

**INVITATION FOREXPRESSSION OF INTEREST (EoI) FOR PROCUREMENT OF
132 UNITS OF TRUCK MOUNTED CRANE FOR M777 A2 ULH REGIMENTS
UNDER MAKE II CATEGORY OF DAP-2020**

References : Defence Acquisition Procedure - 2020.

Appendices :

Appendix A : Preliminary Service Qualitative Requirements for Truck Mounted Cranes.

Appendix B : Vendor Evaluation Criteria.

Appendix C : Technical Evaluation Criteria.

Appendix D : Correctness Certificate.

Appendix E : Confidentiality Agreement.

Appendix F : EoI Compliance Certificate.

Appendix G : Information Performa

1. **Introduction**. 155 mm M777 A2 Ultra Light Howitzers (ULH) are under induction in the Indian Army. These guns have been procured from the United States Government and are planned to be utilised only in mountains in Eastern Sector. The terrain in these areas is under developed and the roads can only sustain vehicles in 4x4 configuration. 155 mm ammunition, which is to be used with these guns is kept in palletised state and needs to be handled mechanically, as it is practically impossible for the troops to handle pallets that are of 500 Kgs or above. Existing 4x4 Lorry 5/ 7.5 Ton is suitable to be used as ammunition vehicle in Medium Regiments with ULH. Since, the Prime Mover in this case cannot carry ammunition, due its limited load capability, nine vehicles are planned to be provided to each Medium Regiment with ULH. Out of these nine vehicles, only six vehicles are planned to be integrated with MHCs which will provide inherent mechanical handling capability to each gun in a battery.

2. **Objective** The objective of this invitation of Expression of Interest (EoI) is to seek willingness of Indian Vendors to participate in the Make II Project for development of prototype for further procurement of 132 units of Truck Mounted Crane for M777 155 mm/ 39 Calibre A2 Ultra Light Howitzer Regiments under Buy Indian (IDDM) category of DAP-2020. Indian Vendors meeting the Technical, Commercial and Project Requirements laid out in the EoI will be issued a 'Project Sanction Order' to develop a prototype as per provisions of DAP-2020.

3. **Layout** The EoI has been covered in following parts:-

- (a) Part I : General Information.
- (b) Part II : Scope of the 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), Truck Mounted Cranes Project**. Address and contact details of the nodal officer are given at **Paragraph 32 of the EoI**.

PART I : GENERAL INFORMATION

5. **Nomenclature**. Truck Mounted Crane for in-service 4x4 5/7.5 Ton GS Vehicle for Medium Regiments equipped with M777 155 mm/ 39 Calibre A2 Ultra Light Howitzers.

6. **Categorisation**. In accordance with **Para 5 of Chapter III of DAP-2020**. The project is further categorised as under:-

- (a) **Prototype Development Phase**. 'Make-II(Industry Funded)' in accordance with Para 5 of Chapter III of DAP-2020.
- (b) **Procurement Phase**. 'Buy (Indian-IDDM)' in accordance with Para 6(d) of Chapter III of DAP-2020.

7. **Quantity**

- (a) **Prototype Development Stage**. Two Truck Mounted Cranes.
- (b) **Procurement Stage**. 132 units of Truck Mounted Cranes.

8. Make-II Procedure is available at Chapter III of DAP-2020.

9. **Appreciated Timelines**. Tentative timelines for the project are as given at **Serial 13**.

PART II : SCOPE OF THE PROJECT

Truck Mounted Cranes

10. **Scope** Truck Mounted Crane for in-service 4x4 5/7.5 Ton GS Vehicle for Medium Regiments equipped with M777 155 mm/ 39 Calibre A2 Ultra Light Howitzers is conceived as a basic requirement for Ultra Light Howitzer Regiments and will be developed by the Indian Industry. The project is aimed at meeting this requirement indigenously.

11. **Preliminary Services Qualitative Requirements (PSQR) of the Proposed System.** PSQR of Truck Mounted Crane for M777 155 mm/ 39 Calibre A2 Ultra Light Howitzer Regiments is attached at **Appendix A.**

Time Line and Milestones

12. Stages of the development and procurement process are given in Chapter III of DAP-2020.

13. **Time Lines & Milestones.**

<u>S No</u>	<u>Activity</u>	<u>Remarks</u>	<u>Timelines</u>
<u>PHASE-I</u>			
(a)	Issue of Eol	By Project Facilitation Team (PFT)	To
(b)	Eol Responses Submission	By Eol respondents (Indian Vendors)	To + 8 weeks
(c)	Eol Responses Evaluation	By Project Facilitation Team (PFT)	To + 14 weeks
(d)	Short listing of DAs and Issue of Project Sanction Order for Development of Prototype	To selected DAs, those meeting evaluation criteria	To + 16 weeks
Total Timeline for Phase-I			16weeks
<u>PHASE-II (Prototype Development & Evaluation)</u>			
(e)	Prototype Development and Evaluation	As per Para 51 of Chapter-III of DAP-2020	PSO + 48 weeks
(f)	Conversion of PSQRs to SQRs/ Solicitation of Commercial offer	Commercial RFP will be issued for submission of Commercial Offers prior to commencement of User Trials.	4 weeks
(g)	Solicitation of Commercial Offer	To validate the performance of the system against the specifications of approved GSQRs after the development of prototype.	4 weeks
(h)	Phase-III (FET till contract) - As per Chapter II of DAP 2020		

Development of Prototype and Trials

14. All possible and reasonable assistance and any clarification related to functional or operational aspect of development as sought by DAs will be provided by Project Facilitation Team (PFT).

15. After the prototype has been developed as per PSQR given at **Appendix 'A'**, 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

16. A commercial Request for Proposal (RFP) for 'Buy (Indian-IDDMM)' 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 Indigenous Design would also be required to be provided by the vendor prior to the issue of Commercial RFP.**

Deliverables

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

(a) **Prototype Development Stage.** Two Truck Mounted Cranes.

(b) **Procurement Stage.** 132 units of Truck Mounted Cranes. Delivery to be completed within 24 months of signing of the contract.

(c) The project being of low value in nature shall be reserve for MSME. However, if at least two MSMEs do not express interest for a Make programme earmarked for them, the same shall be opened up for all, under the condition that interested MSME(s), if any, at that stage and meeting the eligibility criteria, will get preference over Non-MSMEs in selection of DAs.

(d) 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 Request for Proposal (RFP).

Details of Trials/Assistance to be Provided

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

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

(i) **Stage-I : User Trial Readiness Review (UTRR).** Development of prototype to bring the Truck Mounted Crane to user trial level. PFT will carry out User Trial Readiness Review (UTRR) of prototype and freezing of Technical Specification as per policy in vogue.

(ii) **Stage-II :Field Evaluation Trials.** To evaluate the performance and assess the suitability of Truck Mounted Crane 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 the RFP.

(b) **Assistance to be Provided.** One 4x4 Lorry 5/ 7.5 Ton will be provided to each Development Agency. In addition, 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 No18(2)/15/GTF/DP(PIg-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

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

Intellectual Property Rights (IPRs)

20. **Para 59, Chapter III ofDAP-2020.** DA shall retain title or ownership and all other rights in intellectual property generated during the development of project. However, the Government shall have 'March-in Rights' under which the Government can ask the contractor to grant, or may itself grant license for, inter alia, the following reasons: -

(a) Where health and safety requirements so require the Government to act in public interest.

(b) For National Security Reasons.

(c) To meet requirements for public use not reasonably satisfied by the contractor.

(d) For failure of the contractor to substantially manufacture the products embodying the subject invention in India; or

(e) For failure of the contractor to comply with any of the requirements laid down under these guidelines.

PART III : EVALUATION CRITERIA

Vendor Evaluation Criteria

21. EoI respondents will furnish their response to the Vendor Evaluation Criteria as per **Appendix B**.
22. **MSMEs**. This project is reserved for MSMEs as per Para 12 of Chapter III of DAP 2020. However, if at least two MSMEs do not express interest for a Make programme earmarked for them, the same shall be opened up for all.

Technical Evaluation Criteria

23. The respondents to this EoI are required to furnish information about their Technical Capability as per **Appendix 'C'**.
24. **Indigenous Content at Procurement Stage**. Post successful development of prototype(s), further procurement will be as per the '**Buy (Indian-IDDM)**' procedure with a **minimum of 50% Indigenous Content**.
25. **Additional Information**. Additional information required to be furnished as part of the EoI response is given at **Appendix G**.
26. **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 G**).

PART IV : PROCEDURE FOR SUBMISSION OF RESPONSE TO THE EoI

27. The response to the EoI shall be submitted as per formats given at **Appendix B to Appendix G**.
28. **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.

29. **Rejection Criteria for Selection as DAs.** The following may lead to rejection of Eol response :-
- (a) Failure to meet Vendor Evaluation Criteria given at **Appendix B.**
 - (b) Failure to offer meet/ comply with Technical Evaluation Criteria given at **Appendix C.**
 - (c) Failure to submit certificate as mentioned at **Appendix D to G** of the Eol.
 - (d) Failure to offer compliance to any of the terms and conditions given in the Eol.
 - (e) Any other parameter of the response considered inadequate by the MoD, Government of India.
30. **Foreclosure Criteria.** As per provisions of Para 20, Chapter III of DAP-2020, no government funding is envisaged for prototype development, but there is an assurance of orders on successful development and trials of prototype. No foreclosure of the project will be done after issue of Project Sanction Order other than for reasons of default / non-adherence to Project Sanction Order by vendors or delay by DA to produce the prototype for trials is more than 48 weeks from the date of issue of Project Sanction Order.
31. The Eol respondent shall submit three (03) copies of response to the Eol, 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 Eol in a CD/ DVD.
32. **The Envelops shall be Addressed as under:-**
- Secretary, Project Facilitation Team,
Truck Mounted Crane
Arty-5 (Plans & New Eqpt),
Directorate General of Artillery,
Integrated HQ of MoD (Army)
Room No 507, 'A' Wing, Sena Bhawan
DHQ PO, New Delhi – 110011
email id – aproc@nic.in Tele No – 33609
33. Responses to this Eol must be submitted by 08 September 2021 at the above mentioned address.
34. 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 Eol respondent at the time of submission of Eol responses as per format given at **Appendix E.**

PART V : MISCELLANEOUS

35. **Pre Eol Responses Meeting** - A pre-response meeting will be held on 28 July 2021 at 1500 hrs at Directorate General of Artillery, Arty-5 (Plans & New Eqpt), New Delhi-110011. Vendors are required to submit their queries / clarifications / amplifications in writing or by e-mail to this office by 22 July 2021.
36. Guidelines for penalties in business dealings with entities as promulgated by Government from time to time, will be applicable on procurement process & bidders.
37. The Pre-Contract Integrity Pact (PCIP), listed as detailed in Paragraph 92 of Chapter II of DAP-2020, shall apply mutatis mutandis to the 'Buy (Indian-IDDM)' phase of 'Make' project.
38. Respondent would be subject to disqualifications if they make false, incorrect, or misleading claims in their response to this Eol. A 'Correctness Certificate' as per the format at **Appendix D** will be furnished as part of the response.
39. An Eol Compliance Certificate will be submitted as per **Appendix F**.
40. Please acknowledge the receipt of this invitation for Eol.

File No :A/75471/Make/Truck Mtd/GS/Arty-5

Dated : 14 Jul 2021

Enclosures: Appendices A to G



(Devendra Upadhyay)

Colonel
Secretary, Project Facilitation Team
Directorate General of Artillery
Arty-5 (Plans & New Eqpt),

Appendix 'A'
(Refer Para 11 of EoI)

**PRELIMINARY STAFF QUALITATIVE REQUIREMENT (PSQR) FOR
TRUCK MOUNTED CRANE FOR M777A2ULH REGIMENTS**

1.	Reference to General Staff Policy Statement No	:	352
2.	PSQR No (To be allotted by the General Staff)	:	82
3.	Other Previous GSQR No.	:	-
4.	Next review due on	:	-
5.	GSQR being superseded	:	NA
6.	Reference GSEPC Meeting	:	04 Jun 2020
7.	Line Directorate File No.	:	A/75471/Make/Truck Mtd/ GS/Arty-5
8.	Nomenclature	:	Truck Mounted Crane for M777A2ULH Regts
9.	Security Classification	:	Restricted
10.	Priority for Development	:	High Priority
11.	GSQR Reviewed / Modified On	:	NA
12.	Next Review Due	:	NA
13.	GSQR being Superseded	:	NA

Introduction & Proposed Service Employment

14. 155mm ammunition is kept in palletised state and needs to be handled mechanically, as it is practically impossible for the troops to handle pallets that are of 500 Kgs or above. Existing 155mm guns have prime movers that have cranes already integrated to them, thereby providing the facility of mechanical handling of ammunition pallets to each vehicle.

15. As a Make-II case, it is desired to be a low cost option, and with industrial base within the country, the likelihood of break in the supply chain is not envisaged. Moreover, with indigenous development, the dependency on a foreign vendor is obviated and with close integration between the developer and services, the development is likely to be more suited Indian Army.

16. The crane should be capable of handling the 155mm palletised ammunition. It should be capable of being extended and retracted mechanically. It should be capable of being operated from both within and from outside the cabin. It should be easy to operate and should not require any major modifications to the vehicle body. It should be foldable when not in operation so as not to impinge upon the space in the carriage of the vehicle. The boom of the crane should be capable of being operated mechanically and should need minimum human intervention.

Proposed Service Employment

17. **Employment**. The proposed Truck Mounted Cranes will be mounted on existing 4x4 Ly 5/7.5 Ton which will be used as ammunition vehicles for carriage of 1st and 2nd line ammunition of a ULH Regiment.

18. **Scaling**. The cranes will be scaled at the rate of six ammunition vehicles per battery.

ESSENTIAL PARAMETERS

Operational Parameters

19. 155mm M777A2ULH are being inducted in the Indian Army. These guns have been procured from the United States of America. However, the prime mover has not been contracted, as the gun has been made compatible to the Indian prime mover. These guns are planned to be utilised only in mountain in the Eastern Sector. The terrain in these areas is under developed and the roads can only sustain vehicles in 4x4 configuration. The existing 4x4 Ly 5/7.5 Ton has been found suitable to be used as Ammunition Vehicles in ULH Regiments. Nine such vehicle per Regt are being planned to be integrated with Material Handling Cranes (at the scale of six ammunition vehicles per battery).

20. **Design & Compatibility**. Truck Mounted Crane should be modular such that it allows to be shifted from one In-Service 4x4 Ly 5/7.5 Ton to another and is mounted in a manner that allows operation in max span of crane.

21. **Physical Characteristics**.

(a) **Dimensions**. The dimensions of the crane should be such that the entire structure of the crane should rest within the body of the truck and should not lead to Over Dimension Clearances (ODC) for move in rakes.

(b) **Durability and Service Life**. The crane should be modular and be able to render atleast 4000 hours of rugged operations before becoming due for overhaul. It should be suitable to be operated in field conditions.

(c) **Construction**.

(i) **Prime Mover**. The prime mover will be 4x4 Ly 5/7.5 Ton and power to the crane will be provided by the prime mover.

(ii) **Electrical System.** The electrical system of the crane will be integrated with the electrical system of the prime mover.

(iii) **Crane Operation.** The crane should be electrically operated by using both, hand held and vehicle mounted controls. Suitable arrangements should be provided for the crane to be operated both from within and from outside the cabin.

(iv) **Mounting Location.** The crane should be mounted to the rear of the vehicle, near the rear Tail Gate to allow operation in full span.

(d) **Environmental Conditions.**

(i) **Altitude.** It should be capable of being lifting 155mm ammunition pallets at an altitude of 5000 above MSL without any modification.

(ii) **Temperature.** It should be capable of functioning in all weather conditions as obtained in the Indian Subcontinent within temperature range as applicable for the ammunition to be stored and fired, i.e. -20°C to +45°C in plains, deserts, semi-deserts, mountains and High Altitude Areas as per DG MO letter No A/90220/OP TEMP/MO-9 dated 07 December 2012.

22. **Life Expectancy.** The crane should be able to render atleast 4000 hours of rugged operations before becoming due for overhaul.

23. **Emergency Operation.** In event of failure of the electrical system, an alternate system should be provided for lowering load, slewing and collapsing crane back to stowage position.

24. **Control System.** Any two operations out of three, i.e. hoisting, derricking and slewing should be possible simultaneously. Control Panel should be hand held as well as vehicle mounted, powered by the electrical system of the vehicle and should be operated from within and outside the vehicle. The hand held control panel should be provide with a 10m wire for remote operation.

25. **Boom Operation.** The boom of the crane should be telescopic. The extension, retraction and slew should be hydraulically operated. The boom should have marking with respect to maximum extension and load capacity while in full extension.

26. **Reliability.** Reliability of functioning of the crane should not be less than 90% in all environmental conditions as obtained in the Indian Subcontinent.

27. **Lifting Capacity.** The crane should be capable of lifting palletised ammunition crates weighing minimum 700 kgs at a reach of at least 4m.

Technical Parameters.

28. **Dry Weight.** ≤ 340 kgs.

29. **Max Lifting Height above Crane Base.** 6m.

30. **Maximum Radius of the Load.** Minimum 4m.

31. **Slew Angle.** 360°.
32. **Slew Speed.** 2 RPM.
33. **Height in Transportation Position.** 1450mm.
34. **Safety.**
- (a) **Locking Arrangement.**
- (i) The lifting tackle shall have fool-proof locking arrangements under all conditions to hold hoisted load, to cater for safety against load getting detached or falling down.
- (ii) In the event of failure of power system, the loaded crane should automatically get locked in its position.
- (iii) Outriggers, if required should be self adjusting and lockable.
- (iv) Minimum two fire extinguishers of 2kg CO type should be provided.
- (b) **Anti Skid Surface and Provisions.** There should be non-slippery platform around the crane turn table for free movement of the crew. Wherever necessary, ladders with handgrips should be provided.
- (c) **Overload Safety Switches.** The hoisting operation should cease to function when the load being lifted exceeds the safe working load. An audible alarm should get activated when the load being lifted reaches the value equal to that of 90% of safe working load.
- (d) **Safety Charts/Indicators.** An anodised chart showing various angular positions of the boom and the load which can be safely lifted at different reaches should be provided to assist the crane operator.
- (e) **Lighting Arrangements.** Marker lights should be located at all extremities.

Maintenance and Ergonomic Parameters

35. **Maintenance Requirements.**
- (a) The equipment, its assemblies/sub-assemblies should be modular in construction to facilitate repairs in field through replacement of modules.
- (b) Routine maintenance and repair should be minimal and must be easy to carry out under field conditions.
- (c) List of recommended spares for two years should be provided.
- (d) The equipment should have Built In Test Equipment (BITE) to support diagnostics and repairs through module replacement in field audio / visual alarm be provided to indicate test failure.
- (e) All SMTs /STEs /Test Jigs (SMTs/STEs/ TJs) will be developed for the equipment to support diagnostics and repairs at various echelons.

36. **Oils, Lubricants and Greases.** All oils, lubricants and greases should be of Indian origin and readily available in open market. They should conform to the service requirements. Anodised chart/engraved plate must be provided at a prominent place, preferable next to safety chart.
37. **Manufacturing Process.** Must be suited for mass production with minimum defects.
38. **Quality Assurance.** Components should conform to relevant Indian Standards.
39. **Metrication.** All assemblies/sub assemblies and components shall be designed and dimensioned for measurement in SI units.
40. **Overall Design and Manufacturing Technique.** These must incorporate latest designs, developments and techniques currently recognised in India and abroad.
41. **Literature.** The literature should be in defence format as per JSG 0308:2012.
- (a) Bilingual (English and Hindi) User Hand Book.
 - (b) Bilingual (English and Hindi) Illustrated Maintenance Manual.
 - (c) Part Identification List.
 - (d) Design Specifications, list of SMTs/STEs.
 - (e) Manufacturer's Recommended List of Spares (MRLS).
 - (f) List of Tools & Special Maintenance Tools for carrying repairs/overhauls.
42. **Review of PSQR.** The PSQR will be reviewed on as required basis and converted/frozen to GSQR prior to issue of RFP.

DESIREABLE PARAMETERS

43. Nil.

Prepared by :	Lieutenant Colonel Viplav Anand, General Staff Officer-1, Artillery-5 (Plans & New Equipment)
Contact :	Tele/Fax :33859/23017232
Vetted by :	Brigadier Rajesh Srivastava, SM Brigadier Artillery (Equipment)
Contact :	Tele/Fax : 33599/23017232
Address :	Directorate General of Artillery Artillery-5 (Plans & New Equipment) Room Number – 507, A Wing, Sena Bhavan, Integrated HQ of MoD (ARMY) DHQ PO, New Delhi - 110011

VENDOR EVALUATION CRITERIA

Vendor Evaluation Criteria

1. Name of the Vendor.
2. Evaluation Criteria

<u>Ser No</u>	<u>Criteria</u>	<u>Vendor Submission</u>	<u>Remarks (if Any)</u>
(a)	Nature of the Company (refer Para 6(b) of Chapter III of DAP-2020)	Indian / Joint Venture	
(b)	Ownership status (refer Para 6(b) of Chapter III of DAP-2020)	Compliant / Non compliant	
(c)	Category of Industry	Large / Medium / Small / Micro / OFB / Start Up	
(d)	Registration Details	Yes / No	
(e)	DIPP License details.		

Station :

Signature

Company Seal

Date :

Note :

1. All submissions must be on printed copy of Appendix as uploaded on MoD website and should be supported by referenced documents duly authenticated.
2. Any input with incorrect or missing reference will not assessed.

TECHNICAL EVALUATION CRITERIA

<u>Ser No</u>	<u>Criteria and Sub Criteria</u>	<u>Vendor Submission</u>	<u>Remarks (if Any)</u>
1.	Confirmation of capability to develop and provide equipment to meet user requirements specified in Appendix A (Technical Specifications).	Compliant/ Non Compliant	
2.	Proposed system configuration (broad design details).	Provided/ Non Provided	
3.	Indigenous content will be more than 50% as per DAP 2020	Compliant/ Non Compliant	
4.	Indigenous design as per provision of DAP 2020	Compliant/ Non Compliant	
5.	<u>Timelines.</u>		
	(a) Timelines (48 weeks) for development of prototype after issue of Project Sanction Order. Developmental milestones/ stages be provided with planned activities in each stage	Compliant/ Non Compliant	
	(b) Timelines (within 24 months) for production and supply of 132 Nos of Truck Mounted Cranes for Ultra Light Howitzer (ULH) Regiments in 'Buy (Indian-IDDM)' phase after conclusion of contract.	Compliant/ Non Compliant	
<u>PSQR Requirements</u>			
6.	<u>Physical Characteristics</u>		
	(a) <u>Dry Weight.</u> ≤ 340 kgs.	Compliant/ Non-Compliant	
	(b) <u>Dimensions.</u> The dimensions of the crane should be such that the entire structure of the crane should rest within the body of the truck and should not lead to Over Dimension Clearances (ODC) for move in rakes.	Compliant/ Non-Compliant	
	(c) <u>Durability and Service Life.</u> The crane should be modular and be able to render atleast 4000 hours of rugged operations before becoming due for overhaul. It should be suitable to be operated in field conditions.	Compliant/ Non-Compliant	

<u>Ser No</u>	<u>Criteria and Sub Criteria</u>	<u>Vendor Submission</u>	<u>Remarks (if Any)</u>
	(d) <u>Altitude.</u> It should be capable of being lifting 155mm ammunition pallets at an altitude of 5000 above MSL without any modification.	Compliant/ Non-Compliant	
	(e) <u>Temperature.</u> It should be capable of functioning in all weather conditions as obtained in the Indian Subcontinent within temperature range as applicable for the ammunition to be stored and fired, i.e. -20°C to +45°C in plains, deserts, semi-deserts, mountains and High Altitude Areas as per DG MO letter No A/90220/OP TEMP/MO-9 dated 07 December 2012.	Compliant/ Non-Compliant	
	(f) <u>Prime Mover.</u> The prime mover will be 4x4 Ly 5/7.5 Ton and power to the crane will be provided by the prime mover.	Compliant/ Non-Compliant	
	(g) <u>Electrical System.</u> The electrical system of the crane will be integrated with the electrical system of the prime mover.	Compliant/ Non-Compliant	
	(h) <u>Crane Operation.</u> The crane should be electrically operated by using both, hand held and vehicle mounted controls. Suitable arrangements should be provided for the crane to be operated both from within and from outside the cabin.	Compliant/ Non-Compliant	
	(j) <u>Mounting Location.</u> The crane should be mounted to the rear of the vehicle, near the rear Tail Gate to allow operation in full span.	Compliant/ Non-Compliant	
7.	<u>Operational Parameters</u>		
	(a) <u>Design & Compatibility.</u> Truck Mounted Crane should be modular such that it allows to be shifted from one In-Service 4x4 Ly 5/7.5 Ton to another and is mounted in a manner that allows operation in max span of crane.	Compliant/ Non-Compliant	
	(b) <u>Lifting Capacity.</u> The crane should be capable of lifting palletised ammunition crates weighing minimum 700 kgs at a reach of at least 4m.	Compliant/ Non-Compliant	
	(c) <u>Max Lifting Height above Crane Base.</u> 6m.	Compliant/ Non-Compliant	
	(d) <u>Maximum Radius of the Load.</u> Minimum 4m.		
	(e) <u>Slew Angle.</u> 360°.		
	(f) <u>Slew Speed.</u> 2 RPM.		
	(g) <u>Height in Transportation Position.</u> 1450mm.		

<u>Ser No</u>	<u>Criteria and Sub Criteria</u>	<u>Vendor Submission</u>	<u>Remarks (if Any)</u>
	(h) <u>Control System</u> . Any two operations out of three, i.e. hoisting, derricking and slewing should be possible simultaneously. Control Panel should be hand held as well as vehicle mounted, powered by electrical system of the vehicle and should be operated from within and outside the vehicle. The hand held control panel should be provide with a 10m wire for remote operation.	Compliant/ Non-Compliant	
	(j) <u>Boom Operation</u> . The boom of the crane should be telescopic. The extension, retraction and slew should be hydraulically operated. The boom should have marking with respect to maximum extension and load capacity while in full extension.	Compliant/ Non-Compliant	
	(k) <u>Safety</u> . (i) <u>Locking Arrangement</u> . (aa) The lifting tackle shall have fool-proof locking arrangements under all conditions to hold hoisted load, to cater for safety against load getting detached or falling down. (ab) In the event of failure of power system, the loaded crane should automatically get locked in its position. (ac) Outriggers, if required should be self adjusting and lockable. (ad) Minimum two fire extinguishers of 2kg CO type should be provided.	Compliant/ Non-Compliant	
	(l) <u>Anti Skid Surface and Provisions</u> . There should be non-slippery platform around the crane turn table for free movement of the crew. Wherever necessary, ladders with handgrips should be provided.	Compliant/ Non-Compliant	
	(m) <u>Overload Safety Switches</u> . The hoisting operation should cease to function when the load being lifted exceeds the safe working load. An audible alarm should get activated when the load being lifted reaches the value equal to that of 90% of safe working load.	Compliant/ Non-Compliant	

<u>Ser No</u>	<u>Criteria and Sub Criteria</u>	<u>Vendor Submission</u>	<u>Remarks (if Any)</u>
	(n) <u>Safety Charts/Indicators.</u> An anodised chart showing various angular positions of the boom and the load which can be safely lifted at different reaches should be provided to assist the crane operator.	Compliant/ Non-Compliant	
	(o) <u>Lighting Arrangements.</u> Marker lights should be located at all extremities.	Compliant/ Non-Compliant	
	(p) <u>Reliability.</u> Reliability of functioning of the crane should not be less than 90% in all environmental conditions as obtained in the Indian Subcontinent.	Compliant/ Non-Compliant	
	(q) <u>Manufacturing Process.</u> Must be suited for mass production with minimum defects.	Compliant/ Non-Compliant	
	(r) <u>Quality Assurance.</u> Components should conform to relevant Indian Standards.	Compliant/ Non-Compliant	
	(s) <u>Metrication.</u> All assemblies/sub assemblies and components shall be designed and dimensioned for measurement in SI units.	Compliant/ Non-Compliant	
	(t) <u>Overall Design and Manufacturing Technique.</u> These must incorporate latest designs, developments and techniques currently recognised in India and abroad.	Compliant/ Non-Compliant	
	(u) <u>Life Expectancy.</u> The crane should be able to render atleast 4000 hours of rugged operations before becoming due for overhaul.	Compliant/ Non-Compliant	
	(v) <u>Emergency Operation.</u> In event of failure of the electrical system, an alternate system should be provided for lowering load, slewing and collapsing crane back to stowage position.	Compliant/ Non-Compliant	
	(w) <u>Maintenance Requirements.</u> (i) The equipment, its assemblies/sub-assemblies should be modular in construction to facilitate repairs in fd through replacement of modules. (ii) Routine maintenance and repair should be minimal and must be easy to carry out under field conditions.	Compliant/ Non-Compliant	

<u>Ser No</u>	<u>Criteria and Sub Criteria</u>	<u>Vendor Submission</u>	<u>Remarks (if Any)</u>
	<p>(iii) List of recommended spares for two years should be provided.</p> <p>(iv) The equipment should have Built In Test Equipment (BITE) to support diagnostics and repairs through module replacement in field audio / visual alarm be provided to indicate test failure.</p> <p>(v) All SMTs /STEs /Test Jigs (SMTs/STEs/ TJs) will be developed for the equipment to support diagnostics and repairs a various echelons.</p>	Compliant/ Non-Compliant	
	<p>(x) <u>Oils, Lubricants &Greases.</u> All oils, lubricants and greases should be of Indian origin and readily available in open market. They should conform to the service requirements. Anodized chart/engraved plate must be provided at a prominent place, preferable next to safety chart.</p>	Compliant/ Non-Compliant	
	<p>(y) <u>Literature.</u> The literature should be in defence format as per JSG 0308:2012.</p> <p>(i) Bilingual (English and Hindi) User Hand Book.</p> <p>(ii) Bilingual (English and Hindi) Illustrated Maintenance Manual.</p> <p>(iii) Part Identification List.</p> <p>(iv) Design Specifications, list of SMTs/STEs.</p> <p>(v) Manufacturer's Recommended List of Spares (MRLS).</p> <p>(vi) List of Tools & Special Maintenance Tools for carrying repairs/overhauls.</p>	Compliant/ Non-Compliant	

<u>Ser No</u>	<u>Criteria and Sub Criteria</u>	<u>Vendor Submission</u>	<u>Remarks (if Any)</u>
	(z) <u>Warranty</u> . Minimum two years of warranty should be provided by the vendor.	Compliant/ Non-Compliant	
8.	<u>Compliance Certificates</u>		
	(a) Correctness Certificate (As per Appendix D)	Compliant/ Non-Compliant	
	(b) Confidentiality Agreement (As per Appendix E)	Compliant/ Non-Compliant	
	(c) EoI Compliance Certificate (As per Appendix F)	Compliant/ Non-Compliant	

Station:

Signature

Company Seal

Date:

Note :

1. All submissions must be on printed copy of Appendix as uploaded on MoD website and should be supported by referenced documents duly authenticated.
2. Any input with incorrect or missing reference will not assessed.

CORRECTNESS CERTIFICATE

It is certified that information submitted in the documents as part of the response to Expression of Interest for the project of Truck Mounted Crane for M777 155 mm/ 39 Calibre A2 Ultra Light Howitzer Regiments 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

Note :

1. All submissions must be on printed copy of Appendix as uploaded on MoD website and should be supported by referenced documents duly authenticated.
2. Any input with incorrect or missing reference will not assessed.

CONFIDENTIALITY AGREEMENT

1. It is certified that Expression of Interest document for the project of Truck Mounted Crane for M777 155 mm/ 39 Calibre A2 Ultra Light Howitzer Regiments will not be shared with any agency in part or full any other agency. Only relevant details, as applicable, will be shared with technology partners including foreign technology partners. However, the Eol document itself will not be shared with any technology partners.

2. The company understands the security sensitivity of such an operational systems and any information pertaining to deployment and usage of the system including system scaling will not be discussed with third party without a written 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

Note :

1. All submissions must be on printed copy of Appendix as uploaded on MoD website and should be supported by referenced documents duly authenticated.
2. Any input with incorrect or missing reference will not assessed.

Appendix F
(Refers to Para 39 of Eoi)

Eoi COMPLIANCE CERTIFICATE

It is certified that all the aspects mentioned in the Expression of Interest for the procurement of Truck Mounted Crane for M777 155 mm/ 39 Calibre A2 Ultra Light Howitzer Regiments are being complied to. It is acknowledged that the company will be disqualified from further participation if any aspect mentioned in Expression of Interest is not complied with.

Signature with Company Seal

Note :

1. All submissions must be on printed copy of Appendix as uploaded on MoD website and should be supported by referenced documents duly authenticated.
2. Any input with incorrect or missing reference will not assessed.

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 (Manufacture / 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. Credit Rating.
13. Details of IPRs if any.
14. Details of Foreign Collaborations if any planned for execution of project.
15. Technology Received from abroad and assimilated / planned for execution of project.
16. Products Already Supplied :-
 - (a) To Indian Army / Air Force / Navy.
 - (b) PSUs.

- (c) DRDO and its Laboratories.
- (d) Ordnance Factories.
- (e) Any other Defence Organization.
- (f) To other Principal Customers.

17. Details of Developmental Facilities :-

- (a) R&D Facilities Available.
- (b) Number of Technical Manpower.
- (c) Percentage of Total Turn-Over Spent on R&D during the Last Three Years.

18. Turn-Over during the last Three financial Years.

19. Any other relevant information.

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

Station:

Signature

Company Seal

Date :