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BROAD AoN DETAILS FOR PROCUREMENT OF QUANTITY NINETY ONE (91) HIGH MOBILITY RECONNAISSANCE VEHICLE FOR ARMoured AND MECHANISED INFANTRY UNITS DEPLOYED ALONG NORTHERN BORDERS UNDER BUY (INDIAN) CATEGORY AS PER THE PROVISIONS OF CHAPTER-V OF DAP 2020 (FAST TRACK PROCEDURE)

1. **AoN Date.** 01 Dec 2022.
2. **Item Description (Weapon / Equipment / Platform).** High Mobility Reconnaissance Vehicle (HMRV).
3. **Quantity.** Quantity ninety One (91) High Mobility Reconnaissance Vehicle.
4. **Categorisation.** Buy (Indian) as per provisions of Chapter V of DAP 2020 Fast Track Procedure.
5. **ORs of the Item.** Broad ORs of the item is as given below :-
 - (a) The High Mobility Reconnaissance Vehicle (HMRV) will be employed by Command and Recce elements of Mechanised Infantry Units and Armoured Regiments for Recce & Surveillance tasks. HMRV should possess adequate mobility and provide protection for troops on board. In addition, it should be able to carry the battle loads to include weapons, ammunition, surveillance and communication equipment required to carry out mandated operational tasks.

Operational Parameters

6. **Terrain.** HMRV will be employed for on road and cross country (off road) movement in under mentioned terrain & weather conditions: -
 - (a) Plain and desert terrain.
 - (b) High Altitude (up to 5000 meters altitude) / Mountainous terrain including snow bound areas.
 - (c) HMRV should be operational by day & night and in commonly encountered weather conditions in above terrains.
7. **Configuration.** HMRV should be a 4x4 Right Hand drive vehicle with all around protection as described in subsequent paragraphs. It should have a provision to integrate surveillance equipment and a weapon mount (mounted on a hatch/ cupola with 360° traversing capability) for bringing down effective fire.
8. **Service Life.** The service life of vehicle should not be less than 10 years/ 1,00,000 km.
9. **Seating Capacity.** Not less than 4 including driver.
10. **Operating Temperature.** The HMRV including all sub-systems should be operational in following ambient temperature conditions: -
 - (a) **Plain and Desert Terrain.**
 - (i) **Minimum Operating Temperature.** Between 0° to 05° Celsius.

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- (ii) **Maximum Operating Temperature.** Between 40° to 45° Celsius.
 - (b) **High Altitude & Mountainous Terrain.**
 - (i) **Minimum Operating Temperature.** Between (-)20° to (-)10° Celsius.
 - (ii) **Maximum Operating Temperature.** Upto 40° Celsius.
11. **Transportability.** Capable of being transported by:-
- (a) In-service transport aircrafts.
 - (b) In service Military Wagons.

Technical Parameters

12. **Dimensions (Excluding all Detachments).**
- (a) **Length.** Not more than **5.0 meters.**
 - (b) **Height.** Not more than **2.4 meters.**
 - (c) **Width.** Not more than **2.5 meters.**
13. **Payload.** Should be able to carry payload of not less than **1.5 Tons.**
14. **Ground Clearance.** Not less than 250 mm when fully laden.
15. **Cruising Range.** Should have cruising range of minimum 400 Km on road and 200 Km in cross country (off road).
16. **Speed.** Should be able to move on road at 80 to 100 kmph and 35 to 45 kmph in cross country (off road).
17. **Acceleration.** 0 kmph to 60 kmph in not more than 15 seconds on road with full payload.
18. **Obstacle Crossing.** When fully laden should be able to negotiate obstacles as under:-
- (a) **Gradient.** $\geq 30^\circ$.
 - (b) **Side Slope.** $\geq 17^\circ$.
 - (c) **Fording.** Not less than 0.50 m without preparation with Approach/Departure angle of not less than 30°.
19. **Engine.**
- (a) Turbocharged Diesel Engine.
 - (b) **Engine Service Life.** At least 1,00,000 km or 10 years.

- (c) **Cold Starting.** HMRV should be provided with a suitable system for starting in low temperatures up to (-) 20°C.
20. **Transmission.** Automatic Transmission with Manual Override Control & Traction Control System. The transmission should have provision in driver's cabin to select 4x4/ 4x2.
21. **Power to Weight Ratio.** Not less than 30 HP/ ton (fully laden weight with HVAC System).
22. **Suspension.** Independent suspension for all four wheels.
23. **Steering.** Power Steering.
24. **Braking System.** Dual Fail-safe brakes with Anti-Skid Lock Braking System, Hill Hold Assist & Parking Brake.
25. **Tyres.** All terrain suitable tyres with 'Run Flat' and 'Central Tyre Inflation System (CTIS)'. The vehicle should be provided with one set (Qty Four) Anti Skid snow chain. The tyres should be indigenous.
- (a) **Run Flat Tyre System** Provided for all wheels including spare wheel. The vehicle should be able to run a minimum distance of 10 km on level unmetalled roads on flat tyres with full load.
- (b) **Central Tyre Inflation System (CTIS).** The vehicle must have a Tyre Pressure Monitoring System with Indicator and CTIS. Inflation/ Deflation of tyre should be undertaken in static and mobile state from cabin itself.
26. **Protection.** The HMRV should have adequate structural integrity to meet the requisite safety standards. The protection should be provided for side walls, doors, underbelly, wind screen, side & rear glasses and must withstand the direct hit of five rounds of 7.62 x 51 mm Ball fired from 30 m.
27. **Gunner's Hatch.** Roof Mounted Traversing Gunner's Hatch with a traverse of 360° with following additional facilities:-
- (a) A mount for fitment of weapon on hatch with an ability to elevate up to +45° and depress up to -05°.
- (b) The hatch should be provided with detachable plate to cover frontal arc of 120°. The hatch and detachable plate should have the same protection level as given in Para 22.
28. **Communication.** Adequate ergonomics inside troops compartment to integrate and operate Two In Service Radio Sets {Buyer Furnished Equipment (BFE)}.
29. **Navigation.** Combined satellite and inertial navigation system, compatible with NavIC, GPS and GLONASS satellite navigation systems with Navigation data to be displayed on Visual Display Unit in form of digital maps. The system should be compatible with Defence Series Maps (DSM) and upgraded to DSM when introduced to service.

30. **Power Backup.**

- (a) An additional battery of minimum 110 AH capacity other than main vehicle battery to be provided. Both batteries should be indigenous.
- (b) Both the batteries must be charged from alternator (with rectifier) and be provided with over voltage, over charge and short circuit protection.
- (c) Should provide variable charge by four points comprising of two standard 12 Volt charging points and two 05 ampere 220 Volt points.

31. **Environmental Control Unit.** The vehicle must be provided with Heating, Ventilation and Air Conditioning (HVAC) environmental control unit so as to maintain the cabin temperature between **20°C to 25°C**.

32. **Self Recovery.** A self-recovery winch, capable of recovering the fully laden HMRV must be provided in front of the vehicle with a cable of minimum 15 meter length and a suitable hook.

33. **Access to vehicle.** Two doors each on either side for troops compartment & door/ tail board for access to cargo compartment.

34. **Stowage.** The vehicle must be provided with modular Racks/ Brackets to carry BFE (individual and group battle loads) in secured position during vehicle movement for following categories:-

- (a) Two in service Radio sets.
- (b) Haversacks of minimum four personnel.
- (c) Provision for stowage of weapon and ammunition.

35. **Display Unit for Driver.** A suitable display unit for driver to display speed, odometer, trip meter, tyre pressure monitoring system, engine temperature, hand brake engage warning, Built-in Test Equipment (BITE) system and display input from various sensors.

36. **Visual Information Display Unit.** Display system with sound output and speakers to integrate and display navigation system and connect with Laptop/ Smart Phones/ Tablet.

Maintainability and Miscellaneous Parameter

37. **Miscellaneous Parameters.**

- (a) **Software.** Software should be indigenous, propriety and restorable in field, along with a provision for future upgrades.
- (b) **Manuals.** User Manual and Technical Literature to be provided for use and sustenance of the equipment as per JSS: 0251-01: 2015.
- (c) **QA.** HMRV should be compliant to durability & quality aspects as per **Automotive Standard AIS004**. Relevant tests to be mutually decided by QA & supplier.

38. Special Instructions on Field Demonstration.

(a) Field demonstration will be conducted post issue of RFP at locations decided by Empowered Committee through BOO for evaluation of operational requirements at No Cost No Commitment Basis. Contract will be signed only after successful evaluation of field demonstration.

(b) EMI/EMC compliance will be on certificates from either NABL /IABL accredited labs.

39. Special Instructions. RFP will be uploaded as per the provisions of Chapter V of DAP 2020.

Station : New Delhi

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