

Technical Specification for EMS Ambulance TOYOTA HAICE 2700 CC

SUBJECT	FEATURES	REQUIREMENTS	Bidder's Specification
EMS AMBULANCE	General Requirement	Technical features of the ambulance or the related medical equipment/accessories/materials provided under this specification shall be in accordance with <u>the latest active version of Iranian standard IRSI 4374</u> and 10g crash test certificate shall be provide	
		Equipment and the accessories proposed shall include(standards of quality and production of their class)	
		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 mains voltage of 220V- 50HZ and compensate +/-10Vchange in voltage	

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ENGINE	Power (HP)	Min 140HP	
	type	4 in line	
	Fuel type	Petrol	
	Fuel system	Electronic fuel injection (EFI) - VVI (variable valve ignition)	
	Cooling system	Water cooled	
	Fuel economy	Max 12 L/100 km	
	Cruising range	Min 500 km	
	Displacement (cc)	2500 cc up to 3000 cc	
	Torque (NM)	Min 240 NM	
	Temperature condition	(-)30°C UP to (+) 60°C	
	Exhaust emission	Min EURO 4	
	Engine location	Front	

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Transmission	Gear box	Manual or automatic	
	operation	Min 5-SPEED M/T Cruise control	
	Traction/drive system	R.W.D.	
Suspension	Front	Fully independent double wish bone type with torsion bar spring	
	Rear	Rigid leaf spring axle	
Brake & performance	Front	Power assisted Ventilated disc	
	Rear	Power assisted disk or drum	
	Safety system	ABS(anti-lock braking system)	
		BA(brake assist)	
		TRC(traction control)	
		VSC(vehicle stability control) on/off switch	
		HAC(Hill-start assist control)	
		ESS(electronic stability system)	
	Turning circle(Diameter)	Max 13 meters	
	Max Speed	160 km/h	

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	Acceleration	0-100 km Max 20 seconds	
	Air bags	Driver and co-driver	
	Wheelbase	Min 3000 (mm)	
steering	Type	Left hand drive	
	Power	Power assisted steering	
	Safety column	Tilt or collapsible	
weight	payload (kg) (passenger type)	Max 1200 kg Pay load with uneven load distribution Max 1200 kg	
safety drivers cab	seat	Adjustable Driver seat	
		Three-point seat belts with tension meters for driver and co-driver	
	glass	Windshield made from laminated glass Heated windscreen	

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Exterior dimensions	Overall Length		5000-5500 (mm)	
	Overall Height		Max 2800 (mm)	
	Overall width		1880 (mm)	
	Ground clearance		Min 180 (mm)	
	Doors	Drive cab	2 Doors	
		Rear door	Up down	
		Sliding door	One or two sliding doors	
	Tailgate height		Min 1800 (mm)	
Patient cab dimensions interior	Patient cab floor heights		Max 750 (mm)	
	Loading angle		16 degrees	
	length		Min 3200 (mm)	
	width		Min 1700 (mm)	
	height		Min 1600 (mm)	

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Drivers cabin	radio	Origin type	
	mirror	Origin type	
	windows	- A window dimension approximately of 45 x 45 Cm with max. Opening side of 12cm shall be built on the bulk head. - A Curtain shall be handing in the patient 's cab to prevent light from patient's cab to driver's cab - Front door windows shall be operating with electrical power system. - A windscreen defrosting system operable when the road Ambulance is stationary or mobile.	
	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.	
Patient's cab conversion	conversion	- Floor – roof and side walls separately must be made of integrated composite (as one piece) - No wood must used - 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.	

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	windows	• Patient compartment should have enough windows with min total surface area of 1 square meter • 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 0 radius. • The finish of the interior patient cabin including interiors of storage cabinets shall be impervious to soap and water disinfectant mildew fire resistant	
		• The color of the interior shall be white	
	Cabinet – drawers and bench view from the back	• The left wall cabinet must be made of integrated composite (as one piece) • One bench fixed on the right side of the stretcher • Dimensions shall be suitable for 3 persons with 2 points safety belt • The bench must be box type with top open door witch control with 2 or 3 gas spring • It shall furnish for extra patient • The front cabinet (attached to partition) must be made of pvc • Coating of cabinet doors shall be white colure • At least 16 mm thickness PVC materials shall be used for building main frame and edges of the cabinet system. • At least 10mm thickness PVC material shall be used for drawers and the shelves. • Drawers shall be secured against self-opening and should be equipped with Turning bottom or up/down security lock	
	doors	• Shall be capable of being positively restrained in the open position	

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	Seat	• One seats shall be fixed above the stretcher • When not in use, it shall be folded through backrest.	
	Main stretcher	• Chair able stretcher • (multi-function) Simple patient handling by one person with adjustable backrest	
		• weight must be Less than 45 Kg according to EN 1865-1 • 10 G crash test certificates for the main stretcher in compliance with EN 1789 shall be provide	
		• It Shall be fitted with IV holder	
	Infusion bottle hanger	• At least two infusion bottles hanger shall be installed on the ceiling. • They must have suitable space for 2 infusion bottles.	
power source	main battery	• Min. capacity of 80 (Ah) 12V	
	additional battery	• Min. capacity of 80 (Ah)	
	alternator	• Min. 1200 w which could feed each one of two accumulators separately and hardware present in the ambulance required	

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	rectifier	- 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 - The installation of the 220 volt outlet must be done in line with the driver's side door handle	
		Vehicle shall be furnished with rectifier which could charge the accumulators when the vehicle is not operative.	
		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 1600 w. regulated AC power when the ambulance is running	

Patient's cab illumination	LED lighting	shall be equipped with white illumination LED OR SMD lighting group	
		LED lighting shall be mercury-free and provide UV illumination	
		LED lamps shall be resistant to 150 degrees connections heats.	
		LED lighting lamps shall provide 70% of its lighting density as lumen after 50000 hours usage	

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		LED lighting lamps shall provide min.300 lux power illumination around the patient area and min.50lux-power for surrounding area	
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Mandatory miscellaneous equipment	Towing devices	2 towing devices (with capability of towing full loaded vehicle) shall be fixed one on the front and one on the rear of the vehicle.	
	Ambulance shall equipped with	- A vest bin for "sharps objects" - An emergency hammer - A safety belt cutter - A parking wedges - Head lamp range adjustable - Two bi-directional reflective triangles - Plastic coated metal rope which could be easily mounted on the chassis are minimum 5 meters long powerful enough for towing the proposed ambulance. - high visibility reflective Jackets 2 PCS for each ambulance	

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SUBJECT	FEATURES	REQUIREMENTS	Bidder's Specification
Electrical system	The ambulance must be equipped to (4) Electric systems	• Supply system for all compartment • Supply system for communication • Basic system in non-equipped vehicle • Supply system for body mounted devices • Or CAN BUS system	
	Electrical installation	• According to IEC 60364-7-708	
Siren – lighting speaking	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 blue 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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Environmental system	Ventilation	Which shall provide a Min. of 20 air changes per hour	
	Air conditioning	- High quality air condition system suitable for ambient temperature of up to 43oC and 90% humidity - It shall be able to decrees 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. - Automatic heating control temperature	

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Control panel and Noise	Control panel	It shall be installed in patient cab which is available easily for patient compartment attendant.	
	Items on control panel	- Illumination - Heating system - ventilation - internal communication - air conditioner	
	Interior noise level	Max. 78 db according to EN 1789 2007	
Medical Gas System	Oxygen cylinders	Two oxygen cylinders with capacity of 2000 liters each (under normal pressure and temperature) along with pressure regulators and pressure gauges with max. Capacity of (at least 15 l/min according to EN 737-1) shall be provided in an appropriate space outside of the patient compartment.	
	Oxygen outlet	Shall be fitted above the patient head on the wall and bench	
	Oxygen equipment	Humidifier – flow motor – outlet piped to cylinders' storage.	
Stationary suction	Stationary suction (chargeable)	One chargeable suction with min. negative pressure of 500 mmHg and capacity of one liter (according to EN 150 – 10079 –1) to be fixed on the wall. It shall be also portable.	

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SUBJECT	FEATURES	REQUIREMENTS	Bidder's Specification
Paint and marking	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	Red bands must be located around ambulance. According to (expert's emergency viewpoints)	
Portable advance resuscitation system	Portable advance resuscitation system including: Dimension and shape must be according to (expert's emergency viewpoints)	2-liter oxygen cylinder - face mask - Tracheal tubes - Air ways - Resuscitator in two sizes - sphygmomanometer - stethoscope - forceps - scissors - optical fiber laryngoscope with (3-stainless steel blades) - manual suction - mouth gag - An area for storing infusion solutions - medicine storage space	

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Designing accommodations for equipment	Medical equipment	Following list of the medical equipment <u><i>is part of the bid</i></u> so that manufacturer must provide suitable safe separate area (cabinet and shelf) • Scoop stretcher According to EN standard with FDA or CE or IMED Certificate • Cervical collar- set • Chair stretcher According to EN standard with FDA or CE or IMED Certificate • Long spinal board with head immobilizer According to EN standard with FDA or CE or IMED Certificate • Short back board According to EN standard with FDA or CE or IMED Certificate • Immobilization set for fractures • AED according to <u>Table 1</u> specification • Ventilator according to <u>Table 2</u> specification • Tele monitoring JAM H1 with IMED Certificate	

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SUBJECT	FEATURES	REQUIREMENTS	Bidder's Specification
Standard	Vehicle (Van or chassis)	According to ISO, SAE, DIN or JIS or JSO standard	
	Patient Compartment	According to EN1789: 2014	
	Complete Ambulance	It shall meet ISIRI 4374	
Others	Guaranty	120000 km operation or 24 months from acceptance of ambulance whichever occurs earlier.	
	After Sale Service with Spare parts	10 Years	
	Communication preparation	- Driver cabin shall be furnished with essential cabling for communication radio wireless. - At least one Antenna shall be installed on the roof. - Wireless communication device is not part of the bid.	

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توجه:

- ۱- در صورت خرید تجهیزات پزشکی خارجی هر قلم از این تجهیزات داخل آمبولانس، می بایست دارای نمایندگی فعال و مجوز ورود کالا از اداره کل تجهیزات پزشکی بوده و حداقل دارای دو سال سابقه فعالیت داخل ایران باشند. شرکتهای نمایندگی موظف به ارائه دو سال گارانتی و ۱۰ سال خدمات پس از فروش می باشند. شرکتهای تولید کننده در صورت ارائه کالای تولید داخل و انطباق با مشخصات فنی ملزم به تامین استانداردهای اداره کل تجهیزات پزشکی می باشند.
- ۲- فروشنده می بایست جانمایی داخلی جهت نصب بیسیم مطابق درخواست خریدار ایجاد نماید
- ۳- خرید و نصب آنتن بی سیم مطابق مشخصات ذیل به عهده فروشنده می باشد.

مشخصات آنتن روی سقف خودرو

آنتن خودرویی با قابلیت چرخش ۱۸۰ درجه و تمام استیل

قابل جدا شدن برای دسترسی به کارواش

قابل تنظیم با برش شلاقی

قابل تنظیم کارخانه با توجه به فرکانس مشتری

دارای فنر استیل ضد زنگ قوی

قطبش: عمودی

حداکثر توان: ۱۰۰ وات

محدوده فرکانس: قابل تنظیم از ۱۴۰ تا ۱۷۵ مگاهرتز

طول کابل ۵ متری از نوع RG 58

ارتفاع (تقریبا): ۱۴۴۰ میلی متر

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Table 1-Technical specification for MBULANCE AED

Subject	Features	Requirements	Bidder's Specification & Comments
Physical	Multi functional device	Semi automatic AED	
	Weight	Included options, battery & external paddles & Bag Max: 3.5 Kg	
	Operating Temperature	0° C to 45° C	
	Storage Temperature	-5° C to 50° C	
Safety	Safety Function	Solid Foreign Object: According to IEC or other valid standards	
		for enclosure protection, water ingress: According to IEC other valid standards, IP44	
		Shock test in accordance with IEC or other valid standards	
		Vibration test in accordance with IEC or other valid standards	
Display	Display Size	Min. 4 inch	
AED	Mode	AED Mode (Adult and pediatric therapy mode)	
	Paddles and paddes	Reusable External Hard Paddles for Adult and Pediatric (in case of availability)	
		Disposable Paddes (for each device, 40 pairs for adults and 5 pairs for Pediatrics)	
	waveform	Biphasic (Mandatory)	
	Charge Time	Less than 10 seconds for maximum energy level	
	Voice Prompting language	Voice Prompting (english and persian)	
	ECG CABLE	ECG CABLE According to IEC standard, CF and Fully Defibrilltaor Protection	
	Monitoring	ECG LEADS min 6 leads , Arrhythmia Analysis, Heart Rate 0 to 270 bpm ECG Leads from the Paddes or paddels	
	Alarm	Vt , VF Amplitude, Low batteries audible and indication alarm, ECG cable connected, A systole, Electrode Disconnected	

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	Battery and charger	Rechargeable Li-Ion with max 4 hours of charging time Capacity : Min 100 shocks at the max 200 joules biophasic. Battery Life, 5 years or 1000 Battery charge-discharge cycles	
		One separate standing charger Charging with 220 volts AC charger and 12 volts DC power supply	
	Case	Comfortable carrying case	
Standard and Guaranty	Guaranty	2 years from the installation time for all parts- Battery 5 years 10 years after sale services in any cities of Iran	
	Standard	FDA or CE	
	Ambulance Braket Certification .	Ambulance Braket Certification .	
	Shock and Vibration tested.	Shock and Vibration tested.	
Data Transfer	Data Interface	Via SD Card or Usb flash or direct wifi : cardiac monitoring, AED report,Alarm and Event report and etc.	

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Table-2 Specification for portable ambulance ventilator

Subject	Features	Requirements	Bidder's Specifications & Comments
PHYSICAL	Application	for adults and child (weight upper than 10 kg)	
		Emergency and transport ventilation	
	Dimensions	Suitable for ambulance	
	Weight	max 1.5 kg with batteries (Lightweight)	
	Temperature - Operation	-10° to 45°C	
	Temperature – Storage	-10 o to 50 °C	
	Safety Function	Shock Resistance	
		Easy Handling	
Principle of operation	Ventilation mode	Manual or automatic with Assist-Control Triggers- Simple control interface	
		Flow Rate: Up to 36 Liters per Minute	
		Breathing Rate: Adjustable, Up to 20 breaths per minute	
		Tidal Volume: Adjustable, Up to 1000 ml	
		Min coverage of PEEP: 0-5 cm H2O (with PEEP adapter)	
		FiO2: 100% or air mix	
		Low maintenance cost	

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Principle of operation	ALARMS	High Airway Pressure alarm Circuit Disconnect Low Source Gas at a fixed pressure	
		The device easily connected to Oxygen outlets according to the requirement of NEMO.	
		The device shall be equipped with one appropriate manometer and carrying bag	
Standard Guaranty	Guaranty	2 years from the installation time for all parts And 10 years after sale services in any cities in the whole country of Iran	
	Standard	According to EN 794-3 standard	
	Certificate	FDA or CE or IMED	
Standard accessories	Carrying case		
	Silicone patient mask with expiratory valve		
	Disposable patient circuit in PVC with expiratory valve		
	Standard Manometer and o2 tube		
	User manual in farsi		
Cleaning and disinfection procedures shall be fairly easy with the use of routine detergents			