

**GOVERNMENT OF PAKISTAN
MINISTRY OF DEFENCE PRODUCTION
PAKISTAN AERONAUTICAL COMPLEX BOARD KAMRA**

INVITATION TO TENDER AND GENERAL INSTRUCTIONS TO TENDERER
(FOB)

Tender No PACB/741/63141014/0638/P-1
Directorate of Central Procurement
Pakistan Aeronautical Complex Board
Kamra Distt. Attock
Tel: +92-051-90990-2543, 2244
Fax: +92 (057) 9317491
Email: adcp@pac.org.pk
04 April, 2017

PAC & PPRA Websites

Dear Sir,

1. I invite you to tender for supply of store details in the attached **Schedule to Tender** (Form PACB -002A)
2. **CONDITION GOVERNING CONTRACTS.** The “Contract” made as a result of this Tender Inquiry shall mean the agreement entered in to between the parties i.e. the “Purchaser” and the “Seller” on PACB Contract Form (PACB – 003) in accordance with the law of contract Act, 1872 and those contained in PAC purchase procedures and other special conditions that may be added to given contract for the supply of PAC stores specified therein.
3. **DELIVERY OF TENDER.**
 - (a) **Technical Offer:** It shall contain all relevant specifications along with essential literature / brochure in duplicate in a separate envelope and clearly marked “**Technical Offer without prices**”, tender number and date of opening.
 - (b) **Commercial Offer:** It shall indicate prices quoted in figures as well as in words and clearly marked on face of a separate envelope “**Commercial Offer with prices**”, tender number and date of opening.
 - (c) Both the “**Envelops**” of Technical offers and Commercial should be enclosed in one cover, properly sealed and bear the address of Directorate of Central Procurement (DCP) PACB Kamra with tender number and opening date.

- (d) Technical offer i.e. without prices will be opened on the date and time mentioned at Annex "C" of tender. However time and date for opening of Commercial offers of all those firms whose technical offers are accepted will be intimated later. Commercial offers of firms, which are not technically accepted will be returned to the firms un-opened.

4. **FORM PACB - 002A & PACB - 002B:** Form **PACB - 002A & PACB - 002B (Annexure D & E)** duly filled-in are to be returned with the offer duly signed by the authorized signatory person.

5. **SINGLE/MULTIPLE OFFERS:** Only one offer can be made in relevant currency for same item. Multiple rates, if quoted, will be rejected. Multiple quotation against the tender will also be rejected.

6. **DATE & TIME FOR RECEIPT OF TENDER:** The tender must reach DCP PAC Kamra by the date and time specified in the **Schedule to Tender** (PACB – 002A attached). Tenders received after the appointed time will, NOT be entertained. The appointed time will, however fall on next working day in case of closed/forced holiday. Telegraphed / Faxed / Telexed bids will be rejected unless specifically asked for.

7. **DELIVERY PERIOD:** Stores are required within minimum possible delivery period but **not later than 06 to 18 months from signing the contract**. Offers with minimum delivery period are likely to be preferred. However delivery period is to be factual as no extension will be subsequently granted except under unavoidable circumstances beyond control of SELLER or under Force Majeure for which intimation with full justification / evidences is to be dispatched well in advance for consideration.

8. **RIGHTS RESERVED:** PAC Board Kamra reserves the right to accept or reject any offer. The reasons of rejection will be intimated to the unsuccessful bidders. Moreover, past performance of the firms may also be considered.

9. **ADDITION AND DELETION OF STORE:** The purchaser has the right to increase or decrease the quantity of any item and cancellation of the contract partially or fully without any financial repercussion on either side without assigning any reason within 30 days of signing the contract. Such information will be passed on to the supplier / seller through the fastest means e.g. telephone, telegram or fax etc.

10. **VALIDITY OF QUOTATION:** The quotation be valid till **30 June, 2017**.

11. **TECHNICAL LITERATURE, SPECIFICATIONS AND INTERCHANGEABILITY:**

Offers are to be submitted in duplicate supported by brochures and technical literature in original. Offers must conform to tender specifications. A certificate of complete interchangeability must be endorsed on the quotation for all substitute or in-lieu items, otherwise the same are likely to be rejected. A copy of relevant page of publication must be attached to prove correctness of offered / interchangeable / in-lieu item. Prices of master, substitute and in-lieu items must be quoted separately. **Any query regarding technical issues, firms may contact Tel Ext 051-90990-4295, E-mail provmrf@pac.org.pk or Directorate of Log, MRF PAC Karma District Attock.**

12. DEVIATION FROM SPECIFICATIONS: Stores received at consignee, if found not conforming to the contract specifications will be rejected and replacement in accordance with contractual specifications against rejected stores would be provided to consignee as per delivery schedule laid down in the contract. The replacement will be provided without any additional cost. In case stores are rejected after delivery schedule of the contract, replacement is to be provided at the earliest or by the date advised by Directorate of Central Procurement PAC Board.

13. PACKING: Stores must be dispatched in standard trade packing unless otherwise specified to protect them against any damage. Any loss/damage caused due to poor packing will be recovered from the Supplier. In case items are shipped through sea, packing shall be sea worthy.

14. RESTRICTION OF EXPORT / IMPORT LICENSE: Offer subject to restriction of Import/Export License will not be entertained.

15. APPLICATION OF OFFICIAL SECRET ACT 1923: All matters connected with this inquiry and subsequent actions arising thereafter fall within the scope of the Pakistan Official Secret Act 1923 which forbid providing contractual information to un-authorized / un-concerned person / organization. It is therefore, requested to ensure complete secrecy regarding documents and stores concerned with the inquiry to limit the number of employees having accesses to this information.

16. QUOTING OF PRICES: Prices are to be quoted as follows: -

- (a) FOB price of the stores (Line Item Wise).
- (b) Percentage of agent commission (on Ex-Factory price). Agent commission is to be exclusive of quoted price. Principal must indicate if agent commission is not applicable. If there is no indication of agent commission in principal's Performa invoice, agent commission will neither be given by the principal nor by the Buyer.
- (c) The prices must be stated for each item separately both in figures and words. Additional information if any must be linked with entries on the Schedule to Tender (Form **PACB – 002A**)
- (d) Original quotation from the foreign manufacturer / supplier / principal must be attached in support of the quoted price. Principal is to endorse following certificate on the original quotation:-

“Certified that stores offered are factory new and from latest production and prices quoted are not more than the international market prices and also not more than those being charged from other buyers “.
- (e) Shelf / installed life of each item is to be mentioned separately.
- (f) Certificate as per attached Annex “A” duly signed by the principal and agent must be attached with quotation.

17. PROVISION OF OEM CERTIFICATE:

Certificate of OEM for certified vendors or Agency Agreement must be attached with quotation.

18. DISQUALIFICATION: Offers are liable to be rejected if:-

(Please Read Carefully)

- (a) There is deviation from any instruction described in this invitation to tender.
- (b) Offers are found conditional or incomplete in any respect.
- (c) Multiple quotations against the tender.
- (d) Multiple rates are quoted against one item.
- (e) Manufacturer relevant brochure is not attached (in case of equipment or major assemblies of equipment).
- (f) **Annexure "A", Form PACB-002A (Annexure "D") and PACB-002B (Annexure "E")** duly filled – in and signed by the Tenderers are not received with the offer.
- (g) Offer received later than appointed time and date.
- (h) Tender specification if not conforming to the offer. In case of equipment/ major assemblies manufacturer's brochures shows specifications different from those given in tender.
- (j) Offer subject to restriction of Export License.
- (k) Over writing / erasing in prices.
- (l) Change in prices by the supplier after opening of commercial offers unless asked by Directorate of Central Procurement PAC Board.
- (m) Validity of offer is not quoted as required in IT or made subject to confirmation later.
- (n) Offers not accompanied with prescribed tender / Challan fee of Rs. 100/-
- (p) Bid Security not provided.
- (q) **Performa Invoice of Principal / Principal Invoice**, in duplicate clearly indicating whether prices quoted are inclusive of the agent commission, is not enclosed.
- (r) Agency agreement of agent with Principal / OEM and link between Principal and OEM is not provided.

- (s) The validity of agency agreement has expired.
- (t) Offer without certification of OEM.
- (u) OEM and principal name, contact details (Ph No, Fax No, Email etc) and complete address is not mentioned.
- (v) Offer with Prior sale condition.

19. PAYMENT: Payment of 80% on shipment after issuance of acceptance certificate by consignee through Letter of Credit and remaining 20% on issuance of Certificate Receipt Voucher (CRVs) by Consignee. 10% Performance Bank Guarantee is to be submitted within 30 days from the date of signing of contract..

20. SEQUENCE OF QUOTATION: Quotation must be prepared according to the item serial no sequence of Schedule to Tender (Form **PACB-002A**).

21. WARRANTY / GUARANTEE OF STORE: Warranty / guarantee for a period of one year be applicable for stores commencing from acceptance of store at consignee.

22. COUNTRY OF ORIGIN AND MODE OF SHIPMENT: Following details must be provided in your offer / quotation and Performa invoice: -

- (a) Country of origin, place of manufacture of store and beneficiary should be mentioned.
- (b) Name of port connecting PIAC aircraft / PNSC ship where from the store will be shipped. The firm may like to ensure the availability of PIA flight or PNSC operation from the port of shipment before signing the contract.
- (c) Where PNSC or PIAC do not operate, the supplier would ship the stores through Pakistan / Foreign flag Vessel / Airline on freight pre-paid basis with prior approval of procuring agency and claim it subsequently. Insurance and freight charges should not exceed 12.70% of FOB value of the stores.

23. FAX QUOTATION: Fax / Email quotations will not be accepted except when specifically called for under emergency / urgency, however, Fax / Email quotation, if received will only be considered subject to condition that original Performa invoice for each quotation is received within 7 days of Tender Inquiry opening or as advised by procurement agency. In case original quotation is not received within specified time, the offer will be excluded from the competition without any notice to quotee.

24. LC CHARGES: Payment will be made through irrevocable and non-transferable Letter of Credit. LC opening / advising and confirmation and additional charges will be borne by the beneficiary / supplier as per prevailing Bank rates. LC charges within Pakistan will be borne by the purchaser. Charges outside Pakistan are to borne by the seller. Any additional charges due to request of supplier will be borne by the supplier.

25. QUALITY INSPECTION: Items supplied are liable to be inspected by the quality inspectors of to the respective factory of PAC before acceptance.

26. SUBMISSION OF CERTIFICATE: The certificate as per attached Annexure "A" is to be submitted along with offer / quotation.

27. TENDER OPENING: Representative of Foreign Liaison Office will not be allowed to attend Tender Opening unless it is registered with Pakistan Aeronautical Complex Kamra. No unauthorized person will be allowed to attend the tender opening.

28. BID SECURITY: The Bid Security @ 5% (not exceeding 0.150 M) will be deposited by all firms. Bid Security will be deposited in favour of CMA (DP) in the form of CDR only at the time of opening tenders (with technical quotation), in a separate envelope. Bid Security will be returned to all firms except three commercially lowest bidding firms on finalization of commercial quotes. Whereas Bid Security to the 2nd and 3rd commercially lowest bidders will be returned on signing of the contract. Bid Security of the contract concluding firm will be returned on submission of bank guarantee and on receipt of performance bank guarantee acceptance certificate from CMA. Quotations once submitted cannot be withdrawn (Partially/Fully) during validity of the quotation. Firms not complying with the said instructions would be liable for disciplinary action beside forfeiture of the Bid Security. **Note:- No Quote will be accepted without Bid Security which will be as per IT clause 28. However, Bid Security must be provided in shape of CDR only otherwise your quotation will be rejected.**

29. END USER CERTIFICATE (EUC): EUC if required at any stage may be mentioned in the quotation.

30. CHECKING OF STORE: Store will be checked at consignee in the presence of representative of Supplier if he arrives within 15 days after initiation of letter.

31. WITHDRAWAL OF OFFER: If the firm withdraws its offer or backs out from providing items won by the firm within validity period at any stage of contract finalization, the Competent Authority may place such firm under Embargo for a period of six months, which may extend upto one year / forfeit the Bid Security.

32. TREASURY CHALLAN: Offer must be accompanied by Challan Form No. F-32A of Rs, 100/- obtained from State Bank of Pakistan/ Govt treasury under "**Departmental Receipt Major Head 1221000**" CMA (ISO's) Rawalpindi on behalf of "Director Central Procurement PAC Board Kamra". Only one offer can be made for same item on one Challan. Multiple offer / rates, if quoted will be rejected.

33. PHOTO COPIES OF DOCUMENTS: Following information's / copies of document must be provided with offer: -

- (a) Photo copies of valid registration and indexation of foreign principal with PACB/DGDP applicable to the store / equipment offered is to be provided with the quotation.
- (b) A copy of letter showing firm's financial capability / Bank statement.
- (c) Photo copies of General Index number (GID), National Tax number (N T N).

34. PRIOR INTIMATION REGARDING SUBMISSION OF QUOTATION: To avoid misplacement of the quotations, all quotee firms are to intimate this office regarding dispatch of their quotation giving details of the courier through telephone / fax, so that courier service may be tracked to ensure your participation in the competition.

Yours sincerely,

(FAHEEM MUMTAZ)
Flight Lieutenant
Asstt Dir Central Proc
PAC Board Kamra
Tel: 051-90990-2543

Enclosure: -

- | | |
|---|-------------------------------------|
| (i) Certificate (Annex "A") | (ii) Questionnaire (Annex "B") |
| (iii) Schedule of Stores (Annex "C") | (iv) Form (PACB – 002A) (Annex "D") |
| (v) Form (PACB – 002B) (Annex "E") | (vi) Form (PACB – 002C) (Annex "F") |
| (vii) Details of Bank Guarantee (Annex "G") | |

CERTIFICATE

TENDER / CONTRACT No PACB/741/63141014/0638/P-1

It is certified that no person, firm, cooperation, subsidiary or entity in Pakistan or elsewhere shall directly receive any rebate, bonus commission, gift or favour in cash or kind other than commission allowed to M/S (FULL NAME TITLE OF THE COMPANY WITH ADDRESS) against contract No _____ dated _____ In case if it is discovered that contents of this certificate have been infringed / violated by the supplier the purchaser will have the right to cancel the contract and / or impose a penalty equal to 25% of the contract value.

AGENT-

Seal & Signature

PRINCIPAL

Seal & Signature

COUNTERSIGNATURE

Director Central Procurement

Seal & Signature

QUESTIONNAIRE TO BE FILLED IN BY BIDDER

Firm is required to provide confirmation of following points and in case of any change, same is to be highlighted in remarks column.

S.No	Description	Yes/No	Remarks
1.	Whether stores offered conform to the specification and confirmation to this effect has been made in the quotation given in Form PACB – 002A .		
2.	Whether deviation from the demanded specification is attached with Form PACB – 002A .		
3.	Whether complete quotation has been submitted in duplicate		
4.	Whether the prices are exclusive of taxes/duties if so whether taxes/duties have been shown separately.		
5.	Whether Form PACB–002A & 002B duly filled in and signed by the Bidder have been returned in herewith.		
6.	Whether original invoice Performa from principal has been enclosed herewith.		
7.	Whether copy of valid registration/business authorization and indexation of firm have been enclosed herewith		
8.	Whether store is to be checked at consignee in presence of your representative.		
9.	Specimen of End User Certificate has been attached (If required)		
10.	It is confirmed that no Taxes / Duties & Dues payable to Pakistan Govt are outstanding at the part of vendor / firm.		
11.	Whether tender fee challan amounting to Rs 100/- has been enclosed herewith.		
12.	Whether details of financial capability and financial load of contracts outstanding against your firm have been provided.		
13.	Delivery period is as per IT.		
14.	Validity Period of quote is as per IT.		
15.	10% PBG will be provided within 30 days after signing of contract		
16.	Complete details of beneficiary have been provided		
17.	Complete details of foreign bank for LC have been provided		
18.	Bid Security is in the shape of CDR		
19.	Unit Price has been provided against same unit of issue as mentioned in IT. In case of change in unit of issue, price has been converted as per ITs unit of issue in a separate column along with conversion formula.		
20.	Country of origin and port of shipment have been mentioned.		
21.	Valid, original agency agreement has been attached with quotation.		
22.	Copy of NTN has been attached.		
23.	Offer is without any condition		

Dated: _____

(Signature of Bidder & Stamp)

SCHEDULE OF STORES

Tender Inquiry No: - **PACB/741/63141014/0638/P-1**

TENDER SUBMISSION TIME: - Before 1030 Hrs on opening date

TIME & DATE OF OPENING 1100 Hrs on 08-05-2017

(Note: Firms are requested to read carefully all the paras of IT. Moreover, unit price against same unit of issue as mentioned in IT is to be provided. However, if any change may be required in unit of issue the price must be converted as per IT's unit of issue in separate column. Furthermore, conversion of unit of issue and unit price must be mentioned in commercial quote.)

PROCUREMENT OF SPECIALIST VEHICLES FIRE FIGHTING VEHICLES, AIRCRAFT TOWING TRACTOR, FORK LIFT AND AIRCRAFT REFUELLER (L/ITEMS = 04)

S.No	Description	Qty
1	Fire Fighting Vehicle	01 Ea
2	Aircraft Towing Tractor	01 Ea
3	Fork lift	01 Ea
4	Aircraft Refuller	01 Ea

SPECIFICATIONS FOR AIRCRAFT RESCUE FIRE CRASH TENDER WITH WATER FOAM & POWDER

S NO	DESCRIPTION	BROAD SPECIFICATION
1.	Model	Of latest model
1.1	Identification	
	Capacity	5,500 + 660 l
	Model	CFR 5500 (Latest)
	Carrier	
1.2.	Dimensions & weights	
	Overall length	9,700 mm approx
	Overall width, excluding mirror	2,550 mm
	Overall height, loaded	3,800 mm approx
	Wheel-base	3,900 + 1,350 mm
	Turning circle diameter	18,8 m
	Weight, empty	Approx. 17500 kg (including crew & accessories)
	Weight, fully laden	Approx. 24000 kg
	G.V.W	27000 kg
1.3.	Performances-full load	
	Permanently engaged all-wheel drive	6x6
	Braking distance from 32 km/h	9 m
	Braking distance from 64 km/h	30 m
	Fire Fighting	
	Fire Pump	3,500 l/min @ 10 bar
		400 l/min @ 40 bar
	Water tank	5,500l
	Foam concentrate tank	660l
	Roof turret monitor discharge	2,500 l/min
	High pressure hose reel discharge (1X)	150 l/min
	Under truck nozzles discharge (6x)	40 l/min (each)
	Dry powder system	250 kg
	CO2 system	45 + 45 kg
2	General	
	General features	The FCT should be in accordance with the requirements of NFPA 414, latest Edition. The extinguishing agents and protective clothes shall meet stipulation of the "Airport Service Manual, part 1 Rescue and fire fighting" third Edition – 1990 of ICAO as applicable.
3.	Chassis & Engine	
3.1.	Engine	
	Make	

	Model	Of latest model
	Type	Diesel 4 stroke direct injection turbo-charged-EURO 3
	Location	Front
	Cylinder	8 in VEE
	Displacement	15.928 cm ³
	Output Power	435 kw (578) Hp @ 1.800 rpm
3.2.	Electrical System	
	Alternator	28 V X 100 A
	Starter Motor	24 V
	Battery	2X12 V – low maintenance – EB3
	Capacity	220 Ah
	Auxiliary equipment	External battery charging connection
3.3.	Drive line	
	Clutch	Dry single disc- 430 mm
	Front axle	9.0 ton
	1st rear axle	13 ton
	2nd rear axle	13 ton
	Differential lock	Inter wheels and inter axles – drive's selectable
3.4.	Chassis	
	Steering position	Right hand drive – model LS 6/LS 8
	Type	Power assisted
	Suspension – front	Spring leafs, parabolic type
	Suspension – rear	Spring leafs, parabolic type
	Wheel – front	Single
	Wheel – rear	Twinned
	Tyres size	365/85 R20, single at front and rear axles
	Design type	Cross country
	Service brakes	Full air pressure type – double circuit with ABS TELLIGENT system – drum brake fore & aft
	Parking brakes	Spring loaded brakes cylinder – acting on both rear axles
	Additional brakes	Engine exhaust type
	Fuel tank capacity	300 liters – steel – lockable
	Exhaust location	Side
	Towing eyes	The truck is to be fitted with heavy duty front & rear recovery eyes, steel made and fastened to the chassis frame
3.5.	Cabin	
	Type	Forward control type, c/w hydraulic tilting device
	Doors	Two (02)
	Seats	Three (03) (driver +2 member). The two (02) passenger seats equipped with breathing apparatus holder integrated in the back rest. All seats are to be provided with seat belt
		Optional : as optional a third crew member seat (for a total seating capacity of 04) is also available
	Fitting	A/C unit
		Two-speed windshield wiper/washer
		Sun-visors
		Tented glass all around

		Rear mirror
		Grab handles
		Glove box
		Heater –demister-blower
		Dome light
		Headlamps
		Front and side lights
		Rear lights
		Fog lights
		Road home
		Provision for radio R/T set
4.	Body	
	Design	A modular design is to be adopted in the body which comprises of the front section, the mid section and the rear cabinet. The body is to be enclosed the whole vehicle in harmony with the shape of the cabin, providing an outstanding aerodynamic shape. Easily accessible the DCP unit and auxiliary equipments. The mid section contains the tanks. The rear section contains the water pump and the piping.
	Materials	The body is to have steel structure covered by aluminum panel while the tanks made out of polypropylene. The whole assembly to be corrosion free. Each compartment floor and shelf shall be covered with a removable black mat designed to allow for drainage of any water from the stowed equipment.
	Fenders	The rear wheels are to be covered by fenders, matching the general design of the vehicle.
	Access	Access steps and hand rails is to be provided wherever required for the crew safety on the body and in the cabin.
	Bumper	The truck is to be fitted with heavy duty front bumper, steel made and fastened to the chassis frame.
	Towing eyes	The truck is to be fitted with heavy duty front recovery eyes. Steel made and fastened to the chassis frame.
5.	Fire Fighting equipment	
5.1	Fire pump	
	Water pump	CHINETTI 2T-5012 + 4T-440
	Location	The pump is to be located in the rear cabinet, at the rear end of the truck.
	Priming	The priming is to be fully automatic by means of a rotary vanes priming pump 24 Vcc electrically operated.
	Pump drive	The pump is to be driven by clutch independent power take off, which assure a full pump & roll capability to the Air Fire Crash Tender.
	Flow	3,500 L/min @ 19 bar (normal pressure) 400 L/min @ 40 bar (high pressure)
	Pressure Governor system	The water pump is to be provided with an electric pressure governor control system, once activated by operated the system will automatically adjust the engine speed in order to

		keep the pump discharge pressure at the pre-set value. The operator can adjust the pre-set value with one bar step from the system control panel located in the driver cabin.
	Thermal relief ball	To be provided, at the pump discharge side.
5.2	Water Tank	
	Capacity	5,500 l
	Design and construction	The tank is to be made out of polypropylene PPH2464, thickness 20 mm. the whole roof has a non skid surface. The water section is to be baffled into compartment, inter connected at the tank bottom which orifices of suitable size to permit the full flow. The tank is elastically mounted onto the chassis frame, restrained from moving. The construction prevents damages from the chassis frame torsion.
	Tank fitting	Internal bafflers, with whole large enough to allow easy maintenance and inspection of all sections of the tank.
		Two tank filling opening, complete with 2 ½ coupling, mesh strainer, ball valve, blind cap and chain, located one at each side.
		Each connection shall be fitted with a 30 turn-down fitting.
		One tank drain opening, complete with 2 ½ coupling, ball valve blind cap and chain, located at one side.
		One overflow pipe, directed below the chassis, behind the rear wheels.
		One electric level gauge at the dashboard.
5.3	Foam Concentrate tank	
	Capacity	660l
	Design and construction	The tank is to be made out of polypropylene PPH 2664, thickness 20 mm- integrated in the water tank.
	Tank Fitting	One sump, large enough to permit the entire contents to be available for extinguishing.
		One single bolt type man-hole, diameter 500 mm, located on the top for maintenance and inspection purpose.
		Internal baffle, with whole large enough to allow easy maintenance and inspection of all sections of the tank.
		One tank filling opening complete with 2" ½ coupling mesh strainer, ball valve, blind cap and chain, located at one side.
		One pressure / vacuum vent device, located on the top.
		One electric level gauge at the dashboard.
		One electrically operated from the FCT batteries, 24 Vcc, foam filling pump to fill up the foam tank from external source (i.e. foam drums). With 1"1/2 suction connection with 1"1/2 ball valve, quarter turn type and 1"1/2 NH coupling. Min. foam filling pump flow rate: 100lt/min.
5.4	Piping	
	Construction	All pipes is to be made out of stainless steel AISI 3161. Wherever it is required, flexible connection and VICTAULIC coupling.

	Valves	Provided to avoid stresses into the piping and to facilities removal and replacement.
		All valves are to be quarter-turn type. The drain valves will be located in such positions to permit the complete drainage of the tank, water pump and pipes.
		Ball valves: braces body with chromium coated sphere.
		Butterfly valves: cast iron body which stainless steel disc and train.
	Couplings	All coupling are to be according to BS standard each complete with blind cap in chain, and made out of brass.
	Flushing	One complete flashing system to be provided, through remote controlled ball valve.
	Foam proportioning system	In accordance with NFPA 414 section 4.16.4.
	Construction	The FCT is to be fitted with an effective and reliable automatic system for suction and proportioning of the foam concentrate into the water, the proportioning rate is manually preset at the pump compartment. The proportioning valves are conveniently grouped and clearly marked.
Operation	The proportioning system is to be operated automatically at the preset mixing rate.	
5.5	Roof Monitor	
	Construction	One low profile electric / hydraulic remote controlled monitor will be installed on the roof, just behind the cable, remotely controlled by a joy-stick at the dashboard.
		A second brand by is to be fitted beside the water and foam nozzle in order to discharge DCP (DCP flow rate: 7 kg/sec)
	Water & foam discharge valve	Remote controlled c/w manual override.
	DCP discharge valve	Remote controlled c/w manual override.
	Emergency controls	Direct manual operation will be possible from the roof in case of failure of the remote controls.
	Camera	A color camera is to be mounted on the monitor branch pipe and the screen in the cabin is to be provided to the operator and position and direction of the monitor, at any time.
	Discharge rate	2,500 l/min @ 12 bar.
	Throw water	64 m
	Throw water	58 m
	Rotation	270° (135 each side)
	Elevation above level	50°
	Depression below level	10°
5.6	Water and foam attack hose reel (rapid response hose unit)	
	Construction	The CFT tender is to be provided with one (01) first high pressure attack hose reel, fitted with brake, manual rewind crank and hose guide rollers where necessary.
	Location	At side low level.
	Hose type	Non collapsible rubber hose.
	Hose bore	1" (25 mm)

	Hose length	45 m
	Nozzle	Pistol grip type c/w spray or jet pattern selection.
	Discharge	150 l/min
	Throw	20 m
5.7	Under truck nozzles (self protection)	
	Discharge (x 6)	40 l/min
5.9	Suction inlet from open water	
	Construction	The FCT is to be fitted with two suction inlets, located at on the lift hand side.
5.10.	Water and foam sidelines	The FCT is to be fitted with four (04) sideline to discharge water and found, located two (02) at each side of vehicle.
5.11	Dry chemical powder unit	
	Construction	The CFR tender is to be provided with one dry chemical powder DCP (foam compatible) installation, with one unit 250 kg capacity using nitrogen as propellant gas.
	Location	The DCP installation is to be located in the front section of CFR.
	Discharge	The DCP is to be discharged through the DCP nozzle mounted on the front bumper monitor and one DCP hose reel, mounted into a compartment. Hose bore : 1" mm Hose length : 45 m Nozzle : pistol grip (powder gun) Discharge : 2.5 kg/sec Throw : 5/15 m Rewinding : Manual rewind with brake in every position.
5,12	Installation	
	Construction	A CO2 system is to be installed in the front cabin, near by the DCP unit, made by nos-2 x45 kg CO2 cylinders with valve, safety valve, pipes etc. Hose type : hard rubber hose, SAE 100-R1 Hose bore : 1/2" mm Hose length : 45 m Nozzle : CO2 type Rewinding : Electric
5.13	Air Cylinder	
	Construction	N-1 Air cylinder, min, capacity 35 ltr@ 200 bar pressure, fitted with regulator and control device and a 45 m hose on electrical rewind hose reel.
5.14	Cabin control panel	
	Construction	The controls are functionally grouped in a panel in the cabin, within easy reach of the driver and the crew chief, without leaving their seats. Most of the controls and data will be collected on a multi functional screen.
	Emergency control	The control is to be remotely operated from inside the cabin, and it should be also possible the local manual operation in

		case of failure of the remote control system.
	Label	The control is to be clearly marked by means of aluminum printed label with internationally recognized symbols.
	The panel will comprise of	Roof monitor water and foam discharge valve control.
5.15	Pump Control panel	
	Location	At rear side of the FCT
	The panel will comprise of	Water tank level, electric
		Foam liquid gauge, electric.
		Water pump discharge pressure gauge 0/25 bar
		Water pump suction vacuum /pressure gauge-1/0/16 bar
		Water tank suction valve + status light
		Foam tank suction valve + status light
		Water tank refilling valve + status light
		PTO engagement switch + warning light.
		Hand throttle
		Engine rpm gauge + pump working hours counter
		Engine cooling temperature gauge.
		Engine oil pressure gauge.
		Priming pump switch
5.16	DCP Control panel	
	The panel will comprise of	Nitrogen cylinder pressure gauge
		Vessel pressure gauge
		Nitrogen cylinder release valve control switch.
		Pressurization valve
		Flushing valves
6.	Painting and finish	
	Anti rust protection	All seams are to be sealed with silicon which will remain flexible in the time. The fenders inner-sides will be treated with heavy chassis under coating.
	Pre-shipment production	All metal surfaces are protected with special grease or wax before shipment.
7.	Lighting and electrical equipment	
	General	All wiring is to be properly protected against water, heat, ground fire and chemical damages. Each wire will be marked with printed code number throughout their length. All circuit will be protected by proper fuses, clearly marked.
	Emergency lighting and signalization	One (01) LED light bar, full width, mounted on the FCT cabin top roof red color.
		Two (02) LED beacons on the rear corners of the body on the top roof, red color.
		Two (02) LED flashing lights, on the front radiator grill, red color.
		Two (02) LED flashing lights, at the rear, red color.
		All the red flashing lights will work under the same switch.
		One (01) airstrip obstruction light, yellow color on the tank roof.
		Headlight flashing system: a high beam, alternating / flashing

		headlight system shall be provided.
		The headlight flasher shall be separately switched from the warning light panel.
	Non emergency lights	Two (02) heavy duty headlights.
		Two (02) tails lights, with stop and direction lights.
		Two (02) direction lights in the front.
		Two (02) direction lights on either side of the cabin.
		One (01) reversing light.
		One (01) complete setup lights for each compartment, LED type.
		One (01) scene light system, made by totally six (07) lights nominated the area around the FCT during night operation. 02 lights will be mounted in front, above the cabin, 02 lights on each side (above each compartment shutter), 01 light at the rear, above the pump compartment. Scene light can be controlled by a switch on the cabin control panel or a switch on the pump control panel. 01 switch on each side will also available to activate only the scene light of that side.
		Ladder, steps, etc will be properly illuminated where a necessary for use during night operation.
		01 master switch in the cabin.
	Acoustic equipment	One electric siren, HI-Low-YELP sound with public address system.
		One dual forward facing air horns installed in protected locations near the front of the FCT. Air horn activating foot switches shall be located in front of driver and the turret operator
	Auxiliary equipment	One audible reversing alarm.
		One build in battery charger
		One build in air compressor (220) to keep the air tank field when FCT parked and connected to the 229 V
		One self ejecting plug to connect the FCT to the 220 V main supply during standby operation.
		One reverse camera automatically switched one when reverse gear is selected with screen in the cabin.
		One thermal image infra red camera using the same screen in the cabin of the reverse camera (optional)
8.	Manuals	
	General	The following manuals are to be supplied in duplicate in the English language.
	Operation manual	It contains operation instruction with description and specifications of all the main parts of chassis and fire fighting appliances.
	Maintenance	It contains maintenance instructions of all parts and system, inch diagrams of all check and maintenance points of the chassis and fire fighting appliances
	Parts catalogue	It contains all parts and system with part number of chassis

		and fire fighting appliances, assy and sectional drawings of main compounds and electric / pneumatic / hydraulic diagrams.
9.	Ancillary equipment	The following equipment items are to be provided, these items will packaged and shipment as loose equipment. All necessary brackets and hardware to be provided to allow the items to be mounted once vehicle will be received.
	No	Description
	1	Nos 02 dual spanner wrench holders
	2	Mos. 04 suction coupling wrench.
	3	Nos. 02 hydrant wrench holders
	4	Nos.02 Hydrant wrench
	5	No 01 rubber mallet
	6	Nos. 02 double male 2" ½ Bs-inst coupling- adopter.
	7	Nos. 02 double female 2" ½ Bs-inst coupling adopter.
	8	No.01 gated y connection 2"1/2 female – 2x1"1/2 male.
	9	No.01 4"x6MT soft suction hose c/w 4" BSRT coupling.
	10	No. 01 axe with fiberglass handle flat head and blade shield, c/w mounting bracket.
	11	No.01 axe with fiberglass, pick head and blade shield c/w mounted bracket.
	12	No. 01 fire extinguisher, dry chemical powder – 09 kg-c/w mounted bracket.
	13	No. 01 set of folding wheel chocks and mounted brackets.
	14	No. 01 set of wrenches and holder 2" to 4"1/2.
	15	No. 01 emergency road kit including <ul style="list-style-type: none"> -Two highway warning triangles -Two 20 minutes flares -one reflective vest -one water resistance storage bag
	16	Nos. 03 4" hard rubber suction hoses, 3m length c/w 4" BSRT light alloy couplings. Suction hoses will be properly secured on the FCT top roof.
	17	No. 01 4" suction filter with 4" BSRT coupling.
10	Accessories	The following accessories is to be provided properly mounted on truck according to table 5-2.guidness material related to rescue equipment carried on RFF vehicles- of ICAO Airport service manual, part 1 rescue and fire fighting. "third edition - 1990- cat 7
	No	Description
	1	Nos. 04 delivery hoses 2"1/2x 30 m, rubber lined Italian made, c/w 2"1/2 light alloy inst. Couplings.
	2	Nos. 04 hose binders
	3	Nos. 02 multipurpose branch pipe with 2"1/2 inst coupling European origin.
	4	Nos. 03 4" hard rubber suction hoses 3m length, c/w 4" BSRT light alloy coupling. Suction hoses will be properly secured on the vehicle top roof.
	5	Nos. 02 suction spanner
	6	Nos.02 Suction strainers -04"
	7	No.01 water nozzle, fog and spray jet 2"1/2 inst Coupling European origin

	8	No. 01 basket strainer with rope.
	9	No. 02 fire man axe (Small)
	10	No.01 shovel
	11	Nos.01 SCBA-PSS90FDrager or equivalent , with “panorama” full face mark and 6 th - 300 bar steel cylinder + n 1 spare cylinder.
	12	Nos.02 Aluminized fire proximity suits, European made.
	13	Nos. 02 Fire man hood.
	14	Nos. 03 Aluminized gloves)pair)- medium size
	15	Nos. 04 Breathing mask –high quality made
	16	Nos. 04 Breathing mask filter
	17	No.01 Tyre inflating hose
	18	No.01 tyres pressure gauges.
	19	Nos.02 Inspection lamps
	20	No.01 Extendable aluminum ladders, with rope, extended height 10m extended height.
	21	No.01 Rescue hook steel head, pole supplied into sections, total length 4.5m
	22	No.01 fire crew bar, 1.5m
	23	No.01 first aid kit.
	24.	Nos.04 long rubber boots (European made)
	25	No.01 Foldable stretcher.
	26	Nos.04 fireman belts, with crown plated buckle quick release, stainless steel knife to cut seat belt, and harness with out risk of angering the body
	27	Nos.02 electrical gloves, European made pair.
	28	Nos.04 Rosenberg fire fighting suit, complete with trouser, jacket, helmet with front light, boots and gloves
	29	No.01 Axe
	30	No.01 Drift Axe
	31	No.01 Plier, insolated
	32	Nos. 04 fireman helmets with lights
	33.	Nos. 04 canvas hold with zip fastening to hold one fire fighting suit with helmet, gloves, boots and fireman belt
	34.	No.01 fire blanket
	35.	No.01 Bolt cutter 600 cm
	36	Nos.04 ear muffs
	37	No.01 rope, nylon, 20m long with hook.
11	Publication	To be provided following publications along with FCT, two copies of each free of cost. (a) Operator manual. (b) Repair / maintenance manual and overhaul manual. (c) Parts Catalogue. (d) Aluminum tank repair scheme to be provided.
12	Tool kit	Standard tool kit comprising all the tools required for daily servicing and handling. Road side defects are to be provided. Tool kit specific for the maintenance of the FCT, complete overhaul / major servicing.
13	Road / Worth	To deliver FCT to MRF in fully road worth condition without any extra charges.

14	Spare support	Provision of certificate for availability of spares for next 10 years. Provision of list of fast moving spares. One set of fast moving spare with FCT.
15	Pre Delivery / functional / acceptance inspection	Four persons from purchaser (MRF) will visit to manufacturer premises to under take pre shipment / acceptance inspection and training on maintenance / operation of the FCT. All expenses including / boarding, lodging and return Air tickets are to be borne by the manufacturer.
16	Acceptance criteria	The FCT will be confirmed to international safety, workmanship and functional standards, compliance with NFPA-407. A copy of related standard be provided to inspection team for inspection guidance. Inspection / functional check of complete FCT will be carried out at firm's premises by the rep of MRF. To be provided a certificate indicating international aviation standard, in accordance with which the FCT fuel tank has been constructed including its material, strength and corrosion resistant properties. To be provided quality control dossier and original mill test certificate along with FCT.
17	Delivery	06 ~ 18 months after signing the contract

BROAD SPECIFICATIONS OF 5000 US GALLONS A/C REFUELLER

S NO	Description	Item	Specifications
1	Model	Of latest model	
2	Chassis	Model / Manufacture	
3	Engine	Type	Diesel / Turbo / Intercooler Euro-1
		No of Cylinders	6 Cylinders
		Displacement	11051 to 12500 CC
		Max Power	340 ps(250Kw)@ 2100 rpm
		Max Torque	135 kg-m @ 1,260 rpm
4	Transmission	Model	T15S6
		No of Stage	F6 / R1
		Ratio	7.77 to 0.744
5	Clutch	Type	Dry single plate with diaphragm
		Operation	Hydraulic control with air assisted
		Plate Diameter	430 mm
6	Dimension	Length	11,625 mm
		Width	2,500 mm
		Height	3.450 mm
		Wheel Base	7000 mm

		Min. Ground Clearance	270 mm
		Weight Empty	12,860 kg
		Weight with Load	28,060 kg
7	Colour	Jungle Camouflage	
8	Steering	RHD Power Steering	
9	Suspension	Front & Rear	Semi Elliptical type steel leaf spring type
10	Brakes	Parking	Manual operated full Air parking at rear four wheel
		Service	Full air pressure Brake system circuit on all wheel
		Aux. Brakes	Exhaust brake
11	Electrical System	24V System. Batteries to be provided with housing and switch. Batteries cover made of fuel resistant material. Main Battery Shut-off Manual Switch Standard electrical fitting to be provided. (All fire Proof)	
12	Seating Capacity	2 Persons in Front & 1 person at behind. Safety Belts Fixed at Two Points only.	
13	Chassis	Frame to be ladder type reinforced single channel, equipped with hook on the front and rear frame.	

14	Axle	Front	Single Axle, Reverse Elliot "I" beam type; Load Capacity 6,500 kgs on road
		Rear Two axles	Banjo single reduction tandem type load capacity 11,500 + 11,500 = 23,000 kgs Final drive ratio : 5.571
15	Exhaust	Horizontally mounted below front bumper with spark arrester	
16	Pump Drive System	Full power, Split Shaft PTO. Speed Control provided at Control Panel	
17	Clamp Rings	Suitable Qty of Clamp rings for shipment, located at appropriate locations.	
18	Cab	All steel welded cab Hydraulic tilt type 3 crews (2 seats & extra) seats. Driver seat air & spring actuated and adjustable. Personnel seat & behind seats are fixed type. Windshield & windows with tinted glass. Centre and window side minors.	
19	Mud guards	Built – in Mudguards	
20	Spark Arrester	Prevention from the spark. 1 Ea To install in front of Passenger side.	
21	Control Board	Machine room & Control panel located between Cab & Tank.	
		Manual Throttle controls dial.	
		Provisioning of Roll up type shutter doors.	
		warning light for fuel changing system	
		Pressure indicator for pump delivery pressure.	
		Pump rpm Digital indicator.	
		Differential pressure gauges for Filter / Separator.	
		Control Air Pressure Gauge.	
		Reference pressure gauge for Bypass valve.	
		Venturi pressure (Fuelling pressure) gauge.	
Vacuum pressure gauge for Defuel process.			

		Dead man system & Deadman switch.	
		Manual Deadman override switch.	
		Emergency engine stop switch on control panel.	
		Main power switch	
		Working Lamp Switch	
		Deadman Lamp	
		Brake interlock Lamp	
		Water pressure Alarm & Lamp	
		Instruction Plate (in English language)	
		System flow diagram	
22.	Tank	Capacity	20,000 Litres (5000 US Gallons plus) + 5.0 Outage.
		Construction	Made of aluminium Alloy as per international Aviation std. Material of the tank should be corrosion / oxidation free and resistant & comply with int'l safety and aviation standards. The certificate to this effect to be provided at the time of delivery. Tank to be leak resistant and able to sustain jerks and jumps on rough track. Single compartment, provided on the inside stress-resistant shell heads and anti-slashing baffles divide tank into communicating compartments, Such that all are accessible for clearing / inspection.
		Compartments	All compartments assembled by welding of continuous bead type.
		Man Holes	Qty two (2) of 20" size, mounted to tank top side. To be provided with covers, bolted top the main-hole collars. To be fitted with fuel proof sealing. To be provided with vacuum pressure safety valve. To be provided with one separate inlet for dip stick.
		Tank Bottom	Provided sump device at the bottom of tank Front section. To be provided with water drainage and two (2) Ball valves to drain the tank by hand.
		Cat Walk Ladder	Non-skid type (metallic structure), running along the whole upper side of tank with safeguard. One fixed ladder for climbing up / down the catwalk away.
		Hose Carriers	Qty two (2) for 3" hoses fitted on each side of the tank.
		Tank to pumping station	The suction port located in the lower part but above level of drainage sump. One 4" Emergency valve on piping outlet to out off the tank to pumping stations. Anti vibrating joint to damp ladder for possible vibration between the tank and the pump.
		Tank vent & Interlocking device	To be provided Air Vent Valve at the top side of Tank. To be Provided to prevent dispensing unless the vent is open.

		Tank Level Gauge	10" Dia. Aluminium Alloy, Float type at the driver side of Tank.
		Bottom Loading Adapter	2.5" wide standard 1Ea. Model: F-419 (Meggitt USA).
		Internal Valve	4 th type, 1 Ea. Actuated by Air (Manual open) and controlled by jet level sensor during Bottom loading operation. (Mfr : Meggitt. USA).
		Jet Level Sensor	Type : Fuel pressure operated. 1 Ea Model : F613C (Mfr: Meggitt USA)
23	Pump / Fuel System	Type	Self-priming centrifugal pump with self-lubricating anti-fraction bearing. With 6" and 4" delivery parts, capable to deliver the fuel by means of two reel hoses. In addition to a automatic pressure control with Bypass valve and venturi. Pressure adjustable type for constant and accurate refuelling pressure.
		M.W. Pressure	10.5 Bar
		Max deliver Protection from foreign matter	600 US Gallons (2,280 Liters) per minutes ensuring. Fuel delivery of minimum up to 400 US G.P.M through single 2 ½ "delivery hose (under wing refuelling). Fuel delivery of minimum 500 US G.P.M through two Nozzles. Removable strainer provided for pump suction side.
24	Valves	Deadman Valve	One remote control Pneumatic operated stainless ball valve with timing control.
		Bypass Valve	Pump pressure regulating valve controlled by venturi pressure at 45 psi
		FDF Valve	Mode control fuel / defuel valve controlled by pneumatic cylinder.
		Fuel Line Valve	Stop valve to hose reel 3" valve for 2.5" hose and 2" valve for 1.5 hose.
		Isolation Valve	Line stop valve for bottom loading adapting and suction port.
		Recirculation Valve	Valve for the self recirculation mode and suction mode.
		Drain Valve	1" (Two) stainless steel ball valves for the Tank and ¾" (Two) for filter / separator
25	Ejecting Unit	Ejecting system to be provided for empty hose and defuel mode operation.	
26	Filter / Separator	Two stage compact Filter / Separator with a capacity of 600 GPM with cartridges filtering elements provided fuels with filtering range up to 1 micron. Water presence Detector and Drainage valve at the bottom. Two sampling points (on filter inlet and outlet) to be provided. Filter / separator meet international Aviation standard as per EI-1581 (API-1581). Category M-100 type S (5 th latest edition).	

27	Flow Meter	<p>Two (2) Flow meters will be installed with GPM indicator.</p> <p>a) Rated Flow 500 US GPM 4"X4" conn, for under wing Nozzle operation. Model: SPA700-40 Manufacturer : TCS (USA origin)</p> <p>b) Rated Flow 150 USGMP 2"X2" conn, for Over wing Nozzle operation. Model: SPA700-25 Manufacturer: TCS (USA origin)</p> <p>Countering in US Gallons, large numeric counter and non reset table Totalizer.</p>	
28	Gauge / Meters	<p>Differential pressure gauge for control of flow pressure on the lines going. In and out of the Filter / Separator.</p> <p>Fuel pump suction / discharge pressure gauge.</p> <p>Venturi pressure gauge / control Air pressure gauge. Ref. Air pressure gauge.</p> <p>PTO Indicators.</p> <p>Micronics Filter Water presence Alarm / Indicator.</p> <p>Hour Meter.</p>	
29	Fire Extinguisher System	<p>Automatic Fire Extinguishing system is to be provided as following specs.</p> <p>Four (4) units of model : AFE-3.0 will be installed.</p> <p>Mounted at the each comer of machine room / pumping system.</p> <p>Two additional 5 kg Co2 gas cylinder hand operated fire extinguisher provided and located at a suitable place outside the pumping cabinet.</p>	
30	Hoses. Hose Reels and Rewinding system	Hose Reels	To be provided two air operated winding hose inside of the machine room.
		Pressure Refuelling Hose	Two hoses of Aviation fuel-proof for pressure refuelling (2 ½ x75 ft) (1 ½ x100 ft)
			One fitted on hose reel and other supplied as a spare. The one ends fitted 2 ½ "or 1 ½ "permanent couplings to connection to pressure refuelling point. The other end fitted on the reel is to be connected with the central shaft of the reel.
			All hoses must conform to following specification. Type-C with conductive cover conforming to worldwide standard. EI-1529 6 th Edition and European standard EN ISO 1825 2011 Type-C, plus NFPA 407.
		Connections	All connection are to be NPT thread type. KAM-LOCK type quick release coupling between hose & reel port. One 2 ½ " Cam-lock type connection by gates arranged on right, left side of unit and joined to pump suction piping to collect fuel outside sources.
Re-winding system operation	Air operated system with associated safety equipment, which spark-proof and safe to operate under all conditions. A certificate of safety and under taking that it meets the international aviation standards is to be provided at the time of delivery		
31	Delivery Nozzles	Under wing	<p>Nominal 2.5 inch type: completed with HECV (pressure set at 45 psi)</p> <p>Stainless steel 100 mesh screen / swivel mounted / standard plugs and clamps fitted. Quantity : 2 Ea (1 Ea for extra spare stock)</p> <p>Model : F-116AGV7A Mfr : Whittaker (USA)</p>

		Over wing	Nominal 1.5 inch type with trigger, standard plugs and clamps. Quantity : 2 Ea (1 Ea for spare stock) Model : 2958A0138 Mfr : OPW (USA)
32	Nut & Bolts	All nuts and bolts are to be used corrosion proof.	
33	Static Bonding	Tow automatic reels with 30 meters of clear PVC insulated bonding with and crocodile clamps to earth trailer refueller to the aircraft and ground respectively. Standard plugs and clamps fitted on delivery nozzles. ½” meter of insulated bonding wire with crocodile clamp installed with each delivery nozzle to earth it the aircraft. Qty 02 ground rubber and strips (01 spare).	
34	Refueller Performance	Under wing pressure refuelling of aircraft through 2 ½” hose by suction from the refueller tank. De-fuelling of fuel from aircraft through under wing coupling and delivery into the refueller tank. Recycling operation. Refueller tank filling through suction port pump pressure. Refueller tank filling the main hole by gravity fall. Automatic pressure relief system to cater for changes in temp, during days and night.	
35	Safety Features	EMERGENCY SHUT OFF SYSTEM To be provided Electric type EMERGENCY STOP switch. Quantity : 1 Ea (At control panel & rear side) Shut off device for engine, deadman operation, emergency valve in case of emergency.	
		BRAKE INTER LOCK SYSTEM Applied at rear wheel by pneumatic control. Sensing under wing / over wing nozzle, bottom loading adapter and pump engagement. Provided brake interlock override switch at driver’s cabin.	
		DEADMAN SWITCH SYSTEM Specification: safe current type (less than 3 mill-amps) with safety timer system. Electric cable system model : GTP-8392B-Z-25’ Length : 7.5 m (25 ft) (Mfr : Gammon USA)	
		REAR VIEW CCTV CAMERA Large sized LCD monitor will be installed at driver’s cabin.	
36	Criteria for system safety and standard	Compliance to latest ISO and international aviation manufacturing / safety standard. Compliance with NPPA-385/407 (National fire protection association-USA). Aircraft and ground support equipment electrical connections for static grounding. Technical criteria for closed circuit refuelling system. Pressure refuelling. Minimum quality surveillance of petroleum products. Technical guidance for the design and construction for aviation and ground fuel installation of MRF Aircraft. Electrostatic safety. Connection procedures for aviation fuel handling and liquid fuel loading / unloading. Operation during ground transfer and aircraft. To provide OEM’s certificate confirming adherence to above standard.	

37	Miscellaneous Accessories	<p>Sun visor. rear view mirrors.</p> <p>Spare wheel</p> <p>Carrier for spare wheel and jack with handle</p> <p>Wheel brace. Seat belts (self locking)</p> <p>Towing hooks at front and rear.</p> <p>Instruction plates fixed in suitable place in compartment for the operation of engine, pumping system and a automatic fire extinguishers.</p> <p>Dip sticks with comparison tables to check the tank level.</p> <p>Two 3" flexible hoses (approx 4 meter long) with connection for suction from outer sources and filling of the tank, tool kit housing.</p> <p>Two swivel lamps /markers / search light mounted on rear to p corners.</p> <p>Compartment light stop and direction indicator light.</p> <p>Applicable safety caution marking at appropriate places (in English).</p>
38	Publication	<p>To be provided following publications along with refueller, two copies of each free of cost.</p> <p>(a) Operator manual.</p> <p>(b) Repair / maintenance manual and overhaul manual.</p> <p>(c) Parts Catalogue.</p> <p>(d) Aluminium tank repair scheme to be provided.</p>
39	Tool kit	<p>Standard tool kit comprising all the tools required for daily servicing and handling.</p> <p>Road side defects are to be provided. Tool kit specific for the maintenance of the refuelling system, complete overhaul / major servicing.</p>
40	Road / Worth	To deliver Refueller to MRF in fully road worth condition without any extra charges.
41	Spare support	<p>Provision of certificate for availability of spares for next 10 years.</p> <p>Provision of list of fast moving spares.</p> <p>One set of fast moving spare with each refueller.</p>
42	Pre Delivery / functional / acceptance inspection	<p>Four persons from purchaser (MRF) will visit to manufacturer premises to under take pre shipment / acceptance inspection and training on maintenance / operation of the refueller. All expenses including / boarding, lodging and return Air tickets are to be borne by the manufacturer.</p>
43	Acceptance criteria	<p>The Refueller will be confirmed to international safety, workmanship and functional standards, compliance with NFPA-407.</p> <p>A copy of related standard be provided to inspection team for inspection guidance.</p> <p>Inspection / functional check of complete Refueller will be carried out at firm's premises by the rep of MRF.</p> <p>To be provided a certificate indicating international aviation standard, in accordance with which the refueller fuel tank has been constructed including its material, strength and corrosion resistant properties.</p> <p>To be provided quality control dossier and original mill test certificate along with refueller.</p>
44	Delivery	06 ~ 18 months after signing the contract

SPECIFICATIONS FOR AIRCRAFT TOWING TRACTOR

S NO	DESCRIPTION	BROAD SPECIFICATION
1	Model	TR-60H.01
2	Identification	
	Capacity	2.720 Kg (6.000 Lbs)
	Model	TR-60H.01
	Carrier	The towing tractor T-06h.01 is a compact unit with towing capacity of 5000 lbs with optional kit for 6000 lbs
3	Dimensions & weights	
	Overall length	2970 mm
	Overall width, excluding mirror	1600 mm
	Overall height, with CAB	2095 mm
	Wheel-base (Front & rear)	6.5 R-10 / 7.5 R-15
	Turning radius	3680 mm
	G.V.W	4000 Kg
4	Transmission	Hydro Dynamic
		3 speeds
		2 forward and 1 backward gear
		Electrical Control gear ration 1:2, 55y / 1:1, 096 and torque converter
5	Engine	Diesel Deudz TD 2011 LO 4W, Oil cooled, 4 Cylinders, Bore stroke: 96/125 mm
		Capacity : 362 Ltrs
		Compression ratio : 18:1
		Power : 63 KW @ 2500 rpm
		Max torque : 280 Nm a 1.600 rpm
6	Rear Axle	Driver axle with parking brake
7	Chassis	Steel made high resistance
8		Extreme maneuverability
		Easy access to control components
		Easy access to engine for maintenance
9	Electrical System	Battery 12 V & 70 Ah
		DC alternator DE 55A
		Front High beams grid protected
		Rear tail lights brake and reverse
		Front & rear indicator
10	Suspension	Front and rear leaf springs
11	Steering	Hydro static power
12	Seats	Left Hand Drive
		Seat for the driver and co-driver
13	Cock Pit Instruments	Hour meter
		Fuel Gauge

		Engine Temperature gauge
		Horn
		Indicator lights
		Battery, Oil pressure, Light Indicator
14	CAB	CAB is fully closed, wide, wide screen to allow the operator to control the movement
		2 doors, with practicable screed
15	Optional Equipments	Third passenger seat with suspension
		Rotating Beacon
		Towing point operation from the CAB
		Remote approach control panel
		Front rubber bumper
		Internal rubber protection for the CAB
		Working Light
16	Pre Delivery / functional / acceptance inspection	Four persons from purchaser (MRF) will visit to manufacturer premises to under take pre shipment / acceptance inspection and training on maintenance / operation of the FCT. All expenses including / boarding, lodging and return Air tickets are to be borne by the manufacturer.

BROAD SPECIFICATIONS OF FORK LIFTER

S NO	DESCRIPTION	BROAD SPECIFICATION	
1	Model	Of latest Model	
2	Engine	Diesel, 6.7 Ltrs (6 Cylinders water cooled)	
		Displacement	6500 to 7000 CC (156 HP)
		Max. Output	116 kw /156 HP @ 2300 rpm
		Max. Torque	597 Nm @ 1500 rpm
3	Engine Protection system	Acting on low oil pressure and high coolant temperature. System initially de-rates the engine power and finally shuts down the engine. With override function for emergency situations.	
4	Cooling	Generously sized tropical cooling system (for engine transmission, brakes and Hyd system), suitable up to 50 degree C. ambient for normal operation, or up to 45 degree C. for heavy duty operation. Generously sized aluminium radiator block consists of four individual sections: 1. Charge air cooler 2. Engine coolant 3. Brake and Hyd oil 4. Transmission oil.	
5	Transmission	3-Speed auto shift transmission (Automatic Gear Shifting, type APC200 "Soft-shift" system)	
		Transmission protection system: Acting on high oil temperature. System initially de-rates the engine power and finally shutdown the engine. With override function for emergency situations.	

6	Colour	No specific colour is required	
7	Steering Power		
8	Tyre & Wheel	Bias : 10.00x20 pneumatic lug tread tyres	
9	Fork Lift System	Lifting capacity	10.000 Kg @ 600 mm l.c. with side-shift carriage 10.450 kg @ 600 mm l.c. with non side-shift carriage
10	Electrics	24 V system 70 A alternator, heavy duty 900 CCA Batteries	
11	Mast	3750 mm T.O.F. lift height "Vista" 2-stage mast, with 3630 mm lowered height with rear-mounted lift cylinders (behind the mast channels), for excellent visibility. Automatic 2-stage lift system for high lifting speeds in unladen and laden condition, Mid-High- mounted tilt system, Mast title: standard: 15° forward & 12° backwards	
12	Carriage	Standard (non-side shifting) Pin-type carriage, 2350 mm wide Without fork petitioners. Forks spread: Minimum: 75 mm in-to-in (between the forks), or 275 mm centre to centre Maximum: 2270 mm out-to-out (over the forks) or 2070 mm centre to centre	
13	Forks	2440 mm long, Pin-type forks, forks section 75 mm thick x 200 mm wide	
14	Control Functions	Mini-levers & switches control in the cab	
		Control Valves Function	
		3 way: 3 levers Maximum 6 control (6 way valve) to be provided with Mini- lever & switches: 2 are for mast lift and mast tilt. And max, 4 are for auxiliary function (aux). of these max, 4 aux functions, 2 control are proportional. The other 2 auxiliary functions are control by an on / off switch.	
15	Light kit No. 3 consisting of	2 work lights mounted on the mast, 2 rear work/driver lights on the compartment, 2 front side lights, 2 LED tail & stop lights, plus 2 LED back-up lights, 2 front fender (work) lights & orange strobe light on rear top of compartment	
		Audible back up alarm, when in reverse gear, self-adjusting with sound level of 5 dB(A) above ambient, max 112 dB(A)	
16	Fuel Tank	128 to 200 Litres	
17	Hydraulics	Leak-free ORFS (O-ring) type fitting are used throughout the whole machine. Hydraulic tank 109 litre (93 litre useable volume). Hydraulic system oil cooler, part of the 4-segment main cooler unit.	
18	Accessories / Misc	As per standard, including (a) Wheel Brace. (b) Jack with handle / rod. (c) Standard Tool Kit (d) Other accessories as per standard.	

19	TOs Publication	(a) Operation Manual. (b) Maintenance Manual. (c) Parts Catalogue.
20	Pre Delivery / functional / acceptance inspection	Four persons from purchaser (MRF) will visit to manufacturer premises to under take pre shipment / acceptance inspection and training on maintenance / operation of the FCT. All expenses including / boarding, lodging and return Air tickets are to be borne by the manufacturer.

Notes:-

1. Quotation must be submitted on '**FOB**' basis only.
2. Payment will be made as per PAC Board procedure.
3. Store be dispatched by sea.
4. Proper / safe handling of indented vehicles with stand shock during transit / shipment.
5. OEM/Supplier conformance certificate.
6. Warranty / Guarantee against DPL-15.
7. Specialist indented vehicles will be accepted after inspection by MRF Quality Control Department / concerned technical staff of MT squadron.

PAKISTAN AERONAUTICAL COMPLEX BOARD
KAMRA

SCHEDULE TO TENDER

1. **TENDER INQUIRY NO: PACB/741/63141014/0638/P-1**
2. Time and Date of opening Tender at 1100 Hrs on 08-05-2017

(1)	(2)	(3)	(4)	(5)	(6)
Item No	Part No. Description of stores with specifications	Unit of issue	Qty	Unit price	Total price

Grand Total

Signature of Tenderer
(Capacity in which signing)

UNDER TAKING
(Fill in and Return)

To,

**Member Commercial
Pakistan Aeronautical Complex Board
Kamra Distt Attock**

Dear Sir,

I/We hereby offer to supply to PAC Board the stores detailed in the Schedule to Tender or such portion thereof as you may specify in the contract at the prices given in Form **PACB – 002A** and further agree that this offer will remain valid up to _____ and will not be withdrawn or altered in terms of rates quoted and the condition stated therein on or before this date. I/We shall be bound by your communication of acceptance to be dispatched within the prescribed time.

I/We understood the instructions to Tenders and condition of contract as laid down in Form **PACB-10** titled "**General Conditions Governing Contract**" and thoroughly examine specification / drawing and / or patterns quoted in the Schedule to Tender and am/are fully aware to the nature of the stores required and my/our offer is to supply stores strictly in accordance with the requirements.

Witness's Signature:

Name:

N.I.C No.

Address:

Date:

Signature of Tenderers:

Name:

N.I.C No.

Capacity in which Signing:

Address:

Date:

Tel: Telex/Fax

SPECIAL INSTRUCTIONS

Under mentioned information must be available from your quotation else your quotation will be rejected: -

- (i) Currency of quoted price.
- (ii) Delivery period (**Not later than 06 to 18 months from signing the contract**).
- (iii) Quotation Valid up to **30 June, 2017**.
- (iv) Country of origin.
- (v) Port of shipment.
- (vi) Terms of payment are as under:-
80% on shipment and remaining 20% on CRV's with 10% Performance bank guarantee through CMA (DP) RWP.
- (vii) Name of beneficiary with complete address for Letter of Credit.
- (viii) Detail of Foreign Bank for Letter of Credit confirmation.

GENERAL CONDITIONS FOR BG

(a) To ensure timely and correct supply of stores, the firm will furnish an unconditional Bank Guarantee within 30 days of the signing of the contract from a schedule Bank for an amount of _____ i.e. 10% of the total value of the contract (on a judicial Stamp paper of the value of Rs 100/-). The Bank Guarantee shall be endorsed in favour of CMA who is the Account Officer specified in the contract. The CMA concerned shall have the like power of seeking encashment of the Bank Guarantee as if the same has been demanded by the purchase officer himself.

(b) The Bank Guarantees will be of following types with validity and amount has mentioned in each type

(i) **Bank Guarantee against contract performance** It will be between 10% of total value of contract excluding taxes/duties and freight/handling charges etc. It shall remain inforce till 60 days beyond the Delivery Period stipulated in the contract.

(ii) **Bank Guarantee against Advance/ Down Payment.** It will be equal to amount paid in advance /down payment shall remain valid till 60-days beyond the Delivery Period stipulated in the contract.

(iii) **Bank Guarantee against Warranty Period.** It will be for amount of 10% of contract value excluding taxes/duties and freight /handling charges, etc. Duration of BG against Warranty Clause is variable. Normally under DP-15, it is for one year for the general type of equipment/ spares. For consumable goods, the warrantee period should also expire after 6 months or when the goods are fully consumed whichever is earlier or as per terms of contract.

(c) If the supply of store is on warranty, the supplier shall be bound to extend the validity of Bank guarantee for such further reasonable period if so required by the purchase officer to cover the warranty period.

(d) If the supplier fails to provide the Bank guarantee within 30 days after signing a contract, such failure shall constitute a breach of contract and the Director purchase shall be entitled to make other arrangements at the risk and expense of the supplier if no other BG / Bid Security of the same supplier for an equal amount is held up for final release, with the purchaser against any other completed contract(s). In the event of unsatisfactory performance or of any breach of terms of the contract, Bank guarantee shall be forfeited to the Govt. at the discretion of the purchaser. On satisfactory performance of the contract, the Bank Guarantee will be returned to the supplier by CMA (DP) RWP on receipt of instruction from the purchaser i.e. Directorates of Procurements etc.

(e) In case of FOR tenders/contract it is imperative that BGs are obtained from firms/suppliers/agents through scheduled Banks of State Bank of Pakistan so as to safeguard the interest of the state.

(f) In case of FOB tenders/contracts, Bank Guarantee is to be obtained preferably from LC opening Bank of Pakistan and through supplier, LC opening Bank abroad. In case firm does not agree to the aforesaid condition, then BG should at least, be obtained from supplier's country Bank located in Pakistan or any enlisted scheduled Bank of Pakistan in favour of LC opening Bank in Pakistan or any scheduled Bank of Pakistan, and the same will be a Bank to Bank Guarantee in favour of CMA (DP) Rwp.