

## Technical Specification For Ambulance Emergency Medical Services

### Annex02

SUBJECT	FEATURES	REQUIREMENTS	Bidder's Specification	pints
<b>EMS AMBULANCE</b>	General Requirement	Equipment and the accessories proposed shall include (standards of quality and production of their class)		*
		material, excluding medical hardware, shall have national and international quality certificate		*
		The vehicle with accessories proposed shall be the latest model of its type on the production line of the original producer. Renovated, modified second- hand systems, equipment, and appliances or those involving used items and materials shall not be accepted.		*
		system and all the parts and the accessories related with it shall operate in compliance with each other and be under the warranty and the responsibility of the contractor firm or bidder submitting the proposal		*
		all electrical equipment for medical use in the vehicle shall be operational with main voltage of 220V 50HZ and compensate +/- 10Vchange in voltage		*

	Power(HP)	Min.170		*
	type	6 Cylinder or 4 Cylinder		
	Fuel type	Petrol or Diesel		
	Fuel system	fuel injection		*

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	Cooling system	Water cooled		*
	Fuel economy	(average)max .12.5 L/100 KM		*
	Cruising range	Ability to cover a distance of 600 km without refueling on intercity roads		
	Displacement (cc)	Max. 3800 cc		*
	Torque (NM)	Min 350NM		*
	Temperature condition	Vehicle shall operate in ambient Temperature of min (-)30°C max(+) 60°C with an adequate performance		*
	Exhaust emission	According to EURO V		*
	Engine location	Front		*

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<b>Transmission</b>	type	Automatic or manual Gear box		*
	operation	Min 6 speed		*
	Traction/drive system	R.W.D(rear wheel drive)		*
<b>Suspension</b>	Front	Independent: double wishbone with torsion bar or Transverse Leaf spring Or Macpherson Strut Stabilizer bar Shock absorber		*
	Rear	Rigid (parabolic leaf spring) Hydraulic double acting shock absorbing		*
<b>Brake &amp; performance</b>	Type	Power assisted – Dual Circuit		*
	Front	Ventilated disc		*
	Rear	Disc and Drum		*
	Safety system	ABS and ESP		*

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	Ring Diameter	15 or 16 inch		
	Max Speed	180 Km/h or above		*
	Acceleration	0-85 km Max. 35 min isri4374		*
	Air bags	Driver s cabin shall be equipped with min 2 air bag		*
	Wheel base	Min. 3100 (mm)		*
<b>steering</b>	Type	Left hand drive(L.H.D)		*
	Power	Power assisted steering		*
<b>weight</b>	pay load(kg) (passenger type)	Pay load with uneven load distribution Max. 1200Kg		*
<b>safety drivers cab</b>	seat	Shall be multiply adjustable		*
		Three point seat belts with tension meters for driver and co-driver		*
		Head lamp range adjustable		*

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	Overall Length	5400 to 6200(mm)		
	Overall Height	Max. 2800(mm)		
	Overall width	Max. 2200(mm) without mirror		
	Drive cab	2 Doors		

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	Doors	Rear door	Double-wing or Tailgate H $\geq$ 900 and W $\geq$ 900		*
		Sliding door	One or two sliding doors  Oxygen cylinder must be external loading for two sliding type		*
	Tailgate height		In the open position min. 1800mm		*
	Patient cab floor heights		Max. 750(mm)		*
<b>Patient cab dimensions interior</b>	length		Min. 2400(mm)		*
	width		Mid-level min. 1300(mm)		*
	height		Min. 1100(mm)		*

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	radio	Origin type		
	mirror	Origin type		

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	windows	<p>It must allow direct face-to-face contact with the driver. The opening part of the window should have a maximum area of 0.12 square meters</p> <p>A Curtain shall be hanging in the patient 's cab to prevent light from patient's cab to driver's cab</p> <p>A windscreen defrosting system operatable when the road Ambulance is stationary or mobile.</p>		
	Fire extinguisher	Two (ABC dry chemical, carbon dioxide) min. 2kg unit, in a quick-release bracket, one mounted in the driver's cab and one in the patient's cabin.		
<b>Pat ient 's cab</b>	Floor covering	Anti skid- Washable- High Resistant- Fire resistant- Can be disinfected with disinfectant		
		anti bacterial floor covering (resistant to radiation and chemicals) shall be easily clean		
		The covering of joints (corners, etc.) where the side-walls and covering meet shall be sealed and bordered with corrosion resistant and the covering shall extent at least 5cm up the sidewalls.		

	windows	All doors shall have windows and 2/3 of the glass surfaces of the patient cabin shall be tinted.		
	Interior surface	The Interior of the body shall be free of all sharp projection. Exposed edges and corners shall be broken with o radius.		
		surface material joints shall be smooth and impervious		
	Cabinet – drawers and bench	drawers shall be secured against self-opening and should be equipped with locks		

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		<p style="text-align: center;">One bench fixed on the right side of the main stretcher                  Dimensions shall be suitable for 2 persons equipped with 2 points safety belt                  The bench must be box type with top open door which control with 2 or 3 gas spring                  It shall be furnished for extra patient                  Cabinet shall be made of PVC.                  Coating of cabinet doors shall be white color</p>		
	windows	<p style="text-align: center;">Patient compartment should have enough windows with min total surface area of 1 square meter                   2/3 of the glass surfaces shall be tinted</p>		
	doors	<p style="text-align: center;">Shall be capable of being positively restrained in the open position</p>		

	Seat	one seats shall be fixed above the stretcher		
<b>Stretcher base support</b>	Type	The base support shall be built from stainless steel or aluminum		

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	main battery	Min. capacity of 80 (Ah) 12V		
	additional battery	Min. capacity of 80 (Ah) located outside the patient cab.		

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	alternator	Min. 1200 w which could feed each one of two accumulators separately and hardware present in the ambulance required		
	rectifier	Vehicle shall be furnished with rectifier which could charge the accumulators when the vehicle is not operative.		
		One 220 v sockets shall be fitted externally at the patient compartment (driver's side) so that when the ambulance stopped all the internal sockets and electrical system must be active. In this position the engine must not be starting.		
		There will be an automatic system to cancel charging when the accumulators are fully charged.		
		All the sockets shall be protected against current leaks.		
	Inverter	An inverter fed from the 12v accumulators shall be provided on board which is capable of delivering 800 w. regulated AC power when the ambulance is running		*

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Patient's cab illumination	LED lighting	LED lighting lamps shall provide min.100 lux power illumination around the patient area and min.30lux-power for surrounding area		



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<b>Electrical system</b>	The ambulance must be equipped to (4) Electric systems	Basic system in non – equipped vehicle Supply system for body mounted devices Supply system for compartment Supply system for communication	
<b>Siren – lighting speaking</b>	Siren	A siren with a three different tones and Min. power 100 w	
	Rotary beacon	LED Light bar suitable for width of ambulance	
	Flashing light	Two flashing orange lights at the rear door and one on each side	
	Flood light	It shall be fitted at the rear which activated when the rear door is opened	
	Speaker	A public address system (Microphone + external speaker + amplifier) A hands free interphone system (1 speaker in driver cab and 1 speaker in patient compartment)	

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<b>system</b>	Ventilation	Which shall provide a Min. of 20 air changes per hour	
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	Air conditioning	Two separate air conditioning for both driver's cab and patient's compartment with min 7.5 kw compressor which can be controlled separately and independently and compatible with EN1789 standard. Or isiri 4374		
		High quality air condition system suitable for ambient temperature of up to 43 °C and 90% humidity It shall be able to decrease from (32°C) temperature inside the patient's compartment to (27°C) during 15 Minutes and also after 30 minutes shall be able to decrease to 22 °C		
		Fitted with temperature controller for maintaining suitable temperature during a trip.		
	Heating System	Two heating system for both driver's cab and patient's compartment which can be controlled separately and independently.  This system shall be such that given outside and inside of -20°C the heating up to at least 5°C shall not take longer than 15 Minutes.  After 30 minutes a temperature at least 22°C shall be reached in the patient's compartment. The heating shall be adjustable by a thermostat in such a way that the temperature does not exceed ±5 degrees.		

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<b>Control</b>	Control panel	It shall be installed in patient cab which is available easily for patient compartment attendant.	
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<b>panel and Noise</b>	Items on control panel	Illumination Heating system ventilation internal communication		
	Interior noise level	Max. 78 db according to EN 1789 2006 or isiri 4374		
	Oxygen outlet	Shall be fitted above the patient head on the wall		
	Oxygen equipment	Humidifier – flow motor – outlet piped to cylinders storage.		
<b>SUBJECT</b>	<b>FEATURES</b>	<b>REQUIREMENTS</b>	<b>Bidder's Specification</b>	
<b>Paint and marking</b>	Exterior painting	Must be white color		
	Symbol	(Star of life) must be located to the right – left – rear and roof		
	Ambulance	The mirror image of the word (Ambulance) located in the front		
	Color band	In case UNFPA submitted request to supplier prior to delivery		

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SUBJECT	FEATURES	REQUIREMENTS	Bidder's Specification	
<b>Stand ard</b>	Vehicle (Van or chassis)	According to ISO, SAE, DIN or ISIRI standard		
	Patient Compartment	According to EN1789: 2006 or ISIRI 4374		
	Complete Ambulance	It shall meet ISIRI 4374 at minimum stage.		
<b>Other s</b>	Guaranty	50000 km operation or 24 months from acceptance of ambulance whichever occurs earlier.		
	After Sale Service with Spare parts	10 Years		

In case of vehicle technical differences ISIRI 4374 will be considered as the guideline.

Carrying 2 sleeping patients or one sleeping patient and 2 seated patients should be considered and an interior design enabling to have both options is preferable in case of possibility of taking plate.