Fax : 011- 23792508

Directorate General of Mechanised Forces
General Staff Branch
Integrated Headquarters of Ministry of Defence (Army)
Defence Headquarters, Post Office New Delhi-110011

A/36763/WHAFV/GS/IP (Mech) 02 Mar 2020

SUPPLIMENTARY REQUEST FOR INFORMATION FROM VENDORS FOR WHEELED ARMOURED FIGHTING VEHICLE RECCE & SUPPORT (WH AFV R & Sp)

1. Refer RFI for **Wheeled Armoured Fighting Vehicle Recce & Support** No A/36763/WHAFV/GS/IP (Mech) dt 22 Nov 2020.

2. The last date of submission of responses to Request for information for Wh AFV R & Sp has been **extended to 01 Apr 2020**.

3. It is clarified that no further extn for submission of response will be granted.

4. Your response may be fwd to under mentioned address:-

Directorate General of Mechanised Forces (IP MECH)
General Staff Branch
Room Number G31, D1 Wing
Sena Bhawan, Integrated HQ of Ministry of Defence (Army)
DHQ PO, New Delhi-110011
Fax : 011- 23792508
Email : devashishsin.697m@gov.in

Sd /- x x x
(Devashish Singh)
Colonel
Colonel Indigenous Prod (Mech)
For DG Mech Forces

Fax : 011- 23792508

Directorate General of Mechanised Forces
General Staff Branch
Integrated Headquarters of Ministry of Defence (Army)
Defence Headquarters, Post Office New Delhi-110011

A/36763/WHAFV/GS/IP (Mech) 22 Nov 2019

REQUEST FOR INFORMATION FROM VENDORS FOR WHEELED ARMOURED FIGHTING VEHICLE RECCE & SUPPORT (WH AFV R & Sp)

1. The Indian Army is planning to procure **quantity 198 Wheeled Armoured Fighting Vehicle Recce & Support {WH AFV (R & Sp)}** for employment in **R & Sp (Wh) Battalions**. With a view to identify probable vendors who can undertake the said project, the OEMs/Vendors are requested to forward information on the product which they can offer. **The vendor should be capable to supply the entire Quantity of 198 Wheeled Armoured Fighting Vehicle Recce & Support {WH AFV (R & Sp)} within 4 yrs of signing of contract. The RFP for the project is tentatively scheduled for issue by July 2020.** The parameters/broad specifications of the items are mentioned in the questionnaire attached as **Appendix A**. In addition the vendors are requested to furnish details as per Performa at **Appendix B** respectively. The preferred categorisation for the project is **Buy Indian (IDDM) as per DPP 2016**. In case the vendors appreciate that categorisation be any other than Buy Indian (IDDM)/ the same be justified in response to the proposed categorisation.

2. This Request for Information (RFI) consists of two parts as indicated below:-

(a) **Part I**. The first part of the RFI incorporates operational characteristics and features that should be met by the equipment. Few important technical parameters of the proposed equipment are also mentioned. Detailed questionnaire is attached as **Appendix A** and **Annexure I** thereto.

(b) **Part II**. The second part of the RFI states the methodology of seeking response of vendors. **Submission of incomplete response format will render the vendor liable for rejection**.

PART- I

3. **Operational Requirements**. The **Wheeled Armoured Fighting Vehicle Recce & Support {WH AFV (R & Sp)}** will be employed in the plain sector of Punjab and Rajasthan. The Wh AFV R & Sp will be operationally required to operate X-Country across the Developed Sector in Terrain interspersed with Rivers and Canals. The Wh AFV (R & Sp) should be provided with high mobility, adequate armour protection and armament configuration suitable to destroy enemy Tanks and undertake local protection.

4. **Important Technical Parameters**. The following technical parameters are preferred:-

(a) **Service Life**.

(i) Vehicle service life of 32 yrs.

(ii) Engine service life of 1000 hrs.

(iii) Operating Temperature minimum 0° to +05°C and maximum 40° to 45° C.

(b) **Configuration**. 8x8 Wheeled.

(c) **Engine**. Single unit diesel engine.

(d) **Mobility**.

(i) **Dimensions**.

(aa) **Length**. Should be less than or equal to **8.0 meters**.

(ab) **Height**. Should be less than or equal to **3.0 meters** including vision devices and ATGM Launcher.

(ac) **Width**. Should be less than or equal to **3.0 meters**.

(ad) **Weight**. **Gross vehicle weight** should permit floatation capability of the Wh AFV while including a carriage capacity of **payload of minimum 2 Tons weight** (to include ammunition, crew & internal stowage items).

(ae) **Ground Clearance**. Not less than 400mm with a maximum variation of 5% when fully laden.

(af) **Transportability**. The Wh AFV must be transportable by service aircraft (IL-76, & C-17) and in-service rail wagons (Bogie Open Military, Military Bogie Well Type).

(ii) **Power to Weight Ratio**. Engine should have power to weight ratio of minimum **25 HP/Ton** (**Better engine performance and a higher power to weight ratio is desirable**).

(iii) **Carriage of Crew**. **Crew of 4 Persons**.

(iv) **Speed**.

(aa) Should be able to move both on road and cross country with speeds upto $\geq$ 80Kmph & $\geq$ 30 Kmph respectively.

(ab) Should have a reverse speed > 20 Kmph on road.

(v) **Obstacle Crossing**. Should be able to negotiate obstacles as under:-

(aa) **Gradient**. $\geq 30^0$.
(ab) **Side Slope**. $\geq 20^0$.
(ac) **Vertical Step**. Minimum 0.5 M.
(ad) **Trench Width**. Minimum 1.8 M.
(ae) **Amphibious**:-

(i) Floatation speed > 10 Km/Hour in static water.
(ii) Capability to negotiate Current speed upto 3 Knots.

(vi) **Cruising Range**. Should have cruising range of minimum 500 Km on road and 250 Km in cross country.

(vii) **Transmission**. Automatic Transmission with provision to select 8x8/8x4 internally from driver's cabin.

(viii) **Suspension**. Independent suspension for all wheels.

(ix) **Steering**. Power steering with front 4 wheels steerable.

(x) **Braking System**. Dual Fail safe brake system.

(xi) **Tyres**. All terrain suitable tyres with 'Run Flat' and 'Central Tyre Inflation System'.

(xii) **Self Recovery**. Independent self-recovery Mechanism with motor assisted winch must be provided (**capable of self-winching from a minimum dist of 15 m**).

(e) **Armament**.

(i) Two twin lr ATGM with capability of fire and forget, tandem warhead to achieve a min penetration of 650mm of RHA beyond ERA day & night firing capability, hit probability of more than **90%, minimum achievable range not more than 500m and maximum range not less than 4 km in direct firing mode**.

(ii) **In top attack mode minimum achievable range not more than 1100m and maximum range not less than 4 km**.

(iii) Provision of a man portable ground ATGM launcher in addition to the vehicle mounted ATGM, capable of firing same ATGM as mounted on the Wh AFV (R & Sp). Provision of a portable launcher to fire same missile by dismounted troops.

(iv) Provision of internal stowage of eight additional missiles.

(v) **Main Gun & Secondary Armament**. 30mm Cannon with 7.62mm Coaxial Machine Gun (both weapons should be capable of firing in service ammunition). (**Remote Controlled Weapon Station is desirable**). Internal Stowage of 500 rounds of 30 mm ammunition & 2000 rounds of 7.62 mm ammunition.

(vii) **Smoke Grenade Dischargers**. Provision of Six tubes of Smoke Grenade Discharger, Three each on both sides of the Turret. Capable of firing in-service 81MM Smoke Grenades.

(f) **Protection**.

(i) **Sides & Top**. STANAG Level II Ballistic (**Additional protection of STANAG III in the frontal arc and sides of Wh AFV R & Sp by means of removable armour panels**).

(ii) **Wind Screen & Glasses**. STANAG Level II.

(iii) **Belly**. STANAG Level II B Blast.

(iv) **CBRN.** Capable of detection of all types of CBRN contamination and protection of the crew.

(v) **Active Protection System.** An integral Active & Passive Protection System to effectively counter attacks from ATGM, Rocket Propelled Grenades and KE ammunition should be provided.

(vi) **Laser Detection and Warning System.** Provision of a Laser Detection and Warning System capable of suitably activating the smoke grenades to counter incoming laser. The system should also provide audio visual warning to the Commander and Gunner.

(g) **Night Enablement**. The **Wheeled Armoured Fighting Vehicle Recce & Support (WH AFV R & Sp)** should have following Day night sights (**TI / Dual Technology**).

(i) **Driver**. **Front Sight** to have a Min Detection range of 500m by day & night with a LCD/ LED unit for display in the Driver cabin. Display of **rear view with a detection range of 50 m both by day & night**.

(ii) **Gunner**. Fully stabilised day & night TI sight integrated with FCS, GCE & Automatic Target Tracker. Minimum ranges achieved **Detection: 8 km, Recognition: 05 km & Identification: 4 Km for T 72 Tank targets in frontal profile**.

(iii) **Commander**. Should be an independent combined Day & Ni TI Fully Stabilised Panoramic Sight integrated with FCS, GCE & Automatic Target Tracker. Minimum ranges achieved Detection: 8 km, Recognition: 05 km & Identification: 4 Km for T 72 Tank Target in Frontal Profile.

(h) **Gun Control Equipment**. The GCE should have the following capabilities:-

(i) Fully integrated with the fire control and sighting system to permit firing of all weapon systems of the Wh AFV (R & Sp) including the ATGM.

(ii) Provide full over ride control to the commander.

(j) **Fire Control System**. Fully integrated with all weapon and sighting systems the fire control system should have the following capabilities.

(i) Automatic Target Tracker integrated with the ATGM & Main Gun.

(ii) Laser range finder with a max range of 10 Kms.

(iii) Inputs of the FCS should be integrated into the sight display unit panel for both gunner & commander.

(k) **Communications**. Each **Wheeled Armoured Fighting Vehicle Recce & Support (WH AFV R & Sp)** should be fitted with up to three in-service radio equipment [Buyer Nominated Equipment (BNE)].

(i) Digital control harness (DCH) to connect the crew, tactical and section commanders. It should be based on military grade OFC.

(ii) The crew to be provided with a suitable headgear/ helmet mounted cordless communication system with range up to 500 meters from the FICV (Wh).

(iii) Provided with one Hand Held VHF radio set of at least 800m range compatible radio set of WH AFV R & Sp.

(l) **Navigation**. Satellite and Inertial Navigation System with an accuracy of ± 10m in Satellite Mode and ± 1% of distance travelled in Inertial Navigation mode. Navigation system should function with the IRNS (Indian Regional Navigation System) (AS AND WHEN INTRODUCED) and be compatible to the DSM (Defence Series Maps).

(m) **Power Backup**. Capable of supplying power for working of all on board systems, when engine is switched off for minimum 6 hrs (without temperature control system working).

(n) **Fire Fighting System** **Wheeled Armoured Fighting Vehicle Recce & Support (WH AFV R & Sp)** should have a inbuilt fire detection and suppression system capable of controlling all types of fires in the Wh AFV R & Sp.

(o) **Temperature Control System**. The vehicle should be equipped with a temperature control system capable of maintaining an **inside vehicle temperature of 24°C ± 4°**.

(p) **Entry / Exit For Crew**.

(i) **Wheeled Armoured Fighting Vehicle Recce & Support (WH AFV R & Sp)** should have individual hatches for commander gunner & driver.

(ii) Top hatches with appropriate manual system for loading of ATGM on to the launcher by one single person while standing.

(iii) Wheeled Armoured Fighting Vehicle Recce & Support (WH AFV R & Sp) should have a power assisted ramp in the rear for entry, exit by the crew and loading of ammunition.

(q) **Stowage**. In addition to **specified ammunition** and individual battle loads, adjustable modular racks for internal stowage must be provided.

(r) **Water Storage**. Not less than 200 liters of drinking water storage capacity.

(s) **Camouflage**. The Wheeled Armoured Fighting Vehicle (WH AFV) be painted with Anti IR Camouflage Paint.

(t) **Smoke Generation**. The vehicle should have the capability to produce engine generated smoke by an integral system for preventing detection by observation.

(u) **EMI/EMC Compatibility**. The vehicle should be compliant to:-

(i) The entire vehicle system should be Military Standard 464C compliant.

(ii) EMI/EMC compliance as per Military Standard 461E.

5. Vendors should confirm that the following conditions are acceptable:-

(a) **Categorisation**. **198 Wheeled Armoured Fighting Vehicle (WH AFV)** can be supplied under **Buy Indian IDDM. If the proposed categorisation is not feasible, the vendor should state the desired categorisation with reasons**.

(b) The solicitation of offers will be as per “Single Stage-Two Bid System”. It would imply that a “Request for Proposal” would be issued soliciting the technical and commercial offers together, but in two separate sealed envelopes. The validity of commercial offers would be at least 18 months from the date of submitting of offers.

(c) The technical offers would be evaluated by a Technical Evaluation Committee (TEC) to check its compliance with RFP.

(d) The equipment of all TEC cleared vendors would be put through a trial evaluation at a suitable location nominated by the buyer on a “No Cost No Commitment” basis. A staff evaluation would be carried out by SHQ to analyse the result of field evaluation and shortlist the equipment for introduction into service.

(e) Amongst the vendors cleared by GS evaluation, a Contract Negotiations Committee would decide the lowest cost bidder (L1) and conclude the appropriate contract.

(f) Vendor would be bound to provide product support for the entire life span of the Wh AFV (R & Sp), which includes spares and maintenance tools / jigs / fixtures for field and component level repairs.

(g) The vendor would be required to accept the general conditions of contract given in the Standard Contract Document at Chapter VII of DPP placed on www.mod.nic.in.

(h) An integrity pact along with appropriate IPBG is a mandatory requirement in the instant case (Refer Annexure I to Appendix M of Schedule (I).

(j) Performance-cum-Warranty Bond both equal to 10% value of the contract is required to be submitted after signing of contract.

(k) ToT (if applicable) as applicable to categorisation would be need to be confirmed by Vendors.

(l) Offset clause (As Applicable) under provisions of DPP 2016.

PART – II

6. Procedure for Response

(a) Response to RFI will be submitted at under mentioned address

Directorate General of Mechanised Forces (IP MECH)
General Staff Branch
Room Number G31, D1 Wing
Sena Bhawan, Integrated HQ of Ministry of Defence (Army)
DHQ PO, New Delhi-110011
Fax : 011 – 23792508
Email : devashishsin.697m@gov.in

(b) Apart from response to RFI, vendors must fill the form of response as given in **Appendix B to Chapter II of DPP 2016**. In addition to providing details about company, details about the exact product meeting other generic technical specifications should also be carefully filled. Additional literature on the product can also be attached with the form.

(c) The filled form should be dispatched at under mentioned address (concerned Technical Manager):-

Technical Manager (Land System)
Acquisition Wing
Ministry of Defence,
Room No 30,
D-2 Wing Ground Floor
Sena Bhawan, New Delhi-110011

(d) Last date of acceptance of filled form is **12 weeks from date of issue of RFI**. In case the responses are delivered by courier or through authorised company representatives, it is requested that they be delivered at Gate No 4 Sena Bhawan only by 1700 hrs, on all working days till the final date of submission of responses. The vendors short listed for issue of RFP would be intimated.

(e) Interested vendors are required to **intimate their willingness to participate within two week of date of hosting of the RFI.** In accordance with the provisions of the DPP 2016 a **vendor interaction will be conducted with all interested parties. Date and time of the vendor interaction will be intimated to all companies who intimate their willingness to participate.**

7. The Government of India invites responses to this request only from Indian Vendors who have tie ups with Original Equipment Manufacturers (OEM)/Authorised Vendors/Government Sponsored Export Agencies (applicable in the case of countries where domestic laws do not permit direct export by OEMs). The end user of the equipment is the Indian Armed Forces (name of user service).

8. This information is being issued with no financial commitment and the Ministry of Defence reserves the right to change or vary any part thereof at any stage. The Government of India also reserves the right to withdraw it should it be so necessary at any stage. The acquisition process would be carried out under the provisions of DPP-2016.

(**Devashish Singh**)
Colonel
Colonel Indigenous Prod (Mech)
For DG Mech Forces

Appendix A
(Refer to Para 2 of Directorate General Mechanised Forces Letter No A/36763/ WHAFV/GS/IP(Mech) dated 22 Nov 2019)

QUESTIONNAIRE

Ser No	Specifications/Parameters Sought by Indian Army	Reply by the Company
1.	What is the desired categorisation? Please specify whether indigenous content at the field evaluation stage is as per DPP 2016 in your recommended categorisation?	
2.	Name of Indian and Foreign Partners offering various systems and sub systems as part of the WH AFV R & Sp?	
3.	Please provide details of Component of Indigenous Content of **WH AFV R & Sp.** System wise Indigenous Content as well as cost wise break down to be provided.	
4.	Please specify Scope, Depth and Range of ToT available with Indian Production Agency at the beginning of manufacturing process. Indicate time lines by which full ToT for manufacture, continued engineering support and product improvement will be available.	
5.	List of Critical Technologies for which ToT is ***not*** likely to be provided by foreign partners if any?	
6.	Please specify quantity of Indigenously Manufactured (IM) WH AFV R & Sp at beginning of production. In case initial quantities of WH AFV R & Sp) being provided are not IM, then specify timelines for achieving 100% IM capability.	
7.	What is the production capacity (in terms of per year) and likely delivery schedule for qty 198 WH AFV R & Sp from the date of signing contract?	
8.	Does the company guarantee spare and maintenance support during the life cycle of the equipment?	
9.	Tentative cost of the WH AFV R & Sp along with system wise breakup including AMC, product support package and Training Aggregates.	
10.	The information sought for technical and operational characteristics are given in **Annexure I**	

Annexure I

(Refer to Para 8 of Appendix A to Directorate General Mechanised Forces Letter No A/36763/WHAFV/GS/IP (Mech) dated 22 Nov 2019)

INFORMATION SOUGHT FOR TECHNICAL AND OPERATIONAL CHARACTERISTICS

<table>
<tr><th>Ser No</th><th>Specifications/Parameters Sought by Indian Army</th><th>Reply by the Company (Provide comprehensive technical details of each component)</th></tr>
<tr><td>1.</td><td>(a) What is the configuration of the vehicle (mention all details)?
(b) What is the service life of the vehicle (specify in years distance & hours of operation)?
(c) What is the life of the engine being provided (specify in hours)?
(d) What the type and capacity of engine being provided? Give technical specifications in terms of following :-
(i) Design and type of engine and engine output capacity.
(ii) Type of Injection.
(iii) Power output.
(iv) Acceleration.
(v) Description of Gears both forward & reverse.
(vi) Type of Fuel.
(vii) Fuel carriage capacity.
(e) What are the temperature operating ranges (specify maximum and minimum temp) of the vehicle being provided?
(f) What are the dimensions of the equipment (all inclusive of weapon mounting , sighting systems) in the following aspects :-
<table>
<tr><th>Name</th><th>Length (meters)</th><th>Width (meters)</th><th>Total Height incl Cupola, sights etc (meters)</th><th>Gross Veh Weight</th><th>Payload Capacity</th><th>Ground Clearance</th></tr>
<tr><td>Wheeled Armoured Fighting Vehicle Recce & Support {WH AFV(R&Sp)}</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
(Vendors are requested to give dimensions as per the maximum measuring points including all attachments)
(g) <u>Transportability</u>. Give out compliance of transportability of Wh AFV (R & Sp) by the following:-
(i) Aircraft (IL-76, C-17) and numbers which can be carried in each Aircraft.
(ii) Please confirm compatibility of loading on aircraft with standard loading ramp under own propulsion of Wh AFV (R & Sp).
(iii) In service Broad Gauge Rail Bogies. (Bogie Open military and military Bogie will type) and numbers which can be carried in each type of Bogie.</td><td></td></tr>
<tr><td rowspan="2">2.</td><td><u>Mobility</u>. Give out the technical details of following parameters with regard to mobility :-</td><td></td></tr>
<tr><td>(a) Power to weight ratio of the platform.</td><td></td></tr>
</table>

Annexure I continued

Ser No	Specifications/Parameters Sought by Indian Army	Reply by the Company (Provide comprehensive technical details of each Component)
	(b) Speed for both fwd & reverse movement (On road and cross country) Provide details is to include (I) Numbers of gear both for forward and reverse. (ii) Specify gear ratio of each gear. (iii) Facility to engage 8x8 / 8x4 internally and gear ratio of both modes (High / Low). (iv) Details of Reduction gear being provided for steering lock while driving.	
	(c) **Acceleration**:-	
	(i) On road.	
	(ii) Cross country.	
	(d) Obstacle crossing capability with respect to following :-	
	(i) Max gradient climbing (for plains & desert and minimum distance vehicle can negotiate gradient).	
	(ii) Max side slope negotiation (for plains & desert and minimum distance vehicle can negotiate gradient).	
	(iii) Max vertical step climbing.	
	(vi) Amphibious.	
	(aa) Maximum Speed in Water.	
	(ab) Maximum Water Current When Flotation Can be Undertaken.	
	(ac) Maximum Angle of Entry.	
	(ad) Maximum Angle of Exit (Both for Hard Ground and Soft Ground)	
	(e) **Transmission**. Type of transmission system with technical characteristics.	
	(f) **Cruising range**:-	
	(i) Minimum distance which can be travelled with fuel topped up :-	
	(aa) On road.	
	(ab) Cross Country.	
	(ii) Fuel capacity.	
	(iii) Average fuel consumption on road.	
	(iv) Average fuel consumption in cross country.	
	(g) Type of suspension system with technical characteristics.	
	(h) Type of Steering System with technical characteristics.	
	(j) What additional features are provided?	
	(k) Turning Radius.	
	(l) Type and capability of Self Recovery Mechanism. Specify the minimum distance of Self Recovery. Maximum load for self-recovery.	
	(m) **Amphibious Capability**. (i) Give technical details of the type of propulsion incorporated for amphibious capability of the FICV Wh. Give details of floatation speeds in static water. Give details of current negotiation capability. Give details of firing of weapons during floatation. (ii) Give details and layout of waterproofing system and internal pumps provided to prevent internal flooding in the FICV (Wh).	

Annexure I continued

Ser No	Specifications/Parameters Sought by Indian Army	Reply by the Company (Provide comprehensive technical details of each component)
3.	**Armament**. (a) **ATGM**. (i) Specify technical details of the ATGM about the following parameters:- (aa) Guidance mechanism, Flight Trajectory, War Head Capability, type and penetration against RHA beyond ERA. (ab) What type of fire and forget capability is offered by the ATGM System? (ac) What is the capability of simultaneous acquisition and engagement of different type of targets? What is the capability of consecutive launch of ATGMs? (ad) Give details of the flight trajectory, mode of flight of the ATGM. Does the ATGM System offer TOP ATTACK facility. (ae) Indicate the maximum and minimum ranges for the missile both in direct attack and top attack modes. (af) Indicate the physical characteristics of the ATGM viz dimensions & weight. (ag) Is the ATGM Launcher of the WH AFV capable of being utilized in ground launcher mode? (ah) Indicate the type of ground launcher ATGM being offered. Include weight & dimensions of the ground launcher and system for man portable carriage of the ATGM and ground launcher.	
	(b) **Main & Secondary Armament**. (i) Indicate the different type of in-service ammunition that can be fired by both Main Gun and Secondary Armament. Please specify minimum ranges for each type of ammunition. (ii) Mention the accuracy achievable by the different type of ammunition at maximum ranges. (iii) Indicate the different modes of firing along with the rate of firing of both main Gun and Secondary armament. (iv) Indicate capability in terms of maximum range & rate of fire for the utilisation of the Main Gun HE ammunition in anti aircraft role. (v) Give details of the layout of armament sys and internal storage of ammunition (give layout).	
	(c) **Smoke Grenade Discharger**. (i) Give out the layout of the, control mechanism of the Smoke Grenade Discharger and details of the provision of firing single and multiple smoke grenades. (ii) Confirm capability of firing in-service 81MM Smoke Grenades.	

<table>
<tr><th>Ser No</th><th>Specifications/Parameters Sought by Indian Army</th><th>Reply by the Company (Provide comprehensive technical details of each component)</th></tr>
<tr><td></td><td>(d) <u>Fire Control System</u>.
(i) Provide details of the technical specification of the fire control system.
(ii) Provide details of the performance parameters of fire control system what is the mechanism for firing operation of all on board weapon systems including missiles.
(iii) What types of dual firing capability to the Gunner and Commander the fire control system is provided by the fire control system?
(iv) What are the type of physical inputs that the fire control system analyses for automatic calculation to remove errors and biases?
(v) What accuracy does the fire control system provide for different type of ammunition and weapon system at maximum ranges?
(vi) What are accuracy parameters of the Laser Range Finder at maximum and minimum ranges?
(vii) What is the accuracy of the auto tgt tracker for a moving tgt of moving speeds of 10, 20 & 30 Km/h at maximum reqmt of rgs of all wpns?</td><td></td></tr>
<tr><td></td><td>(e) <u>Gun Control Equipment</u>.
(i) What speed of traverse of the turret achieved by the Gun control system?
(ii) What is accuracy achieved by the Gun control equipment at maximum ranges at moving speeds of 10km / 20 km & 30 km?
(iii) What are the features of overriding of Gun controls and tgt designation between Commander & Gunner?
(iii) What are the types on inputs that would be available on the sighting system of Gunner & Commander?</td><td></td></tr>
<tr><td></td><td>(f) <u>Sighting Devices</u>.
(i) Give out the details of sights being used in the Wheeled Armoured Fighting Vehicle Recce & Support {WH AFV(R&Sp)} as per the table below :-
<table>
<tr><th rowspan="2"></th><th colspan="3">Sight</th><th colspan="2">Maximum Range Detection/ recognition/ identification</th></tr>
<tr><th>Type</th><th colspan="2">Fd of view</th><th colspan="2"></th></tr>
<tr><td></td><td></td><td>Wide</td><td>Narrow</td><td>Tk tgt</td><td>Pers</td></tr>
<tr><td>Driver
Commander
Gunner</td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
(ii) <u>Gunner & Commander</u>.
(aa) What are the type of sights being provided?
(ab) What are the different mode of operations of the Day and Night Sight being provided? Specify the type of Sights being provided?
(ac) What are the minimum detection and identification ranges of the sights for different types of tgts both the day and ni?</td><td></td></tr>
</table>

Annexure I continued

<table>
<tr><th>Ser No</th><th>Specifications/Parameters Sought by Indian Army</th><th>Reply by the Company (Provide comprehensive technical details of each component)</th></tr>
<tr><td></td><td>(ad) What is the independent rotation angle of both the Commander and Gunner Sights (for both cases when sights being operated slaved to the turret and in independent role be explained in detail)?
(iii) <u>Driver</u>.
(aa) What are the type of sights being provided?
(ab) What are the different modes of operation for both the Day and Night Sight (specify for front and rear sights)?
(ac) What are the minimum detection ranges for both rear and front Driver sights both by day and ni?
(ad) What type and size of display unit is being provided for the Driver?</td><td></td></tr>
<tr><td>4.</td><td><u>Protection</u>. What is the certified STANAG level of protection? Specify details of protection being offered in terms of type of weapon/ammunition/distance of protection and its reliability for following components :-
<table>
<tr><th>Ser No</th><th>Vehicle Component</th><th>Protection offered (Specify weapon, range & reliability)</th></tr>
<tr><td>(i)</td><td>Sides, Front & Rear</td><td>(aa) Indicate the provision of add on protection panels for increasing the frontal and side protection levels in detail. (ab) Indicate type of add on armour being provided and proposed arrangements for its fitment?
(ac) Increase in weight on account of fitment of these panels be indicated.</td></tr>
<tr><td>(ii)</td><td>Windscreen & Glasses</td><td></td></tr>
<tr><td>(iii)</td><td>Belly</td><td></td></tr>
<tr><td>(iv)</td><td>Chemical biological radiological and nuclear protection</td><td>(aa) Specify the min detection time and details of protection offered.
(ab) Time for creation of over pressure.
(ac) Automatic cut off and shut off capability being offered and time for activation of the system.</td></tr>
<tr><td>(v)</td><td>Active Protection System</td><td>Give detailed parameters of active and passive protection system. Type of protection offered, activation parameters and mode of operation.</td></tr>
<tr><td>(vi)</td><td>Laser Detection and Warning System</td><td>(a) Give details of capability of Laser Detection and Warning System to detect lasing on the Wh AFV (R & Sp).
(b) What is the layout of the laser detectors?
(c) What is the time lag for detection and activation of smoke grenade dischargers in event of lasing?</td></tr>
</table></td><td></td></tr>
</table>

Annexure I continued

Ser No	Specifications/Parameters Sought by Indian Army	Reply by the Company (Provide comprehensive technical details of each component)
5.	**Braking System**. (a) Give details of the type of braking system. Specify the different brakes being provided (hand brake, foot brake, engine brake). (b) Is ABS being provided? What is the capability of the ABS? (c) Specify audio visual warning for Driver being provided when the hand brakes are applied. (d) Type of Braking System with technical characteristics. (i) Specify the minimum ground slope where the parking brakes (hand brake) would be effective. (ii) Specify minimum braking distress (on plain road) of the driver foot brake at different speeds.	
6.	**Tyres.** (a) Give details of Run Flat Tyres being provided to include maximum distance the Wh AFV (R & Sp) can move with all Eight Tyres being flat. (b) Give details of the central Tyre inflation system being provided. (c) What is the minimum time for inflation of a single Tyre and all Eight Tyres? (d) What is the system for display of Tyre pressure? (e) How many Tyres can be inflated simultionesly? (f) Are the Tyres indigenously produced?	
7.	**Electronics & Communications**. (a) What is the provision of fitment of 'In Service' Radio Sets of IA in the **Wheeled Armoured Fighting Vehicle Recce & Support {WH AFV(R&Sp)}** (specify location, power source and related details of integration of equipment)?	
	(b) **Navigation System** (i) What is the type and capability of navigation system is installed in **Wheeled Armoured Fighting Vehicle Recce & Support {WH AFV(R&Sp)}** (specify technical details of the equipment)? (ii) What is the accuracy of the navigation system being provided? (iii) Details of the display unit being provided. Give size of display GPS/Navigation System. Give out the compatibility of navigation equipment to **IRNS** & **DSM** (as and when introduced in service).	
	(c) **Power Backup**. What is the type of power back up being provided? Give the power rating and backup time of power backup system being provided? Give technical details of power backup being provided to include :- (i) Is an APU (Auxiliary Power unit) being provided as a power backup? if yes what is the type of APU power rating, fuel used and maximum operating time?	

Annexure I continued

Ser No	Specifications/Parameters Sought by Indian Army	Reply by the Company (Provide comprehensive technical details of each component)
	(ii) Is a battery bank being provided as part of power back up system? If yes give details of following:- (aa) Type and number of batteries being used. (ab) Time for recharging of battery bank. (ac) Are the batteries being used indigenously produced?	
8.	**Temperature Control System**. (a) What is the type and capability of Temperature Control System being provided? (b) Give out maximum and minimum temperatures under which the temperature control system will operate and temperatures what will be achieved by the system. Indicate maximum duration of continuous operation. (c) Indicate maximum time for achieving the desired temperatures ranges. (d) Give the technical details to include power consumption and performance parameters?	
9.	**Fire Fighting System**. (a) What type of fires to the system capable of detecting and controlling? (b) What is the time for detection & controlling of different type of fires? (c) Give layout of the fire fighting system and specify number of detectors, self-activating fire extinguishers and manual extinguishers.	
10.	**Seating System**. (a) Give details of the seating system to include the following: - type of seats being provided, blast resistance of the seating system. (b) Give layout of the Wh AFV (R & Sp) including the placement of all systems, seating for the crew and stowage.	
11.	**Access**. Give out configuration of the vehicle and location and type of Doors/Cupolas and entry and exit arrangements being provided. Include details all features being provided.	
12.	**Stowage**. What the capacity and location of internal and external storage arrangements being provided? Give out details of the provision for loading of ATGMs.	
13.	**Smoke Generation System**. (a) Give technical details of the smoke generation system being fitted? (b) Give details of smoke screen provided in terms of cubic meters / minute of operation. (c) What is the fuel consumption of operating the smoke generation system? (d) What is the maximum and minimum temperature requirement to produce smoke? (e) What is the maximum duration for generation of smoke?	

Annexure I continued

Ser No	Specifications/Parameters Sought by Indian Army	Reply by the Company (Provide comprehensive technical details of each component)
14.	**Maintainability**.	
	(a) What is your MRO (Maintenance, Repair and Overhaul) Philosophy? Please provide a brief on your MRO philosophy, aligned to Unit Fd, Intermediate and Base level repair (Refer Appendix E to Schedule I to Chapter II Defence Procurement Procedure (DPP) 2016).	
	(b) Will you be providing 'Engineering Support Package (ESP)' for lifetime sustenance of equipment for various echelons of repairs to include the following :- (i) Special Machine Tools (SMTs) for maintenance and repair related tasks. Special Test Equipment (STEs) / Test jigs for diagnostics to support maintenance and repair tasks. Inspection gauges to check serviceability standards/ tolerances. (ii) Spares, to include subassemblies as well as spares for Component Level Repairs (CLR). (iii) Technical Literature to include Illustrated Spare Part List (ISPL) and manuals covering all aspects related to operation, maintenance, diagnostics and repair at various echelons. (iv) Training aggregates/ aids for training of operator, quality assurance and maintenance personnel. (v) Inspection standards to ascertain serviceability of equipment as well as its modules/ components.	
	(c) What Class of Interactive Electronic Technical Manual (IETM) will be provided by you for technical literature mentioned above?	
	(d) Is there a requirement of periodic calibration of any Special Machine Tools/ Special Test Equipment's (SMTs/ STEs)/ Gauges (Ground Support Equipment (GSE)/ Ground Handling Equipment (GHE)/ Bay Servicing Equipment (BSE) to be also included for Aviation Equipment)? If yes, Will you provide capability to undertake calibration, as part of Engineering Support Package?	
	(e) Will the ESP cater for repairs of Special Test Equipment's (STEs) also, to include spares, technical literature, training etc? If not, then what is your proposal for sustenance of STEs? (f) Are you willing to undertake Annual Maintenance Contract (AMC) for the Special Test Equipment (STEs)? If yes, what is the indicative cost in terms of percentage of cost of Special Test Equipment (STEs)? Please provide inputs for Comprehensive AMC and AMC without spares separately.	
	(g) What is the period for which you commit the product support for sustenance of equipment in terms of supply of spares/ AMC/ calibration etc?	
	(h) How many sub vendors are involved in the manufacturing of product? Is product support from all sub vendors also assured for the same period, as committed by you?	

Annexure I continued

Ser No	Specifications/Parameters Sought by Indian Army	Reply by the Company (Provide comprehensive technical details of each component)
	(j) Is the equipment modular in construction to facilitate repairs in field by replacing defective module? What is the mean Time to Repair (MTTR) for repairs through replacement?	
	(k) What is Mean Time Between Failure (MTBF) for equipment and its main assemblies?	
	(l) What is the expected life of your equipment and main subassemblies like barrels/ engine etc. (as applicable) in terms of usage?	
	(m) Does your equipment have Built in Test Equipment (BITE) to support diagnostics and repair through modular replacement? Are you going to provide any Automatic Diagnostic Tools (ADT) with the equipment?	
	(n) Is there any software applicable to your equipment? If yes, can it be restored in field in case of any fault? Is it upgradable? Whether open paper license is available or not?	
	(o) Does your equipment or any of its sub system have counter to display cumulative usage to facilitate usage base preventive/ periodic maintenance?	
	(p) Can you provide Indian origin tyre, tube, generators and batteries with your equipment, where applicable?	
	(q) Will you be providing details of Indian equivalents of oils & lubricants used with your eqpt?	
15.	**Simulator**. (a) Give details of simulator being provided with Wh AFV (R & Sp). Training on all operation of Driver, Gunner & Commander are required to be provided by the simulator. (b) Give proposed configuration of the simulator.	
16.	**EMI/EMC Compatibility**. Mention/give details of compliance to EMI/EMC standards.	

Appendix B
(Refer to Para 1 of Directorate General Mechanised Forces Letter No A/36763/WHAFV/GS/IP (Mech) dated 22 Nov 2019)

INFORMATION PERFORMA (INDIAN VENDORS)

1. **Name of the Vendor/Company/Firm**

_____

_____

(Company profile, in brief, to be attached)

2. **Type (Tick the relevant category)**.

(a) Original Equipment Manufacturer (OEM) Yes/No

(b) Authorised Vendor of foreign Firm Yes/No (Attach details, if yes)

(c) Other (give specific details).

_____

---

3. **Contact Details.**

Postal Address:_____

_____

City : _____ State : _____

Pin Code : _____ Tele : _____

Fax : _____URL/Website : _____

4. **Local Branch/Liaison Office in Delhi (India) (if any).**

Name & Address : _____

_____

Pin Code _____ Tele : _____

Fax _____

Appendix B Continued

5. **Financial Details.**

(a) Category of Industry (Large/Medium/small scale) :_____

(b) Annual Turnover: _____(in INR)

(c) Number of employees in firm: _____

(d) Details of manufacturing infrastructure: _____

_____

(e) Earlier contracts with Indian Ministry of Defence/Government agencies :-

Contract Number	Equipment	Quantity	Cost

6. **Certification by Quality Assurance Organization.**

Name of Agency	Certificate	Applicable from (Date & Year)	Valid till (date & Year)

7. **Details of Registration**.

Agency	Registration No	Validity (Date)	Equipment
DGS&D			
DGQA/DGAQA			
OFB			
DRDO			
Any other Government Agency			

8. **Membership of FICCI/ASSOCHAM/CH or other Industrial Associations**.

Name of Organistion	Membership Number

Appendix B Continued

9. **Equipment / Product Profile (to be submitted for each product separately)**

(a) Name of Product : _____
(Should be given category wise for e.g. all products under night vision devices to be mentioned together)

(b) Description (attach technical literature) : _____

(c) Whether OEM or Integrator : _____

(d) Name and address of Foreign collaborator(if any) : _____

(e) Industrial Licence Number : _____

(f) Indigenous component of the product (in percentage) :_____

(g) Status (in Service/Design development state) : _____

(h) Production capacity per annum : _____

(j) Countries/agencies where equipment supplied earlier(give details of quantity Supplied : _____

(k) Estimated price of the equipment _____

10. Alternatives for meeting the objectives of the equipment set forth in the RFI.

11. Any other relevant information : _____

12. Declaration. It is certified that the above information is true and any changes will be intimated within five (05) working days of occurrence.

(Authorised Signatory)