

TECHNICAL SPECIFICATION: ROAD AMBULANCE – EN 1789 CLASS C MOBILE INTENSIVE CARE UNIT (ICU AMBULANCE) – SYRIA

1. SCOPE

1.1 General

This Technical Specification establishes the minimum technical requirements for the design, manufacturing, supply, delivery, installation, testing, commissioning, training and warranty support of complete Lots of Road Ambulances Class C, Mobile Intensive Care Unit (MICU). The ambulances shall be supplied as a new, complete, fully integrated and operational system, comprising the base vehicle, ambulance conversion, permanently installed systems, medical equipment integration, accessories, documentation and training.

The technical specification-tender is divided into Lot 1 and Lot 2. The only technical difference between the two Lots is the required vehicle drivetrain configuration. Unless explicitly stated otherwise, all other technical, functional, safety, medical equipment, testing, documentation, training, and warranty requirements specified herein shall apply equally to both Lots.

1.2 Ambulance Classification

The completed ambulance shall comply with EN 1789, Type C – Mobile Intensive Care Unit, applicable to road ambulances designed and equipped for the transport, advanced treatment and monitoring of patients requiring intensive care.

1.3 Intended Use

The ambulance shall be suitable for, as a minimum:

- Emergency transport and stabilization of critically ill or injured patients.
- Inter-hospital intensive care transfer.
- Adult and pediatric critical-care transport.
- Advanced trauma transport.
- Cardiac, respiratory and neurological emergencies.
- High-risk maternal transfer where clinically appropriate.

The configuration shall permit continuous patient monitoring, mechanical ventilation, defibrillation, oxygen therapy, suction, infusion therapy and emergency airway management during transport.

1.4 Patient and Crew Capacity

The ambulance shall accommodate, as a minimum:

- One (1) stretcher patient.
- One (1) driver.
- Two (2) staff in the driver cabin
- Minimum two (2) medical personnel in the patient compartment.

The patient compartment must permit access to the patient and safe operation of the required ICU equipment during transport.

1.5 Operational Environment – Syria

The ambulance must be designed for intensive operation throughout the Syrian Arab Republic, including urban areas, rural areas and long-distance inter-facility transfers.

The complete vehicle and conversion shall be suitable for:

- Ambient temperature: approx. 0 °C to +50 °C.
- High solar radiation.
- High dust and sand exposure.
- Damaged asphalt and gravel roads.
- Extended daily operating periods.

- Outdoor vehicle storage.

These conditions shall be considered in the design of the cooling, ventilation, filtration, electrical, battery and vehicle systems.

2. APPLICABLE STANDARDS AND REGULATORY REQUIREMENTS

2.1 General

Equivalent Standards Clause (in accordance with Sections 31 and 32 VgV)

Where these procurement documents or technical specifications refer to specific DIN, EN, ISO, or other standards, technical specifications, approvals, or regulations, such references shall **always be understood to include the addition "or equivalent"**.

Tenders offering solutions that deviate from the specified standards or specifications are permissible, provided that the bidder proves in their tender that the proposed supplies, services, or processes satisfy the performance and functional requirements set out in the technical specifications in an equivalent manner.

Proof of equivalency must be provided by the bidder upon submission of the tender (e.g., through test reports issued by an accredited conformity assessment body, manufacturer technical dossiers, or other appropriate evidence pursuant to Section 33 VgV). The burden of proof regarding equivalency rests entirely with the bidder.

The completed ambulance and supplied equipment shall comply, where applicable, with:

- **EN 1789** – Medical vehicles and their equipment – Road ambulances.
- **EN 1865 series** – Patient handling equipment used in road ambulances.
- **IEC/EN 60601 series** – Medical electrical equipment.
- **IEC/EN 60601-1-12** – Medical electrical equipment intended for use in the emergency medical services environment.
- **IEC/EN 60364-7-721** - Low-voltage electrical installations: Requirements for special installations or locations – Electrical installations in caravans and motor caravans.
- **ISO 13485** – Medical devices – Quality management systems.
- **ISO 14971** – Medical devices – Application of risk management.
- **ISO 3795:1989** – Road vehicles, and tractors and machinery for agriculture and forestry — Determination of burning behavior of interior materials.
- **ISO 7396-1:2016** – Medical gas pipeline systems – Part 1: Pipeline systems for compressed medical gases and vacuum, incorporating Amendment 1:2019.

2.2 EN 1789 Compliance

The **completed ambulance**, including conversion and installed systems, shall comply with the applicable requirements of EN 1789 Type C. The Tenderer shall provide documentary evidence demonstrating compliance of the ambulance configuration offered.

2.3 Crashworthiness

The completed ambulance shall comply with the applicable EN 1789 dynamic/crashworthiness requirements, including retention and anchorage of the patient, occupants, stretcher, medical equipment, oxygen cylinders, furniture and other installed equipment.

Compliance with the applicable EN 1789 requirements for dynamic testing at 10 G in the prescribed directions shall be demonstrated by appropriate test reports, certificates, or equivalent conformity documentation.

2.4 Type Approval

The completed ambulance shall have a valid Vehicle Type Approval, Whole Vehicle Type Approval (WVTA), or equivalent approval acceptable for registration and operation in the destination country. Equivalent internationally recognized approvals may be accepted, provided the Tenderer demonstrates an equivalent or higher level of safety and performance.

3. GENERAL TECHNICAL REQUIREMENTS

3.1 Complete Supply

The Supplier shall provide a complete operational ICU ambulance comprising, as a minimum:

- Base vehicle.
- Ambulance conversion.
- Patient compartment.
- Electrical systems.
- HVAC system.
- Medical oxygen system.
- Emergency warning and signaling system.
- Medical furniture.
- Patient handling systems.
- Medical equipment mounting and retention systems.
- Specified medical equipment and accessories.
- Documentation.
- Training.
- Warranty.

3.2 Condition

The base vehicle, conversion and supplied equipment shall be:

- Brand new.
- Unused.
- Current production models.
- With aftersales and warranty service available in Syria.

Prototypes, demonstration, used or refurbished vehicles/equipment will not be accepted.

3.3 System Integration

The ambulance shall be supplied as one integrated system.

The Supplier shall assume responsibility for the technical compatibility and safe integration of the:

- Base vehicle.
- Ambulance conversion.
- Electrical system.
- HVAC system.
- Medical gas system.
- Patient handling equipment.
- Medical devices.
- Furniture.
- Equipment mounting and retention systems.
- Any other equipment, system or part.

3.4 -

3.5 Maintainability

The design shall permit routine inspection, servicing and replacement of serviceable components without unnecessary dismantling of structural components or fixed medical furniture. Components requiring periodic inspection or replacement, including electrical protection devices, batteries, filters, oxygen-system components and HVAC service points, shall be reasonably accessible.

4. VEHICLE PLATFORM

4.1 General

4.1.1 Vehicle Configuration

The base vehicle shall be a commercially available high-roof long panel van or equivalent purpose-built ambulance platform, suitable for conversion into an EN 1789 Type C ambulance.

4.1.2 Drive

- Lot 1: Drive configuration: 4 × 2.
- Lot 2: Drive configuration: 4 × 4.

For Lot 1, Rear-Wheel drive or front-wheel drive are acceptable, provided all specified mass, stability, performance and ambulance-conversion requirements are achieved.

4.1.3 Steering

- Left-hand drive.

4.1.4 Vehicle Production

The proposed vehicle shall be a current production model at the Tender Closing Date. Year of manufacture shall be the year of delivery and shall not be earlier than the calendar year preceding delivery.

4.2 Dimensions

The following ranges establish the required vehicle category, any technically equivalent commercial vans platforms are acceptable:

4.2.1 Overall length: Approx. 5,500–7,100 mm.

4.2.2 Overall width, excluding mirrors: Approx. 2,000–2,150 mm.

4.2.3 Overall height after conversion: Approx. 2,600–3,100 mm, subject to the final ambulance configuration.

4.2.4 Wheelbase: Approx. 3,500–4,500 mm.

4.2.5 Patient compartment:

The patient compartment shall be designed and configured to accommodate all medical devices, equipment, and consumables required for a Type C ambulance in accordance with EN 1789.

4.2.6 Length: $\geq 3,100$ mm

4.2.7 Width: $\geq 1,780$ mm

4.2.8 Height: $\geq 1,900$ mm

4.2.9 Internal standing height: $\geq 1,900$ mm.

4.3 Vehicle Mass and Payload

4.3.1 Gross Vehicle Mass

GVM/GVW: approx. 4,100–5,500 kg.

4.3.2 Payload

The vehicle shall provide sufficient payload for the complete ambulance conversion, installed equipment, medical supplies, oxygen, fuel, patient and specified crew without exceeding manufacturer:

- Permissible GVM.
- Front axle rating.
- Rear axle rating.
- Tyre load ratings.
- Minimum residual payload of approx. ≥ 260 Kg for medical and technical products.

4.3.3 Weight Verification

The Tenderer shall provide the proposed vehicle/conversion mass calculation, including:

- Completed vehicle mass.
- GVM.
- Available payload.
- Maximum front axle load.
- Maximum rear axle load.

The final ambulance shall be weighed following completion and prior to Final Acceptance.

4.4 Engine and Emissions

4.4.1 Fuel

The proposed vehicle may be equipped with either:

- A. Gasoline (petrol) engine, or
- B. Diesel engine.

- Both fuel types are acceptable. The proposed engine and fuel type shall be suitable for the offered vehicle configuration, including the required drivetrain, Gross Vehicle Weight (GVW), ambulance conversion, and intended operating conditions in Syria.

4.4.2 Engine.

The engine shall provide adequate power, torque, reliability, and operational performance for the fully equipped ambulance.

The engine shall provide adequate performance including operation of auxiliary vehicle systems and air-conditioning under the specified climatic conditions.

4.4.3 Gasoline, Option A.

- A. Option A Gasoline engine, naturally aspirated or turbocharged, suitable for intensive ambulance operation and the expected operating conditions.

- Number of cylinders: 4
- Total displacement: Approx 3000 cc
- Rated Power: Approx. 105 to 130 kW.
- 4.4.4 Torque: Approx. 200 to 350 Nm.

4.4.4 Diesel, Option B.

- B. Option B Diesel, turbocharged, direct-injection engine suitable for intensive ambulance operation and the specified operating conditions.

Number of Cylinders: Minimum 4 Cylinders.

Engine Displacement: Approx. 1,950–3,000 cc.

Rated Power: Approx. 100–160 kW.

Torque: Approx.: 340–480 Nm

4.4.5 Emission Standard

- The proposed engine shall comply with **Euro 3** or a higher emission standard.
- The emission standard and associated engine technology shall be suitable for the prevailing fuel quality, operating environment, maintenance capabilities, and service conditions in Syria.
- The proposed engine shall be supported by adequate after-sales service, warranty support, maintenance capability, and availability of spare parts in Syria.
- The Tenderer shall provide details and supporting evidence of the qualified service network available in Syria for the proposed vehicle and engine. Failure to demonstrate adequate service and warranty support in Syria may result in disqualification of the offer.

4.4.6 Fuel Tank

- Minimum capacity: ≥ 70 L.

A fuel pre-filter/water separator or equivalent protection suitable for the intended operating environment shall be provided where available from the OEM (Original Equipment Manufacturer).

4.5 Transmission

- Manual and Automatic transmission are accepted.
- Where automatic transmission is offered, it shall include manual gear-selection/override capability or equivalent.

4.6 Suspension and Ground Clearance

4.6.1 Suspension

The vehicle shall be equipped with a heavy-duty suspension system suitable for ambulance conversion and continuous operation at the vehicle's specified Gross Vehicle Weight (GVW).

The suspension system shall:

- Be suitable for the additional mass and load distribution resulting from the ambulance body conversion, medical equipment, oxygen system, batteries, personnel, patients, and other installed equipment.
- Maintain adequate vehicle stability, handling, braking behaviour, and ride comfort under both partially and fully loaded operating conditions.
- Have sufficient load capacity on both front and rear axles without exceeding the manufacturer's permitted axle load ratings.
- Include suitably rated or reinforced rear suspension where required by the final ambulance configuration.
- Be designed for operation on paved and uneven road surfaces and under the expected operating conditions in Syria.
- Any modification or reinforcement of the original suspension shall be technically compatible with the base vehicle and shall not adversely affect the vehicle manufacturer's warranty, safety, or applicable type approval.

4.6.2 Ride Quality

The suspension system, tyres, ambulance conversion, equipment mounting systems, and overall vehicle configuration shall be designed to minimize shock, vibration, and excessive vehicle movement transmitted to the patient, medical personnel, and installed medical equipment.

The completed ambulance shall provide adequate ride comfort and stability including operation on uneven road surfaces

4.6.3 Ground Clearance

The ground clearance of the completed ambulance shall be suitable for the intended operating conditions and shall not be adversely reduced by the ambulance conversion or installation of auxiliary equipment.

- Lot 1 – 4x2 Ambulance: Minimum ground clearance: ≥ 150 mm.
- Lot 2 – 4x4 / AWD Ambulance: Minimum ground clearance: ≥ 180 mm.

Ground clearance shall be measured at the lowest relevant fixed point of the completed vehicle, under the manufacturer's specified operating/loading condition.

4.7 Braking and Vehicle Safety

The vehicle shall include, as a minimum:

- ABS.

- Electronic Stability Control (ESC) or equivalent.
- Traction control.
- Brake assistance / electronic brake-force management, where incorporated by the OEM.
- Driver airbag.
- Front passenger airbag.
- Three-point seat belts for cab occupants.

OEM driver-assistance systems normally available for the proposed vehicle category shall be included.

4.8 Wheels and Tyres

- Wheel diameter: ≥ 16 in.

Tyres shall be:

- Be new, unused, commercial/heavy-duty radial tyres suitable for ambulance operation.
- Have a load index sufficient for the maximum permissible axle loads of the completed ambulance, taking into account the actual tyre configuration on each axle.
- Have a speed rating equal to or greater than the maximum design speed of the completed vehicle.
- Be suitable for the expected climatic, road and operating conditions in Syria, including prolonged operation on paved, damaged and uneven roads.
- Be compatible with the proposed 4×2 or 4×4/AWD drivetrain, as applicable.
- Be of the same size, type, load index and speed rating on each axle, unless otherwise specified by the vehicle manufacturer.
- Comply with the applicable vehicle manufacturer's requirements and relevant tyre regulations.
- One full-size spare wheel and tyre with suitable carrier shall be provided.

The wheel and tyre combination shall be approved by the base vehicle manufacturer for the proposed vehicle variant.

4.9 Driver's Cab and Operational Equipment

The driver's cab must include, as a minimum:

- Air conditioning.
- Power steering.
- Driver and passenger airbags.
- Adjustable driver's seat.
- Adjustable steering wheel.
- Three-point seat belts.
- Electric windows.
- Central locking.
- Cruise control or speed control system.
- Rear-view/reversing camera.
- Rear parking assistance.
- Radio with Bluetooth or equivalent hands-free connectivity.
- USB charging connection(s).
- Warning triangle.
- Vehicle tool kit and jack suitable for the supplied vehicle.
- Two keys, remote control.

4.10 Vehicle Electrical Generation

The OEM electrical generation system shall be suitable for the additional ambulance electrical load.

- **Starting battery:** $\geq 80 \text{ Ah } 12 / 24 \text{ V}$ or OEM equivalent suitable for the vehicle configuration.
- **Additional battery.** $\geq 80 \text{ Ah } / 12 \text{ V. } 63 \text{ Ah } / 2 \times 12 \text{ V.}$
- **Alternator:** $\geq 180 \text{ A.}$
- The ambulance auxiliary electrical system shall be independent from the starter battery to the extent necessary to prevent medical/auxiliary loads from compromising engine starting.
- The Supplier shall size the auxiliary electrical system according to the total installed electrical load and intended ambulance operation. The values specified above represent the minimum acceptable requirements. Additional power capacity shall be provided as necessary to ensure an adequate and reliable power supply to all installed medical and auxiliary equipment.
- Batteries shall be securely installed and positioned to permit maintenance. Batteries, terminals, connections, and associated wiring shall be designed and protected to prevent accidental short circuits.

4.11 Technical Documentation with Offer

The Tenderer shall provide sufficient OEM documentation to verify the principal offered vehicle characteristics, including:

- Manufacturer and model.
- Vehicle configuration.
- Engine type rated power and emission level.
- Transmission.
- GVM/GVW.
- Axle capacities.
- Principal external dimensions.
- Wheelbase.
- Tyre specification.
- Alternator rating.
- Fuel tank capacity.
- Manufacturer's technical datasheet.

Brand names or specific commercial vehicle models are not prescribed. Compliance will be assessed against the technical and performance requirements of this specification.

5. AMBULANCE CONVERSION AND PATIENT COMPARTMENT

5.1 General Conversion

5.1.1 The conversion shall comply with the applicable requirements of EN 1789 Type C – Mobile Intensive Care Unit.

5.1.2 --

5.1.3 Structural modifications shall not compromise the integrity, safety, permissible mass or OEM warranty of the base vehicle.

5.1.4 All seats, stretcher systems, furniture, oxygen cylinders, medical devices and other equipment shall be securely installed/retained in accordance with the applicable EN 1789 requirements.

5.1.5 The patient compartment shall be separated from the driver's cab by a rigid partition incorporating a communication window and/or access opening as permitted by the approved configuration.

5.2 Patient Compartment

5.2.1 The compartment shall provide sufficient working space for continuous intensive-care treatment of one stretcher patient.

5.2.2 Minimum internal standing height: 1,900 mm.

5.2.3 The layout shall permit direct access to the patient's:

- Head and airway.
- Upper torso.
- Both sides where clinically required for emergency interventions.

5.2.4 The layout shall permit operation of the monitor/defibrillator, ventilator, suction and infusion devices without obstructing patient access.

5.2.5 Minimum capacity:

- One (1) main stretcher patient.
- Minimum two (2) medical personnel in the patient compartment as required in 1.4. and Table 3 Minimum Passenger Capacity.

Table 1 Minimum Passenger Capacity, EN 1789

Number of passengers in seats and/or stretchers (in addition to the driver)	Type C
Minimum number of passengers	4 / 5 ^a

- ^a With two stretchers. This option does not apply to this tender
- A sign indicating the maximum number of seated passengers and stretcher patients that may be transported shall be displayed in the driver's compartment.

5.3 Interior Finishes

5.3.1 Walls and ceiling shall be finished with smooth, non-porous, impact-resistant and washable material suitable for repeated cleaning and disinfection.

The surfaces should be easy to clean with standard disinfection products. Any material that features the risk of bacteria formation is not acceptable.

Union of the furniture with interior bodywork joints shall be perfect to avoid fissures and cracks, shall be leaks proof.

Sharp edges are not acceptable in any circumstance. The finishes shall be blunt, avoiding edges and protrusions that could endanger the safety of the staff or patients.

5.3.2 Flooring shall be:

- Waterproof.
- Slip-resistant.
- Seamless or with hygienically sealed joints.
- Resistant to routine healthcare cleaning/disinfection agents.
- Coved/sealed at wall interfaces where practicable.

5.3.3 Adequate thermal and acoustic insulation shall be provided.

5.3.4 Interior materials shall meet applicable EN 1789 fire-safety requirements.

- Fire Safety: All interior materials shall have a flame propagation rate of less than 100 mm/min when tested in accordance with ISO 3795:1989.

5.4 Doors and Windows

5.4.1 Minimum access shall comprise:

- Two rear loading doors.
- One side sliding door.

5.4.2 Rear doors shall open sufficiently to permit unobstructed stretcher loading/unloading.

- Opening required approx. 270°.

5.4.3 Patient compartment windows shall provide adequate privacy through factory tinting, translucent film or equivalent.

5.4.4 Doors shall incorporate secure internal and external operating mechanisms and shall permit emergency evacuation.

5.5 Medical Furniture and Storage

5.5.1 Furniture shall be purpose-designed for ambulance use and securely attached to the vehicle structure in compliance with the 10 G dynamic test requirements.

5.5.2 Storage capacity.

- Shall be sufficient for the specified medical devices, consumables, emergency bags and accessories.

5.5.3 Drawers, doors and storage compartments shall incorporate positive locking mechanisms preventing unintended opening during transport.

5.5.4 The compartment shall include, as a minimum:

- Medical equipment cabinet/storage system.
- Lockable medication storage.
- Work surface.
- Storage for consumables.
- Dedicated ventilator mounting position.
- Monitor/defibrillator mounting position.
- Infusion pump mounting system/rail.
- Minimum two (2) IV supports.
- Clinical waste container.
- Sharps container.
- Hand-disinfection provision.
- Oxygen outlets.
- Electrical outlets.

5.6 Patient and Crew Safety

5.6.1 All patient-compartment seating shall be purpose-designed for ambulance use and fitted with approved occupant restraint systems.

5.6.2 At least one attendant seat shall permit treatment/observation of the patient while the attendant remains restrained.

5.6.3 Suitable handholds/handrails shall be provided.

5.6.4 Loose equipment shall have dedicated secured storage or retention systems.

6. ELECTRICAL, HVAC AND MEDICAL GAS SYSTEMS**6.1 Electrical System**

6.1.1 The ambulance electrical installation shall comply with EN 1789 and shall be electrically integrated without compromising the OEM vehicle system.

6.1.2 A dedicated auxiliary battery system shall supply the patient-compartment and medical loads.

6.1.3 Auxiliary battery capacity shall be sized by documented electrical load calculation for the complete offered configuration.

6.1.4 Minimum auxiliary battery capacity: approx. 180 Ah at 12 V equivalent usable nominal system capacity, or equivalent energy capacity for another system voltage/battery technology.

6.1.5 Maintenance-free AGM, lithium-based or equivalent battery technology suitable for ambulance duty, shall be accepted.

6.1.6 Automatic battery isolation/protection shall prevent auxiliary loads from discharging the starter battery.

6.1.7 The system shall include battery monitoring and charging status indication.

6.2 AC/DC Power

6.2.1 Minimum patient-compartment outlets:

- 3 × 12 V DC, or equivalent DC outlets appropriate to installed equipment.
- 2 × 220 V AC, 50 Hz protected outlets.

- Minimum 2 × USB/USB-C charging points.

6.2.2 A pure sine-wave inverter shall be provided where AC equipment is powered from the auxiliary battery.

6.2.3 Inverter continuous rating: Minimum 1,500 VA, sized according to the final load calculation.

6.2.4 External shore-power supply: 220/240 V AC, 50 Hz.

6.2.5 Shore power shall permit auxiliary battery charging and operation of applicable onboard equipment such as.

- Charging the battery/batteries;
- Operating medical equipment, where installed;
- Operating a patient-compartment heater, where installed;
- Operating an engine preheater, where installed.
- The connector for 110 V or 220/240 V shall be a male connector and shall not interfere with electrical or mechanical safety.

6.2.6 Vehicle movement/engine start.

- Shall be prevented while physically connected to shore power, or an equivalent automatic safety-disconnection arrangement shall be provided.
- If an automatic mechanical disconnection system is not installed, the connector shall be located on the driver's side.
- The 110 V or 220/240 V circuit shall be protected either by a residual current device (RCD) with a maximum rated residual operating current of 30 mA or by means of an isolating transformer.
- If protection is provided solely by a residual current device, a label shall be placed near the socket stating:
- "CAUTION! CONNECT ONLY TO AN AUTHORISED POWER OUTLET."

6.3 Interior Lighting

6.3.1 High-efficiency LED lighting shall be provided.

6.3.2 Separate lighting modes shall include:

- General patient-compartment lighting.
- High-intensity clinical/work lighting.
- Low-intensity night lighting.
- Loading/access lighting.

6.3.3 Clinical lighting.

- Shall permit patient examination and emergency procedures without significant shadowing.

Table 2 Table 8 – Patient Compartment Lighting.

Requirement		Type C
Patient area (treatment)	Minimum	500 lx ^{a, c}
Immediate surrounding area	Minimum	300 lx ^a
Colour temperature		≥ 3,500 K ≤ 5,000 K ^b
Ra (Colour Rendering Index)	Minimum	90

^a In addition, a system shall be provided to reduce the lighting level in the patient compartment to 150 lx.

^b A range between 3,800 K and 4,300 K is recommended as optimal.

^c With additional illumination of 1,650 lx for the treatment area.

6.4 HVAC and Ventilation

6.4.1 The patient compartment shall have an independent controlled heating, ventilation and air-conditioning system.

6.4.2 The HVAC system shall be designed for operation at external ambient temperatures up to approx. +50 °C.

6.4.3 Air-conditioning capacity shall be sufficient to maintain clinically acceptable patient-compartment conditions under the specified Syrian operating environment.

6.4.4 Heating shall be suitable for operation at ambient temperatures down to approx. 0 °C.

6.4.5 Mechanical ventilation/extraction shall be provided.

- Number of Air Change per Minute: 20

6.4.6 Air distribution shall avoid significant hot/cold zones around the patient.

6.4.7 Replaceable filtration suitable for high-dust environments shall be provided.

6.4.8 HVAC controls shall be accessible from the patient compartment.

6.5 Medical Oxygen System (see Annex 1)

6.5.1 A permanently installed medical oxygen system shall be provided. The medical oxygen supply system shall comply with the applicable requirements of EN 1789. **ISO 7396-1** may be used as guidance for the design of relevant components of the medical gas supply system, where applicable.

6.5.2 The system shall include:

- Minimum two (2) secured main oxygen cylinders or equivalent central oxygen Notice capacity.
- Pressure regulator(s).
- Pressure indication.
- Shut-off/isolation arrangement.
- Minimum two (2) patient-compartment oxygen outlets.
- Minimum one (1) adjustable flowmeter.
- Approved medical oxygen tubing and fittings.
- One (1) portable oxygen set.

6.5.3 Total usable oxygen capacity, fixed system.

- Minimum approx. 2,000 L (at normal temperature and pressure).
- Flowmeter/rotameter with a maximum flow rate ≥ 15 L/min and pressure-regulating valve
- Higher were required by the offered ventilator and mission profile. The final equivalent demand must be made by the supplier.

6.5.4 Total usable oxygen capacity, portable set.

- Minimum approx. 400 L (at normal temperature and pressure).
- Flowmeter/rotameter with a maximum flow rate ≥ 15 L/min and pressure-regulating valve

6.5.5 The Supplier shall demonstrate oxygen autonomy based on continuous ventilator operation plus an appropriate emergency reserve.

6.5.5 Cylinders and associated equipment shall be secured in accordance with applicable EN 1789 dynamic retention requirements.

6.6 Suction (see Annex 1)

6.6.1 Minimum one (1) electrically powered portable medical suction unit must be supplied.

6.6.2 The portable suction unit shall remain operational independently of the vehicle electrical supply through its internal rechargeable battery.

7. EMERGENCY WARNING, COMMUNICATIONS AND EXTERNAL CONFIGURATION

7.1 Emergency Warning System

7.1.1 Emergency warning and priority signaling shall comply with applicable vehicle homologation and destination-country (Syria) road traffic requirements.

7.1.2 Minimum configuration:

- Roof-mounted LED emergency lightbar or equivalent integrated system.

- Front LED warning lights.
- Rear LED warning lights.
- Side warning lights.
- Electronic siren.
- Loudspeaker, minimum approx. 100 W.
- External side/rear work or scene lighting.

7.2 Scene and Loading Lighting

7.2.1 LED scene lighting shall be provided on both sides of the patient compartment.

7.2.2 Rear loading-area illumination shall be provided.

7.2.3 External work lights shall be independently switchable.

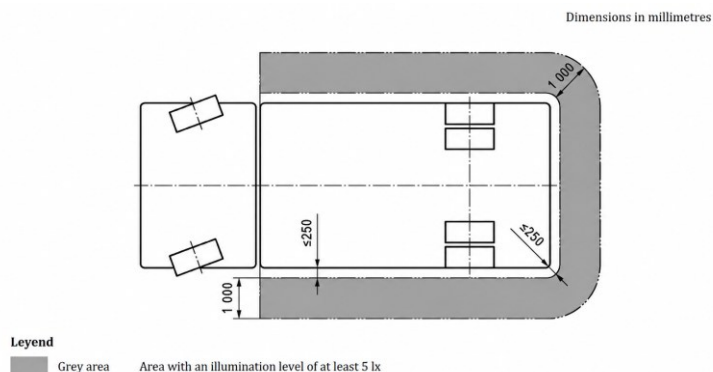


Figure 1 Exterior lighting

7.3 Communications

7.3.1 The vehicle shall include pre-installation for professional radio communication equipment, including suitable power supply, antenna cabling and mounting provision.

7.3.2 Final radio equipment/frequencies shall be coordinated with the competent Syrian authority. GIZ will provide that information.

7.3.3 Hands-free mobile communication capability shall be provided in the driver's cab.

7.4 External Finish and Identification

7.4.1 Base vehicle colour: White, unless otherwise instructed by the GIZ.

7.4.2 Final Ambulance identification, reflective markings, logos and emergency markings shall be agreed with the GIZ before production.

7.4.3 Reflective materials shall be suitable for exterior vehicle application, UV exposure and the specified climatic conditions.

7.4.4 No supplier advertising shall be applied without GIZ approval.

8. MEDICAL EQUIPMENT

8.1 General

8.1.1 Medical devices shall be new, current production, suitable for ambulance/EMS use and compliant with the applicable regulatory and medical electrical safety requirements.

8.1.2 Devices requiring operation during transport shall be suitable for the EMS environment and securely mounted/retained.

8.2 Minimum Medical Equipment Schedule

The devices must cover ICU/ALS functions, including.

I. Patient Transport Equipment

- II. Immobilisation Equipment
- III. Ventilation / Respiratory Equipment
- IV. Diagnostic Equipment
- V. Peripheral IV Access, Injection and Infusion
- VI. Management of Life-Threatening Problems
- VII. Products for Dressings and Medical Care

Integration and Non-Duplication Note: Each physical device, equipment item and consumable listed in Annex 1 schedule shall be supplied only in the quantity stated. Where multiple required clinical functions are incorporated into a single device, particularly the monitor/defibrillator, the integrated device shall fulfil all specified functions, performance requirements and accessory requirements. Cross-references to the same equipment elsewhere in the Technical Specification shall not be interpreted as requirements for additional units unless explicitly stated.

8.2.1 Detailed requirements for major medical devices in **Annex 1. Medical Devices.**

8.2.2 All necessary mounting brackets, power cables, charging systems and accessories required for ambulance operation shall be included.

8.2.3 Medical devices intended for both adult and pediatric use shall be supplied with the corresponding accessories.

9. DOCUMENTATION, TESTING, COMMISSIONING AND TRAINING

9.1 Documentation

The Supplier shall provide in English, as applicable:

- Vehicle operator manual.
- Vehicle maintenance manual.
- Ambulance conversion manual.
- Electrical schematic and circuit identification.
- Medical oxygen schematic.
- HVAC information.
- Final ambulance layout.
- Equipment inventory.
- Medical-device manuals.
- Applicable certificates of conformity.
- EN 1789 compliance documentation.
- Crash/dynamic retention compliance evidence.
- Final weight and axle-load report.
- Warranty documentation.

9.2 Factory Inspection and Testing

Prior to shipment, the Supplier shall complete a documented Factory Acceptance Test (FAT) covering, as a minimum:

- Vehicle identification and configuration.
- Conversion workmanship.
- Doors and access.
- Stretcher/loading system.
- Seats and restraints.
- Electrical installation.
- Shore power and interlock.
- Battery charging.
- Interior/exterior lighting.
- HVAC.
- Medical oxygen installation and leak/functional test.
- Suction.

- Warning lights and siren.
- Medical equipment installation.
- Equipment mounting/retention.

The FAT report shall be submitted before shipment. Also refer to the special contractual terms and conditions, page 3 – Quality Inspection.

GIZ may, in coordination with the Supplier, conduct one or more of the following activities at the manufacturing facility:

- Manufacturing inspection.
- Final inspection and/or witnessing of the FAT.
- Pre-shipment inspection.

9.3 Delivery / Reception

Upon delivery, the vehicle shall be inspected for:

- Quantity.
- Identification.
- Transport damage.
- Completeness of loose equipment and accessories.
- Delivery/reception shall not constitute Final Acceptance, yet a certificate must be produced and signed by the relevant parties.

Delivery must take place no later than 6 months after the order is placed. The delivery times specified above for all lots constitute an exclusion criterion. Bidders who do not meet this criterion will be deemed unsuitable and excluded from the procedure. The supplier must specify a firm and precise delivery date in its tender.

9.4 Commissioning and Site Acceptance

The Supplier shall perform commissioning following delivery.

Commissioning shall include functional verification of the vehicle, conversion, electrical system, HVAC, medical oxygen system, stretcher/loading system and supplied medical equipment.

Final Acceptance shall be subject to successful commissioning and correction of identified deficiencies.

- The Acceptance Certificate must be produced and signed by the relevant parties.

Refer to the special contractual terms and conditions, page 3 – Acceptance and Annex 2– Acceptance Certificate.

9.5 Training

The Supplier shall provide 2 days practical on-site training covering:

Operators/medical personnel:

- Ambulance systems.
- Stretcher/loading system.
- Oxygen system.
- Electrical system and shore power.
- Medical equipment.
- Equipment securing.
- Daily safety checks.

Technical personnel:

- System architecture.
- Electrical system.
- Battery/charging system.

- HVAC.
- Oxygen installation.
- Basic fault diagnosis.
- Corrective maintenance procedures.

Training materials shall be provided in English or in Arabic language.

9.6 Handover

Formal handover shall occur only after:

- Installation and commissioning are complete.
- Required tests have passed.
- Training has been completed.
- Required documentation has been submitted.
- Identified deficiencies affecting safe operation have been corrected.
- The ambulance shall be handed over in perfect working condition and in complete alignment with the required performance features, documented through the applicable Handover Protocol.

10. TECHNICAL SUPPORT

10.1 Technical Support

The Supplier shall provide technical contact details for:

- Base vehicle support.
- Ambulance conversion support.
- Medical-device support.

In country and remote technical assistance should be available during the warranty period.

10.2 Spare Parts

The Supplier shall submit recommended spare-parts lists for:

- Ambulance conversion.
- Electrical system.
- HVAC.
- Medical oxygen system.
- Supplied medical equipment.

The Supplier shall confirm anticipated availability of essential ambulance-conversion spare parts and technical support for a minimum of seven (5) years after Final Acceptance.

10.3 Quality & workmanship.

1. The Ambulance shall be brand new, free from defects that may impair its serviceability or detract from appearance.
2. The general appearance of the Ambulance shall not show any evidence of poor workmanship.
3. All bodies, systems, equipment, and interfaces with the chassis shall be done per EU/International standards listed in this document or any other that may be applicable for Syria.
4. Component parts and units shall be manufactured to definite standard dimensions with proper fits, clearances, and uniformity. Welded, bolted and riveted construction utilized shall be in accordance with the highest standards of industry.

The following deficiencies are not acceptable and shall be cause for rejection:

1. Rough, sharp or unfinished edges, burrs, seams, corners, joints, cracks, and dents.
2. Non-uniform panels. Edges that are not radiused, beveled, etc. Body panels or components that are uneven, unsealed, or contain cracks, dents or have voids.
3. Paint runs, sags, orange peel, fisheyes, etc., and any other imperfection of lack of complete coverage of paints or coatings.
4. Misalignment of body fasteners, glass, viewing panels, light housings, other items with large or uneven gaps, spacing, etc. such as door, body panels, and hinged panels.
5. Hoses, wiring or harness routed through panels and bulkheads without grommet or other protective insulation, routed across components in a manner allowing chaffing to occur or routed in such a manner to be damaged by the exhaust system.
6. Improper electrical connections, or loose, vibrating, or abrading components.
7. Interference of chassis components, body parts, doors, etc.
8. Improperly supported or secured hoses, wiring harnesses, mechanical controls, etc., including interference with other components of any gas, vacuum, or fluid lines (air conditioning, coolant, oil, oxygen, etc.).
9. Inappropriate or incorrect use of hardware, fasteners, components, or methods of construction.
10. Incomplete or improper welding, riveting, or bolting.
11. Lack of uniformity and symmetry where applicable.
12. Loose, vibrating, abrading body parts, components, subassemblies, hoses, wiring harnesses or trim. Noise, panel vibrations, etc.
13. Improper body design that could cause injury during normal use or maintenance, and which fail to provide access to perform routine or mandatory repairs or maintenance on the mobile health unit electrical and mechanical systems. In addition, the improper combination of options which by their combination and installation are incompatible regarding function or safety.
14. Sagging, non-form fitting upholstery or padding.
15. Delamination of plastic composition materials.
16. Any deviation from specification requirements or manufacturer's standard production practice whether or not stipulated herein, that detracts from form, fit, function, durability, reliability, safety, performance, or appearance shall be cause for rejection.

10.4 Service ability for Syria.

Considering the destination country, preference shall be given to solutions using commercially available components, standard service tools and components that can be maintained regionally without dependence on proprietary workshop infrastructure, except where required by the base-vehicle OEM or medical-device manufacturer.

11. Homologation.

The completed ambulance shall comply with the applicable requirements of Regulation (EU) 2018/858 for special-purpose vehicles (ambulance, code SC), including applicable multi-stage approval requirements, or equivalent internationally recognized vehicle approval requirements.

EU type approval is specified as a technical benchmark for vehicle registration in Syria. The completed ambulance shall, in all cases, comply with the applicable Syrian requirements and be suitable for registration and legal operation in Syria.

12. Other

The following data must be submitted in accordance with the EU F-Gas Regulation (2024/573):

- Net mass of fluorinated greenhouse gases contained in products and equipment (in kg)
- Metric tons of CO₂ equivalent of bulk gases and gases contained in products or equipment (in t CO₂ equivalent)

Customs tariff numbers / customs technical descriptions must be specified in the tender offer.

[Annex 1. Medical Equipment Schedule, minimum.

No.	Medical Device / Equipment	Function	Minimum Technical Requirement	Qty.
1	Manual Defibrillator / Multiparameter Monitor with AED	IV, VI	Portable ALS monitor/defibrillator for adult/paediatric use. Manual biphasic defibrillation, AED, synchronized cardioversion and integrated transcutaneous pacing. Monitoring: ECG/HR, diagnostic 12-lead ECG, NIBP, SpO ₂ and EtCO ₂ /capnography, suitable for intubated and non-intubated adult/paediatric patients. Colour display ≥8"; data/event storage; integrated printer. Battery ≥2 h; AC/DC charging. Complete adult/paediatric accessories and secure ambulance mounting. IEC/EN 60601-2-4 and applicable IEC/EN 60601 requirements.	1
2	Emergency / Transport Ventilator	III, VI	Adult/paediatric invasive and non-invasive transport ventilator. Volume- and pressure-controlled ventilation; VC/CMV, PC/CMV, SIMV and CPAP/PS or equivalent. Adjustable RR, tidal volume/pressure, PEEP and FiO ₂ ; appropriate alarms. Battery ≥4 h required. Complete with adult/paediatric circuits and secure mounting.	1
3	Manual Resuscitators (BVM)	III, VI	Self-inflating BVMs: adult ≥1,500 mL approx.; paediatric 450–750 mL approx.; infant/neonatal 200–350 mL approx. Complete with appropriate masks, oxygen reservoirs and tubing; pressure limiting for infant/neonatal required.	3 (1 each)
4	Fixed Medical Oxygen System	III	Permanently installed; usable capacity ≥2,000 L NTP; secured cylinder(s), pressure regulation/indication, isolation and medical-grade piping. Capacity and flow sufficient for ventilator plus ≥1 additional oxygen outlet simultaneously.	1 system
5	Medical Oxygen Outlets	III	Quick-connect outlets connected to fixed system; standardized medical oxygen connection throughout ambulance.	≥2
6	Portable Medical Oxygen System	III	Usable capacity ≥400 L NTP; regulator, pressure gauge, adjustable flowmeter 0–15 L/min minimum, tubing and carrying/protective arrangement.	1
7	Oxygen Therapy Interface Set	III	Simple oxygen masks, non-rebreather masks and nasal cannulas suitable for adult and	≥2 each size/type

			paediatric patients; compatible with supplied oxygen system.	
8	Nebulisation Set	III	Oxygen/air-driven nebulizer chamber with tubing and adult/paediatric masks and/or mouthpiece; compatible with supplied oxygen system.	2 sets
9	Primary Medical Suction System	III	Fixed/securely mounted; adjustable vacuum; maximum vacuum ≥ -65 kPa; container ≥ 1 L; overflow protection, filter, tubing, Yankauer and adult/paediatric suction catheters.	1
10	Portable Medical Suction Unit	III	Self-contained electric unit; maximum vacuum ≥ -65 kPa; free-air flow ≥ 25 L/min; container ≥ 1 L; overflow/filter protection; battery ≥ 30 min; charging and secure mounting.	1
11	Oropharyngeal Airway Set	III, VI	Neonatal, infant, paediatric and adult sizes; approximately sizes 000–5 or equivalent.	1 set
12	Nasopharyngeal Airway Set	III, VI	Soft flexible airways covering appropriate paediatric/adult sizes; approx. 12–34 Fr or equivalent.	1 set
13	Conventional Laryngoscope Set	III, VI	Macintosh/Miller blades covering infant, paediatric and adult patients; LED/equivalent illumination; battery/rechargeable.	1 set
14	Video Laryngoscope	III, VI	Portable; colour display ≥ 3 " required; adult/paediatric blade capability; anti-fog/equivalent; rechargeable.	1
15	Endotracheal Tube Set	III, VI	Approx. 2.5–8.5 mm ID; cuffed/uncuffed as clinically appropriate; radiopaque marker, depth markings and standard 15-mm connector.	1 set
16	ET Tube Fixation Device	III, VI	Purpose-designed device for secure fixation of endotracheal tubes; suitable sizes/configurations for adult and paediatric patients.	10
17	Bougie / Intubation Stylet Set	III, VI	Adult and paediatric introducers/bougies and/or malleable stylets compatible with supplied ET tubes.	1 set
18	Magill Forceps	III, VI	Reusable medical-grade adult and paediatric sizes.	1 each
19	Supraglottic Airway Set	III, VI	Paediatric/adult range, approximately sizes 1–5 or equivalent weight-based range.	1 set
20	CPR / Pocket Resuscitation Mask	III, VI	Transparent mask with one-way valve/filter and oxygen connection; suitable for emergency resuscitation; protective case included.	2
21	Syringe Infusion Pump	V	Compatible with standard approx. 5–60 mL syringes; programmable rate; occlusion, end/near-end, syringe displacement and battery alarms; battery ≥ 4 h; secure mounting/stacking and charging.	2
22	Volumetric Infusion Pump	V	Programmable flow and VTBI; occlusion, air-in-line, completion and battery alarms; battery ≥ 4 h; secure mounting and charging.	2
23	IV Fluid Warmer	V	Controlled outlet temperature approx. 37–40°C; automatic regulation and over-temperature protection; compatible with supplied IV sets; ambulance power/mounting.	1
24	Pressure Infusion Bag	V, VI	Suitable for 500/1,000 mL IV bags; manometer, inflation bulb and release valve; pressure approx. 300 mmHg.	1

25	Intraosseous (IO) Access System	V, VI	Manual or powered emergency IO access system suitable for adult and paediatric patients. Complete with appropriate adult/paediatric needles, insertion accessories and protective storage case.	1 set
26	Manual Blood Pressure Monitor	IV	Shock-resistant aneroid/equivalent; 0–300 mmHg; accuracy ± 3 mmHg or better; paediatric through large-adult cuffs.	1
27	Clinical Thermometer	IV	Digital medical type; approx. 32–43°C or wider; accuracy $\pm 0.2^\circ\text{C}$ or better in relevant clinical range.	1
28	Blood Glucose Meter	IV	Portable POC device; sample ≤ 1 μL and result ≤ 10 s required; memory; complete with lancing device, 100 test strips and 100 lancets.	1
29	Stethoscope	IV	Professional diagnostic stethoscope suitable for adult and paediatric auscultation; durable and cleanable.	1
30	Diagnostic Examination Set – Fixed / Onboard	IV	Adult/paediatric otoscope and ophthalmoscope; LED/equivalent illumination. Otoscope with magnifying lens and adult/paediatric specula. Ophthalmoscope with adjustable focusing lens system/aperture selection. Wall-mounted/fixed charging station required; rechargeable handle(s); secure ambulance retention. ≥ 25 disposable specula of each supplied size/type where applicable.	1 set
31	Diagnostic Examination Set – Portable	IV	Portable adult/paediatric otoscope and ophthalmoscope set; LED/equivalent illumination; rechargeable/battery handle(s), adult/paediatric specula and protective case. ≥ 25 disposable specula of each supplied size/type where applicable. To be stored in Emergency Diagnostic Kit Bag.	1 set
32	Diagnostic Examination Light	IV	Fixed/integrated adjustable LED examination/procedure light; $\geq 10,000$ lux required; low heat; cleanable.	1
33	Main Ambulance Stretcher System	I	Wheeled stretcher, undercarriage/loading system and vehicle fixation as compatible system; SWL ≥ 180 kg, preferably ≥ 200 kg; adjustable backrest; mattress, side rails and restraints. EN 1865 series/EN 1789 as applicable.	1
34	Scoop Stretcher	I, II	Adjustable split stretcher; approx. 1,650–2,000 mm length or wider adjustment; SWL ≥ 150 kg, preferably ≥ 170 kg; ≥ 3 straps; cleanable/radiolucent where applicable.	1
35	Vacuum Mattress	I, II	Full-body; approx. $\geq 1,900 \times 750$ mm; SWL ≥ 150 kg; waterproof/radiolucent; handles, pump and ≥ 3 straps.	1
36	Patient Transport / Stair Chair	I	Folding; SWL ≥ 150 kg, preferably ≥ 180 kg; restraints, footrest, handles and wheels; stair-assistance tracks/sliding system required.	1
37	Patient Transfer Sheet / Mattress	I	Length $\geq 1,800$ mm; SWL ≥ 150 kg; waterproof/tear-resistant; ≥ 6 reinforced handles; foldable/rollable.	1

38	Long Spinal Board	I, II	Approx. 1,800–1,900 × 400–500 mm; SWL ≥150 kg; radiolucent; perimeter handles; head immobilizer and ≥3 straps.	1
39	Extrication / Short Spinal Immobilisation Device	II	For seated/confined-space extrication; head/torso restraint; SWL ≥150 kg; lightweight, cleanable and radiolucent where applicable.	1
40	Traction Splint	II	Adjustable emergency traction splint for suspected femoral fractures; adult range; complete traction mechanism, supports and straps.	1
41	Limb Immobilisation Splint Set	II	Adult/paediatric upper- and lower-limb splints; ≥4 sizes/configurations; lightweight, cleanable and radiolucent where applicable.	1 set
42	Pelvic Binder	II, VI	Purpose-designed adjustable pelvic stabilization device; rapid application; broad adult size range; radiolucent where applicable.	1
43	Cervical Collar Set	II	Adult/paediatric sizes or adjustable equivalents; rigid/semi-rigid; airway access; radiolucent and cleanable where reusable.	1 set
44	Trauma Shears	VI, VII	Heavy-duty professional EMS trauma shears; corrosion-resistant, cleanable/disinfectable and suitable for cutting clothing and dressings.	2
45	Needle Decompression Catheter	VI	Sterile single-use; approx. 10–14G; sufficient length for emergency tension-pneumothorax decompression; adult length ≥8 cm required.	2
46	Emergency Chest Drainage Kit	VI	Sterile thoracic drainage set including appropriate drain/catheter, insertion accessories, tubing and closed drainage/collection arrangement.	1 set
47	Urinary Catheterisation Set	VII	Foley catheters approx. 12–18 Fr, drainage bags, sterile lubricant and required accessories.	1 set
48	Minor Emergency Surgical Instrument Set	VII	Medical-grade scissors, dressing/tissue forceps, haemostatic forceps, needle holder and basic emergency instruments; reusable/sterilizable.	1 set
49	Medical Refrigerator	VII	≥5 L; +2 to +8°C; digital control/display; high/low-temperature alarm; logging required; positive-lock door; ambulance-compatible electrical supply and secure retention.	1
50	Emergency Childbirth / Obstetric Delivery Kit	VI, VII	Sterile emergency delivery kit with drapes, pads, ≥2 cord clamps, sterile cutting instrument/scissors, gauze, gloves, maternal pads, neonatal thermal wrap and disposal materials.	1 kit
51	0.9% Sodium Chloride IV Solution	V	Sterile IV solution in 500 and/or 1,000 mL flexible bags.	2 L total
52	Peripheral IV Cannulas	V	Sterile over-the-needle cannulas: 14G, 16G, 18G, 20G, 22G and 24G; radiopaque, colour-coded, flashback and Luer-compatible.	5 each / 30
53	IV Administration Sets	V	Sterile; spike, drip chamber, tubing, roller clamp and Luer-lock connection; vent where applicable.	10
54	IV Extension Lines	V	Sterile flexible tubing; Luer-lock male/female connections; kink resistant.	10

55	Three-Way Stopcocks	V	Sterile, leak-resistant Luer-lock type.	10
56	Needle-Free IV Connectors	V	Sterile, self-sealing, leak-resistant and Luer-lock compatible.	10
57	Disposable Syringes	V	2/3, 5, 10, 20 and 50/60 mL; clear graduated; Luer-lock required.	5 each size
58	Hypodermic Needles	V	Sterile assorted approx. 18–25G; colour-coded; Luer compatible.	10
59	IV Cannula Fixation Dressings	V	Sterile transparent semipermeable adhesive dressings; appropriate sizes.	10
60	Venous Tourniquets	V	Quick-release required; reusable/cleanable or single-use.	2
61	Skin Antiseptic Swabs	V, VII	Individually packed; 70% isopropyl alcohol and/or chlorhexidine-based.	50
62	Sterile Gauze Swabs	VII	Approx. 10 × 10 cm; ≥8 ply.	20 packs
63	Sterile Absorbent Wound Dressings	VII	Medium/large; suitable for moderate/heavy wound exudate or bleeding.	10
64	Sterile Adhesive Wound Dressings	VII	Absorbent non-adherent pad with adhesive fixation; assorted sizes.	10
65	Elastic Conforming Bandages	VII	Assorted approx. 5, 7.5 and 10 cm widths.	6
66	Medical Adhesive Tape	VII	Hypoallergenic; approx. 2.5–5 cm width; roll ≥5 m required.	2 rolls
67	Haemostatic Gauze / Dressing	VI, VII	Sterile haemostatic dressing suitable for severe haemorrhage and wound packing.	2
68	Emergency Limb Tourniquet	VI	Commercial mechanical tourniquet for life-threatening extremity haemorrhage; rapid one-handed application required.	2
69	Emergency Pressure Dressing	VI, VII	Sterile absorbent wound pad with integrated compression bandage.	4
70	Occlusive Chest Seal	VI, VII	Sterile adhesive chest seal; vented required; two seals/set required.	2 sets
71	Sterile Burn Dressings	VII	Non-adherent emergency burn dressings; assorted sizes; hydrogel/equivalent acceptable.	4
72	Burn Sheet / Blanket	VII	Large-area burn covering, approx. 1,800 × 2,200 mm or equivalent.	1
73	Sterile Eye Irrigation Solution	VII	0.9% NaCl/equivalent ophthalmic irrigation solution; ≥500 mL/container required.	2
74	Disposable Stretcher Bedding Set	I, VII	Complete single-use patient bedding for main stretcher comprising stretcher sheet, pillowcase where applicable and patient cover/blanket. Non-woven, non-irritating and fluid-resistant where appropriate; sized for supplied stretcher.	10 sets
75	Thermal Patient Blanket	VII	Reusable/washable; approx. ≥1,500 × 2,000 mm.	2
76	Sterile Medical/Surgical Gloves	VII	Powder-free; latex-free required; assorted S/M/L/XL sizes.	50 pairs
77	Nitrile Examination Gloves	VII	Non-sterile, powder-free, latex-free; assorted S/M/L/XL sizes.	200 gloves (100 pairs) min.
78	Disposable Emesis Bags	VII	Leak-resistant; capacity ≥1,000 mL.	10

79	Clinical / Infectious Waste Bags	VII	Leak-resistant and appropriately identified/colour-coded for clinical waste.	10
80	General Waste Bags	VII	Strong leak-resistant bags compatible with ambulance waste container.	10
81	Sharps Disposal Container	VII	Puncture- and leak-resistant; secure final closure; approx. 2–5 L. One may be positioned onboard and one allocated to portable response equipment as appropriate.	2
82	Amputated-Part Transport System	I, VII	Insulated system permitting cool transport without direct tissue-to-ice contact; sealable inner and insulated outer arrangement; target approx. 2–8°C.	1
83	Kidney-Shaped Basin	VII	Medical-grade; approx. 700–1,000 mL; reusable/cleanable or disposable.	1
84	Bedpan	VII	Adult, non-breakable, leak-resistant and disinfectable.	1
85	Male Urinal Bottle	VII	Non-glass; ≥1,000 mL; preferably graduated and closable.	1
86	Advanced Airway / Respiratory Kit Bag	III, VI	Purpose-designed EMS bag/backpack with modular compartments for organized carriage of airway/intubation and respiratory equipment specified in this schedule.	1
87	IV Access / Infusion Kit Bag	V	Portable EMS bag/pouch with organized compartments for IV/IO access and associated supplies specified in this schedule.	1
88	Trauma / Haemorrhage Control Kit Bag	VI, VII	Rapid-access EMS bag for organized carriage of haemostatic dressings, tourniquets, pressure dressings, chest seals, gauze and related trauma supplies.	1
89	Emergency Diagnostic Kit Bag	IV	Compact EMS bag for the portable diagnostic examination set (Item 31), manual BP monitor, stethoscope, thermometer, glucose meter and associated accessories/consumables.	1
90	Emergency Obstetric Kit Bag	VI, VII	Clearly identified portable EMS bag/container for the emergency childbirth/obstetric equipment and supplies specified under Item 50.	1
91	Primary Emergency Response / ALS Backpack	III, IV, V, VI	Purpose-designed EMS backpack for deployment from ambulance to patient. Modular compartments/pouches for selected essential airway, respiratory, diagnostic, vascular-access and immediate resuscitation equipment/consumables from this schedule.	1

Note, General Requirements.

- i. **General Equipment Requirements:** All equipment shall be brand new and unused, suitable for professional ambulance/EMS use and, appropriately CE marked and compliant with the specified standards and regulatory requirements. Adequate technical support, spare parts and after-sales service shall be available in Syria.
- ii. **Portable Emergency Kits/Bags:** All emergency bags and backpacks shall be purpose-designed for professional EMS use; robust, lightweight, water-resistant, and readily cleanable and disinfectable. They shall incorporate durable closures, carry handles and/or padded shoulder straps, and clearly organized internal compartments or removable modules to permit rapid identification and access to equipment. Each bag/backpack shall have a designated

- storage position and shall be securely restrained within the ambulance in accordance with the applicable requirements of EN 1789.
- iii. **Allocation and Non-Duplication:** Equipment and consumables specified elsewhere in this schedule may be allocated to and stored within the portable kits/bags specified under Items. Placement of such equipment or consumables within a kit/bag shall not constitute a requirement for additional quantities, unless an additional quantity is explicitly specified.
 - iv. **Intentional Diagnostic Set Duplication:** Two complete diagnostic examination sets shall be supplied: one fixed/onboard set under Item 25 and one portable set under Item 26, the latter to be stored in the Emergency Diagnostic Kit Bag. This duplication is intentional and is excluded from the non-duplication provision above.
 - v. **Integration of Functions:** A separate medical device is not required where the specified mandatory function is fully integrated into another medical device included in the offer, provided that all applicable functional, performance, accessory and safety requirements are met. The Bidder shall clearly identify all integrated functions and provide supporting technical documentation demonstrating compliance.
 - vi. **Function Codes:** I – Patient Transport Equipment; II – Immobilisation Equipment; III – Ventilation / Respiratory Equipment; IV – Diagnostic Equipment; V – Peripheral IV Access, Injection and Infusion; VI – Management of Life-Threatening Problems; VII – Products for Dressings and Medical Care.
 - vii. **Installation and Space Integration:** The Supplier shall ensure that all equipment, including its storage, mounting, charging and fixation systems, can be safely accommodated within the patient compartment. The final arrangement shall not obstruct patient care, personnel movement, access to equipment, stretcher operation, doors or emergency exits. All equipment and storage systems shall be securely retained for vehicle operation in accordance with the applicable requirements of EN 1789.