Tender No: ٥٧/ل/2021

SUPPLY FOR RIV VEHICLE

Annex A

TECHNICAL SPECIFICATION

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1. INTRODUCTION

This Technical Specification describes the technical requirements of the RIV Vehicle.

This Technical Specification is not intended to provide an exhaustive specification and the potential Supplier is to provide a detailed specification as part of his offer. The potential Supplier can also propose alternative or optional items which will be considered during the evaluation of the tenders.

Preference will be given to proposals which include equipment for which spare parts and support is readily available within Jordan or the Middle East region.

2. DEFINITIONS

The following definitions shall apply:

- RIV: Rapid Intervention Vehicle.

3. STANDARDS AND CERTIFICATION

The RIV Vehicle is to be designed in accordance with the rules of an ISO certificate.

The RIV Vehicle is to be supplied with a Certificate clearly stating the rules and standard that the RIV Vehicle complies with. The acceptable certification standards include “Full Classification”, “Certification” or other recognised standard.

Important Note:

*The RIV should meet ICAO requirements in “**ICAO Annex 14 volume 1, Aerodrome design and operations, Airport services manual (Doc 9137) part 1**”, and if any item in the RIV does not meet ICAO, it must be mentioned clearly.*

***Note**: An electronic copy of this reference will be delivered to all bidders.*

4. GENERAL REQUIREMENTS

1. This spec. sheet cover the requirements of qty (1) RIV Vehicle.
2. All equipment's should be brand new and of the manufacturers latest mode and manufacturing year should be 2022.
3. Equipment's should satisfactorily work under the following environmental conditions.

   A. Ambient temperature = -5 - 55 C°.

   B. Relative humidity = 10 – 90 %.

   C. Topographic level = 0 – 500 meter above sea level.

4. All dimensions, weighs forces, plans and schemes should be considered and written in metric system .
5. Literature such as spec. sheets, parts, workshop, maintenance manuals should be provided in English language, two copies, at least with one electronic copy for each manual.
6. All manuals must be precise and accurate to the equipment model and serial no, and must cover every and each component of the machine.
7. Shorter delivery periods will be considered and will be given priority .
8. Jordan traffic laws and regulations must be considered in bidder's equipment specifications offers .
9. A spare tyre with wheel and replacing tools should be delivered with the vehicle.
10. A special tool set should be listed and delivered with vehicle.
11. A list of a manufacturer proposed spare parts package for (2) year's operation should be priced and attached to the offer, noting that this item is considered mandatory for the Tenderer to submit and optional for the Customer to choose in case of awarding.

12. Minimum 2 years guarantee period (Defects Notification Period) against any manufacturing defects for the vehicle and all related equipment.

5. SPECIFICATIONS:

The Vehicle and all of its added components should be a brand new and of the latest manufacturer made. The unit should be match or better than the next specifications:

Spec. for	**Airport Rapid Intervention Vehicle /Pick-up Type**
Scope	Airport Rapid intervention vehicle (Water/Foam/Powder) including standard accessories duly mounted on (4×4) Chassis, designed to perform as a first response appliance at aircraft emergencies, crash situations, firefighting and rescue

The following notes should be considered:-

1. Technical offers should explain each item required in our form below in details (comply, provided, included, refer to…..etc.)
2. Any technical details presented in the financial offers will not be considered by the technical study committee.
3. Technical offers will be studied according to the answers and comments. Which have to be filled in our specification form below.
4. Any required technical data should be approved by original catalogues for the products (not copy), so the original catalogues should be submitted.
5. All the details mentioned in the specification form shall be considered obligatory.

Item	**Required Specification**		**Tenders specification**
1	a) Manufacturer :	- Chassis: to be mentioned.	
		- Superstructure: to be mentioned.	
	b) Brand name: to be mentioned.		

	c) Origin:	- Chassis: to be mentioned.	
		- Superstructure: to be mentioned.	
	d) Model No. : To be mentioned.		
	e) Brand new, Manufacturing date: not less than 2022		
2	**DIMENSIONSS AND WEIGHT**		
	a) Overall length: to be mentioned.		
	b) Overall width: to be mentioned.		
	c) Overall height: to be mentioned.		
	d) Wheel base: to be mentioned.		
	e) Ground clearance: to be mentioned.		
	f) Gross vehicle weight (GVW): to be mentioned.		
	g) Approach angle: not less than 30°		
	h) Departure angle : not less than 30°		
	i) Distribution, front axle load, rear axle load: to be described in details and must provide by sketches.		
	j) HP / GVW: to be mentioned (high ratio is preferable).		

3	**CHASSIS**	
	a) Mode of drive: 4*4.	
	b) Acceleration time from (0-80) km/h within 25 sec.	
	c) Steering: Left hand drive, power assisted.	
	d) Engine :	
	1- Type: diesel engine with turbo charger & inter cooler.	
	2- Power output: not less than 300Hp at suitable RPM. - Performance chart to be submitted.	
	3- Stroke, NO. Of cylinders: 4 cycles, 6 cylinders or more.	
	4- Engine capacity: to be mentioned.	
	5- Engine electronic controlling , injection mechanism : to be described in details	
	6- Cooling system: water cooled.	
	7- Air cleaner: dry paper element.	
	e) Transmission	
	1- Type: automatic.	
	2- Gearbox: to be described in details.	

	f) Cabin	
	1- Type: forward control with Dimensions should be comfortable for the crew with their firefighting suits.	
	2- Fabrication: 4 doors with windows.	
	3- Seating capacity: not less than 3 + 1.	
	4- Safety belts and headrests for driver and crew.	
	5- Air-conditioning (front and rear) : to be described in details.	
	6- Easy access to the cabin.	
	g) Suspension system: to be described in details.	
	h) Shock absorber: telescopic, hydraulic or air -hydraulic acting type for front axle.	
	i) Brake	
	1- Service: air over hydraulic , full air or full hydraulic	
	2- ABS system , EBD and ESC	
	3- Parking brake: pneumatic system or mechanical system with spring cylinder. (automatically engagement is preferable)	
	4- Any Additional brake safety systems to be described in details (if available).	
	j) Electrical system	

	1- Battery and its capacity: to be mentioned.	
	2- Alternator (V/A), output power: to be mentioned.	
	3- Battery and alternator sufficient to feed (Electrical and light system) mentioned in item (5).	
	k) Tires (on/off road) :	
	1- Size, brand name, & manufacturing date (not to exceed 12 month from vehicle manufacturing date): to be mentioned.	
	2- Spare: Qty (1) mounted, to be loaded and unloaded easily with suitable mechanism without obstructions for working on vehicle.	
	3- Tire designations (Load range, Max. speed and Max. Load): to be mentioned.	
	l) Fuel	
	1- Kind: diesel.	
	2- Tank capacity: To be mentioned.	
	3- Jordan diesel standards compatibility. - Emission class : Euro 5	
	4- Provided with heating element for fuel filter.	
4	**SUPERSTRUCTURE (must be approved for installation by chassis manufacturer)**	
A	**BODYWORK**	
	1) One box for rear body to allow maximum accessibility to Water tank, compartments and pump set.	

	2) The body frame should be fabricated from high quality aluminium or any equivalent material (thickness and grade to be mentioned).	
	3) Foldable steps around the vehicle to ease access to the compartments and equipment with a load capacity around 200 Kg.	
	4) The upper deck of the superstructure should be fabricated from high quality aluminium non slippery checkered plates, and designed against distortion or damage from any unforeseen impacts.	
	5) The upper deck should be equipped with a handrail, made of light material for safe operation.	
	6) Suitable access to the roof by means of ladder. (Non-slip square steps) and made of light material, located at the rear of the vehicle ended with heavy duty grip.	
	7) Separate compartments: for the pump at the rear, powder system and for all requested accessories for optimum operation.	
	8) Each compartment should equipped with sliding drawers (if needed) to safely and easily retain objects.	
	9) Weather and dust-proof aluminium roller shutters. Shutters should be provided with rugged type handle.	
	10) The compartments must be supplied with LED night work and Illumination, operated automatically when the shutter is opened.	
	11) All compartments and shelving should be provided with sufficient drain holes to prevent accumulation of water.	
	12) All tools on the top of the vehicle must be fixed with a suitable fixing mechanism.	
	13) PIPES AND COUPLINGS: 1. All pipe sizes and configurations are designed to produce minimum friction loss. 2. All couplings must be instantaneous couplings according to "BS" standards or equivalent as appropriate.	
B	**WATER TANK**	
	1) Tank capacity: not less than (1000) Liters.	

	2) Tank material: Should be Stainless steel 316L or Polypropylene (PP) or GRP. - In case of stailnless steel tank, thickness of walls including top and bottom not less than 4mm. - In case of Polypropylene (PP) or GRP tank: 1- Repair kit should be provided, as well as at least 15 years warranty. - Thickness: to be mentioned.	
	3) Manhole with a closing cap on top of the tank, to ease access for inspection and maintenance as following: - Cylindrical shape. - Closing cap height 15 cm from the top of the tank. - Diameter to be mentioned.	
	4) Internally Installed buffle plates. - No. of buffles : to be mentioed.	
	5) Over flow pipe acts as a (pressure/vacuum) vent as well.	
	6) hydrant-filling ports, one on each side (LH and RH side) with (2.5") BS male coupling and female blank cap, equipped with a valve.	
	7) Drain valve at the bottom of the tank at suitable location, with a piping to facilitate complete removal of accumulated sediment.	
	8) Electronic tank level indicator.	
	9) All other required fittings for optimum operation : to be mentioned	
C	**FOAM TANK**	
	1) Tank capacity: not less than (100) Liters	
	2) Suitable for all foam types.	

	3) Tank material: Should be Stainless steel 316L or Polypropylene (PP) or GRP. - In case of stailnless steel tank, thickness of walls including top and bottom not less than 4mm. - In case of Polypropylene (PP) or GRP tank: Repair kit should be provided, as well as at least 15 years warranty. - Thickness: to be mentioned.	
	4) Internally Installed buffle plates. - No. of buffles : to be mentioed.	
	5) Connection to the foam proportioning system, with valve.	
	6) Electronic tank level indicator.	
	7) All other required fittings for optimum operation : to be mentioned.	
D	**WATER PUMP: (High and Low pressure)**	
	- Manufacture, model and origin to be mentioned. - Pump performance chart to be provided. - A certification showing the approval that it can be used as a fire fighting pump to be submitted.	
	1) Pump Driven by separated engine. a- Diesel type. b- No. of cylinders and capacity to be mentioned. c- Power output: capable to give the rating (rpm, torque) to the pump to give the required pressure and flow. d- Engine specification: to be described in details. (Any other mechanism to drive the pump while vehicle is moving to be mentioned).	
	2) Centrifugal pump.	
	3) Pump Performance: not less than (1000) L/min at 10 bar	

	4) Pump shaft should be made of stainless steel (Grade, diameter and thickness) to be specified.	
	5) Pump casing and impellers made of bronze or aluminium	
	6) Priming system: Auto priming system to be described in details.	
	7) The pump should be fitted with the following connections :	
	a. 4" suction complete BSRT coupling and blank cap	
	b. 2.5" BS female instantaneous coupling as an outlet complete with valves and blind cap.	
	c. Tank filling/suction.	
	d. Drain valve at suitable location.	
	e. Bumper monitor connection.	
	f. Underground nozzles connection.	
	g. All other fittings for optimum operation to be submitted.	
E	**FOAM PROPORTIONER**	
	1) Automatic: model to be mentioned.	
	2) Made of anti-corrosion high quality material.	
	3) Suitable for all types of foam compounds.	
	4) Can be set from inside the cabin and outside control panel by a selector switch for (1% - 6%) concentrations.	

F	**FOAM AND WATER BUMPER MONITOR**	
	1) Location: fitted on the front bumper.	
	2) Suitable for jet and spray.	
	3) Material: made of high quality and durable material.	
	4) Horizontal range: 180º.	
	5) Vertical range: range (-15→60º).	
	6) Water/Foam mixture: not less than 500 L/min at 10 bar.	
	7) Throwing distance:	
	a- Water: not less than 40m.	
	b- Foam: not less than 25m.	
	c- Fog stream: to be mentioned.	
	8) Electronically controlled from inside the cabin by means of a joystick.	
	9) Manually operated from inside the cabin in case of electric failure.	
G	**(WATER/FOAM) HOSE REEL (QTY 1)**	
	1) Location: easy access and operate.	

	2) Electrical and manual rewind.	
	3) Diameter not more than (1.5"), not less than 30 length.	
	4) Output flow rate: to be mentioned.	
	5) (Water (jet and fog) /Foam) nozzle, pistol type (on/off) controlled.	
H	**CONTROLS**	
	A) Control unit inside the cabin:	
	1) Switch for foam suction and mixing ratio	
	2) Rotating beacons switch.	
	3) Siren switch.	
	4) Drainage of pump switch.	
	5) Priming system indicator.	
	6) Pump drive switch.	
	7) Water tank and foam tank electric level indicators.	
	8) (Water/Foam) outlets control switches for both pressure and flow rates.	
	9) Switch for water suction from the tank	

	10) Lights for night operation.	
	11) Emergency indicators such as (engine temp, pump temp too high … etc) with buzzer.	
	12) Pump rpm and hour meter.	
	13) Any other parameters required for optimum operation to be mentioned.	
	B) Pump side control panel:	
	1) Water tank suction.	
	2) Foam tank suction.	
	3) Foam mixing ratio.	
	4) Pump rpm and hour meter.	
	5) Water tank filling (via pump).	
	6) Pump drive switch.	
	7) Priming system indicator.	
	8) Pump compound pressure gauge.	
	9) Pump discharge pressure gauge.	
	10) Water tank level indicator.	

	11) Hose reel control valve.	
	12) Control valve for bumper monitor.	
	13) (Water/foam) outlets control switches for both pressure and flow rates	
	14) illumination for night operation	
	15) Emergency indicators such as (engine temp , pump temp , ….etc.), with buzzer	
	16) Any other parameters required for optimum operation to be mentioned.	
I	**Dry Powder Unit :-**	
	1) The dry powder unit (450 kg) is located in the front storage locker 2) Type : to be mentioned 3) Powder Vessel Capacity : not less than 450 kg 4) Operating pressure : to be mentioned	
	5) Expelling gas installation - Type of expelling gas : Nitrogen - Number of cylinder : to be mentioned - Cylinder capacity : to be mentioned - Test pressure : to be mentioned	
	6) Extinguishing Pistols : - Number : to be mentioned - Discharge rate : not less than 4.5 kg/ second - Throwing range : to be mentioned - Throwing height : to be mentioned	
	7) Hose Line - 1 hose reel with electric and manual rewind - Material : to be mentioned - Location: easy access and operate.	

	- Diameter not more than (1 "), not less than 25 m length. - Output flow rate: to be mentioned.	
J	**SELF PROTECTION OF THE VEHICLE:-**	
	1) To be used for Under vehicle protection.	
	2) No. of nozzles and flow rates to be submitted.	
	3) Controlled from inside the cabin.	
5	**Electrical and light system**	
	1- Light mast :	
	a) Telescopic type.	
	b) Pneumatically operated. - Air compressor operated via12 VDC.	
	c) Made of light, anti-corrosion, high quality weather proof material.	
	d) Height: not less than (5) m from the ground level.	
	e) Located at the front of the body work.	
	f) 360° rotation manually. - Easy access to the mast to rotate it easily.	
	g) Adjustable LED type search light via remote control, as follows - Qty (2), 100 watt each. - White colour. - Power efficiency: not less than 90%. - Service life at least 20,000 working hours. - CRI ≥ 80.	

	2- Light bar minimum of three red flashing lights, mounted on the upper front of the vehicle.	
	3- Side lights Qty (2) on each side.	
	4- Fog lights for optimum operation.	
	5- Electric siren with public address system (different tunes) Q'ty (1) set.	
6	***EQUIPMENT***	**5.1.1.1.1.1**
	a) Delivery hoses 2.5" diameter , not less than 30m length with LA couplings Qty (2)	
	b) Water gun nozzle with (2.5") male inlet (jet and fog , multi flow rates) Qty (2)	
	c) Foam nozzle Qty (2)	
	d) Fire suit Qty (3)	
	1- Jacket and Trousers to be as followed:	
	a- Weight: to be mentioned. - Light weight is preferable.	
	b- Available in different sizes: to be specified	
	c- Colour : black or dark blue	
	d- With high intensity reflective twin straps on front and back	
	e- Made of NOMEX delta or Kevlar or viscos or any equivalent material.	

	f- Multi layers configuration	
	g- Good thermal insulation	
	h- Rips, wear, punchers, abrasion and mildew resistant.	
	i- Water proof.	
	j- Breathable moisture barrier.	
	k- Easy to wear	
	l- Knees and pants cuffs	
	2- For the jacket	
	a- Comfortable over lapping collar	
	b- With a zipper and a Velcro closure over it.	
	c- 5 Pockets (one for radio ,two on the chest and two on the west)	
	d- Shoulders and elbows reinforced with extra layer of outer shell	
	e- Flashlight holder.	
	f- Knitted cuffs with thumb Loops to prevent sleeve retraction.	
	For the Trousers: provided with removable x-shape adjustable suspender pads	

	3- Firefighting boots, as following	
	a- Waterproof leather, breathable.	
	b- Size: different sizes, available sizes to be specified.	
	c- With textile lining.	
	d- Leg length: (25 – 30) cm.	
	e- Colour: black with high intensity reflective strap.	
	f- Steel toe cap and reinforced sole.	
	g- Boot straps on both sides, without zip.	
	h- Sole : 1- Rubber shell. 2- Oil and fuel resistant. 3- Anti-skid tread. 4- Shock absorbing. 5- Anti-oxidant.	
	i- Foot bed: 1- Anatomically formed. 2- Exchangeable. 3- Washable. 4- Good moisture absorption. 5- Short drying time.	
	4- Safety belt :	

	a- Width not less than 3 inches	
	b- Provided with hook and 1 m rope attached to the belt	
	5- Helmet :	
	a- Made of high quality material, material to be mentioned.	
	b- Suspension: Center of Gravity adjustment system	
	c- Face shield with thumb wheel adjustments.	
	d- Easy-to-adjust, quick-release chin strap with postman's slide.	
	e- NOMEX III or equivalent covers for neck / ear protection.	
	f- Colour: yellow.	
	g- With head lamp if available.	
	6- Hood	
	a- To be used to protect the ear and the neck area from heat.	
	b- To be suitable with the supplied helmet.	
	c- Made from NOMEX III or equivalent.	
	d- Single layer.	

	e- Seals tight around face and SCBA masks.	
	f- Elastic enclosure allows easier donning.	
	g- Seamless chin area.	
	7- Fire man Gloves.	
	a- Easily grasped fine objects, and provide secure grip during operation.	
	b- Five finger type.	
	c- Size: different sizes, available sizes to be mentioned	
	d- Breathable with inner lining.	
	e- Fire retardant and good thermal insulation.	
	8- General	
	a- Instruction sheet (catalogue if available) about cleaning and storage for each item should be provided.	
	b- All above mentioned items should comply with up- to-date standard (NFPA 1971 or equivalent EN 469 standard) with certificate of approval for each Item.	
	e) Complete set of breathing apparatus Qty (3) as follows : - shall be used for firefighting purposes. - With (3) spare cylinders.	

	- breathing apparatus set to be with the following specifications :	
	1- 200 –300 bar cylinder and valve assembly :-	
	a) Light weight, made of high quality material.	
	b) Water capacity of 6 liters	
	c) Free gas capacity (to be mentioned).	
	d) Weight (to be mentioned)	
	e) Plug-in manifold for regulator and flexible hose for content gauge and warning whistle.	
	f) Cylinder valve fitted with a safety-locking device.	
	2- Full face piece assembly : - A Mask and balanced demand valve of positive pressure type, inserted valve of plug-in type , First breath Activation type.	
	3- Pressure reducing regulator of two stage type.	
	4- Harness and back frame assembly for supporting the equipment on the body of wearer consist of : 1- Easily adjustable wide padded shoulder straps; and waist belt. 2- Individually pivoting shoulder and waist strap give maximum ease of movement distribution. 3- Ergonomically shaped “open type” carrying frame for comfort and to increase ventilation.	
	5- Plug-in manifold regulator and flexible hose for content gauge and warning whistle (any other safety devices should be mentioned)	

	6- All design features of SCBA assemblies should be specified in details.	
	7- With all catalogues and user manual both printed and on a (CD) or video tape	
	8- Catalogues for use, maintenance and spare parts for each component should be provided.	
	9- All above mentioned items should comply with up- to-date standard (NFPA 1981, 2007 edition or EN 137: 2006 type 2 with accredited certificate or EC type examination certificate for each Item. 10- All the breathing apparatus with cylinder should be complied & made for firefighting purposes).	
7	***ACCESSORIES***	
	a) Standard chassis tool set to be specified in details Q'ty (1) set	
	b) Standard body tool set to be specified in details Q'ty (1) set	
	c) Wheel stopper Q'ty (2)	
	d) Tire chain with suitable bags. Q'ty (1)set	
	e) Vehicle colour: Red (RAL 3000).	
	f) Hose bridges Q'ty (2)	
	g) Spare parts, workshop manuals for both chassis and superstructure should be supplied. (Qty 3 sets + CD for spare parts).	
	h) Protection guards for head light, stop light and the illumination in the compartments.	
	i) Hydraulic Jack with its all-necessary tools.	
8	***GENERAL***	

	a) Mobile radio installation requirements should be determined by (cdd) and airport department telecommunication department before delivery.	
	b) Able to operate at all weather conditions (-5°to 55°)	
	c) All sketches and drawings with all details as crew cap, all dimensions and locations of all equipment, components and any other necessary details must be submitted.	
	d) Providing a price list of recommended spare parts for the chassis and superstructure for 2 years	
	e) Supplier should guarantee supplying of spare parts (Min. of 10 years from time of delivery).	
	f) Supplier should provide international approval certifications, certifications of Origin and catalogues for all equipment above and water pump.	
	g) standards such as (NFPA, EN , ICAO ,…etc.) to be submitted	
	h) Reflective strip around the vehicle.	
	i) Colour: - Super structure : Fire Red (RAL 3000) - Chassis : Grey or Black With LOGO determined by airport department	
	j) Supplier services (technical support, maintenance) should be specified in detailed.	

6. TRAINING:

The supplier must hold a technical and operating training course for 5 working days in King Hussein international airport.

7. THIRD PARTY INSPECTION CERTIFICATE:

To be supplied with the RIV Vehicle.

8. OPTIONS:

Any important optional component should be mentioned, offered, and priced separately.

9. FACTORY ACCEPTANCE TESTS (PRILIMINARY ACCEPTANCE):

As mentioned in Tender Document.