

**SPECIFICATION NO: 78200/DC-OFPM/SPEC/IPP/2021**

**DATED: 07.01.2021**

**RFP IN RESPECT OF INTEGRATED POWER PACK FOR  
FICV (TRACKED)**

**A. PREAMBLE:** This RFP (Request for Proposal) is aimed at harnessing the synergy of technological competence available with the India industry; overriding the challenges of getting an indigenous solution and offering an impetus to the “Make-In-India” model as envisaged by the Govt. of India. The proposal is invited from the potential industry partners that possess an immense experience and expertise in the field of either manufacturing the major sub-systems of an Integrated Power Pack (IPP) or integrating them all on a tracked armoured vehicle with an established and demonstrated record.

**B. BROAD SPECIFICATION OF FUTURISTIC INFANTRY COMBAT VEHICLE (FICV):** Broad technical parameters of the proposed vehicle which are required to be taken into consideration while selecting the major sub-systems and integration thereof are as under:

<b>Basic Platform</b>		
<b>S. No.</b>	<b>Parameters</b>	<b>Specification</b>
1.	Gross Vehicle weight (including combat weight without Integrated Power Pack)	17.5 Tons
2.	<b>Desirable Weight of Integrated Power Pack</b>	<b>2.5-3 Ton (Max)</b>
3.	Dimension (Approx) (LxWxH)	7.2x3x2.6 (in metres)
4.	Engine	Turbocharged Diesel Engine; 600±20 HP of latest series in its range.
5.	Transmission	Automatic, cross drive and integrated transmission of latest series in its range.
6.	Drive system	Sprocket driven Tracks (on both sides)

7.	Space Envelope (for IPP) (LxWxH)	<b>Length : 2880mm (max)</b> <b>Width : 1850 mm (max)</b> <b>Height: 1375 mm (max)</b> <b>Space Envelop Drg. enclosed as an Annexure-A</b>
8.	Operating Condition of the Vehicle	Min. operating Temp: -15°C to 5° C
		Max. operating Temp: 40°C to 45°C
		Altitude: 0-10000 feet from the mean sea level
		Humidity: 5-95%
9.	Geographical Deployment	Plains, Deserts & Mountains

**C. SCOPE OF SUPPLY (PER SET):** The one set of Integrated Power Pack consists of following sub-systems:

SI No	System Description	Quantity (Set/No)
1.	Engine	1 Nos.
2.	Engine Exhaust system to suite the vehicle architecture	1 Nos.
3.	Transmission	1 Nos.
4.	Cooling system (Liquid/Water cooling)	1 Set
5.	Control linkages (As per clause D: (IV))	1 set
6.	Driver Control Panel with all necessary controls, display and Audio-Visual warnings.  Note: Driver control panel must have self-diagnostic and warning system for all critical parameters of engine, transmission and cooling systems.	1set
7.	Final drive, linkages and interfaces.	1set

8.	Electrical and Electronic sub-systems with cable harness to meet the above requirements.	1set
9.	Set of Li-Ion Battery along with necessary contactors and cable set for Electric Start System	1 Set
10.	Fuel System including: 1. Integrated Fuel pump & Motor set. 2. Pump Mounting Hardware. 3. Design layout including size and material of fuel pipeline from the main fuel tank.  <b>(Manufacture and Assembly of Fuel line as per design suggested by the Industry Partner and the fuel tank shall be OFMK responsibility)</b>	1 Set
11.	Documentation as per clause J	1 Set

**D. TECHNICAL SPECIFICATION:** Detailed specification in respect of each sub-system is given as under:

<b>I. Engine (Military Series) : Must be used in Military vehicles</b>		
<b>Sl No</b>	<b>Parameters or Configuration</b>	<b>Details</b>
1.	Type	Diesel
2.	Turbocharged	Yes
3.	Power rating (at mean sea level)	600 ±20 HP
4.	Engine Performance at Altitude	Power Deration should not be more than 15% of rated capacity at 10,000 feet from the mean sea level.
5.	Engine life	Minimum 1000Hrs (prior to major overhaul)

6.	Engine Start	<p><b>Provision for Dual Start</b></p> <p>A. Electric:</p> <ol style="list-style-type: none"> <li>1. Starter is an integrated part of the engine.</li> <li>2. The instantaneous current requirement to be indicated.</li> </ol> <p>B. Pneumatic (Preferably)</p> <p><b>NOTE: Jump &amp; Tow start will not be considered as one of the starts under the definition of Dual Start.</b></p>
7.	Specific Fuel Consumption (for Gross HP)	Less than 230gm/kW-Hr
8.	Air intake system	<ol style="list-style-type: none"> <li>1. Incorporate air filters with self-cleaning feature and certification for compliance with ISO 5011 &amp; ISO 12103 A4 ( coarse)</li> <li>2. Air intake system should have suitable mechanism to eject the dust from system.</li> </ol>
9.	Smoke Screen	The engine should be capable of continuously generating smoke screen for minimum three minutes at a time.
10.	Control	All critical parameters should be electronically controlled via an Integrated Electronic Control Management System.
11.	Mountings	<p>Suitable mountings to minimise the vibration.</p> <p>Vibration level should be less than <math>0.32 \text{ m/s}^2</math> as per ISO 2631-1/1997.</p> <p><b>(will be measured for power pack alone under static vehicle condition)</b></p>
12.	Alternator	<p>Integrated alternator</p> <p>Rating : <math>15 \pm 1 \text{ kW}</math></p> <p>Regulated Output Voltage: 27 Volt</p>
13.	Max Noise Level	$\leq 105 \text{ dB}$ <b>(Will be measured after integration with the vehicle under static vehicle condition.</b>

		<b>The measuring point shall be 10 meters from the vehicle)</b>
14.	Major Overhaul Kit	The complete list of spare part required for the major overhaul to be submitted during contract execution along with the other documents.
15.	Tests	<p>Following tests as per Society of Automotive Engineers (SAE) standards to be conducted on the engine :-</p> <ul style="list-style-type: none"> <li>- Checking of physical parameters like weight and size.</li> <li>- Checking of all electrical connections.</li> <li>- Certification by Original Equipment Manufacturer (OEM) for testing at part and full load performance of the Engine.</li> <li>- Test bed Certification of Power vs Speed graph and Torque vs Speed Graph by OEM.</li> <li>- Certification of power vs Altitude Curve at different temperatures by OEM.</li> </ul>
16	Diagnosis	- Certification for compliance of diagnosis system as per SAE J1939-73
17	Water Proofing System	Mechanism to ensure engine operation during amphibious operation of FICV.
18.	Cold Starting	Yes

<b>II. Transmission</b>		
<b>Sl No</b>	<b>Parameters or Configuration</b>	<b>Details</b>
1.	Type	<p>Cross Drive and Fully Automatic <b>(Automated manual transmission, Dual Clutch Transmission &amp; Continuous variable Transmission do not fall under the category of Automatic Transmission specified here)</b></p> <p>Note: It should have an efficient Transmission System to provide capability for 360° pivot-turning.</p>
2.	Gears	<p>1. Forward:4 (Minimum) 2. Reverse:1 (Minimum)</p>
3.	Gears shift selector	Lever or Touch based
4.	Power Take off (PTO)	<p><b>Minimum 2</b></p> <p>O/P Power: PTO-1: Min 25 kW (Air-Conditioning Compressor) PTO-2: Min 250 kW <b>(PTO: Either from Engine or Transmission)</b></p>
5.	Torque Converter	Yes
6.	Steering and Braking	Integrated with Transmission
7.	Tests	<p>Following tests to be conducted on the Integrated Transmission :-</p> <ul style="list-style-type: none"> <li>- Checking of physical parameters like weight and size.</li> <li>- Checking of all electrical connections.</li> </ul>

		<ul style="list-style-type: none"> <li>- Functioning of Gear Shift Lever.</li> <li>- Functioning of Steering and Braking system.</li> </ul>
<b>III. Integrated Pre-Heating and Cooling System (Liquid/Water)</b>		
SI No	Parameters or Configuration	Details
1.	Heat Exchanger	<p>1. For turbocharged Engine, transmission, Auxiliary Power Unit (APU) and Environmental Control Unit (ECU)</p> <p><b>NOTE:</b> The cooling system should be such that it ensures no de-rating of capacity post extreme exploitation of the engine.</p> <p>2. The designed heat exchanger shall have a space provision to mount the APU Radiator and ECU condenser with additional capacity to manage heat load approximately 50 kW.</p>
2.	Ballistic Louvers	At vehicle top for air inlet and outlet (The final configuration to be discussed with Ordnance Factory Medak (OFMK) for final deliverable design).
3.	Level sensors (for fluid)	Yes
4.	Test	<ul style="list-style-type: none"> <li>- The system should be able to meet the heat load of engine, transmission APU and ECU systems. Certification for compliance as per IS Standard 13686 of radiator.</li> </ul>

5.	Amphibious Operation	Suitable cooling arrangement to be provided during amphibious operation with closed louvers.
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#### IV. Control Linkages , Final Drive, Driver Control Panel & NVH Insulation

Sl. No	Parameters or Configuration	Details
1.	Gearshift lever (automatic)	Lever or button based (for forward, reverse and neutral)
2.	Steering Lever	To be provided
3.	Service/Stopping brake	Pedal with linkages
4.	Parking Brake	Yes
5.	Accelerator Pedal	Yes
6.	Final Drive	Requisite reduction gear ratio with connecting shafts and interfaces.  <b>Sprocket: OFMK scope.</b>
7.	Driver Control Panel	<p><b>Display:</b> IDD should be a multipage display configuration, LCD/LED/OLED touch screen with a ruggedized display and switches to operate the vehicle.</p> <p>Size of Touch screen and aspect ratio should be optimum to operate.</p> <p>Touch screen should be simple and easy to use. It should work by little positive pressure and auditory control activation feedback.</p> <p>Display of parameters should be distinct by different colours.</p> <p>Text size based on the distance it is going to be seen, avoiding 3D effects of button.</p>



		<p>Multipage display configuration should display following parameters.</p> <p>Page1: Running vehicle parameters (as per annexure-B)</p> <p>Page2 :- Diagnostic data</p> <p>Soft/hard navigation buttons to select &amp; view different pages.</p> <p>Bottom portion of all the pages be common which shows the important vehicle parameters in numerical format and has set of warning &amp; status icons to grab driver's attention immediately.</p> <p>Display should ensure night vision compatibility and sun light readability.</p> <p>Display response time should be less than 100 milliseconds.</p> <p><b>Controls:</b> - The controls should be easily discernible during daylight and darkness.</p> <p>Controls should be at suitable distance so as to avoid two buttons being pressed inadvertently.</p> <p>Controls input should follow the conventional stereotype – Turning a control clockwise should be associated with up, right and increase.</p> <p><b>Ergonomics:</b> IDD should be designed and mounted in such a way that the controls are easy for the driver to use without adverse impact on the driving.</p> <p>Ergonomics of Human-Machine Display should comply with ISO</p>
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		<p>9241-303 or MIL-HDBK-1470</p> <p><b>(OFMK shall share the Driver's seating position along with the space envelop)</b></p> <p><b>Diagnosis and Maintenance:</b> On board diagnostic system should diagnose critical parameters like coolant temperature and Engine Oil pressure. Warning signal should be displayed if the parameter crosses the threshold or normal operating range.</p> <p>Diagnostic system should give inputs and display the time for maintenance of a particular system.</p> <p><b>Duplicate display:</b> Suitable display should be mounted near driver hatch. It enables the driver to read the status of <b>only critical parameters</b> while driving in head-up position.</p> <p>In addition to the IPP related control and display, various hull electrical equipments and peripherals are to be operated/controlled via Driver's panel.</p> <p>For this purpose, additional Circuit Breakers, Indicating Lamps, Fuse Holders and Push Button Switches are required on the driver's panel. Detailed requirement has been spelt out in the Annexure-B.</p> <p>The scope of IPP provider is to provide these additional ckt breakers, switches and indicating lamps on the driver's panel only. Its interface with Hull Electrical equipments and peripherals shall be</p>
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		OFMK responsibility.  NOTE: The final configuration of the driver's panel shall be finalized in association with OFMK after placement of the formal Supply Order.
8.	Insulation	- IPP Compartment should be provided with proper insulation for better NVH compliance.
9.	Test	- Physical Parameters like size and weight will be checked.  - Functioning of Brake, Accelerator pedal, Gear shift lever and controls at driver panel will be checked.  - Stopping and Parking brake test as per Test Operations Procedure (TOP) 02-2-610
<b>V. COMPLIANCES</b>		
1.	The complete IPP at integrated vehicle level (for EMI/EMC)	As per MIL-STD-461 (E/F)
2.	All Electric and Electronic Sub-systems	As per JSS-55555 EMI/EMC-461 (E/F)

**E. SCOPE OF WORK:** The scope of work for IPP is as under:

1. The complete Integration of engine, matching auto transmission, and cooling system at the premises of Industry Partner.
2. The integration of IPP, control linkages, final drive and driver panel shall be done by the Industry Partner on FICV-HULL at OFMK/Indian Industry premises.
3. Installation and Integration of IPP on vehicle with necessary mountings.
4. Testing of cooling system for leakages and air flow.
5. Mobility test will be carried out by OFMK in association with the Industry partner.

6. Technical support for testing of IPP in the integrated Hull as per Serial No. G.

7. Final configuration of cooling system, air-intake, hot air ejection, dust ejection, exhaust system and positioning of PTOs shall be finalized in consultation with OFMK.

**F. EXPECTED SYSTEM PERFORMANCE AFTER INTEGRATION:** The proposed integrated power pack is expected to meet the following min vehicle parameters after the integration:

**NOTE:** 1. The parameters marked as “Target Parameter or Reference Parameter” indicate that these parameters need to be considered at design stage by the respective designer of IPP, Running Gear and the whole vehicle.

2. The Industry Partner for IPP is required to be fully associated during the integration and internal running trials, that is, FICV in static condition as well as during the 1000 km test run. Should there be any requirement of correction/modification in respect of any parameter in achieving the below mentioned vehicle parameters—after detailed analysis by the joint team—the respective system designer or source of supply (for IPP-Industry Partner, for the other systems-OFMK) will be taking necessary corrective action.

<b>I. Mobility</b>		
<b>Sl. No.</b>	<b>Parameters</b>	<b>Specification</b>
1.	Power to Weight Ratio	≥25 HP/Ton [ <b>TARGET</b> ]
2.	Speed  <b>Vehicle Track and Sprocket Dimension:</b> <b>Track length (on ground): 4.75m</b> <b>Width: 336mm</b> <b>Track link length: 170mm</b> <b>Sprocket (Pitch Circle Diameter) :- 650 mm</b>	1. On road :- ≥65 Km/Hr 2. Reverse :- ≥20 Km/Hr (Plain) 3. Cross Country [ <b>TARGET</b> ]: ≥35Km/Hr 4. Cross Country –Desert [ <b>TARGET</b> ]: ≥30Km/Hr
3.	Acceleration	0 to 30 Kms./Hr (on hard ground) in less than 8-10 seconds [ <b>TARGET</b> ]

<b>II. Obstacle Crossing Capabilities</b>		
<b>Sl. No.</b>	<b>Parameters</b>	<b>Specification</b>
1.	Gradient:  <b>NOTE: The IPP and the Final Drive is to be designed such that the FICV (Gross weight 20 Ton) should be able to negotiate the gradient at speed of 10 Km/Hr from the rest.</b>	$\geq 35^\circ$ [TARGET]
2.	Side Slope	$\geq 25^\circ$ [REFERENCE]
3.	Vertical Step	$\geq 0.8$ Meter [REFERENCE]
4.	Trench Width	$\geq 2.5$ Meter [REFERENCE]

#### **G. METHODOLOGY OF EVALUATION OF THE SYSTEM (IPP):**

1. A factory Acceptance test will be conducted at the premises of Industry Partner for carrying out the functional check of Integrated Power Pack in presence of authorised OFMK representative.
2. On receipt of the IPP at OFMK, a joint inspection of the package shall be carried out to ensure the completeness and correctness of all the items in IPP. This joint inspection shall be limited to physical checking of the store, not functional.
3. After initial integration of the IPP on FICV (Tracked), the system shall be put on continuous running for min 24 hours (without track) to ensure the precision of the integration (inspect noise and vibration level).
4. After successful integration and stationary trial, the vehicle shall be tested for 1000 Kms. running on OFMK test track. During this internal running trial all the system level performance parameters shall be evaluated in association with the Industry Partner. There should not be any major breakdown/deterioration of performance in respect of “Integrated Power Pack”, during the exploitation of the vehicle for 1000 Kms. run, failing which the whole exercise would call for a repeat. This internal trial of 1000km run shall be conducted for the first two Integrated Power Packs.

5. On successful completion of internal running trials at OFMK, the final acceptance minutes shall be signed by both parties (OFMK & Industry Partner), which will also be termed as “**Acceptance Certificate**”.

6. Besides above internal trials, the Industry Partner shall be associated during field trials (once the formal trial directive for FICV evaluation is issued) to witness the system performance on the actual war field condition. This would enable the development partner to gather technical information and improve upon the system to meet the expectations of the end user (Indian Armed Forces), if any. However, it would not be obligatory on part of Industry Partner to attend the same.

#### **H. ACCEPTANCE OF INTEGRATED POWER PACK:**

The performance of the integrated system shall be tabulated (tender specification vis-a-vis performance observed) at every state of integration as specified in Para G (except S.No.6). Once all the expected and predefined parameters (as per tender) are met after 1000km continuous running, a joint acceptance minute shall be prepared.

#### **I. TRAINING:**

1. Training for Operation, User Level Maintenance including Preventive Maintenance on Integrated Power Pack should be provided to OFMK employees (4-5) at OFMK for a period of maximum 15 working days.

2. However, OFMK reserves the right to send its team at Integrator’s premises during the course of testing for better understanding the integration process and in-hand training on the system. In such case the development partner must facilitate the OFMK team for inspection and training. However, all expenditure towards logistics shall be borne by OFMK.

**J. DOCUMENTATION:** Following documents are required to be submitted along with the store:

1. Vendor should submit the Computational Fluid Dynamics (CFD) analysis report of cooling system.
2. 3-D CAD model of all systems for IPP.
3. All test reports and certificates mentioned against clause D.
4. Weight of each sub-system.
5. Centre of Gravity location in respect of IPP.
6. Technical manual (with trouble shooting manual).
7. Operators manual.
8. Maintenance manual with schedule for regular maintenance.
9. Manufacturer recommended list of spares and tools.

**K. PRE-QUALIFICATION CRITERION:** The subject system (Integrated Power Pack) primarily consists of two major sub-systems: Engine and Transmission. Therefore, followings are the prequalification criterion for selecting the industry partner for this prestigious and challenging project:

**1. CATEGORY-1:** The industry having capacity and capability to design and manufacture min. 400 HP engine and has successfully supplied minimum 100 Nos. of such engines to the Defence Forces/DPSU/OFB either as a standalone system or as an integrated system with well established record. Such industry partner can collaborate with any other industry partner or partners, as the case may be, to offer the final solution as per the RFP specification.

**2. CATEGORY-2:** The industry having capacity and capability to design and manufacture the matching transmission for 400 HP engine (as per the specification of transmission) and has successfully supplied minimum 100 Nos of such transmission systems to Defence Forces/DPSU/OFB either as a standalone system or as an integrated system with well established record. Such industry partner can collaborate with any other industry partner or partners, as the case may be, to offer the final solution as per the RFP specification.

**3 CATEGORY-3:** The industry that has the capacity and capability to integrate the major sub-systems (engine & transmission, related control linkages and electronic sub-systems) on a tracked armoured vehicle or on a multi-axle (minimum 3-axle) armoured vehicle or on a multi-axle (minimum 3-axle) vehicle and has successfully produced and supplied minimum 50 Nos of such vehicle to the Defence Forces/DPSU/OFB with well established record. Such industry partner can collaborate with any other industry partner or partners, as the case may be, to offer the final solution as per the RFP specification.

4. The industry partner **must clearly indicate in their offer that under which category they are applying in respect of Pre-Qualification Criterion.** And, in order to establish their claim under selected pre-qualification criterion, they must submit the documents along with the performance report of their product from the end user to substantiate their declaration. However, in respect of a complete weapon platform the inspection note issued by DGQA on behalf of the end user will also be considered as a Performance Certificate. Such submitted documents will be subjected to the cross verification by OFMK. Any adverse or contradictory remark by the end user during this process of cross substantiation by OFMK will lead to the disqualification of the bid without further discussion or correspondence.

5. Furthermore, the interested industry partner must possess any of these above stipulated conditions on the date of technical bid opening. Any claim (due to further development in the industry in due course of time, that is, after technical bid opening) in the respect of pre-qualification criterion **will not be entertained**.

6. Apart from the above main technical criterion, the industry must possess a sound financial record. The company should be a profit making company at least in three years out of the last five financial years. In this regard, the interested partners must submit their financial statements in order to establish their claim.

7. The min average turnover of the company in the last three financial years should not be less than Rs 350 cr. This condition derives its genesis from the Draft RFI No: A/36830/FICV(Tr)/GS/Mod(Mech), dated: 22<sup>nd</sup> Oct 2019, issued by DGMF which states: **“The vendor should be capable to supply the first lot of 200 Fully Formed FICV(Tr) within two years of Award of Contract/Supply Order.”**

8. This RFP is intended for the Indian Industry Partners and therefore the bid submitted by any “foreign industry” shall not be considered for evaluation and shall be returned as it is.

9. Considering the complexity of the system and being a design & development project, the Techno-commercial offer is invited only from OEMs as per clause K (I, II, & III). The Techno-commercial offer submitted through Authorised Dealer, Authorised Partner or Authorised System House, or any other terminology used but carries the similar significance, shall be rejected without assigning any reason.

10. The term ‘Industry Partner’ is referred here as: a company, or group of companies under the same group.

## **L. GENERAL TERMS AND CONDITIONS:**

1. The information shared at this stage is sufficient to tender the techno-commercial offer. However, once the contract is placed on the successful bidder the other relevant information which OFMK feels necessary for the integration of the Integrated Power Pack on the vehicle shall be shared with.

2. It would be mandatory for the successful bidder to sign a Non-Disclosure Agreement (NDA) with OFMK that any information relating to the OFMK design in full or part thereof will not be shared with any third party without prior, formal approval from OFMK. (The format for NDA is attached as an annexure C)



3. The successful Industry Partner shall submit the detailed layout 3d CAD Model of their proposed Integrated Power Pack (including the ergonomics of Driver's compartment) within three months from the date of placement of the order so that OFMK can configure the Hull modelling as per the requirement and the same is readily available for the integration once the power pack arrives at OFMK premises.

4. OFMK may consider (**not obligatory**) the acceptance of dimension with  $\pm 5\%$  variation in overall dimension (as specified in clause B (7)—SPACE ENVELOP FOR IPP) of the proposed layout and space requirement, if needed by the Industry Partner during actual designing the layout— **solely on the principle of space optimization and better performance of the vehicle.**

5. The selected industry partner for the project shall ensure the availability of spares for field maintenance and major overhaul for the next 20 years to ensure the serviceability of the platform in the field. (**Applicable only during production phase of FICV**)

6. On successful completion of the project, the industry partner who has already developed, supplied and demonstrated the system as per tender specification shall be considered as an established source (Industry Partner) for the subject system and shall avail the preference in the future procurement process as per the guideline of the Govt. of India/OFB Procurement Manual-2018 (clause: 2.26), and subsequent amendments thereof, being notified from time-to-time.

7. All interested industry partners must submit clause-wise compliance statement with respect to all technical parameters and other terms and conditions. The offer without a compliance statement shall not be evaluated and will be rejected without any correspondence. Notwithstanding anything mentioned in the technical offer, the statements and compliances made in the "**compliance statement**" with respect to technical & commercial terms and conditions shall be firm and final.

8. The industry partner must clearly indicate the **Category** under which they consider themselves as "**QUALIFIED**" in respect of "**Pre-Qualification Criterion**". In this regards they must indicate the **Document No** in their compliance statement that they are submitting along with the offer for their claim.

9. The solicitation of offer will be as per "**Single Stage-Two Bid System**" which implies that a **Request for Proposal** would be issued soliciting the technical and commercial offer together as per **e-procurement portal of OFB.**

10. The validity of offers (both technical and commercial) would be at least six months from the date of technical bid opening date.

11. All consumables required after delivery of the IPP from Industry partner premises shall be in OFMK scope.

#### **M. EVALUATION OF THE OFFERS:**

1. The technical offers would be evaluated by a “**Technical Evaluation Committee**” as per the categorisation selected by the industry partner and the compliance statement submitted thereafter.

2. The technical evaluation committee reserves the right to carry out physical capacity verification of the industry to ascertain the capacity and capability of the Industry if the committee feels necessary and not satisfied with documents submitted along with the offer.

**N. COMMERCIAL EVALUATION:** Being a development programme and such procurement phase, all recurring and non-recurring cost (including design & development, documentation and training cost) shall be loaded to arrive at the lowest offer. However, the Industry partner must submit the details of recurring and non-recurring cost separately.

#### **O. INDIGENIZATION:**

1. The Indian Industry Partner must provide the sub-system wise Indigenous content of the proposed “Integrated Power Pack” as well as cost breakup in % down to all major components/sub-assembly.

2. The Industry partner should also specify the depth and range of Transfer of Technology (in case of foreign content) available with Indian Production agency at the development stage.

3. The indigenization plan of the selected Industry Partner must be **at least** in line with DAP (Defence Acquisition Procedure)-2020 Chapter-1, Category: Buy (Indian) (or prevailing DAP) during **the production phase** of the equipment.

#### **P. PAYMENT TERMS:**

1. Being a development project, an advance payment, not exceeding 15% of contract value (excluding taxes and duties) can be made subject to submission of Bank Guarantee (BG) **110% of the advance payment claimed**. The validity of the bank guarantee shall be minimum two years from the date of release of advance payment.

However, this bank guarantee shall be released immediately after the issue of “Acceptance Certificate” by OFMK or expiry of validity whichever is earlier. In case, the Industry Partner anticipates delay in delivery of IPP, they will return the Advance Payment OR extend the validity of this BG well in advance (at least three months before the delivery schedule), failing which OFMK reserves the right to forfeit the BG without intimation.

2. The 70% of the contract amount (in respect of delivered store only on pro-rata basis) can be paid against the receipt of the Integrated Power Pack at the consignee’s premises (OFMK) and joint physical inspection of the store as per clause G (2). Since the integration of the Power Pack on FICV (Tr) and its performance check during the internal trial is the core spirit of the contract, this 70% payment can only be made against the submission of Bank Guarantee of equal amount valid for a period minimum one year from the date of release of this payment. If the Industry Partner fails to integrate the power pack on FICV (Tr) within 6 months from the date of offering of FICV for integration, OFMK reserves the absolute right to forfeit the Bank Guarantees.

3. The balance 15% shall be made after issue of “**Acceptance Certificate**” as per clause **G (except SI No-6)** against the submission of Bank Guarantee of 3% (Performance Guarantee) of the total contract value valid up to the warranty period of the delivered store. Both bank guarantees, that is, submitted against the advance payment and against the 70% payment shall be released immediately after the issue of “**Acceptance Certificate**” by OFMK. However, for any reason, not attributed to the Industry Partner, OFMK is unable to complete the 1000 Km internal running trial within one year from the date of receipt of IPP at OFMK, the bank guarantees: towards the advance payment and 70% against the receipt of IPP shall be returned to the Industry Partner.

**OR**

Total 100% payment shall be made after issue of “**Acceptance Certificate**” by OFMK as per clause G (5) against the submission of Bank Guarantee 3 % (performance guarantee) of the total contract value valid up to Warrantee Period of the delivered store. –**Preferred Mode of Payment.**

**Q. DELIVERY SCHEDULE:** Delivery schedule for the IPP is as under:

<b>SI No</b>	<b>Prototype</b>	<b>Delivery Schedule</b>
1	First Prototype	1. <b>Supply at OFMK:</b> 24 Months from the placement of Order 2. <b>Integration of IPP with FICV &amp; Factory Running Trial:</b> 6 months from the date of offering of the First FICV Hull at OFMK.

2	Second Prototype	<p><b>1. Supply at OFMK:</b> 12 Months from the date of issue of acceptance certificate of the first prototype.</p> <p><b>2. Integration of IPP with FICV &amp; Factory Running Trial:</b> 6 months from the date of offering of Second FICV Hull at OFMK.</p>
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**NOTE:** Being a development project, the successful bidder is required to submit the PERT chart with stage wise timeline for the completion of the project—including completion of successful internal trial of 1000 km—from the date of placement of the contract and acceptance thereof. However, such timeline must not exceed beyond the final timeline mentioned against the delivery schedule as above.

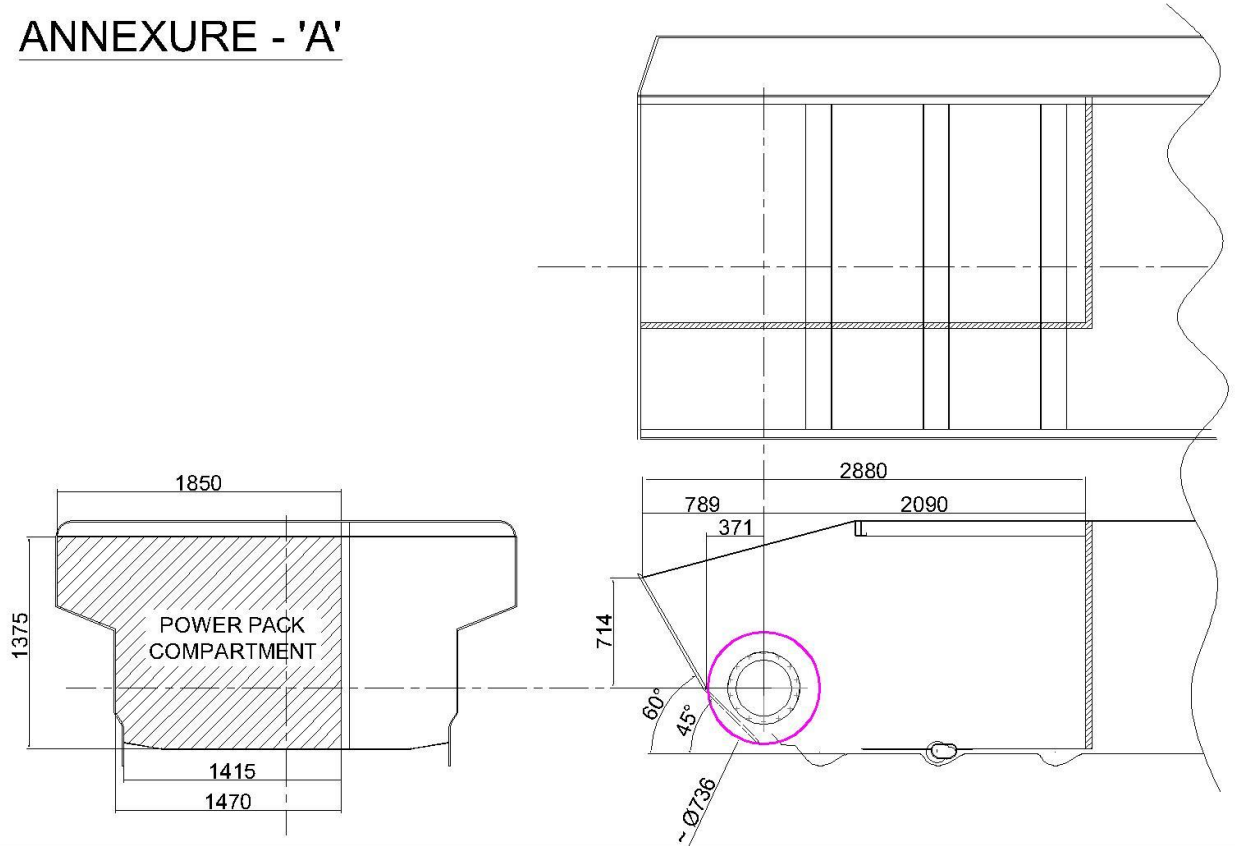
**R. WARRANTY:** The warranty of the IPP supplied shall be one year from the date of final acceptance of the system or 18 months from the date of receipt of IPP at OFMK whichever is earlier.

**S. INTELLECTUAL PROPERTY RIGHT (IPR):** Intellectual property right for design and development of IPP must be with Indian Industry.

**T. PRE-BID MEET:** Interested Industry Partner may interact with OFMK for techno-commercial clarification during Pre-Bid meet, which will be scheduled after three weeks of floating the formal tender inquiry. Notwithstanding this pre-bid meet, the interested Industry Partner can interact with or visit OFMK for any clarification.

# ANNEXURE-A

## ANNEXURE - 'A'



## ANNEXURE-B

### PROVISION ON PANEL/DASH BOARD FOR VEHICLE SYSTEM

SI NO	ITEM DESCRIPTION	QTY	OPERATIONAL DETAILS
1	FUSE HOLDERS FOR FUSES	7	1. 10A-3 Nos 2. 5A-3 Nos 3. 2A-01 No
2	SIGNAL LIGHTS (HOLDERS WITH LED LIGHT)	11	FOR INDICATION
3	CKT BREAKERS	9	1. 5A -2 (SPARE) 2. 10A-1 (NEUCLEAR EXPLOSION PROTECTION SYSTEM) 3.15A-2 (FEED PUMP+PRE-HEATER MOTOR) 4. 30A-3 (BILGE PUMP) 5. 50A-1 (NBC BLOWER)
4	ONE POLE SWITCHES	5	1. SMOKE GENRATING EQUIPMENT 2. ENGINE COOLING SWITCH 3. MARKER LIGHT SWITCH 4. WATER PROFING VALVE CONTROL CKT 5. STORAGE BATTERY SWITCH
5	TWO POLE SWITCH (WITH NEUTRAL)	2	1. INSTRUMENT PANEL LIGHTING SWITCH 2. HEAD-LIGHT SWITCH
6	ONE POLE PUSH TYPE SWITCH (SPRING RETURN)	2	1. PRE-HEATER GLOW PLUG SWITCH 2. BLANK (SPARE)
7	BUTTONS (PUSH BUTTON)	9	1. FIRE FIGHTING-2 Nos 2. OIL-PRIMING PUMP 3. CBRN PROTECTION SYSTEM 4. NEUCLEAR EXPLOSION PROTECTION SYSTEM 5. COOLANT PUMP 6. ELECTRIC STARTER 7. AIR START 8. SPARE (BLANK)

8	METER (DISPLAY) ON DASH BOARD WITH ALL REQUIRED SENSORS (RELATED TO IPP)	10	<ol style="list-style-type: none"> <li>1. ENGINE HOUR METER</li> <li>2. ENGINE RPM</li> <li>3. ENGINE OIL TEMPERATURE</li> <li>4. ENGINE OIL PRESSURE.</li> <li>5. GEAR BOX OIL PRESSURE</li> <li>6. COOLANT TEMPERATURE</li> <li>7. SPEEDOMETER (VEHICLE)</li> <li>8. ALTERNATOR VOLTAGE &amp; CURRENT INDICATION</li> <li>9. FUEL LEVEL INDICATION</li> <li>10. AUDIO-VISUAL WARNING SYSTEM FOR IPP</li> </ol>
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**Note:** All above controls, switches/buttons or their equivalents covering the functionalities should be provided by the Industry partner as a part of IDD. However, the actual power flow, operational control logic and implementation of functionalities other than those for IPP will be part of OFMK scope.

**ANNEXURE-C**

**(DRAFT NDA)**

**NON DISCLOSURE AGREEMENT**

**(NDA)**

NO. **XXXX**/OFMK/ODC /2020-21 Dated: xx-11-2020

Made by and between

**ORDNANCE FACTORY MEDAK  
YEDDUMAILARAM  
SANGAREDDY DT.  
TELANGANA-502205**

Hereinafter referred to as “OFMK”

And

**ABC FIRM ADDRESS**

Hereinafter referred to as “M/s ABC”

Authorised Signatory  
of  
**M/S ABC**

Signature of  
DIRECTOR/ODC



## NON DISCLOSURE AGREEMENT

THIS AGREEMENT is entered into on this day of by and between ORDNANCE FACTORY MEDAK a unit of ORDNANCE FACTORY BOARD (OFB) a Govt. Department existing and organised under the laws of India, whose registered office is at Yeddumailaram, Sangareddy district, Telangana, India - 502205 represented for this NDA by GENERAL MANAGER ORDNANCE FACTORY MEDAK (hereinafter referred to as “OFMK” ) and “ABC”, whose office is at -----  
**ADDRESS**-----,represented for this NDA by “ABC” for **SUPPLY OF IPP ,FICV**

“OFMK and M/S ABC” are hereinafter individually referred to as the “Party “and collectively as the “Parties”.

Whereas

In the course of discussions concerning a possible co-operation, whose terms and consequences this agreement does not contemplate, relating to **SUBJECT MATTER**, OFMK and, may disclose to each other technical, commercial, financial and other information of a strictly confidential nature, in connection with **SUBJECT MATTER** -by OFMK

The Parties wish to settle the conditions of the disclosure of the confidential information and to define rules relating to the use and protection of said information.

Now therefore it is hereby agreed as follows:

1. The purpose of this agreement is to set forth rules relating to the use and protection of the Confidential Information disclosed by a Party to the other as well as the confidentiality obligations of the Receiving Party with respect to the Confidential Information.

Nothing in this agreement shall be construed as compelling the Parties to disclose any Confidential Information to each other, or to enter into any further contractual relationships.

Authorised Signatory  
of  
**M/S ABC**

Signature of  
DIRECTOR/ODC

2. For the purpose of this agreement the term “Confidential Information“ shall mean any information disclosed by one Party (the Disclosing Party) to the other Party (the Receiving Party) under the agreement whether in writing, orally, visually, in the form of samples, models or otherwise, provided that such information, if written, is clearly and conspicuously marked as being proprietary or confidential and that if oral, visual, and in other non-written form is designated as Confidential Information at the time of disclosure and is confirmed by the Disclosing Party as such in writing within 30days of it being disclosed. All the protection and restrictions in this Agreement as to the use and disclosure of confidential Information shall apply during the same period of one month.
  
3. In consideration of an subject to the foregoing, the Receiving Party in each case undertakes in respect of Confidential Information disclosed to it here under, and for the duration of this Agreement and after its expiration or termination of this Agreement and duration shall remain in full force and effect for a period of Three (03) years following the disclosure of such Confidential Information or until it falls under one of the expectations set out on Section 4 below:
  - (a) To obtain /keep such Confidential Information in strict confidence.
  - (b) Except with prior written consent of the Disclosing Party, not to disclose such Confidential Information whether directly or indirectly, in particular through reproduction, to any third Party or Persons. Any third party means any individual or company other than OFB/OFMK and M/S ABC. Not to use such confidential Information and shall not be sold/traded/published or otherwise disclosed to any one in any manner, whatsoever, including by means of reproduction otherwise in writing by the Disclosing Party;
  - (c) To protect such Confidential Information, whether in storage or in use, with the same degree of care as that party uses to protect its own Confidential Information against public disclosure, but in no case with any less degree than reasonable of care;
  - (d) Not to disclose such Confidential Information to any persons employed in its company other than those for whom such knowledge is essential for the purpose contemplated in the Agreement ,provided such persons are informed of the Confidential Information and of the associated confidentiality obligations under this Agreement;

Authorised Signatory  
of  
M/S ABC

Signature of  
DIRECTOR/ODC

4. The obligations in this Agreement shall not apply to any information which it can be proved by the Receiving Party upon the request of the Disclosing Party:
- (a) At the time of disclosure was ,or thereafter became, part of the public domain otherwise than through the fault or negligence of the Receiving Party, or
  - (b) Was lawfully obtained by the Receiving Party from a third Party with full rights of disclosure, or
  - (c) Is already known to the Receiving Party at the date of receipt of Confidential Information pursuant to this Agreement, or
  - (d) Was independently developed by the Receiving Party without making use of the Confidential Information, or
  - (e) Has been approved for release or use (in either case without restriction) by written authorisation of the Disclosing Party, or
  - (f) Has not been designated or confirmed as being Confidential Information, unless the circumstances of its disclosure make it obvious that it was information of this confidential nature.
5. Each Party designates the below identified person(s) from within its own organisation to receive and disclose all Confidential Information which is subjected to the restriction of this Agreement and to maintain a log and/or file thereof:

For M/S ABC:-

TITLE:

ADDRESS : -----ADDRESS-----

FOR OFMK:-

TITLE            DIRECTOR/ODC

ADDRESS:    ORDNANCE DEVELOPMENT CENTRE, ORDNANCE  
FACTORY MEDAK, YEDDUMAILARAM, SANGAREDDY DIST,  
TELANGANA STATE-502205

Authorised  
signatory of M/S ....

Signature of  
DIRECTOR/ODC

Any alteration in the name or address of the above individual(s) by either Party shall be notified to the other in writing.

6. This Agreement shall be constructed as granting or confirming, either expressly or impliedly any rights under Patents, copyright or any other form of intellectual property rights belonging to the Disclosing Party in respect of Confidential Information the ownership of which shall remain vested in the Disclosing Party at all times.
7. All confidential Information, including drawings, specifications and other documents submitted by one Party to the other shall remain the property of the Disclosing Party. If either Party elects not to pursue the purpose contemplated by this Agreement each Party shall either return to the other Party all such information, drawings, specifications and other documents and all copies thereof containing the confidential information or destroy them upon the written request of the Disclosing Party and provide the latter with a certificate of destruction within thirty (30) days after such request. The return or destruction of documentation shall not be deemed to release either Party from its obligation contained in Clause 3 above.
8. In providing Confidential Information hereunder, the Parties make no representation, warranty, assurance, or inducement, expressed or implied, as to its adequacy, sufficiency or freedom from defect of any kind, including, but not limited to, freedom from Patent infringement that may result from the use of such information, nor shall the Parties incur any responsibility or obligation by reason of such information.
9. Unless earlier terminated in accordance with article 10 hereafter, this Agreement is entered into for a period of three (03) year from the date of its signature by both Parties.
10. Either Party shall be entitled to terminate this Agreement at any time with thirty (30) days prior written notice to the other Party.
11. Neither Party shall assign or transfer any of its rights or obligations hereunder without the prior written consent of the other Party, except to a successor in ownership of substantially all the assets of the assigning Party if the successor in ownership expressly assumes in writing the terms and conditions of this Agreement.

Authorized

Signature of

signatory of M/S...

DIRECTOR/ODC

12. Each Party shall use every reasonable endeavour to ensure that its employees and other persons when disclosure of Confidential Information has been specifically authorized by the Disclosing Party shall observe the obligations contained herein as if such employees and other persons were a Party to this Agreement.
13. Any confidential Information disclosed by the Parties under this Agreement which is Classified Information i.e., information provided with a military security classification by the competent national military authorities, shall be identified by the Disclosing Party as classified Information at the time of disclosure and the disclosure, protection, use and handling of such information shall be in accordance with security procedures by the appropriate Government.
14. The entering into this agreement shall not constitute obligation on part of either of the Parties to enter into any further agreement.
15. This Agreement shall be governed by and construed in accordance with the Law of Govt. of India. Any dispute arising in connection with this Agreement, if not settled amicably, shall be settled through the arbitrators appointed by DGOF.

The Arbitration award shall be final and binding upon the Parties.

16. This Agreement constitutes the entire agreement between the Parties with respect to the subject matter hereof and supersedes and cancels all prior representations, negotiations, commitments, undertakings, communications, whether oral or written, understandings and agreements between the Parties, with respect to or in connection with any of the matters or things to which such Agreement applies or refers.

This Agreement can only be changed by a written amendment agreed upon by the Parties hereto and signed by Persons authorised to bind the Parties.

IN WITNESS whereof the Parties have caused this Agreement to be signed by their duly authorised representatives on the date first above written.

<p>For and on behalf of:</p> <p>-----<b>ADDRESS</b>-----</p> <p>-----</p> <p>Authorized signatory of M/S ABC</p>	<p>For and on behalf of:</p> <p>ORDNANCE FACTORY MEDAK, YEDDUMAILARAM, TELANGANA STATE, PIN CODE: 502205.</p> <p>Signature of DIRECTOR/ODC</p>
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