

**QUESTIONNAIRE TO SEEK INDUSTRY RESPONSE FOR
MAKE-I PROJECT INDIAN LIGHT TANK (ILT)**

1. The questionnaire to seek industry response for carrying our feasibility study is given below.
2. Interested entities may respond by 13 April 2022 on the address given below:-

Col AC-4 (FRCV & EM)
Dte Gen Armd Corps (AC-4)
IHQ of MoD (Army)
A Wing, Sena Bhawan
New Delhi -110011
Email – **xecoord-2020@gov.in**

<u>Q No</u>	<u>Questionnaire</u>	<u>Response</u> Yes / No should be suitably amplified
<u>Assessment of Capability of Indian Industry.</u> Please list out the details of your entity (Company/Firm/Consortium/JV) in each of following aspects:- (A detailed response will facilitate in a realistic assessment).		
1.	<u>Status of Applicant Entity (Company/Consortium/JV).</u> (a) Would your company be able to provide the Light Tank and ammunitions including ATGMs by itself? (b) If the answer to previous question is No then would your company be forming a consortium for meeting the requirement? (c) If the answer to the previous question is Yes , then is your company the designated Lead Member of the consortium/ JV?	

2.	<p><u>Buy (Indian-IDDM) Capability.</u> Can your entity indigenously design, develop & manufacture Light Tank under Make-I category as per technical parameters, given in the para 6 of the brief of project, with a minimum of 50% Indigenous Content (IC) on cost basis of the base contract price i.e. total contract price less taxes & duties for procurement under Buy (Indian-IDDM) category of DAP-20 ?</p>	
3.	<p><u>Entity/Company Details (Lead Company as well members of Consortium/JV, If Consortium/JV applicable).</u></p> <p>(a) The category of the company, whether large/medium/small.</p> <p>(b) Years of existence {Registered in _____ (Year)}.</p> <p>(c) The shareholding pattern of the company.</p>	
4.	<p><u>Financial Eligibility Criteria (Lead Company as well members of Consortium/JV, If Consortium/JV applicable).</u></p> <p>(a) <u>Credit Rating.</u> Long term credit rating of CCR-BBB or better as on 31st March of the previous financial year.</p> <p>(b) <u>Annual Turnover of the Company and Profitability.</u> Minimum average annual turnover for last three financial years ending 31st March of the previous financial Year. Annual profit in the last five financial years.</p> <p>(c) <u>Net Worth.</u> Net worth of entities, ending 31st March of the previous financial year.</p> <p>(d) <u>Insolvency.</u> Details of insolvency resolution as per IBC if any.</p>	

5.	<p><u>Technical Eligibility Criteria.</u> (As per Para 7 (a) & (b), Appendix F, Chapter III of DAP-2020)</p> <p>(a) <u>Nature of Business.</u> Whether the entity/company is OEM, manufacturing agency or system integrator of defence equipment and not a trading company?</p> <p>(b) <u>Experience in Related Field.</u></p> <p>(i) Does your entity/company have a minimum two (02) year experience in broad areas like manufacturing/ engineering/ electronics/ explosives etc as applicable in the instant case?</p> <p style="text-align: center;">OR</p> <p>(ii) If not, then a cumulative experience of at least three (03) years in above areas, resulting in gaining of competence for manufacturing the proposed product.</p> <p>(c) <u>Integration Capability.</u> To establish the same, the company should have:</p> <p>(i) Successfully commissioned at least one project with a capital expenditure of not less than ₹ 500 Crores (Rupees Five Hundred Crores only) on each such plant/project.</p> <p style="text-align: center;">OR</p> <p>(ii) Successfully signed at least one contract in the product or related domain (eg. Aerospace/ shipbuilding/ armoured fighting vehicles/weapon systems / command & control systems, as the case may be) of value not less than ₹ 300 Crores (Rupees Three Hundred Crores), during the last seven (07) financial years.</p> <p>(d) <u>Licence.</u> Details of Licences held by your entity/company for any systems, ammunition or other controlled technologies applicable for this project.</p> <p>(e) <u>Intellectual Property Rights (IPR).</u> Does your entity/company hold any patents/IPR of the critical components/ technologies related to this project?</p> <p>(f) <u>Quality Control.</u> Details regarding Indian and International quality certification like ISO 9000 etc, if so, details of date of certification with validity and certification agency.</p>	
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	<p>(g) <u>Domain-Specific Criteria</u>. (To establish domain specific capability) Does your entity/company have :-</p> <ul style="list-style-type: none"> (i) Special facilities necessary for development, fabrication or assembly of the product. (ii) Does the company have adequate infrastructure to develop, integrate and manufacture? If not, what would be the procedure and timelines to establish the same? (ii) Design and manufacturing capabilities such as design simulators/software, tempering and machining, specialised welding technology, high-end control systems, etc. 	
6.	<p><u>Research & Development (R&D) Infrastructure</u>. Infrastructure and number of employees working in R&D of systems related to the product.</p> <p>(a) Details of Developmental Facilities:-</p> <ul style="list-style-type: none"> (i) Laboratories and Drawing Office Facility. (ii) Inspection and Quality Control. (iii) Manpower. <p>(b) Does the company have adequate infrastructure for carrying out trials and testing of equipment? Please give details.</p>	

Assessment of Enabling Technologies. Please list out technological expertise, IPR and Design ownership and past manufacturing experience of your entity (Company/Firm/Consortium/JV) in each of following aspects:- **(A detailed response will facilitate in a realistic assessment).**

		Individual Company Capability	Consortium/ JV Capability	Capability with assistance of DRDO (if applicable)	Critical Technology Not likely to be available in India & will be obtained
7.	Design Modeling and Simulation. Advance Vehicle Dynamics Modeling (CAM/CAD) assisted and Simulation.				
8.	Systems Integration. Experience in Systems Integration.				
9.	Metallurgy. Any new generation materials which could be used in the project for light weighting the armour.				
10.	Power Pack / Engine Technology. Volumetrically compact High BHP engines, Modular Multi-Rating Hybrid Power Packs.				
11.	Transmission Systems and Drive Technology. Automatic / Semi-Auto Transmission.				
12.	Suspension System and Braking. Active / Adaptive Suspension Systems.				
13.	Tracks and Running Gear. Segmented Band Rubber Track Technology / Tracks Made of Elastomers / OR any other technology including existing metallic tracks.				

14.	<u>Armament Technology.</u> Soft recoil Systems, All Electric Gun/Turret Drive, High Pressure Guns for tank/artillery systems.				
15.	<u>Ammunition.</u> Conventional tank ammunitions to include HE, HEAT and APFSDS Ammunitions for 105 and higher caliber guns. Titanium Long Rod Penetrator (LRP) or any other alloys offering better performance than Tungsten for Kinetic Energy (KE) ammunition.				
16.	<u>Anti-Tank Guided Missiles (ATGM).</u> Gun Tube Launched or External ATGMs (3 rd / 4 th Generation).				
17.	<u>Fire Control and Sighting (FCS) System.</u> Commander Panoramic Sights (CPS) and Gunner Main Sights (GMS) - 3 rd Gen Thermal Imager, Digital Ballistic Computer, Automatic Target Tracker.				
18.	<u>Situation Awareness.</u> Battlefield Management System (BMS) and Identification of Friend or Foe (IFF) Systems, See Through Armour (Situational Awareness System)				

19.	<p><u>Survivability.</u></p> <p>(a) Composite Armour, Explosive Reactive Armour (ERA).</p> <p>(b) Active Protection System (APS) - Soft Kill/ Hard Kill APS.</p> <p>(c) Chemical Biological Radioactive Nuclear (CBRN) Protection System.</p> <p>(d) Integrated Fire Detection and Suppression Systems (IFDSS).</p> <p>(e) Stealth Technologies.</p>					
20.	<p><u>Vetronics.</u> To monitor sub system performance parameters and ability to predict system failure for timely intervention.</p>					
21.	<p><u>Ergonomics.</u> Crew efficiency enhancing features including Environment Control Units (ECUs) etc.</p>					
22.	<p>Any other Systems (Not included in list given above but part of the product configuration) If YES, please give details of each system</p>					

23.	Critical Technology. Please provide list and details in Cost Percentage Terms of Critical Technologies & Military Materials which are not likely to be available in India.				
24.	Buyer Nominated Equipment (BNE) / Buyer Furnished Equipment (BFE). Please list out any sub-component or subsystem which your entity would like to be nominated as BNE/BFE to facilitate early realisation of prototype.				
25.	Indigenous Capability. Please provide details of envisaged Indigenous Capabilities {in cost percentage (%) terms} for prototype development and production stage of Light Tank (refer paragraph 09 to 12, Chapter II of DAP-2020), under the following heads:-				
	Ser No	Stage	Individual Company Capability	Consortium / JV Capability	Capability with assistance of DRDO (if applicable)
(a)	Prototype Development Stage				
(b)	Production Stage				
26.	Indigenous Software. Please provide details of systems/ sub-systems for which use of indigenous software is envisaged for the Light Tank (refer Paragraph 13, Chapter II of DAP-2020) under following heads:-				
	Ser No	System	Sub-system	Applications which will use Indigenous Software	Reasons for Not Using Indigenous Software (If Applicable)
(a)	Fire Control System (FCS)				
(b)	Active Protection System (APS)				
(c)	Chemical Biological Radioactive Nuclear (CBRN) Protection System				
(d)	Any other Systems (Not included in list given above but part of the product configuration)				
	If YES, please give details of each system				

<p><u>Estimated Time Period for Development.</u> Please list out the details of estimated timelines proposed by your entity (Company/Firm/Consortium/JV) in each of following aspects:- (A detailed response will facilitate in a realistic assessment).</p>	
27.	How much time in months is envisaged to make available one prototype of Light Tank for Field Trials?
28.	What will be the envisaged production capacity (numbers per year) of your entity and likely delivery schedule for Quantity 354 Light Tanks from the date of signing contract?
<p><u>Estimated Cost of Prototype Development and for Subsequent Procurement under 'Buy (Indian-IDDM)' Category.</u> Please provide tentative Basic Cost of the following in ₹ without any taxes and duties as proposed by your entity (Company/Firm/Consortium/JV). (A detailed response will facilitate in a realistic assessment).</p>	
29.	<p><u>Light Tank.</u></p> <p>(a) Cost of Prototype Development (quantity one / two).</p> <p>(b) Cost of one Light Tank of Production Series.</p> <p>(c) Likely life cycle (30-40 Years) cost of the system.</p> <p>(d) Minimum quantity economically viable for business.</p>
30.	<p><u>Ammunition.</u> Per Round/Missile.</p> <p>(a) APFSDS.</p> <p>(b) HEAT.</p> <p>(c) HE.</p> <p>(d) ATGM.</p>

<u>Applicability of Foreclosure Criteria</u>	
31.	You are requested to confirm that your entity (Company/Firm/Consortium/JV) will accept the foreclosure criteria for Make-I Category as specified in Para 20 (a), Chapter-III of DAP-2020 or as amended in future by the MoD, Gol.
<u>Any Other Aspect Considered Important.</u> Please list out the response of your entity (Company/Firm/Consortium/JV) in each of following aspects:- (A detailed response will facilitate in a realistic assessment).	
32.	<u>Incorporation of DRDO/DPSUs in the Project.</u> Does your entity plan to incorporate DRDO/DPSUs in any stage of design and development or subsequent manufacture.
33.	<u>Incorporation of MSMEs in the Project.</u> Does your entity plan to incorporate MSMEs in any stage of design and development or subsequent manufacture.
34.	<p><u>Sustenance.</u></p> <p>(a) Does your entity guarantee indigenous spare and maintenance support (MToT) through the lifecycle (Approximately 40 Years post induction) of the equipment (including spares and upgrades)?</p> <p>(b) Would your entity be capable of providing Base Repairs and Overhaul facilities? Please indicate by which Year of Delivery.</p> <p>(c) How will your entity ensure continuous supply of spares?</p> <p>(d) Is your entity willing to provide training to technicians of the Electrical and Mechanical Engineers (EME) of IA for maintenance and base repairs of the proposed Light Tanks?</p> <p>(e) Is your entity willing to provide technical literature of the platform and various sub systems?</p> <p>(f) Envisaged warranty period of the product.</p>

35.	<u>Training of Crews.</u> (a) Is your entity willing to offer initial and refresher training required by tank crews? (b) What all simulators for training of tank crews and other training aggregates for the proposed product can be supplied by your entity? (Annexure IV to Appendix K, Chapter-II of DAP 2020)	
36.	Any other information relevant to the project not asked for in the questionnaire may also be submitted.	