQR of the 3rd Gen ATGM Sys is attached as **Appendix 'B'**.

Milestones

11. Stages of the development and procurement process are given at Paragraph 9 of the Make-II Procedure (Chapter III-A, DPP-2016).

12. Major activities in the procurement process will be as follows:-

Serial No	Activity	Remarks
(a)	Pre EoI Response Meeting	3 Weeks (tentative) after the issue of EoI to clarify the issues/ queries raised by participating firms to facilitate submission of EoI response.
(b)	Evaluation of EoI Responses	By PFT.
(c)	Issue of Project Sanction Order for Development of Prototype	To shortlisted Development Agencies (DAs) meeting evaluation criteria.
(d)	User Trial Readiness Review	(i) To confirm completion of design & development of prototypes as per PSQR prior to commencement of User Trials. (ii) More than one review may be conducted, as required. Dates will be promulgated by the PFT as per progress of the project.
(e)	Solicitation of Commercial Offers	Commercial RFP will be issued for submission of Commercial Offers prior to commencement of User Trials.
(f)	Conduct of User Trials on No Cost No Commitment (NCNC) basis and GS Evaluation	To validate the performance of the system against the specifications of approved GSQRs after the development of prototype.

Development of Prototype and Trials

13. Any clarification related to functional or operational aspects of the equipment under development as sought by the DAs to meet the PSQR will be provided by the PFT.

14. After the prototype has been developed as per PSQR given at **Appendix 'B'**, the PFT would carry out User Trial Readiness Review of the prototype(s) and freeze the Technical Specifications before conduct of User Trials on NCNC basis. Evaluation of the equipment will be carried out during the User Trials to validate the performance of the equipment against the Final Technical Specifications. **Service HQ will formulate the 'Trial Directive' which will incorporate the parameters for validating the 'Essential Parameters'**. Necessary technical literature pertaining to the design & material will be provided by the DAs for the User Trial Readiness Review and conduct of User Trials on the prototype.

Solicitation of Commercial Offers

15. A commercial Request for Proposal (RFP) for 'Buy (Indian-IDDM)' phase would be issued to DA(s) prior to commencement of User Trials for soliciting their commercial offers. **Additional technical information/ documentation, as may be necessary including those related to Indigenous Content and IPRs would also be required to be provided by the vendor prior to the issue of Commercial RFP**.

Deliverables

16. The project is envisaged to have the following deliverables:-

(a) **Prototype Development Stage**. Following equipment to be supplied by the DA(s):-

(i) Launchers - 01 (one).

(ii) Missiles - 06 (six) including 02 (two) with warheads.

(iii) Simulators – 01 (one) System.

(b) **Procurement Phase**. Following equipment are required to be finally delivered to the Indian Army in the procurement stage:-

(i) Launchers – 101.

(ii) Missiles – 2330 (with warheads).

(iii) Simulators – 06 System.

(c) An appropriate Engineering Support Package (ESP) will be required for repair & maintenance of the equipment to include spares, special test equipment/ special maintenance tool, training and technical literature to include user hand book, preservation instructions, complete equipment schedule, repair manual and technical manuals. These will be provided with the equipment during the procurement phase. Details will be further amplified in the Commercial Request Proposal (RFP).

Details of Trials/Assistance to be Provided

17. The following trials will be conducted/assistance will be provided: -

(a) **Trials**. The trials will be conducted in two stages: -

(i) **Stage–I: Developmental Trials**. Development of prototype and bring the missile system to user trial level and ensure that the system meets the critical parameters and safety standards.

(ii) **Stage–II: Field EvaluationTrials**. To evaluate the performance and assess the suitability of 3rd Gen ATGM system to meet operational, technical and safety aspects, **User Trials**, **DGQA Trials**, **EMI/EMC Trials** and **Maintainability Evaluation Trials (MET)** on **NCNC basis** will be conducted. Details of the same will be included in Commercial RFP.

(b) **Assistance to be Provided**. Assistance to the Development Agencies in terms of provision of allotment of ranges, testing facilities and access to service equipment will be guided by **Govt of India, Ministry of Defence letter No 18(2)/15/GTF/DP(Plg-MS) dated 28 August 2019**. In case any damage occurring to **equipment/ property/ personnel resulting from the testing of the job of private entity, the private entity is liable to bear the expenses** of repair/replacement of the facility and all necessary insurance coverage for the job shall be the responsibility of the private entity.

Multiple Technological Solutions

18. Post conclusion of FET and discovery of L1, orders will not be split with L2 vendor.

Intellectual Property Rights (IPRs)

19. As per provisions of **Para 47, Chapter III-A of DPP-2016**. The 'IPR Agreement' will be furnished by each EoI respondent at the time of submission of EoI responses as per format given at **Appendix 'C'**. Further, based on the development of the prototype, a comprehensive list of design documents (to be informed subsequently) will need to be submitted by the development agencies for verification by a **Committee of Experts**.

PART III: EVALUATION CRITERIA

Commercial Evaluation Criteria

20. Indian entity satisfying criteria given at **Appendix A of the Make-II Procedure** [(Chapter-IIIA, DPP-2016(incorporating all the amendments upto 01 Nov 2019)] will be considered as an eligible "Indian Vendor" for the project. EoI respondents will furnish their response to the Commercial Evaluation Criteria as per **Appendix 'D'**.

Technical Evaluation Criteria

20. The respondents to this EoI are required to furnish information about their Technical Capability as per **Appendix 'E'**. Compliance/ information as per **Annexure to Appendix 'E'** is also required to be submitted as per the proposed solution offered by the DA against PSQR of the equipment.

21. **Indigenous Content**.

(a) **Prototype Development Stage**. **Minimum 60% Indigenous Content** with indigenous design and development.

(b) **Procurement Phase**. Post successful development of prototype(s), further procurement will be as per the **'Buy (Indian-IDDM)'** procedure with a **minimum of 60% Indigenous Content**.

22. **Additional Information**. Additional information required to be furnished as part of the EoI response is given at **Appendix 'F'**.

23. **Foreign Collaboration**. If the DA is collaborating/ plans to collaborate with a foreign technology provider, the nature of such collaboration and the technology areas being transferred must be stated in the response (please refer Paragraphs 12 & 13 of **Appendix 'F'**) .

PART IV: PROCEDURE FOR SUBMISSION OF RESPONSE TO THE EoI

24. The response to the EoI shall be submitted as per formats given at **Appendix 'C' to Appendix 'H'**.

25. **Guidelines for Submitting EoI Responses**.

(a) The responses should be submitted strictly as per the formats given in respective Appendices. Should a vendor need to mention any other information, a separate column/ row may be added.

(b) All responses and Appendices should be submitted in a single file/ folder. Supporting documents/ additional references should be submitted in a separate folder with proper reference mentioned against each parameter/ sub parameter in respective appendices.

(c) Any supporting document/ evidence without any reference to specific parameter of criteria will not form part of the assessment.

26. **Rejection Criteria for Selection as DAs**. The following may lead to rejection of EoI response:-

(a) Failure to meet Commercial Evaluation Criteria given at **Appendix 'D'**.

(b) Failure to meet/ comply with the Technical Evaluation Criteria Specifications give at **Appendix 'E'**.

(c) Failure to offer compliance to any of the terms and conditions given in the EoI.

(d) Any other parameter of the response considered inadequate by the MoD, Government of India.

27. The EoI respondent shall submit three (03) copies of response to the EoI, clearly marking one copy as '**Original Copy**' and second & third as '**Duplicate Copy and Triplicate Copy**'. In the event of any discrepancy between them, the original copy shall govern/ prevail. Each page of the response will bear the signatures of the authorised signatory of the company. The DA shall also submit a soft copy of the response to this EoI in a CD/ DVD.

28. The envelopes shall be addressed as under:-

Secretary, Project Facilitation Team
3rd Generation Anti-Tank Guided Missile System Project (Make-II)
Infantry-5/ Directorate General of Infantry
Integrated HQ of MoD (Army)
Room Number 411B
D-1 Wing, Sena Bhawan
DHQ PO, New Delhi-110011
Telephone/ Fax : 011-23018398
Email : khanjar@nic.in

29. The response to this EoI must be submitted by **1700 hours on 23 March 2020** at the above mentioned address.

30. The Company will be required to sign and honour the 'Confidentiality Agreement' with MoD Govt of India. The 'Confidentiality Agreement' will be furnished by each EoI respondent at the time of submission of EoI responses as per format given at **Appendix 'G'**.

PART V: MISCELLANEOUS

31. **Pre EoI Response Meeting**. A pre-response meeting will be held on **26 February 2020 at 1430 hours** at Infantry Directorate Conference Hall, Room No. 407, 4th Floor, D-1 Wing, Sena Bhawan, New Delhi - 110011. Vendors are required to submit their queries / clarifications / amplifications in writing to this office by **19 February 2020**.

32. Guidelines for penalties in business dealings with entities as promulgated by Government from time to time, will be applicable on procurement process & bidders.

33. The Pre-Contract Integrity Pact (PCIP), listed as detailed in paragraph 92 of Chapter II of DPP 2016, shall apply mutatis mutandis to the 'Buy (Indian-IDDM)' phase of 'Make' project.

34. Respondent would be subject to disqualification if they make false, incorrect, or misleading claims in their response to this EoI. A 'Correctness Certificate' as per the format at **Appendix 'H'** will be furnished as part of the response.

35. Please acknowledge the receipt of this invitation for EoI.

File No: 86785/ATGM Make-II/Inf-5(a)

Dated: 05 Feb 2020

(**Prashant Pande**)
Colonel
Secretary, Project Facilitation Team
3rd Generation Anti-Tank Guided Missiles System Project

Enclosures: **Appendices A to H**

Appendix 'A'
(Refer Para 8 of EoI)

TENTATIVE TIME LINES FOR 3RD GEN ATGM SYSTEM (MAKE-II) PROJECT

Sr. No	Activity	Time in weeks from collegiate discussions (T_0)
1.	Issue of EoI	8
2.	EoI Response submission	6
3.	EoI response evaluation	5
4.	Issue of Project Sanction Order	2
5	Design & development of prototype	48-52* (Approved in the AoN)
6.	Conversion of PSQR to SQRs/ Solicitation of Commercial offer	4
7.	User Trials & Staff evaluation	8-26
	Total	**81-103 weeks**

*(*Note- Acceptance of 48-52 weeks for design and development timelines for prototypes as against tentative timelines of 12-30 weeks has been granted by the competent authority)*

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Appendix 'B'
(Refer Para 10 of EoI)

PRELIMINARY STAFF QUALITATIVE REQUIREMENTS FOR 3RD GENERATION ANTI-TANK GUIDED MISSILE (ATGM) SYSTEM

INTRODUCTION

PART I: GENERAL INFORMATION

General

1. The Parachute, Parachute (Special Forces) and Infantry Battalions while operating in an environment, characterized by a high density of mechanized threats, need an effective ATGM platform to counter the prevailing threat. The present system being used by these battalions is the 2nd Generation MILAN system of France and KONKURS of Russia.

Aim

2. To specify the qualitative requirement for the 3rd Generation ATGM System for the Parachute, Parachute (Special Forces) and Infantry Battalions.

Proposed Service Employment

3. The proposed ATGM system will replace the 2nd Generation MILAN System of France and KONKURS of Russia in service with Parachute, Parachute (Special Forces) and Infantry Battalions. The ATGM system should be suitable for employment in various terrains both during day and night.

Availability Date

4. The prototype system including all accessories should be made available for trials within two years of date of finalization of the GSQR.

ESSENTIAL PARAMETERS

Part II: General Characteristics

5. The system should be easy to maintain and operate.

6. The system should be robust to withstand rough usage under various operating conditions.

Part III: Operational Characteristics

7. **Range**.

   (a) **Maximum**. Effective range should not be less than 2.5 km by day & night.

   (b) **Minimum**.

      (i) **Direct Attack**. Minimum achievable, but not more than 200 metres.

      (ii) **Top Attack**. Minimum achievable, but not more than 800 metres.

8. **Accuracy**. Have a hit probability of not less than 90% by day & night.

9. **Type of Guidance**. Third generation with active / passive guidance system (with lock-on before launch capability).

10. **Type of Warhead**. HEAT, Tandem warhead.

11. **Operational Performance**.

(a) Accurate and effective against intended targets at altitudes up to 3000m.

(b) **Temperature**.

(i) **Minimum**. (-) 20^0C to (-) 10^0C.

(ii) **Maximum**. 40^0C to 45^0C.

(c) **Attack Profile**. Should have a fire and forget, direct attack and top attack capability against intended targets.

(d) **Launch Platform**. The ATGM system should be capable of being launched from a vehicle and ground based platform. The zeroing of the sighting systems should not be disturbed while changing from vehicle platform to ground based platform and vice versa.

(e) **Man-Portability**. Should be carried by a crew of three persons. Weight of the complete ATGM system (to include the launcher system with tripod, four missiles and the day & night sighting systems) to be equitably distributed amongst a crew of three persons.

(f) **EMI/EMC**. The equipment should comply with electromagnetic interference and electromagnetic compatibility parameters as per MIL STD 461C or higher.

(g) **Environmental Conditions**. The ATGM system should comply with environmental standards as relevant as per JSS 55555.

12. **Arming and Safety**. The system should have adequate safety devices during transportation by road, rail or air and during handling.

13. The ATGM system should constitute the following main components:-

(a) Launcher with tripod.

(b) Day (CCD) and night (Thermal Imaging) sighting systems with Laser Range Finder (LRF).

(c) Missile with container.

(d) Mount for the launcher to be fitted on a light vehicle.

14. **Penetration**. Achieve a minimum penetration of 600mm of Rolled Homogenous Armour (RHA) beyond Explosive Reactive Armour (ERA).

15. **Activation Time and Rate of Fire**. The system should be capable to be brought into firing mode from man-pack condition in less than five minutes. The system should be capable of firing the second missile within two minutes of launch of the first missile.

16. **Propulsion**. The missile should have soft launch capability with smokeless propellant.

Physical Characteristics

17. **Weight**.

(a) Missile (including launch tube assembly)	:	Not more than 15 kgs.
(b) Launcher (including CLU battery, tripod and sighting systems)	:	Not more than 15 kgs.

18. **Optical Sight**.

(a) Magnification	:	Not less than 4x.
(b) Field of View (FOV)	:	Not less than 4 degree.

19. **Thermal Imaging Sight**.

(a) Narrow FOV	:	Not less than 2 degree.
(b) Wide FOV	:	Not less than 5 degree x 4.5 degree.

(c) **Ranges against a tank size target as under**: -

(i) Detection (ability to distinguish an object from the background)	:	Not less than 4.5 km.
(ii) Recognition (ability to classify the object class - Tank, Truck, Armoured Personnel Carrier etc)	:	Not less than 3.5 km.

20. **Power Source**.

(a) **CLU Battery**. Rechargeable battery with minimum four (04) hours endurance mounted on the Launcher.

(b) **Back-up Battery**. Rechargeable battery with endurance of minimum eight (08) hours with charger and connecting cable for connecting battery with launcher.

21. **Caliber of Missiles**. 110mm – 155mm.

22. **Miscellaneous**.

(a) **Transportability**. Should be transportable by road, sea, rail or air in all terrains. It should also lend itself to being para dropped.

(b) **Shelf Life and Service Life**. The minimum shelf life should be 10 years for the missile under controlled conditions of temperature and humidity which includes a shelf life of three years of field exposure/usage. The service life of the launcher should be 15 years.

23. **Missile Container**. The missile should be fired from a container or launch tube mounted on the launcher. The container should facilitate easy storage, loading, transportation and handling as well as should be hermetically sealed.

Part IV: Operation and Maintenance

24. **Design**. The launcher system design should be modular to the extent possible with easy accessibility to ensure quick replacement of faulty modules / sub-assemblies.

25. **Built In Test Equipment (BITE)**. The system should have BITE facility for various modules/sub-assemblies.

Part V: Training

26. **Simulator**. A simulator meeting all essential QR for the launcher and parameters of target detection, recognition and engagement as applicable should be available to carry out training.

DESIRABLE PARAMETERS

27. **Type of Guidance**. Lock-On after Launch capability may be available in the ATGM System.

28. **Operation Altitude**. The ATGM system should be capable of operating at altitudes up to 5000m.

29. **Penetration**. The ATGM system should be able to achieve a minimum penetration of 800mm of Rolled Homogenous Armour (RHA) beyond Explosive Reactive Armour (ERA).

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Appendix 'C'
(Refer Para 19 of EoI)

INTELLECTUAL PROPERTY RIGHTS AGREEMENT

It is certified that 100% Intellectual Property Rights (IPR) for the design of the 3rd Generation Anti-Tank Guided Missile System is the property of M/s _____. It is acknowledged that the company will be disqualified from further participation if any information provided is found to be incorrect.

Signature with Company Seal

Appendix 'D'
(Refer Para 19 of EoI)

COMMERCIAL EVALUATION CRITERIA

1. **Name of the Vendor**: _____
2. **Evaluation Criteria**.

S No	Criteria	Vendor Submission	Reference (Reference against vendor claim/ response must be flagged and mentioned in this column)	Remarks (if Any)
(a)	Nature of the Company [refer Para 2(a) of Appendix A of Chapter III-A of DPP-16].			
(b)	Ownership Status [refer Para 2(b) of Appendix A of Chapter III-A of DPP-16].			
(c)	Category of Industry (Large/ Medium/ Small/ Micro).			
(d)	Registration Details.			
(e)	Credit Rating.			
(f)	Net worth ending 31st March of the previous financial year.			
(g)	Average annual turnover of the applicant company for the last three financial years ending 31st March of the previous financial year.			

Station: Signature Company Seal

Date:

Note:-

1. All submissions must be supported by referenced documents duly authenticated.
2. Any input with incorrect or missing reference will not be assessed.

Appendix 'E'
(Refer Para 20 of EoI)

TECHNICAL EVALUATION CRITERIA

1. **Name of the Vendor**: _____
2. **Evaluation Criteria**.

S No	Criteria and Sub Criteria	Vendor Submission	Reference (Reference against vendor claim/ response must be flagged and mentioned in this column)	Remarks (if Any)
(a)	Execution of similar projects for military users in India and/or abroad.			
(b)	Experience in design, development, manufacture or collaboration with foreign OEM of complete ATGM systems/ sub-systems including the following technologies:- (i) Seeker Technology. (ii) Image Processing Technology. (iii) IMU (Gyro, Accelerometers & Encoder) Technology (iv) Control Actuation Technology. (v) Trajectory Prediction Technology (vi) Warhead Technology. (vii) Rocket Motor Technology. (viii) Thrust Vector Technology.			-Details sought are for inform-ational purpose only and will not be disqualifying criteria.
(c)	Whether holding Defence Industrial License for manufacture of missile systems including explosives or the same has been applied for from Mnistry of Home affairs (MHA).	Details to be provided		
(d)	Proposed indigenous content in percentage of total cost to be mentioned separately for:- (i) Prototype development stage (ii) Procurement stage			

S No	Criteria and Sub Criteria	Vendor Submission	Reference (Reference against vendor claim/ response must be flagged & mentioned in this column)	Remarks (if Any)
(e)	Confirmation of capability to develop and provide equipment to meet user requirements specified in Appendix 'B' (Technical specifications).	Compliance to be given		
(f)	Proposed system configuration (broad design details).			
(g)	Timelines.			
	(i) Timelines (in weeks) for development of prototype after issue of Project Sanction Order. Developmental milestones/ stages be provided with planned activities in each stage.			
	(ii) Timelines (in months) for production and supply of 101 Launchers, 2330 Missiles and 06 Simulators systems by 'Buy (Indian-IDDM)' phase after conclusion of contract.			
(h)	Acceptance to all terms and conditions given in the EoI.	Compliance to be given		

Station: Signature Company Seal

Date:

Annexure to Appendix 'E'
(Refer Para 20 of EoI)

TECHNICAL EVALUATION COMPLIANCE MATRIX

S No	PSQR Requirements	Vendor Response	Remarks
General Characteristics			
1.	The system should be easy to maintain and operate.	-	To be checked by User.
2.	The system should be robust to withstand rough usage under various operating conditions.	-	To be checked by User.
Operational Characteristics			
3.	**Range**.		
	(a) **Maximum**. Effective range should not be less than 2.5 km by day & night.	Maximum operating range to be furnished by the vendor	To be checked by User.
	(b) **Minimum**. (i) **Direct Attack**. Minimum achievable, but not more than 200 metres. (ii) **Top Attack**. Minimum achievable, but not more than 800 metres.	Minimum operating range for both Direct Attack and Top Attack to be furnished by the vendor	To be checked by the User.
4.	**Accuracy**. Have a hit probability of not less than 90% by day & night.	To be certified by the vendor.	To be checked by the User.
5.	**Type of Guidance**. Third generation with active / passive guidance system (with lock-on before launch capability).	Type of Guidance system to be mentioned by the vendor.	To be checked by the User.
6.	**Type of Warhead**. HEAT, Tandem warhead.	Type of Warheads to be mentioned by the vendor.	To be checked by the User & DGQA.

Annexure to Appendix 'E' Contd...

S No	PSQR Requirements	Vendor Response	Remarks
7.	**Operational Performance**.		
	(a) Accurate and effective against intended targets at altitudes up to 3000m.	Maximum operating altitude to be furnished by the vendor.	To be checked by the User.
	(b) **Temperature**. (i) **Minimum**. (-) 20°C to (-) 10°C. (ii) **Maximum**. 40°C to 45°C.	Both minimum and maximum operating temperature range to be furnished by the vendor.	(i) To be checked by the User & DGQA. (ii) Vendor certification required for minimum temperature.
	(c) **Attack Profile**. Should have a fire and forget, direct attack and top attack capability against intended targets.	To be certified by the vendor.	To be checked by the User.
	(d) **Launch Platform**. The ATGM system should be capable of being launched from a vehicle and ground based platform. The zeroing of the sighting systems should not be disturbed while changing from vehicle platform to ground based platform and vice versa.	(i) To be certified by the vendor. (ii) Vendor is required to provide a mount to be fitted on the vehicle from which the ATGM system is required to be launched.	(i) To be checked by the User. (ii) Type of vehicle will be intimated/provided by the User.
	(e) **Man-Portability**. Should be carried by a crew of three persons. Weight of the complete ATGM system (to include the launcher system with tripod, four missiles and the day & night sighting systems) to be equitably distributed amongst a crew of three persons.	Vendor to propose breakdown of the complete ATGM system (to include the launcher system with tripod, four missiles and the day & night sighting systems) to be equitably distributed in three backpacks as far as possible.	To be checked by the User.
	(f) **EMI/EMC**. The equipment should comply with electromagnetic interference and electromagnetic compatibility parameters as per MIL STD 461C or higher.	To be certified by the vendor.	To be checked by ACE, Mhow.
	(g) **Environmental Conditions**. The ATGM system should comply with environmental standards as relevant as per JSS 55555.	To be certified by the vendor.	To be checked by DGQA.

Annexure to Appendix 'E' Contd...

S No	PSQR Requirements	Vendor Claim Value	Remarks
8.	**Arming and Safety**. The system should have adequate safety devices during transportation by road, rail or air and during handling.	To be certified by the vendor.	To be checked by the User & DGQA.
9.	The ATGM system should constitute the following main components:-	Vendor to provide a list of all main components of the ATGM system.	To be checked by the User.
	(a) Launcher with tripod.		
	(b) Day (CCD/CMOS) and night (Thermal Imaging) sighting systems with Laser Range Finder (LRF).		
	(c) Missile with container.		
	(d) Mount for the launcher to be fitted on a light vehicle.		
10.	**Penetration**. Achieve a minimum penetration of 600mm of Rolled Homogenous Armour (RHA) beyond Explosive Reactive Armour (ERA).	To be certified by the vendor.	To be checked by DGQA.
11.	**Activation Time and Rate of Fire**. The system should be capable to be brought into firing mode from man-pack condition in less than five minutes. The system should be capable of firing the second missile within two minutes of launch of the first missile.	Vendor to provide the time required to bring the system in firing mode from man pack condition and the time required to fire the 2nd missile from the same launcher after firing the 1st missile.	To be checked by the User.
12.	**Propulsion**. The missile should have soft launch capability with smokeless propellant.	To be certified by the vendor.	To be checked by DGQA.
Physical Characteristics			
13.	**Weight**.	Vendor to provide breakdown of the weight of each major component of the system.	To be checked by the User.
	(a) Missile (including launch tube assembly) : Not more than 15 kgs.		
	(b) Launcher (including CLU battery, tripod and sighting systems) : Not more than 15 kgs.		
14.	**Optical Sight**.	To be certified by the vendor.	To be checked by DGQA.
	(a) Magnification : Not less than 4x.		
	(b) Field of View (FOV) : Not less than 4 degree.		

Annexure to Appendix 'E' Contd...

S No	PSQR Requirements	Vendor Claim Value	Remarks
15.	**Thermal Imaging Sight**.	To be certified by the vendor.	To be checked by DGQA.
	(a) Narrow FOV : Not less than 2 degree.		
	(b) Wide FOV : Not less than 5 degree x 4.5 degree.		
	(c) **Ranges against a tank size target as under**: - (i) Detection (ability to distinguish an object from the background) : Not less than 4.5 km. (ii) Recognition (ability to classify the object class (Tank, Truck, Armoured Personnel Carrier etc) : Not less than 3.5 km.	Vendor to provide the operating detection and recognition ranges for the system.	To be checked by the User.
16.	**Power Source**.	To be certified by the vendor.	To be checked by the User & EME.
	(a) **CLU Battery**. Rechargeable battery with minimum four (04) hours endurance mounted on the Launcher.		
	(b) **Back-up Battery**. Rechargeable battery with endurance of minimum eight (08) hours with charger and connecting cable for connecting battery with launcher.		
17.	**Caliber of Missiles**. 110mm – 155mm.	To be certified by the vendor.	To be checked by DGQA.
18.	**Miscellaneous**.		
	(a) **Transportability**. Should be transportable by road, sea, rail or air in all terrains. It should also lend itself to being para dropped.	To be certified by the vendor.	To be checked by the User.
	(b) **Shelf Life and Service Life**. The minimum shelf life should be 10 years for the missile under controlled conditions of temperature and humidity which includes a shelf life of three years of field exposure/usage. The service life of the launcher should be 15 years.	To be certified by the vendor.	To be checked by DGQA.

Annexure to Appendix 'E' Contd...

S No	PSQR Requirements	Vendor Claim Value	Remarks
19.	**Missile Container**. The missile should be fired from a container or launch tube mounted on the launcher. The container should facilitate easy storage, loading, transportation and handling as well as should be hermetically sealed.	To be certified by the vendor.	To be checked by the User & DGQA.
Operation and Maintenance			
20.	**Design**. The launcher system design should be modular to the extent possible with easy accessibility to ensure quick replacement of faulty modules / sub-assemblies.	To be certified by the vendor.	To be checked by EME.
21.	**Built In Test Equipment (BITE)**. The system should have BITE facility for various modules/sub-assemblies.	To be certified by the vendor.	To be checked by EME.
Training			
22.	**Simulator**. A simulator meeting all essential QR for the launcher and parameters of target detection, recognition and engagement as applicable should be available to carry out training.	Vendor to provide all technical specifications of both the indoor and outdoor simulator.	To be checked by the User & DGQA.
Desirable Parameters			
23.	**Type of Guidance**. Lock-On after Launch capability may be available in the ATGM System.	Type of Guidance system to be mentioned by the vendor.	To be checked by the User.
24.	**Operation Altitude**. The ATGM system should be capable of operating at altitudes up to 5000m.	Maximum operating altitude to be furnished by the vendor.	To be checked by the User.
25.	**Penetration**. The ATGM system should be able to achieve a minimum penetration of 800mm of Rolled Homogenous Armour (RHA) beyond Explosive Reactive Armour (ERA).	To be certified by the vendor.	To be checked by DGQA.

Station: Signature Company Seal

Date:

Appendix 'F'
(Refer Para 22 of EoI)

INFORMATION PERFORMA

1. Name of the Company.

2. Name of CEO with Designation.

3. Address of the Registered Office.

4. Address of the Factory/Factories.

5. Company Website(s).

6. Date of Incorporation.

7. Brief History of the Company.

8. Category of Industry (Large/ Medium/ Small/ Micro).

9. Nature of Company (Public Limited/ Private Limited).

10. Nature of Business (Manufacturer/ Trader/ Sole Selling or Authorised Agent/ Dealer/ Assembler/ Processor/ Re packer/ Service Provider). Please give broad product range as applicable.

11. Details of Current Products:-

    (a) Type/ Description.

    (b) Licensed/ Installed Capacity.

    (c) Annual Production for Preceding 3 Years.

12. Details of Foreign Collaborations if any planned for execution of project.

13. Technology Received from abroad and assimilated/ planned for execution of project.

14. Products Already Supplied:-

    (a) To Indian Army/Air Force/Navy.

    (b) PSUs.

    (c) DRDO and its Laboratories.

Appendix 'F' Contd...

(d) Ordnance Factories.

(e) Any other Defence Organisation.

(f) To other Principal Customers.

15. Details of Developmental Facilities:-

(a) R&D Facilities Available.

(b) Number of Technical Manpower.

(f) Percentage of Total Turn-Over Spent on R&D during the Last Three Years.

16. Turn-Over during the last Three Financial Years.

17. Any other relevant information.

18. Contact Details of the Executive nominated to co-ordinate with the Assessment Team (please provide telephone, mobile and e-mail address).

Appendix 'G'
(Refer Para 30 of EoI)

CONFIDENTIALITY AGREEMENT

The company understands the security sensitivity of operational equipment. No information pertaining to deployment and usage of the equipment including scaling will be discussed with any third party without required permission from the Project Facilitation Team. The company understands that failure to observe this agreement will lead to disqualification from the project.

Signature with Company Seal

Appendix 'H'
(Refer Para 34 of EoI)

CORRECTNESS CERTIFICATE

It is certified that information submitted in the documents as part of the response to Expression of Interest for the project of 3rd Generation Anti-Tank Guided Missile System is correct and complete in all respects. It is acknowledged that the company will be disqualified from further participation if any information provided is found to be incorrect.

Signature with Company Seal