# *ANNEX II + III:* TECHNICAL SPECIFICATIONS + TECHNICAL OFFER corrigendum

**Contract title: Supply of Fire engine and Firefighting equipment for project PREVENT p 1 /…**

**Publication reference:** RORS00268 DVD-2/L1

**LOT 1 - Fire engine and mobile diesel generator**

**Columns 1-2 should be completed by the contracting authority**

**Columns 3-4 should be completed by the tenderer**

**Column 5 is reserved for the evaluation committee**

Annex III - the contractor's technical offer

The tenderers are requested to complete the template on the next pages:

* Column 2 is completed by the contracting authority shows the required specifications (not to be modified by the tenderer),
* Column 3 is to be filled in by the tenderer and must detail what is offered (for example the words ‘compliant’ or ‘yes’ are not sufficient)
* Column 4 allows the tenderer to make comments on its proposed supply and to make eventual references to the documentation

The eventual documentation supplied should clearly indicate (highlight, mark) the models offered and the options included, if any, so that the evaluators can see the exact configuration. Offers that do not permit to identify precisely the models and the specifications may be rejected by the evaluation committee.

The offer must be clear enough to allow the evaluators to make an easy comparison between the requested specifications and the offeredspecifications.

| **1.**  **Item number** | **2.**  **Specifications required** | **3.**  **Specifications offered** | **4.**  **Notes, remarks,  ref to documentation** | **5.**  **Evaluation committee’s notes** |
| --- | --- | --- | --- | --- |
|  | **FIRE ENGINES WITH FIRE EXTINGUISHING EQUIPMENT** |  |  |  |
|  | Brand and type of undercarriage and country of origin: The undercarriage is to be delivered with built-in original factory parts, homologated, year of production min. 2024 |  |  |  |
|  | DIMENSIONS AND MASSES   * Total permissible weight: min. 17500 kg * Load capacity - front axle: min. 7000 kg * Load capacity - rear axle: min. 11000 kg * Wheelbase: min. 3700 mm |  |  |  |
| **2.1** | ENGINE AND GEARBOX   * Diesel engine with turbocharger: In-line diesel engine, min. 6 cylinders * Exhaust emissions: Complied with the requirements in the Republic of Serbia, min. Euro 6 standard * Engine displacement: Min. 7.500 ccm * Maximum engine power: min. 200 kW (272 HP) * Maximum torque: min. 1050 Nm * Transmission: manual, min. 6+1 speeds * Selection of transmission mode: For emergency interventions * Power take-off - PTO with flange: In accordance with the conditions for driving the fire pump via the cardan shaft |  |  |  |
| **2.2** | RELIABILITY SYSTEM   * Propulsion formula: 4x2 * Front axle: Not driven, cranked, steered, not liftable * Rear axle: axle without drive shaft, straight, not steered, not liftable * Front axle suspension: Parabolic leaf springs, stabilizer * Rear axle suspension: Parabolic leaf springs, telescopic shock absorbers and stabilizer |  |  |  |
| **2.3** | BRAKING SYSTEM   * Brakes, front and rear axle: Disc brakes on front and rear axles * Characteristics: EBS, ABS, Hill Start Assist * Engine brake: min. 120 kW * Parking brake: On rear wheels * Parking brake characteristics: Air operated spring brake actuators |  |  |  |
| **2.4** | ELECTRICAL SYSTEM AND LIGHTS   * Voltage: 24 V * Batteries: Two batteries with a capacity of min. 170 Ah, maintenance-free * Alternator * The lights: LED position side lights, Tail lights, LED daylight, LED side turn signals * Audible warning when reversing |  |  |  |
| **2.5** | CABIN   * Type: Driver's cab and minimum 2 crew members (1 + 2) * Material: Cab made of galvanized sheet steel and painted. The cabin floor is lined with non-slip material * Cabin color: Red, RAL 3000 * The door: 2 (two) with central locking, min. 3 keys * Seats: * Air-backed driver's seat * All seats with seat belts * Mirrors: * Main rearview mirror electrically adjustable with heaters * Wide angle rearview mirrors * Edge mirror * Front mirror, manually adjustable * Other: * Air conditioning * Windshield, safety, tinted |  |  |  |
| **2.6** | FUEL TANK AND ADBLUE   * Volume: min. 200 l * AdBlue tank: min. 30 l |  |  |  |
| **2.7** | ACCESSORIES AND ASSOCIATED TOOLS   * 2 connectors in the vehicle cab: 1 x 12 V, 1 x 24 V * Tempomat (cruise control, CC) * Electronic Stability Program (ESP) * Lane Departure Warning System (LDWS) * Forward Collision Warning System with Advanced Emergency Braking System (AEBS) * Drive wheel slip control (ASR) * 1 pull-out ring on the front of the vehicle * Vehicle crane: min. 8000 kg * Basic handy tool * A warning triangle * First aid * Fluorescent vest * Glass cleaning set * Bumper, plastic, metal or its combination |  |  |  |
| **3.** | **UPGRADE** |  |  |  |
| **3.1** | AUXILIARY FRAME   * Installing the auxiliary frame: Attaching the paws to the main chassis so that a detachable connection is achievable * U profile * Material: Carbon steel sheet * Reinforcement in characteristic places - transverse connection * The purpose: Even load transfer on the undercarriage * The connection of the auxiliary frame with the suspension is made in accordance with the recommendations of the chassis manufacturer |  |  |  |
| **3.2** | WATER TANK   * Volume: min. 5000 l * Positioning in relation to the chassis or auxiliary chassis: Transversely * Relying: Elastic supports * Material: Polypropylene * Barriers which prevents the water ripples * Inspection opening: diameter min. 500 mm * Overflow system with vacuum vent * Electric water level meter * Hydrant charging connection: Storc coupling type B |  |  |  |
| **3.3** | FOAM TANK   * Volume: min. 300 l * Material: Polypropylene * Foam pouring hole * Breathing vent (AT - vent) * Electric foam level meter * Connections for the installation of foam and water mixing systems * Foam supply connection from an external source |  |  |  |
| **3.4** | BODYWORK CONSTRUCTION   * Roof superstructure/upgrade: Bounded by a protective fence - stainless steel shutter * Walking surface of the superstructure/ upgrade roof: Lined with non-slip aluminum sheet * Storage made of: Aluminum * Box profiles * AL rolling shutters with the possibility of locking: min. 5 pcs. * Equipment holders * Roof climber upgrade: Positioned in the rear storage * Climber tread: Non-slip surface * Holding handle and climbing aid: Positioned along the ladder itself * Winch – winch for self-extraction: Positioned at the front of the vehicle * Pulling force of the self-extracting winch: min. 5000 kg * Winch voltage: 24 V |  |  |  |
| **3.5** | FIRE PUMP   * Brand: Specify * Type: Single-stage normal pressure pump and four-stage high pressure pump * Label: Specify * Propulsion of the pump: On cardan shaft * Pump material: Aluminum * Pump axle material: Stainless steel * Vacuum device * Pump capacity: Flow rate at normal pressure minimum 2500 liters/min at 10 bar   Flow rate at high pressure minimum 400 liters/min at 40 bar   * Standard: EN 1028 or equivalent * Possibility of simultaneous work in medium and high mode * A pre-filter is installed on the suction line towards the pump * Automatic overheat protection * Foam mixing system: Manual from 3% and 6% * Other characteristics: Control for switching on and off the auxiliary drive, speed regulation via potentiometer, minimum 3.5 inch display on which the amount of water and foam in the tank can be monitored, normal and high pressure in the pump, and the number of revolutions of the pump or a simply water and foam level indicator. The pump control panel must have controls for releasing water into the pump, a control for the return valve, a control for switching on the vacuum pump, a control for switching on the high pressure, a control for normal and high pressure winches, a control for dosing foam, a control for opening and closing the water in the roof pitcher. All inscriptions on the controls could be in Serbian.   On the left and right sides of the pump, install one normal pressure outlet with pressure check valves and Storz B couplings, an outlet for a high pressure winch and a normal pressure winch, an outlet for a water jet, and one suction inlet with a Storz A coupling.  The pump should be located at the rear of the vehicle body.  2 outlets with pressure check valves, minimum Ø75 mm, from the rear of the vehicle.  Install a filter on the water intake to the pump.  The pump should have automatic overheating protection. |  |  |  |
| **3.6** | INSTRUMENT CONTROL PANEL   * Waterproof * Manual commands * Positioning: Rear pump storage * Commands it possess: * Medium pressure winch command * Command for switching on the high pressure winch * Command for switching on the vacuum device * Return line * Valve for releasing water from the tank into the pump * Premixer * Medium pressure manometer * High pressure manometer * Manovakumetar * Working hours counter * Water level indicator in the tank * Foam level indicator in the tank * Command to switch the pump drive on / off * STOP switch |  |  |  |
| **3.7** | INSTALLATION OF GUIDE AND FOAM   * Material: Stainless steel * Protection: Staining * Connections: * 2 outlets with minimum 75mm diameter non-return valves on the rear of the vehicle (left and right of the pump) * 1 connection with minimum 75 mm diameter butterfly valve for monitor – top * One minimum 30 mm diameter connection for medium pressure winch * One minimum 25 mm diameter connection for high pressure winch * 1 connection for water suction with a diameter of minimum 100 mm * One 25 mm foam pull connector * Water and foam mixer in the ratio of 3% and 6% * Water and foam installation elements (elbows, forks, couplings) are made of stainless materials * All connections of the installation are with standard couplings for fire hoses type "Storz" made of forged aluminium alloy |  |  |  |
| **3.8** | **WINCHES** |  |  |  |
| **3.8.1** | QUICK INTERVENTION WINCH - MEDIUM PRESSURE   * Position: Rear left storage * Hose material: Non-deformable rubber hose * Hose length: min. 50 m * Diameter: Normal pressure rubberhose 32 x 7 non-collapsible G 1 ½ " / Storz C * Standard: DIN EN 1947 category II,Typ A, Class 1 or equivalent * Nozzle capacity min. 100 - 400 liters / min at minimum 10 bar * Adjusting the shape and flow of the jet * Winch winding – electro: Winding the winch using a 24V electric motor without a chain. The winch must have an automatic brake that stops the winch if overload occurs, thus protecting the electric motor from damage * Winch winding – manual: The winch also has a handle for manual winding of the winch in case of electric motor failure * Brake * Additional equipment: Rollers are installed on the winch for easier hose guidance. At the end of the hose is a turbo nozzle for normal pressure with a foam attachment |  |  |  |
| **3.8.2** | QUICK INTERVENTION WINCH - HIGH PRESSURE   * Position: Rear right storage * Hose material: Non-deformable rubber hose * Standard: DIN EN 1947 category II,Typ A, Class 1 or equivalent * Diameter: min. 19 mm * Nozzle capacity min. 200 liters / min at minimum 40 bar * Adjusting the shape and flow of the jet * Foam adapters * Wound winch - electro: Winding the winch using a 24V electric motor without a chain. The winch must have an automatic brake that stops the winch if overload occurs, thus protecting the electric motor from damage * Wound winch - manual: The winch also has a handle for manual winding of the winch in case of electric motor failure * Brake * Additional equipment: Rollers are installed on the winch for easier hose guidance. At the end of the hose is a turbo nozzle for normal pressure with a foam attachment. |  |  |  |
| **3.9** | NOZZLE MONITOR   * The purpose: Directing extinguishing agents - water or foam * Positioning: Firetruck roof superstructure/upgrade (front part) * Plate valve * Adjustable flow nozzle and jet shape * Turret: Manually controlling * Characteristics: * Capacity: up to 2500 lit/min at minimum 10 bar * Water jet range: min. 80 m * Foam jet range: min. 50 m * Management: manually * Horizontal movement: 360 ° * Vertical movement: from -50 ° to + 80 ° * Assembly and disassembly |  |  |  |
| **3.10** | LIGHT SOUND SIGNALING   * Blue rotating light and electro howling siren: On the roof of the vehicle cabin * Homologations: ECE R65 Certificate Blue   ECE R10-05 Certificate or equivalent and according to Serbian legislation   * Characteristics: * Wide-angle FX Optic with Ultra-bright latest generation LED’s * 6 Flash Patterns * 4mm ultra-strong UV stabilised polycarbonate lens * Fully populated 360-degree blue lights integrating internal speaker * Blue bottom and top lenses / black middle lens for the speaker * R65 class II (blue) * EMC R10 compliant * IP54 protection (IP69K internal LED modules) * Dimensions: * Height: minimum 60mm x width: 300mm * Length: min. 1600 mm * Voltage: 11-32VDC * Digital siren: * EMC R10 Certificate International and European Tones (programmable) Public Address model including microphone Audible sense feature included as standard 100w or 60w selectable * Low current `standby‘ feature * Positive and negative triggers * Tone selector accessible externally * EMC / R10 Compliant * Audio signaling with siren, PA system and speaker (100 W horn), control panel in the cabin with built-in 24V microphone * The equipment storage boxes and the pump area are illuminated * Two flashing blue lights are to be installed on the rear of the vehicle * On the sides of the vehicles in the roof gallery are to be placed 3 pcs. white LED lights to illuminate work environments |  |  |  |
| **3.11** | VEHICLE COLOR AND BRANDING   * Vehicle color: RAL 3000 (flame red) * Undercarriage: Black * Fenders and bumpers: White * Branding: Customer's logo on the cabin door |  |  |  |
| **4.** | **FIRE AND RESCUE EQUIPMENT**   * Suction hose Ø min. 100 mm: 4 pcs. * Suction basket: 1 pcs. * Hydrant extension: 1 pcs. * Hydrant extension key: 1 pcs. * Divider B / 2C: 2 pcs. * Discharge hose B: 6 pcs. * Discharge hose C: 12 pcs. * Medium foam nozzle: 2 pcs. * Heavy foam nozzle: 2 pcs. * Universal (turbo rotomag) nozzle with regulation of flow and shape of the jet from 100 to 500 l / min: 4 pcs. * Pressure hose supports: 10 pcs. * Pressure hose holders: 10 pcs. * B / C adapter: 6 pcs. * Fire extinguisher S9: 6 pcs. * Insulating apparatus with spare bottles in the same quantity: 3 pcs. * Broom: 2 pcs. * Ax: 2 pcs. * Backpack: 3 pcs. * Pickaxe: 2 pcs. * Spade: 2 pcs. * Shovel: 2 pcs. * ABC key: 4 pcs. * Three-part ladder stretcher: 1 pcs. |  |  |  |
| **5.** | **TECHNICAL DOCUMENTATION, TRAINING AND WARRANTY** |  |  |  |
| **5.1** | TECHNICAL DOCUMENTATION   * Instructions for handling and maintenance of the complete vehicle could be in Serbian: 1 printed copy * Workshop manual for the maintenance of all assemblies and devices on the vehicle for the complete vehicle: 1 printed copy * Catalog of spare parts in electronic form: 1 disc (CD) copy * All necessary accompanying documentation and confirmation from the performed technical inspection so that the vehicle can be registered for the intended purpose (with certificates) |  |  |  |
| **5.2** | TRAINING   * One-day training for staff who will operate the vehicle * Training of technical and supervisory staff for maintenance of all assemblies and devices on the vehicle |  |  |  |
| **5.3** | WARRANTY   * Warranty period for the entire vehicle: at least 20 months * Entry into force of the warranty period: From the moment of signing the qualitative - quantitative record |  |  |  |
|  | **MOBILE DIESEL GENERATOR** |  |  |  |
|  | **Diesel Generator With Canopy**   * Power: min. 70 kW * Hz: 50 * V: 400V/125A * Three-phase * Fuel: Diesel * Size * Length: 2300-2500 mm * Width: 1000-1200 mm * Height: 1500-1600 mm * Weight: max. 1440 kg * Fuel tank daily capacity: min 200L * Voltage: 400/230V three phase * Operating method: 4 stroke * Aspiration system: Turbo-aftercooled * Injection system: Common-rail * No. and Cylinder arrangement: 4 In-Line * Regulation: Electronic * Rotation speed (r.p.m): 1500 * Pistion speed (m/s): 6.2 * Coolant (L): max. 30 * Oil (L): 13-22 * Protection alternator: min. Ip22 * Dust and drop resistant * Roofed * Protective cage * Colour: orange * Standards:   Working temperature: -30≤°C≤70  Protection degree (front panel): min. IP 65  Degree of humidity (during 48hr): min. 93%,40°C   * Digital control panel with led indicators |  |  |  |
|  | **Trailer For Diesel Generator** |  |  |  |
|  | Payload: minimum 2000 kg  Trailer weight: maximum 650 kg  Total weight: maximum 2700 kg  Two axles with tires |  |  |  |
|  | Massive, torsion axle  Extra strong, steel chassis  Safety V-bar  The trailer floor is made of non-slip, waterproof multi-layer wooden board  Additional shock absorbers on the wheels  Built-in modern, multifunctional signaling according to European standards - 12 V  Hand and overrun brake with gas shock absorber  Spring hooks for securing cargo built into the trailer cargo area - minimum 8 pcs. |  |  |  |
|  | Cargo area dimensions: maximum 410 x 210 cm  Page height: up to 35 cm  Wheel size: min 165/80/R 13”C - cargo wheels |  |  |  |
|  | Color: Grey or according to agreement |  |  |  |
|  | Wheels and fenders are to be located under the cargo area |  |  |  |
|  | On the rear part, install two feet to stabilize the trailer |  |  |  |
| **3.** | **TECHNICAL DOCUMENTATION, TRAINING AND WARRANTY** |  |  |  |
| **3.1** | TECHNICAL DOCUMENTATION  - Instructions for operation and maintenance of the complete trailer and aggregate could be in Serbian: 1 printed copy  - Workshop instructions for maintenance of all assemblies and devices on the vehicle for the complete trailer: 1 printed copy  - Spare parts catalog in electronic form: 1 copy on disk (CD)  - All necessary accompanying documentation and confirmation of the technical inspection so that the trailer can be registered for the intended purpose (with certificates) |  |  |  |
| **3.2** | TRAINING  - One-day training for personnel who will operate the trailer and generator  - Training of technical and supervisory personnel for the maintenance of all components and devices of the trailer and generator |  |  |  |
| **3.3** | WARRANTY  - Warranty period for the entire trailer and the aggregate: at least 20 months  - Warranty period coming into force: From the moment of signing the qualitative-quantitative record |  |  |  |

**<Signature of authorised representative of the legal entity >**

**< Name and position of authorised representative of the legal entity >**

**< Date >**