

Addendum-I

RFP for Design, Manufacture and Supply of High-End Ultra Luxury Fully built AC Buses for Managing Public Transport across Tier-III Routes with comprehensive Annual Maintenance Contract (AMC) model.

RFP No. 1707 Date: 22/09/2023

No. .1903/OSRTC/IMTR/40/2023

Date:03.11.2023

Bus Specification of High-End Ultra Luxury Fully Built AC Buses (BS-VI MODEL) with upper and lower Sleeper Berths (Type C Buses)

Specifications For High-End Ultra Luxury Fully Built AC Sleeper Buses (BS-VI MODEL) (Type C Buses)			
Sl. No.	Parameter	Technical Details	
1	Overall Dimension of Bus (In mm)	Particulars	Type
		Wheelbase	8200 To 8500
		Overall Length	15 Mtrs.
		Height Of the Bus with Roof Top AC	Maximum of 4000mm
		Front Overhang	Max. 2680mm
		Rear Overhang	Max. 3300mm
		Overall Width	Max. 2600mm
		Gang Way Width	Min. 380mm
		Engine Hp & Norms	350 To 400 HP & BS-VI
2	Bus Details	The Full Forward Control Bus Shall Confirm to <u>CMVR and AIS-119/AIS-52 Norms</u> in All Respects. Bus Shall Comprise of Bus Engine, Fuel Injection Pump. Air Compressor, Radiator, Transmission (Including Clutch, Gear Box and Propeller Shafts). Air Suspension, Rear Axle Assembly, Power Steering Assembly. 9 Wheels with Tyre Assembly (Including Spare Wheel Carrier Provision with Clamping Arrangements). Air Brake System, 24v Heavy Duty Wiper Assembly, Multiplexing for Chassis & Bus Shall Be as Per CMVR & AIS 052. With Wiper Arm & Two Blades of Suitable Size, Head and Tail Lamp Assemblies, Electrical Horn, Side Indicators, Aesthetically Designed Instrument Panel and Ergonomically Designed Pneumatically Adjustable Type Driver Seat Assembly of Harita Make with ELR Safety Belt, Two Rear View	

Specifications For High-End Ultra Luxury Fully Built AC Sleeper Buses (BS-VI MODEL)			
(Type C Buses)			
Sl. No.	Parameter	Technical Details	
		Mirrors of Electrically Operated and Two Hydraulic Jacks Of Minimum 10 Ton Capacity. Foldable/Adjustable Seat of Harita Make for Co-Driver with ELR Type Safety Belts Shall Be Provided in The Driver's Cabin. Bus Shall Be Fitted with Multiplex Wiring.	
3	Engine With Suitable Mountings	Located At the Rear, The Engine Shall Be of Turbocharged, 6 Cylinders, Common Rail system, Coolant Cooled, Four Stroke Diesel Engine Confirming to Bs-Vi Emission Norms. The Engine Should Be Amply Powered for Providing Direct Driver to The Bus and Air-Conditioning Unit. Electronic Device Be Provided for Controlling the Fuel Injection System and Other Systems.	
		Engine Output	Torque
		350 - 400 Hp	1350 Nm @ 1200 – 1600 Rpm
4	Lubrication	Lubricating Points Shall Be Provided for All Elements of The Steering. Transmission And Suspension System. These Points Shall Be Easily Accessible for Lubricating with Power-Operated System.	
5	Cooling System	The System Shall Include Radiator, Intercooler, Coolant Pump, Fan with Thermostat to Control the Coolant Temperature. The Thermostat Shall Be of Fail-Safe Type.	
6	Fuel Injection Pump	The Engine Shall Be Fitted with Common Rail Direct Injection. The Two-Stage Fuel Filters Pre and Fine Shall Be Capable of Filtering All Particles of More Than 20 Microns in Size.	
7	Pollution & Exhaust Gas	The Engine Shall Meet Bharat Stage-Vi Norms. The Supplier Shall Submit Arai Approved Specifications for Model of Bus Offered in The Tender.	
8	Transmission, Clutch & Gear Box	Transmission Shall Be with Automated Manual Gearbox with Minimum 12 Forward and One Reverse Gear, Suitable Designed for Operation on All Terrain.	
9	Tyres	Radial Tubeless Tyres Of Size Minimum 295/80r 22.5 18pr"- 9 Nos. Of Make MRF, JK, Michelin, Manufactured Within 6 (Six) Months Prior To The Date of Delivery of The Buses and Rims Of 8.25" X 22.5" Size.	

Specifications For High-End Ultra Luxury Fully Built AC Sleeper Buses (BS-VI MODEL) (Type C Buses)		
Sl. No.	Parameter	Technical Details
10	Power Steering	The Steering Position Shall Be on The Right-Hand Side of The Bus. The Steering System Shall Be Hydraulically Power Assisted
11	Full Air Suspension	Air Suspension Having Minimum 2 No's of Air Bellows, Levelling Valves, And Heavy-Duty Shock Absorbers in The Front. Air Suspension Having Minimum 4 Nos. Of Air Bellows, Levelling Vale and Heavy-Duty Shock Absorbers of The Rear.
12	Brakes	Full Air Brake System Dual Line Disc Type Combined with Electronic Braking System (EBS), Hydraulic Retarder and Efficient Parking Brakes and Electronic Control System.
13	Fuel Tank	The Fuel Tank Shall Confirm to The Specification of CMVR With A Storage Capacity Of Maximum 600 Ltrs. Having Shield Around for Protection and Insulation.
14	Electrical System	2 x 12v (24v) System with Min. 165 Ah Capacity Batteries of Reputed Make. Heavy Duty Wiper Motor with Suitable Length of Aesthetically Designed Wiper Arms. Battery Cut-Off/Isolation Switch Should Be Provided Near the Driver Seat. 5a/24v Power Switch & Fray at Dashboard for Charging Electronic Ticketing Machine (ETM) For Keeping the ETM Shall Be Provided. Battery Box Should Be Located at Convenient Place for Ease of Maintenance. Lights & Lighting System as Per CMVR/AIS 008
15	Provision For Mobile Charging	USB Charging Point: USB/C-type charging points to be provided for all Sleeper Berths.
16	Alternator & Self Starter	Suitable Assemblies Shall Be Provided For 24 Volts System. The Alternators Shall Be Dynamically Balance with Built-In Regulator and Be Provided with Suitable Mounting. The Starter Motor Shall Be Axial Type Flange Mounted. Both These Units Shall Be So Located as To Prevent Ingress of All or Water into Them. Self-Starter & Alternator Shall Be of Reputed Make Only.
17	Instrument Panel	Aesthetically Designed Instrument Panel Should Consists of Odometer with Km Counter, Air Pressure Gauge, Flashing-Side Indicator and Switch, Warning Lamp for Low Air Pressure, Warning

Specifications For High-End Ultra Luxury Fully Built AC Sleeper Buses (BS-VI MODEL) (Type C Buses)		
Sl. No.	Parameter	Technical Details
		Lamp for Charging F Batteries, Starter Switch, Dipper Switch, Temperature Gauge, Engine Oil Pressure Gauge, Engine RPM Meter and Vehicle Diagnostic Display.
18	Body Structure	The Complete Structure Should Be Applied with Epoxy Primer Before Paneling. Body Structure as Per AIS 052/AIS 119 Code.
19	Bus Paneling	Exterior Paneling: Existing Stretch Panel Is 1.00mm+/-0.1mm. So, It May Vary From 0.9mm to 1.1mm.) Al Hatch Door Panel T 2.5mm Wheel Arch Gi Panel T 1.5mm Suitable design to be provided for flap doors to Prevent Ingress of Water into The Luggage Compartment Exterior roof panel shall be of GI/ other suitable material as per OEM standard. Interior Paneling: Truss Panel Paneling Should Be of BWR/ BWP Plywood Sheet with Vinyl Mat of Superior Quality. Roof Ceiling Shall Be FR Grade with Thermocol /Any Other Superior Insulating Materials and Covered with Good Quality Aluminum Composite Panel. It Must Meet AIS 052/AIS 119 Code.
20	Emergency Door/Exit.	Emergency Door/ Exit Shall Be at the middle/rear area on the Driver Side Meeting the Latest CMVR/ AIS:52/AIS 119 Norms.
21	Driver Cabin, Saloon & Dicky Flooring.	BWR/BWP Plywood/ Compressed Densified Wooden Floorboard of 0.8 Density of Minimum 10mm Thickness of Reputed Make Covered With 1.5mm Thickness Anti-Skid Vinyl Mat for Cabin and Saloon Flooring. Dickey Box Flooring Should be Compressed Densified Wooden Floorboard of 0.8. Density of Minimum 10mm Thickness of Reputed Make Covered With 1.5 Mm Thickness Anti-Skid Vinyl Mat/Aluminum Checkered Sheet.
22	Glasses.	Single Front Windshield Polyvinyl Butyral (PVB) Laminated Glass with Minimum 7.76 Mm Thickness Properly Mounted on the Frame. Windshield Glass Shall Be Fitted with Good Quality EPDM Rubber Glazing for Easy Replacement.

Specifications For High-End Ultra Luxury Fully Built AC Sleeper Buses (BS-VI MODEL) (Type C Buses)		
Sl. No.	Parameter	Technical Details
23	Air-Conditioning System.	A.C. Unit of Carrier/Approved Make of Roof Mounted Evaporator and Condenser of Noise/Vibration Proof. The Electromechanical Control I.E. Cab Command Should Be Easily Accessible on Dashboard to Set the Temperature. The Unit Shall Be Designed to Operate in Hat and Dusty Environments Suitable for Bus Having 45 Passengers. The Cooling Capacity of A.C. Unit Shall be of Minimum 45KW With 5 Speed Blower. Ducting Facility Shall Be Provided Inside the Parcel Rack on Both Sides of The Bus and Also for Driver's Cabin with Proper Support Brackets.
24	External Painting: Solid/Metallic.	To Be Decided Later by Authority.
25	Sleeper Berth	Minimum of 40 Sleeper Berths provided along the length of the vehicle. The berth layout shall be as per AIS:119 (2X1 layout)
26	Sleeper Berth Specification	Each Passenger Berth should be of the size of minimum 560 X 1800mm
27	Under Boot Luggage Space	Lockable Dust and Rattle Free Under Boot Luggage Space Of Minimum 8 Cubic Meters Should Be Provided. Luggage Guard To Be Provided On Both Sides With Doors From Both Ends With Locking Arrangement With Heavy Duty Good Quality Hinges. Locks, Brackets & Gas Springs Etc. For Longevity. Preferably, Flap Door Opening Shall Be Parallel to The Bus Body or Minimum 120 Degrees from Closed Position.
28	Technical Approval	Product Approval Certificate from The Approved Agencies Like ARAI/CIRT etc.
29	Accessories	2 Nos of Fire Extinguisher B Class Type Each Of 5 Kgs. Suggestion Box, First Aid Box, 2 Roof Hatches, Curtains for All Windows, Curtains for Gangway and In between twin sleeper berths. LED Destination Board at Front (Size: 975x300mm) Hammers shall be fitted for breaking glasses as per OEM Approved design. Curtains- 2 Sets of Curtains of FR Grade Per Bus

Specifications For High-End Ultra Luxury Fully Built AC Sleeper Buses (BS-VI MODEL) (Type C Buses)		
Sl. No.	Parameter	Technical Details
		All The Other Mandatory Accessories as Per CMVR/AIS:052/AIS119 Shall Be Provided
30	CCTV Cameras	3 Nos. Surveillance Cameras with Night Vision Shall Be Provided With 48 Hours Recording Storage Facility. One Cameras for Front View of Road Fitted to A Pillar on Left Side. One Camera Above Passenger Door to Cover the Driver & Cabin Area and One for the gangway Area.
31	Rear View Camera	One Reverse Camera Shall Be Provided at Rear End Outside of Bus.
32	Statutory Provision	The Vehicle Should Be Provided with FDSS. Bus Multiplexing, Changes in Engine to GVW Ratio. Acceleration Parameters, Interior NVH & Braking System Complaining To AIS-140, 153 & 135.
33	Music System with Public Address System	PA System Required as Per AIS 052/AIS 119. Audio Player Having USB Port and Public Announcement System to Be Provided with Speakers.
34	GPS	Only Provision Required to Plug-In the Device Later by OSRTC
35	Front Electronic Board	Electronic Scrolling Board to Be Provided Written as OSRTC in English with Monogram or Any Other Name as Decided by OSRTC
36	Wi-Fi System	For On Board Wi-Fi in The Future, Facilities and Provisions for Wiring, Power Supply, And Charging of Devices Shall Be Provided by The Manufacturer. At Present Wi-Fi Is Not in The Scope of This RFP.
37	Luggage Box	It Should Be Minimum Of 8 Cubic Mtr. Capacity
38	Automatic Fire Suppression System for Engine	Minimum 1 Kg. Capacity
39	Roof Hatch	Two Nos. To Be Provided
40	Panic Bottom	To Be Provided as Per Standard and Govt. Norms
41	On Board Diagnostic Unit (OBU)	OEM shall provide VHMD data/ OBU / CCTV / VLTD APIs for integration with OSRTC ITMS without any Cost to OSRTC.OEM ensures all OBU like Electrical wiring ,ICT etc. OEM shares the protocols for capturing VHMD information and also integration of the VHMD system with the OSRTC's ITMS system.

Specifications For High-End Ultra Luxury Fully Built AC Sleeper Buses (BS-VI MODEL) (Type C Buses)		
Sl. No.	Parameter	Technical Details
42	Guarantee/ Warranty	Manufacturer Shall Give the Warranty of The Bus for Its Structure & Chassis Aggregates, Minimum Two Years or Three Lakhs Kms. Whichever Is Earlier.

Note: Starting from October 1, 2023, all buses produced must be outfitted with a fire alarm and protection system in the occupant compartment. (Ref: Letter No 267, 28.04.2023 Govt of India)

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