KARACHI METROPOLITAN CORPORATION

CONTRACT MANAGEMENT SECRETARIAT

1st Floor, KMC Building, M.A. Jinnah Road, Karachi

Telephone No: 021-99216095, 99216038 Fax No: 021-99216011

No. Dir(CMW)/F&A/KMC/750/2026 Karachi, Dated: 19-6-2026

SUBJECT: **NOTICE INVITING TENDER (INTERNATIONAL COMPETITIVE BIDDING THROUGH e-PADS).**

Reference: **Tender. No. 750 dated:19-06-2026.**

NOTICE INVITING TENDER (INTERNATIONAL COMPETITIVE BIDDING THROUGH e-PADS)

Contract Management Department, Karachi Metropolitan Corporation (KMC), invites electronic bids from eligible Manufacturers, Authorized Dealers, Suppliers, Joint Ventures and Firms having relevant experience, financial capability and technical expertise for the following procurement under International Competitive Bidding through the e-Pak Acquisition & Disposal System (e-PADS), in accordance with **Single Stage - two Envelope** of Sindh Public Procurement Rules, 2010 (Amended), and applicable Government procurement regulations.

Sr.#	Tender Reference No.	Name of Scheme	Bid Security in shape of Pay Order/ Demand Draft or Bank Guarantee in favour of Project Director, Local Government Project (Refundable)	Tender Cost In shape of Pay Order in favour of Project Director, Local Government Project (Non-Refundable)
1	2	3	4	5
1	750	Procurement of Fire Vehicles (various types), Aerial Ladder Platform Snorkel Type and additional equipment's Modernization of KMC Fire Brigade Department in accordance with Recognized International Standards (EN) Post-Warranty O&M including 5 years warranty & preventative maintenance.	**230.7 million**	**Rs. 3,000/-**

Interested bidders may download the bidding documents from the EPADS available at www.portalsindh.eprocure.gov.pk or through their respective e-PADS dashboards. Bidders who are not already registered with e-PADS are required to complete their registration on the system prior to submission of bids.

The bids, duly completed in all respects and signed by the authorized representative of the bidder, shall be submitted electronically through EPADS on or before **3rd August 2026 at 1 pm.**. The bids shall be opened electronically through EPADS on **3rd August 2026 at 2 pm**.

A scanned copy of the Bid Security shall be uploaded on EPADS along with the bid. The original Bid Security must be delivered to the office of **Director Contract Management, Room no: 12, 2nd Floor, KMC Head Office, MA Jinnah Road, Karachi** before the deadline for submission of bids. Any bid not accompanied by the original Bid Security within the prescribed time shall be rejected.

Detailed specifications, eligibility requirements, evaluation criteria, and other terms and conditions are provided in the bidding documents.

The Procuring Agency reserves the right to reject any bid or all bids at any time prior to the acceptance of a bid, subject to the relevant provisions of the Sindh Public Procurement Rules, 2010.

19/06/2026.

Director Contract Management,
Karachi Metropolitan
Corporation

DAWN

Dated: 20.06.2026

KARACHI METROPOLITAN CORPORATION

CONTRACT MANAGEMENT SECRETARIAT

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1	2	3	4	5
1	750	Modernization of Fire Brigade Department, KMC in accordance with recognized International Standards (EN/NFPA).	**230.7 million**	**Rs. 3,000/-**

Interested bidders may download the bidding documents from the EPADS available at www.portalsindh.eprocure.gov.pk or through their respective e-PADS dashboards. Bidders who are not already registered with e-PADS are required to complete their registration on the system prior to submission of bids.

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Director Contract Management,
Karachi Metropolitan Corporation

INF/MM/167/2026

KARACHI METROPOLITAN CORPORATION

CONTRACT MANAGEMENT SECRETARIAT

1st Floor, KMC Building, M.A. Jinnah Road, Karachi
Telephone No: 021-99216095, 99216038
Fax No: 021-99216011

No. Dir(CMW)/F&A/KMC/750/2026
Karachi, Dated: 19-06-2026

SUBJECT: NOTICE INVITING TENDER (INTERNATIONAL COMPETITIVE BIDDING THROUGH e-PADS).

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1	2	3	4	5
1	750	Modernization of Fire Brigade Department, KMC in accordance with recognized International Standards (EN/NFPA).	230.7 million	Rs. 3,000/-

THE EXPRESS TRIBUNE

Dated: 20.06.2026

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Detailed specifications, eligibility requirements, evaluation criteria, and other terms and conditions are provided in the bidding documents.

The Procuring Agency reserves the right to reject any bid or all bids at any time prior to the acceptance of a bid, subject to the relevant provisions of the Sindh Public Procurement Rules, 2010.

Director Contract Management,
Karachi Metropolitan Corporation

INF/MM/167/2026

روزنامہ اوصاف

Dated: 20.06.2026

کراچی میٹروپولیٹن کارپوریشن، کنٹریکٹ مینجمنٹ سیکرٹریٹ

پہلی منزل، کے ایم سی بلڈنگ ـــــ ایم اے جناح روڈ، کراچی
فون: 021-99216095, 99216038 فیکس: 021-99216011

نمبر Dir(CMW)/F&A/KMC/750/2026 کراچی، بتاریخ 19-06-2026

نوٹس طلبی ٹینڈر (انٹرنیشنل کمپیٹیٹو بڈنگ بذریعہ e-PADS)

حوالہ: ٹینڈر نمبر 750 بتاریخ 19-06-2026

نوٹس طلبی ٹینڈر (انٹرنیشنل کمپیٹیٹو بڈنگ بذریعہ e-PADS)

کنٹریکٹ مینجمنٹ ڈپارٹمنٹ، کراچی میٹروپولیٹن کارپوریشن (کے ایم سی) کو سندھ پبلک پروکیورمنٹ رولز، 2010 (ترمیمی) اور لاگو حکومتی پروکیورمنٹ ریگولیشنز کے مطابق e-Pak Acquisition & Disposal System (e-PADS) کے تحت درج ذیل پروکیورمنٹ کے لئے متعلقہ مہارت، مالی استعداد اور تکنیکی مہارت کے حامل اہل تیار کنندگان، مجاز ڈیلرز، جوائنٹ وینچرز اور فرموں کے الیکٹرانک پیشکشیں مطلوب ہیں۔

نمبر شمار	ٹینڈر حوالہ نمبر	اسکیم کا نام	بڈ سیکورٹی بشکل پے آرڈر/ ڈیمانڈ ڈرافٹ یا بینک گارنٹی بحق پراجیکٹ ڈائریکٹر، لوکل گورنمنٹ پراجیکٹ (قابل واپسی)	قیمت ٹینڈر بشکل پے آرڈر، بحق پراجیکٹ ڈائریکٹر، لوکل گورنمنٹ پراجیکٹ (ناقابل واپسی)
1	2	3	4	5
1	760	فائر بریگیڈ ڈپارٹمنٹ، کے ایم سی کی تسلیم شدہ بین الاقوامی معیار/(EN/NFPA) کے مطابق ماڈرنائزیشن	230.7 ملین	3,000 روپے

خواہشمند پیشکش دہندگان پیشکش دستاویزات www.portalsindh.eprocure.gov.pk پر دستیاب EPADS سے یا اپنے متعلقہ e-PADS ڈیش بورڈ سے ڈاؤن لوڈ کر سکتے ہیں۔ جو پیشکش دہندگان e-PADS پر پہلے سے رجسٹرڈ نہیں ہیں انہیں پیشکشیں جمع کرانے سے پہلے سسٹم پر اپنی رجسٹریشن مکمل کرانا ہوگی۔

ہر لحاظ سے مکمل اور پیشکش دہندہ کے مجاز نمائندہ کے دستخط کے ساتھ پیشکشیں الیکٹرانک طریقے سے EPADS کے ذریعے 3 اگست 2026 دن ایک بجے تک یا اس سے پہلے جمع کرا دی جائیں۔ پیشکشیں EPADS کے ذریعے الیکٹرانک طریقے سے 3 اگست 2026 کو دو بجے کھولی جائیں گی۔

بڈ سیکیورٹی کی سکین شدہ کاپی پیشکش کے ہمراہ EPADS پر اپ لوڈ کی جائے۔ اصل بڈ سیکیورٹی پیشکشیں جمع کرانے کی آخری تاریخ سے قبل دفتر ڈائریکٹر کنٹریکٹ مینجمنٹ، کمرہ نمبر 19، دوسری منزل، کے ایم سی ہیڈ آفس، ایم اے جناح روڈ، کراچی میں پہنچائی جائے۔ کوئی بھی پیشکش جو مقررہ وقت کے اندر اصل بڈ سیکیورٹی کے ہمراہ نہ ہو مسترد کر دی جائے گی۔

تفصیلی آئٹم جات، اہلیت کی شرائط، ایویلیوایشن کا طریقہ، معیار اور دیگر شرائط و ضوابط پیشکش دستاویزات میں دی گئی ہیں۔

پروکیورمنٹ ایجنسی سندھ پبلک پروکیورمنٹ رولز 2010 کی متعلقہ دفعات کی رو سے پیشکش کی منظوری سے قبل کسی بھی وقت کوئی ایک یا تمام پیشکشیں مسترد کرنے کا اختیار حاصل ہے۔

ڈائریکٹر کنٹریکٹ مینجمنٹ،
کراچی میٹروپولیٹن کارپوریشن

INF/MM/167/2026

روزنامہ جنگ کراچی
SATURDAY JUNE 20, 2026

Dated: 20.06.2026

کراچی میٹروپولیٹن کارپوریشن

کنٹریکٹ مینجمنٹ سیکریٹریٹ

فسٹ فلور KMC بلڈنگ M.A جناح روڈ کراچی

ٹیلیفون نمبر 021-99216095,9916038 فیکس نمبر 021-99216011

No. Dir(CMW)/F&A/KMC/750/2026 Karachi, Dated: 19-6-2026

موضوع: نوٹس طلبی ٹینڈر

(بین الاقوامی مسابقتی بڈنگ بذریعہ e-PADS)

Reference: Tender. No. 750 Dated:19-06-2026

کنٹریکٹ مینجمنٹ ڈپارٹمنٹ کراچی میٹروپولیٹن کارپوریشن (KMC) سندھ پبلک پروکیورمنٹ رولز 2010 (ترمیم شدہ) کے ایک مرحلہ۔دو لفافہ اور قابل اطلاق گورنمنٹ پروکیورمنٹ رولز کے مطابق ای پاک ایکوئزیشن اینڈ ڈسپوزل سسٹم (e-PADS) کے ذریعے بین الاقوامی مسابقتی بڈنگ کے تحت درج ذیل کے حصول کے لئے متعلقہ تجربہ، مالیاتی صلاحیت اور تکنیکی مہارت کے حامل اہل مینوفیکچررز، مجاز ڈیلر، سپلائرز، جوائنٹ وینچرز اور فرمز سے الیکٹرانک بڈز مدعو کی جاتی ہیں۔

نمبر شمار	ٹینڈر حوالہ نمبر	اسکیم کا نام	بڈ سیکورٹی: بنکل پے آرڈر/ڈیمانڈ ڈرافٹ/ بینک گارنٹی بنام پروجیکٹ ڈائریکٹر لوکل گورنمنٹ پروجیکٹ (قابل واپسی)	ٹینڈر لاگت: بنکل پے آرڈر/ڈیمانڈ ڈرافٹ/ بینک گارنٹی بنام پروجیکٹ ڈائریکٹر لوکل گورنمنٹ پروجیکٹ (قابل واپسی)
1	2	3	4	5
1	750	تسلیم شدہ بین الاقوامی معیارات (EN/NFPA) کے مطابق فائر برگیڈ ڈپارٹمنٹ KMC کی ماڈرنائزیشن	230.7 ملین	3000/- روپے

دلچسپی رکھنے والے پیشکش دہندگان بڈنگ دستاویزات www.portalsindh.eprocure.gov.pk پر دستیاب EPADS سے بذریعہ اپنے متعلقہ e-PAD ڈیش بورڈز سے ڈاؤن لوڈ کر سکتے ہیں، جو پیشکش دہندگان پہلے سے e-PADS سے رجسٹرڈ نہیں ہیں ان سے پیشکشوں کے جمع کرانے سے پہلے سسٹم پر اپنی رجسٹریشن مکمل کرنا مطلوب ہے۔

ہر لحاظ سے مکمل اور پیشکش دہندہ کے مجاز نمائندے کی جانب سے دستخط شدہ پیشکشیں بذریعہ EPADS الیکٹرونکلی 3 اگست 2026 کو بوقت سہ پہر 1:00 بجے یا قبل ازیں جمع کرانی ہوں گی۔ بذریعہ EPADS الیکٹرونکلی پیشکشیں 3 اگست 2026 کو بوقت سہ پہر 3:00 بجے کھولی جائیں گی۔

پیشکش کے ہمراہ بڈ سیکورٹی کی اسکین کردہ کاپی EPADS پر اپ لوڈ کرنی ہوگی، اصل بڈ سیکورٹی پیشکشوں کے جمع کرانے کے لئے آخری تاریخ سے پہلے لازماً دفتر ڈائریکٹر کنٹریکٹ مینجمنٹ روم نمبر 19 سیکنڈ فلور KMC ہیڈ آفس ایم اے جناح روڈ کراچی میں پہنچا دینی چاہیئے۔ مقررہ وقت کے اندر کسی پیشکش کے ساتھ اصل بڈ سیکورٹی نہ ہونے پر مسترد کر دی جائے گی۔ مفصل تصریحات، اہلیت کی ضرورتیں جانچ پڑتال کا معیار اور دیگر شرائط وضوابط بڈ دستاویزات میں مہیا کر دی گئی ہیں۔

پروکیورنگ ایجنسی کو یہ حق حاصل ہے کہ سندھ پبلک پروکیورمنٹ رولز 2010 کی متعلقہ شقوں سے مشروط پیشکش کی قبولیت سے پہلے کسی بھی وقت کسی پیشکش یا جملہ پیشکشوں کو مسترد کر دے۔

ڈائریکٹر کنٹریکٹ مینجمنٹ

کراچی میٹروپولیٹن کارپوریشن

INF/MM/167/2026

Daily AWAMI AWAZ
روزاني
عوامي آواز
سال 37_ شمارو 161 | جمعو 19 جون 2026ع 03 محرم الحرام 1448ھ | صفحا_08_قيمت 50 رپيا

ڪراچي ميٽروپوليٽن ڪارپوريشن
ڪانٽريڪٽ مئنيجمينٽ سيڪريٽريٽ

پهرين منزل، KMC بلڊنگ، M.A جناح روڊ، ڪراچي
ٽيليفون نمبر: 99216038 021-99216095، فيڪس نمبر: 021-99216011

No.DIR(CMW)/F&A/KMC/750/2026 Karachi Dated: 19.06.2026

موضوع: ٽينڈر گهرائڻ جو نوٽيس (انٽرنيشنل ڪامپيٽيٽو بڊنگ بذريعه e-PADS)

ڪراچي ميٽروپوليٽن ڪارپوريشن (KMC) جو ڪانٽريڪٽ مئنيجمينٽ ڊپارٽمينٽ، اهل مينوفيڪچررز، آٿورائيزڊ ڊيلرز، سپلائرز، جوائنٽ وينچرز ۽ فرمن کان جيڪي لاڳاپيل تجربو، مالي صلاحيت ۽ ٽيڪنيڪل ماهر آهن، اي_پاڪ ايڪوزيشن اينڊ ڊسپوزل سسٽم (e_PADS) ذريعي بين الاقوامي مقابلي واري واڪ جي تحت هيٺ ڏنل خريداري لاءِ، سنگل اسٽيج _ ٽو اينويلپ آف سنڊ پبلڪ پروڪيورمينٽ رولز، 2010 (ترميم ٿيل)، ۽ لاڳو سرڪاري خريداري ضابطن جي مطابق اليڪٽرانڪ واڪ طلب ڪري ٿو.

نمبر شمار	ٽينڈر ريفرنس نمبر	اسڪيم جو نالو	بڊ سيڪيورٽي پراجيڪٽ ڊائريڪٽر، لوڪل گورنمينٽ پراجيڪٽ جي حق ۾ پي آرڊر/ڊيمانڊ ڊرافٽ يا بينڪ گارنٽي جي صورت ۾ (قابل واپسي)	ٽينڈر لاڳت پراجيڪٽ ڊائريڪٽر، لوڪل گورنمينٽ پراجيڪٽ جي حق ۾ پي آرڊر جي صورت ۾ (ناقابل واپسي)
1	2	3	4	5
	750	تسليم ٿيل بين الاقوامي معيارن (EN/NFPA) سان مطابقت ۾ فائر برگيڊ ڊپارٽمينٽ، KMC جي جديديت.	230.7 ملين	3000 رپيا

دلچسپي رکندڙ واڪ ڏيندڙ EPADS تان واڪ دستاويز ڊائون لوڊ ڪري سگهن ٿا جيڪي www.portalsindh.eprocure.gov.pk تي موجود آهن يا انهن جي لاڳاپيل e_PADS ڊيش بورڊ ذريعي. واڪ ڏيندڙ جيڪي اڳ ۾ ئي e_PADS سان رجسٽرڊ نه آهن انهن کي واڪ جمع ڪرائڻ کان اڳ سسٽم تي پنهنجي رجسٽريشن مڪمل ڪرڻ جي ضرورت آهي.

واڪ جيڪي هر لحاظ کان مڪمل ڪيا ويندا ۽ واڪ ڏيندڙ جي بااختيار نمائندي پاران دستخط ڪيا ويندا سي 3 آگسٽ 2026 تي يا ان کان اڳ منجهند 01:00 وڳي EPADS جي ذريعي اليڪٽرانڪ طور تي جمع ڪرايا ويندا. واڪ 3 آگسٽ 2026 تي منجهند 02:00 وڳي EPADS جي ذريعي اليڪٽرانڪ طور تي کوليا ويندا.

بڊ سيڪيورٽي جي هڪ اسڪين ٿيل ڪاپي واڪ سان گڏ EPADS تي اپلوڊ ڪئي ويندي. اصل بڊسيڪيورٽي کي واڪن جي جمع ڪرائڻ جي آخري تاريخ کان اڳ ڊائريڪٽر ڪانٽريڪٽ مئنيجمينٽ، ڪمرو نمبر: 19، پهرين منزل، KMC هيڊ آفيس، M.A جناح روڊ، ڪراچي جي آفيس ۾ پهچائڻ گهرجي. مقرر ڪيل وقت اندر اصل بڊ سيڪيورٽي سان گڏ نه هجڻ واري ڪا به آڇ رد ڪئي ويندي.

تفصيلي وضاحتون، قابليت جون گهرجون، تشخيصي معيار، ۽ ٻيا شرط ۽ ضابطا واڪ دستاويزن ۾ مهيا ڪيا ويا آهن.

خريداري ايجنسي ڪنهن به واڪ يا سڀني واڪن کي ڪنهن به وقت واڪ جي قبوليت کان اڳ رد ڪرڻ جو حق محفوظ رکي ٿي، جيڪو سنڊ پبلڪ پروڪيورمينٽ رولز، 2010 جي لاڳاپيل شقن جي تابع آهي.

دستخط

ڊائريڪٽر ڪانٽريڪٽ مئنيجمينٽ
ڪراچي ميٽروپوليٽن ڪارپوريشن

INF/MM/167/2026

KARACHI METROPOLITAN CORPORATION
Media Management Department

PRESS CLIPPING

DAWN

22 JUN 2026

No.Dir/CMW/F&A/KMC/ 2026

KARACHI METROPOLITAN CORPORATION
OFFICE OF THE DIRECTOR
(CONTRACT MANAGEMENT WING-CMW)
FINANCE & ACCOUNTS DEPARTMENT

Dated: 20/06/2026

CORRIGENDUM

Original NIT Ref No. CMW/F&A/KMC/750/2026

Modernization of Fire Brigade Department, KMC in accordance with recognized International Standards (EN/NFPA)

With reference to the Notice Inviting Tender (International Competitive Bidding through e-PADS) published on 20/06/2026 in the leading newspapers i.e. Daily DAWN (English), EXPRESS Tribune (English), Jang (Urdu) and Awami Awaz (Sindhi) on 19/06/2026 under the Tender Ref No. 750/2026 dated 19-06-2026, the following amendments may be noted.

1. In addition to online submission through e-PADS, bidders shall submit the original Bidding Document Fee (Non-refundable) in favour of Karachi Metropolitan Corporation (KMC)
2. Bid Security in the form of a Pay Order or call at deposit or Demand Draft or Bank Guarantee (in original) shall be made in favour of Karachi Metropolitan Corporation (KMC) instead of Project Director, Local Government Project.
3. A scanned copy of Bidding Document Fee Pay Order shall be uploaded on e-PADS along with the bid. The original instruments must be submitted to the office of the undersigned on or before the bid submission deadline.

All other terms and conditions of the Notice Inviting Tender shall remain unchanged.

Director (Contract Management Wing)
Finance & Accounts, KMC

INF/MM.168/2026

جنگ

23 جون 2026

No.Dir/CMW/F&A/KMC/2026

کراچی میٹروپولیٹن کارپوریشن

دفتر ڈائریکٹر (کنٹریکٹ مینجمنٹ ونگ CMW)

فنانس اینڈ اکاؤنٹس ڈپارٹمنٹ

کمرہ نمبر 19، دوسری منزل، کے ایم سی ہیڈ آفس، ایم اے جناح روڈ، کراچی

فون نمبر :021-99215795 مورخہ :20-06-2026

تصحیح

اصل NIT حوالہ نمبر CMW/F&A/KMC/750/2026

تسلیم شدہ بین الاقوامی معیارات (EN/NFPA) کے مطابق

فائر بریگیڈ ڈپارٹمنٹ، کے ایم سی کی ماڈرنائزیشن

بحوالہ نوٹس طلبی ٹینڈر (ePADS کے ذریعے بین الاقوامی مسابقتی بڈنگ) شائع شدہ مورخہ :20-06-2026 کو معروف اخبارات یعنی روزنامہ ڈان (انگریزی)، ایکسپریس ٹریبیون (انگریزی) جنگ اردو اور مورخہ :19-06-2026 کو عوامی آواز (سندھی) میں بمطابق ٹینڈر حوالہ نمبر 750/2026 مورخہ :19-06-2026 میں درج ذیل ترامیم کو نوٹ کرلیا جائے۔

1-e-PADS کے ذریعے آن لائن جمع کرانے کے علاوہ پیشکش دہندگان کو اصل بڈنگ دستاویزات فیس (ناقابل واپسی) بنام کراچی میٹروپولیٹن کارپوریشن (کے ایم سی) جمع کرانی ہوگی۔

2- بڈ سیکورٹی بصورت پے آرڈر یا کال ایٹ ڈپازٹ یا ڈیمانڈ ڈرافٹ یا بینک گارنٹی (اصل) پروجیکٹ ڈائریکٹر، لوکل گورنمنٹ پروجیکٹ کے بجائے کراچی میٹروپولٹن کارپوریشن (KMC) کے نام پر بنائی جائے گی۔

3- بڈنگ دستاویزات فیس کے پے آرڈر کی ایک اسکین شدہ کاپی پیشکش کے ساتھ e-PADS پر اپ لوڈ کی جائے گی۔ اصل انسٹرومنٹس لازماً دفتر زیر دستخطی میں پیشکش جمع کرانے کی آخری تاریخ تک یا اس سے قبل جمع کرادیئے جائیں۔

نوٹس طلبی ٹینڈر کی دیگر تمام شرائط وضوابط میں کوئی تبدیلی نہیں کی گئی۔

ڈائریکٹر (کنٹریکٹ مینجمنٹ ونگ)

فنانس اینڈ اکاؤنٹس ڈپارٹمنٹ، KMC

INF/MM.168/2026

KARACHI METROPOLITAN CORPORATION

CONTRACT MANAGEMENT WING, (F&A)

Room No. 19, 2nd Floor, KMC Building, M.A. Jinnah Road, Karachi

Telephone No: 021-99216095, 99216038, 99215795 Fax No: 021-99216011

No. Dir (CMW)/F&A/KMC/750-A/2026 Karachi, Dated: 19-6-2026

SUBJECT: **NOTICE INVITING TENDER (INTERNATIONAL COMPETITIVE BIDDING THROUGH e-PADS, SPPRA PORTAL, GOVERNMENT OF SINDH).**

Reference: **Tender. No. 750 dated:19-06-2026.**

NOTICE INVITING TENDER
(INTERNATIONAL COMPETITIVE BIDDING THROUGH e-PADS SPPRA)

The Contract Management Wing, Finance & Accounts Department, Karachi Metropolitan Corporation (KMC), Province of Sindh, Pakistan invites electronic bids from eligible Manufacturers, Authorized Dealers, Suppliers, Joint Ventures and Firms having relevant experience, financial capability and technical expertise for the following procurement under International Competitive Bidding through the e-Pak Acquisition & Disposal System (e-PADS) SPPRA Portal, in accordance with **Single Stage - two Envelope** of Sindh Public Procurement Rules, 2010 (Amended), and applicable Government procurement regulations.

Sr.#	Tender Reference No.	Name of Scheme	Bid Security In shape of Pay Order or Demand Draft or Deposit at Call or Bank Guarantee in favour of Karachi Metropolitan Corporation (Refundable)	Tender Cost In shape of Pay Order in favour of Karachi Metropolitan Corporation (Non-Refundable)
1	2	3	4	5
1	750	Modernization of Fire Brigade Department, KMC in accordance with recognized International Standards (EN/NFPA).	**Rs. 230.7 million (PKR)**	**Rs. 3,000/- (PKR)**

Interested bidders may download the bidding documents from the EPADS available at www.portalsindh.eprocure.gov.pk or through their respective e-PADS dashboards. Bidders who are not already registered with e-PADS are required to complete their registration on the system prior to submission of bids.

The bids, duly completed in all respects and signed by the authorized representative of the bidder, shall be submitted electronically through EPADS SPPRA Portal on or before **3rd August 2026 at 1300 PST.** The bids shall be opened electronically through EPADS on **3rd August 2026 at 1400 PST.**

The original Bid Security and original Bidding Document Fee must be delivered to the office of the Director Contract Management Wing (F&A), KMC, Room No. 19th, 2nd Floor, KMC Head Office, M.A. Jinnah Road, Karachi, before the deadline prescribed for submission of bids. Any bid not accompanied by the original Bid Security and Bidding Document Fee within the stipulated time shall be considered non-responsive and shall be rejected.

Detailed technical specifications, scope of work, eligibility requirements, minimum qualification criteria, evaluation criteria, and all other relevant terms and conditions are provided in the Bidding Documents.

The Procuring Agency reserves the right to reject any or all bids at any time prior to the acceptance of a bid, subject to the relevant provisions of the Sindh Public Procurement Rules, 2010 (as amended).

Director (Contract Management Wing)
Finance & Accounts, KMC

Dy. Director (WEB) Computer Section, Mayor Secretariat, KMC
With a request to upload on the KMC Website (a soft copy of Bidding Document is enclosed).

C.C to: -

1. The Mayor, Karachi KMC.
2. The Municipal Commissioner, KMC
3. The Financial Advisor, KMC.
4. The Chief Fire Officer (FB), KMC.
5. Office file-2026.

Complementary to:

1. The PS to Special Secretary (Technical), LG&HTP, Govt. of Sindh.
2. The Section Officer/Dy. Secretary (Admin/Staff) LG&HTP, Govt. of Sindh.

Gulf News International
Dated: 23.06.2026

KARACHI METROPOLITAN CORPORATION
CONTRACT MANAGEMENT SECRETARIAT

1st Floor, KMC Building, M.A. Jinnah Road, Karachi
Telephone No: 021-99216095, 99216038 Fax No: 021-99216011

No. Dir(CMW)/F&A/KMC/750/2026 Karachi, Dated: 19-6-2026

SUBJECT: NOTICE INVITING TENDER (INTERNATIONAL COMPETITIVE BIDDING THROUGH E-PADS).

Reference: Tender. No. 750 Dated:19-06-2026

NOTICE INVITING TENDER (INTERNATIONAL COMPETITIVE BIDDING THROUGH e-PADS)

The Contract Management Department, Karachi Metropolitan Corporation (KMC), Province of Sindh, Pakistan invites electronic bids from eligible Manufacturers, Authorized Dealers, Suppliers, Joint Ventures and Firms having relevant experience, financial capability and technical expertise for the following procurement under International Competitive Bidding through the e-Pak Acquisition & Disposal System (e-PADS), in accordance with **Single Stage - two Envelope** of Sindh Public Procurement Rules, 2010 (Amended), and applicable Government procurement regulations.

Sr.#	Tender Reference No.	Name of Scheme	Bid Security in shape of Pay Order/ Demand Draft or Bank Guarantee in favour of Karachi Metropolitan Corporation (Refundable)	Tender Cost in shape of Pay Order in favour of Karachi Metropolitan Corporation (Non-Refundable)
1	2	3	4	5
1	750	Modernization of Fire Brigade Department, KMC in accordance with recognized International Standards (EN/NFPA).	**Rs. 230.7 million (PKR)**	**Rs. 3,000/- (PKR)**

Interested bidders may download the bidding documents from the EPADS available at www.portalsindh.eprocure.gov.pk or through their respective e-PADS dashboards. Bidders who are not already registered with e-PADS are required to complete their registration on the system prior to submission of bids.

The bids, duly completed in all respects and signed by the authorized representative of the bidder, shall be submitted electronically through EPADS on or before **3rd August 2026 at 1300 PST.** The bids shall be opened electronically through EPADS on **3rd August 2026 at 1400 PST.**

A scanned copy of the Bid Security and bidding documents fees pay order shall be uploaded on EPADS along with the bid. The original Bid Security must be delivered to the office of **Director Contract Management, Room no: 19, 2nd Floor, KMC Head Office, MA Jinnah Road, Karachi** before the deadline for submission of bids. Any bid not accompanied by the original Bid Security within the prescribed time shall be rejected.

Detailed specifications, eligibility requirements, evaluation criteria, and other terms and conditions are provided in the bidding documents.

The Procuring Agency reserves the right to reject any bid or all bids at any time prior to the acceptance of a bid, subject to the relevant provisions of the Sindh Public Procurement Rules, 2010.

Director Contract Management,
Karachi Metropolitan Corporation

INF/MM/167/2026

GOVERNMENT OF SINDH
LOCAL GOVERNMENT & HOUSING
TOWN PLANNING DEPARTMENT

No. 1059-B
Date 16.6.26

NOTIFICATION

No: LGD/TW/DDT/902(147-KMC)2026: - In pursuance of Rule-7 of the Sindh Public Procurement Rules, 2010 (as amended up to date), and on the recommendation of the Municipal Commissioner, Karachi Metropolitan Corporation, conveyed vide Letter No. PS/MC/KMC/341/2026 dated 16th June 2026, and with the approval of the Competent Authority, a **Procurement Committee (PC)** is hereby constituted for the procurement proceedings of the **"Modernization of Fire Brigade Department, KMC in accordance with recognized International Standard (EN/NFPA)"** with the following composition and Terms of Reference:

S.No	Name and Designation	Status
1.	Director General (Technical Services), KMC	Chairman
2.	Chief Fire Officer, KMC	Member
3.	Chief Engineer M&E, KMC	Member
4.	Director Contract Management, KMC	Member/ Secretary
5.	Director Machinery Pool Division, Municipal Services KMC	Member
6.	Representative of Sindh Emergency Rescue Service 1122, Rehabilitation Department (Not below the rank of BPS-18)	Member
7.	Project Engineer, Fire Brigade, KMC.	Member

Terms of Reference

1. The Committee shall act in accordance with Rule-8 (Functions and Responsibilities of Procurement Committee(s)) of the Sindh Public Procurement Rules, 2010 (as amended up to date), and shall perform the following functions, including but not limited to:
   i. Preparing and/or Reviewing bidding documents;
   ii. Carrying out technical as well as financial evaluation of the bids;
   iii. Preparing evaluation report as provided in Rule 45;
   iv. Making recommendations for the award of contract to the competent authority; and
   v. Perform any other function ancillary and incidental to the above.
2. The Chairman of the Procurement Committee may, with the approval of the Procurement Committee, co-opt any representative or technical expert from government or private organization, and may also invite a representative of any department or organization to attend the proceedings in the capacity of an observer.

- SECRETARY TO GOVERNMENT OF SINDH
LOCAL GOVERNMENT & HTP DEPARTMENT -

Continued....

No: LGD/TW/DDT/902(147-KMC)2026/1059-B Karachi, dated the: 16th June 26

A copy is forwarded for information & necessary action to: -

1. The Chairman, Planning and Development Board, GoS, Karachi
2. The Principal Secretary to Chief Minister Sindh
3. The Secretary Finance, GoS, Karachi.
4. The Managing Director, Sindh Public Procurement Regulatory Authority, GoS, Karachi.
5. The Secretary, Rehabilitation Department, **with request to nominate the representative (not below the rank of BPS-18) of Sindh Emergency Rescue Service 1122, Rehabilitation Department for the Procurement Committee.**
6. The Chairman/Member of the Procurement Committee
7. The Special Secretary (Technical) Local Govt. Department.
8. The Deputy Secretary (Staff) to Chief Secretary Sindh, Karachi.
9. PS to Minister, Local Government & HTP Department, GoS, Karachi
10. PS to Secretary Local Govt & HTP Department.
11. Office File

(IRFAN HYDER ABBASI)
DEPUTY DIRECTOR (TECHNICAL)

KARACHI METROPOLITAN CORPORATION

FINANCE & ACCOUNTS DEPARTMENT

CONTRACT MANAGEMENT WING-(CMW)

International Competitive Bidding (ICB)
Karachi, Pakistan

SINGLE STAGE – TWO ENVELOPES PROCEDURE

Based on SPP Rule 2010 (Amended up to date), Govt. of Sindh

(Part-A)

TECHNICAL DOCUMENT

NAME OF SCHEME:

"MODERNIZATION OF FIRE BRIGADE DEPARTMENT, KMC IN ACCORDANCE WITH RECOGNIZED INTERATIONAL STANDARDS (EN or NFPA)"

Estimated Cost:-	**PKR 7,190.72 Million**	**Bidding Documents Cost:**	**PKR Rs. 3,000/- (Non-refundable)**
Time Limit:-	**02 years (24 Months)**	**Penalty**	**PKR Rs. 25,000/- Per Day**
To be opened on:-	**3rd August 2026**	**Validity of Tender:**	**As per Clause 16 ITB**

PART ONE (FIXED)

- Instructions to Bidders (ITB)

- General Conditions of Contract (GCC)

Table of Contents - Part One

Part One - Section I.

Instructions to Bidders

Table of Clauses

Instructions to Bidders (ITB)

A. Introduction

1. Source of Funds

1.1 The Procuring agency from local government funds from the source(s) indicated in the bidding data / Bid Data Sheet (BDS) in various currencies towards the cost of the project /schemes specified in the bidding data and it is intended that part of the proceeds of this loan / grant / funds / will be applied to eligible payments under the contract for which these Standard Bidding Documents are issued.

1.2 Payment by the Funds will be made only at the request of the Procuring agency and upon approval by the Government of Sindh., and in case of a project will be subject in all respect to the terms and conditions of the Agreement. The Project Agreement prohibits a withdrawal from the allocated fund account for the purpose of any payment to persons or entities or for any import of goods if such payment or import, to the knowledge of the Federal Government / Sindh Government, is prohibited by a decision of the United Nations Security Council take under Chapter VII of the Charter of the United Nations. No party other than the Procuring agency shall have any rights from the Project Agreement or have any claim to the allocated fund proceeds.

2. Eligible Bidders

2.1 This Invitation for Bids is open to all suppliers from eligible source as defined in the SPP Rules,2009 and its Standard Bidding Documents except as provided hereinafter.

2.2 Bidders should not be associated, or have been associated in the past, directly or indirectly, with a firm or any of its affiliates which have been engaged by the Procuring agency to provide consulting services for the preparation of the design, specifications, and other documents to be used for the procurement of the goods to be purchased under this Invitation for Bids.

2.3 Government-owned enterprises in the Province of Sindh may participate only if they are legally and financially autonomous, if

they operate under commercial law, and if they are not a dependent agency of the Government of Sindh.

2.4 Bidders shall not be eligible to bid if they are under a declaration of ineligibility for corrupt and fraudulent practices issued by the any government organization in accordance with sub clause 34.1.

3 **Eligible Goods and Services**

3.1 All goods and related services to be supplied under the contract shall have their origin in eligible source countries, defined in the SPP Rules, 2009 and its Standard Bidding Documents, and all expenditures made under the contract will be limited to such goods and services.

3.2 For purposes of this clause, "origin" means the place where the goods are mined, grown, or produced, or the place from which the related services are supplied. Goods are produced when, through manufacturing, processing, or substantial and major assembly of components, a commercially recognized product results that is substantially different in basic characteristics or in purpose or utility from its components.

3.3 The origin of goods and services is distinct from the nationality of the Bidder.

4 **Cost of Bidding**

4.1 The Bidder shall bear all costs associated with the preparation and submission of its bid, and the Procuring agency named in the Bid Data Sheet, hereinafter referred to as "the Procuring agency," will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

B. The Standard Bidding Documents

5 **Content of Bidding Documents**

5.1 the Standard Bidding Documents include:

(a) Instructions to Bidders (ITB)
(b) Bid Data Sheet
(c) General Conditions of Contract (GCC)
(d) Special Conditions of Contract (SCC)

(e) Schedule of Requirements
(f) Technical Specifications
(g) Bid Form and Price Schedules
(h) Bid Security Form
(i) Contract Form
(j) Performance Security Form
(k) Manufacturer's Authorization Form

5.2 The Bidder is expected to examine all instructions, forms, terms, and specifications in the Standard Bidding Documents. Failure to furnish all information required by the Standard Bidding Documents or to submit a bid not substantially responsive to the Standard Bidding Documents in every respect will be at the Bidder's risk and may result in the rejection of its bid.

6 **Clarification of Bidding Documents**

6.1 An interested Bidder requiring any clarification of the bidding documents may not if the Procuring agency in writing The Procuring agency will responding writing to any request for clarification of the Standard Bidding Documents which it receives no later than three working days prior to the deadline for the submission of bids prescribed in the Bid Data Sheet. Written copies of the Procuring agency's response (including an explanation of the query but without identifying the source of inquiry) will be sent to all interested bidders that have received the bidding documents.

7 **Amendment of Bidding Documents**

7.1 At any time prior to the deadline for submission of bids, the Procuring agency, for any reason, whether at its own initiative or in response to a clarification requested by a interested Bidder, may modify the Standard Bidding Documents by amendment.

7.2 All interested bidders that have received the Standard Bidding Documents will be notified of the amendment in writing, and will be binding on them.

7.3 In order to allow interested bidders reasonable time in which to take the amendment into account in preparing their bids, the Procuring agency, at its discretion, may extend the deadline for the submission of bids.

C. Preparation of Bids

8 **Language of Bid**

8.1 The bid prepared by the Bidder, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Procuring agency shall be written in the language specified in the Bid Data Sheet. Supporting documents and printed literature furnished by the Bidder may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language specified in the Bid Data Sheet, in which case, for purposes of interpretation of the Bid, the translation shall govern

9 **Documents Comprising the Bid**

9.1 The bid prepared by the Bidder shall comprise the following components:

(a) a Bid Form and a Price Schedule completed in accordance with ITB Clauses 10, 11, and 12;
(b) documentary evidence established in accordance with ITB Clause 13 that the Bidder is eligible to bid and is qualified to perform the contract if its bid is accepted;
(c) documentary evidence established in accordance with ITB Clause14 that the goods and ancillary services to be supplied by the Bidder are eligible goods and services and conform to the Standard Bidding Documents; and
(d) bid security furnished in accordance with ITB Clause15.

10 **Bid Form**

10.1 The Bidder shall complete the Bid Form and the appropriate Price Schedule furnished in the Standard Bidding Documents, indicating the goods to be supplied, a brief description of the goods, their country of origin, quantity, and prices.

11 **Bid Prices**

11.1 The Bidder shall indicate on the appropriate Price Schedule the unit prices (where applicable) and total bid price of the goods it proposes to supply under the contract.

11.2 Prices indicated on the Price Schedule shall be Cost Insurance and Freight (CIF) Karachi prices. The price of other (incidental) services, if any, listed in the Bid Data Sheet will be entered separately.

11.3 The Bidder's separation of price components in accordance with ITB Clause 11.2 above will be solely for the purpose of facilitating the comparison of bids by the Procuring Agency and

will not in any way limit the Procuring agency's right to contract on any of the terms offered.

11.5 Prices quoted by the Bidder shall be fixed during the Bidder's performance of the contract and not subject to variation on any account, unless otherwise specified in the Bid Data Sheet. A bid submitted with an adjustable price quotation will be treated as nonresponsive and will be rejected, pursuant to ITB Clause 24. If, however, in accordance with the Bid Data Sheet, prices quoted by the Bidder shall be subject to adjustment during the performance of the contract, a bid submitted with a fixed price quotation will not be rejected, but the price adjustment would be
treated as zero.

12 **Bid Currencies**

12.1 Prices shall be quoted in Pak Rupees unless otherwise specified in the Bid Data Sheet.

13 **Documents Establishing**

Bidder's Eligibility and Qualification

13.1 Pursuant to ITB Clause 9, the Bidder shall furnish, as part of its bid, documents establishing the Bidder's eligibility to bid and its qualifications to perform the contract if its bid is accepted.

13.2 The documentary evidence of the Bidder's eligibility to bid shall establish to the Procuring agency's satisfaction that the Bidder, at the time of submission of its bid, is from an eligible country as defined under ITB Clause 2.

13.3 The documentary evidence of the Bidder's qualifications to perform the contract if its bid is accepted shall establish to the Procuring agency's satisfaction:

a) that, in the case of a Bidder offering to supply goods under
the contract which the Bidder did not manufacture or otherwise produce, the Bidder has been duly authorized by the goods' Manufacturer or producer to supply the goods in the Procuring agency's country;
b) that the Bidder has the financial, technical, and production capability necessary to perform the contract;
c) that, in the case of a Bidder not doing business within the Procuring agency's country, the Bidder is or will be (if

awarded the contract) represented by an Agent in that country equipped, and able to carry out the Supplier's maintenance, repair, and spare parts-stocking obligations
prescribed in the Conditions of Contract and / or Technical Specifications; and

d) that the Bidder meets the qualification criteria listed in the Bid Data Sheet.

14 **Documents Establishing Goods' Eligibility and Conformity to Bidding Documents**

14.1 Pursuant to ITB Clause 9, the Bidder shall furnish, as part of its bid, documents establishing the eligibility and conformity to the Standard Bidding Documents of all goods and services which the Bidder proposes to supply under the contract.

14.2 The documentary evidence of the eligibility of the goods and services shall consist of a statement in the Price Schedule of the country of origin of the goods and services offered which shall be confirmed by a certificate of origin issued at the time of shipment.

14.3 The documentary evidence of conformity of the goods and services to the Standard Bidding Documents may be in the form of literature, drawings, and data, and shall consist of:

a. detailed description of the essential technical and performance characteristics of the goods;
b. a list giving full particulars, including available sources and current prices of spare parts, special tools, etc., necessary for the proper and continuing functioning of the goods for a period to be specified in the Bid Data Sheet, following commencement of the use of the goods by the Procuring agency; and
c. an item-by-item commentary on the Procuring agency's Technical Specifications demonstrating substantial responsiveness of the goods and services to those specifications, or a statement of deviations and exceptions to the provisions of the Technical Specifications.

14.4 For purposes of the commentary to be furnished pursuant to ITB Clause14.3(c) above, the Bidder shall note that standards for workmanship, material, and equipment, as well as references to brand names or catalogue numbers designated by the Procuring agency in its Technical Specifications, are intended to be

descriptive only and not restrictive. The Bidder may substitute alternative standards, brand names, and/or catalogue numbers in
its bid, provided that it demonstrates to the Procuring agency's satisfaction that the substitutions ensure substantial equivalence
to those designated in the Technical Specifications.

15 **Bid Security**

15.1 Pursuant to ITB Clause 9, the Bidder shall furnish, as part of its bid, a bid security in the amount specified in the Bid Data Sheet.

15.2 The bid security is required to protect the Procuring agency against the risk of Bidder's conduct which would warrant the security's forfeiture, pursuant to ITB Clause 15.7.

15.3 The bid security shall be in Pak. Rupees and shall be in one of the following forms:

a) a bank guarantee or an irrevocable letter of credit issued by a reputable bank located in the Procuring agency's country, in the form provided in the Standard Bidding Documents or another form acceptable to the Procuring agency and valid for thirty (30) days beyond the validity of the bid; or
b) irrevocable encashable on-demand Bank call-deposit.

15.4 Any bid not secured in accordance with ITB Clauses 15.1 and 15.3 will be rejected by the Procuring agency as nonresponsive, pursuant to ITB Clause 24.

15.5 Unsuccessful bidders' bid security will be discharged or returned as promptly as possible but not later than thirty (30) days after the expiration of the period of bid validity prescribed by the Procuring agency pursuant to ITB Clause 16.

15.6 The successful Bidder's bid security will be discharged upon the Bidder signing the contract, pursuant to ITB Clause 32, and furnishing the performance security, pursuant to ITB Clause 33.

15.7 The bid security may be forfeited:

a) if a Bidder with draws its bid during the period of bid validity specified by the Bidder on the Bid Form; or

b) in the case of a successful Bidder, if the Bidder fails:

i. to sign the contract in accordance with ITB Clause 32;

or

ii. to furnish performance security in accordance with ITB Clause 33.

16 **Period of Validity of Bids**

16.1 Bids shall remain valid for the period specified in the Bid Data Sheet after the date of bid opening prescribed by the Procuring agency, pursuant to ITB Clause19. A bid valid for a shorter period shall be rejected by the Procuring Agency as non-responsive.

16.2 In exceptional circumstances, the Procuring agency may solicit the Bidder's consent to an extension of the period of validity. The request and the responses thereto shall be made in writing. The bid security provided under ITB Clause 15 shall also be suitably extended. A Bidder may refuse there quest without forfeiting its bid security. A Bidder granting the request will not be required nor permitted to modify its bid, except as provided in the bidding document.

17 **Format and Signing of Bid**

17.1 The Bidder shall prepare an original and the number of copies of the bid indicated in the Bid Data Sheet, clearly marking each "ORIGINAL BID" and "COPY OF BID," as appropriate. In the event of any discrepancy between them, the original shall govern.

17.2 The original and the copy or copies of the bid shall be typed or written in indelible ink and shall be signed by the Bidder or a Person or persons duly authorized to bind the Bidder to the contract. All pages of the bid, except for unamended printed literature, shall be initialled by the person or persons signing the bid.

17.3 Any interlineations, erasures, or overwriting shall be valid only if they are initialled by the person or persons signing the bid.

17.4 The Bidder shall furnish information as described in the Form of Bid on commissions or gratuities, if any, paid or to be paid to

agents relating to this Bid, and to contract execution if the Bidder is awarded the contract.

D. Submission of Bids

18 **Sealing and Marking of Bids**

18.1 The Bidder shall seal the original and each copy of the bid in separate envelopes, duly marking the envelopes as "ORIGINAL" and "COPY." The envelopes shall then be sealed in an outer envelope.

18.2 The inner and outer envelopes shall:

(a) be addressed to the Procuring agency at the address given in the Bid Data Sheet; and

(b) bear the Project name indicated in the Bid Data Sheet, the Invitation for Bids (IFB) title and number indicated in the Bid Data Sheet, and a statement: "DO NOT OPEN BEFORE," to be completed with the time and the date specified in the Bid Data Sheet, pursuant to ITB Clause 2.2.

18.3 The inner envelopes shall also indicate the name and address of the Bidder to enable the bid to be returned unopened in case it is declared "late".

18.4 If the outer envelope is not sealed and marked as required by ITB Clause 18.2, the Procuring agency will assume no responsibility for the bid's misplacement or premature opening.

19 **Deadline for Submission of Bids**

19.1 Bids must be received by the Procuring agency at the address specified under ITB Clause 18.2 no later than the time and date specified in the Bid Data Sheet.

19.2 The Procuring agency may, at its discretion, extend this deadline for the submission of bids by amending the Standard Bidding Documents in accordance with ITB Clause 7, in which case all rights and Obligations of the Procuring Agency and bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

20	**Late Bids**	20.1 Any bid received by the Procuring agency after the deadline for submission of bids prescribed by Procuring Agency pursuant to ITB Clause 19 will be rejected and returned unopened to the Bidder.
21	**Modification and Withdrawal of Bids**	21.1 The Bidder may modify or withdraw its bid after the bid's submission, provided that written notice of the modification, including substitution or withdrawal of the bids, is received by the Procuring Agency prior to the deadline prescribed for submission of bids. 21.2 The Bidder's modification or withdrawal notice shall be prepared, sealed, marked, and dispatched in accordance with the provisions of ITB Clause 18. By assigned confirmation copy, post marked not later than the deadline for submission of bids. 21.3 No bid may be modified after the deadline for submission of bids. 21.4 No bid may be withdrawn in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the Bid Form. Withdrawal of a bid during this interval may result in the Bidder's forfeiture of its bid security, pursuant to the ITB Clause 15.7.

E. Opening and Evaluation of Bids

22	**Opening of Bids by the Procuring agency**	22.1 The Procuring agency will open all bids in the presence of bidders' representatives who choose to attend, at the time, on the date, and at the place specified in the Bid Data Sheet. The bidders' representatives who are present shall sign a register evidencing their attendance.
		22.2 The bidders' names, bid modifications or withdrawals, bid prices, discounts, and the presence or absence of requisite bid security and such other details as the Procuring agency, at its discretion, may consider appropriate, will be announced at the opening. No bid shall be rejected at bid opening, except for late bids, which shall be returned unopened to the Bidder pursuant to ITB Clause 20.
		22.3 Bids (and modifications sent pursuant to ITB Clause 21.2) that are not opened and read out at bid opening shall not be considered further for evaluation, irrespective of the circumstances. Withdrawn bids will be returned unopened to the bidders.
		22.4 The Procuring agency will prepare minutes of the bid opening.
23	**Clarification of Bids**	23.1 During evaluation of the bids, the Procuring Agency may, at its discretion, ask the Bidder for a clarification of its bid. The request for clarification and the response shall be in writing, and no change in the prices or substance of the bid shall be sought, offered, or permitted.
24	**Preliminary Examination**	24.1 The Procuring agency will examine the bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and

whether
the bids are generally in order.

24.2 Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail, and the total price shall be corrected. If the Supplier does not accept the correction of the errors, its bid will be rejected, and its bid security may be forfeited. If there is a discrepancy between words and figures, the amount in words will prevail.

24.3 The Procuring Agency may waive any minor informality, nonconformity, or irregularity in a bid which does not constitute a material deviation, provided such waiver does not prejudice or affect the relative ranking of any Bidder.

24.4 Prior to the detailed evaluation, pursuant to ITB Clause 25 the Procuring Agency will determine the substantial responsiveness of each bid to the Standard Bidding Documents. For purposes of these Clauses, a substantially responsive bid is one which conforms to all the terms and conditions of the Standard Bidding Documents without material deviations. Deviations from, or objections or reservations to critical provisions, **such as** those concerning Bid Security (ITB Clause 15), Applicable Law (GCC Clause 30), and Taxes and Duties (GCCClause32), will be deemed to be a material deviation. The Procuring agency's determination of a bid's responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence.

24.5 If a bid is not substantially responsive, it will be rejected by the Procuring agency and may not subsequently be made responsive
by the Bidder by correction of the nonconformity.

25 **Evaluation and Comparison of Bids**

25.1 The Procuring Agency will evaluate and compare the bids which have been determined to be substantially responsive, pursuant to
ITB Clause 24.

25.2 The Procuring agency's evaluation of a bid will be on delivered duty paid (DDP) price inclusive of prevailing duties and will exclude any allowance for price adjustment during the period of execution of the contract, if provided in the bid.

25.3 The Procuring agency's evaluation of a bid will take into account, in addition to the bid price quoted in accordance with ITB Clause 11.2, one or more of the following factors as specified in the Bid Data Sheet, and quantified in ITB Clause 25.4:

a) incidental costs
b) delivery schedule offered in the bid;
c) deviations in payment schedule from that specified in the Special Conditions of Contract;
d) the cost of components, mandatory spare parts, and service;
e) the availability Procuring agency of spare parts and after-
sales services for the equipment offered in the bid;
f) the projected operating and maintenance costs during the
life of the equipment;
g) the performance and productivity of the equipment offered;
and/or
h) other specific criteria indicated in the Bid Data Sheet and/or in the Technical Specifications.

25.4 For factors retained in the Bid Data Sheet pursuant to ITB 25.3, one or more of the following quantification methods will be applied, as detailed in the Bid Data Sheet:

a. Incidental costs provided by the bidder will be added by Procuring agency to the delivered duty paid (DDP) price at the final destination.
b. *Delivery schedule*
    i. The Procuring agency requires that the goods under the Invitation for Bids shall be delivered at the time specified in the Schedule of Requirements which will be treated as the base, a delivery "adjustment" will be calculated for bids by applying a percentage, specified in the Bid Data Sheet, of the DDP price for each week of delay beyond the base, and this will be added to the bid price for evaluation. No credit

shall be given to early delivery.

or

ii. The goods covered under this invitation are required to be delivered (shipped) within an acceptable range of weeks specified in the Schedule of Requirement. No credit will be given to earlier deliveries, and bids offering delivery beyond this range will be treated as nonresponsive. Within this acceptable range, an adjustment per week, as specified in the Bid Data Sheet, will be added for evaluation to the bid price of bids offering deliveries later than the earliest delivery period specified in the Schedule of Requirements.

or

iii. The goods covered under this invitation are required to be delivered in partial shipments, as specified in the Schedule of Requirements. Bids offering deliveries earlier or later than the specified deliveries will be adjusted in the evaluation by adding to the bid price a factor equal to a percentage, specified in the Bid Data Sheet, of DDP price per week of variation from the specified delivery schedule.

c. *Deviation in payment schedule.* ***(Condition c(i) is applicable)***

i. Bidders shall state their bid price for the payment schedule outlined in the SCC. Bids will be evaluated on the basis of this base price. Bidders are, however, permitted to state an alternative payment schedule and indicate there duction in bid price they wish to offer for such alternative payment schedule. The Procuring agency may consider the alternative payment schedule offered by the selected Bidder.

or

ii. The SCC stipulates the payment schedule offered by the Procuring agency. If a bid deviates from the schedule and if such deviation is considered acceptable to the Procuring agency, the bid will be evaluated by calculating interest earned for any earlier payments involved in the terms outlined in the bid as compared with those stipulated in this invitation, at the rate per annum specified in the Bid

Data Sheet

d. *Cost of spare parts.*

i. The list of items and quantities of major assemblies,
components, and selected spare parts, likely to be required during the initial period of operation specified in the Bid Data Sheet, is annexed to the Technical Specifications. The total cost of these items, at the unit prices quoted in each bid ,will be added to the bid price.
or

ii. The Procuring agency will drawup a list of high-usage and high-value items of components and spare parts, along with estimated quantities of usage in the initial period of operation specified in the Bid Data Sheet. The total cost of these items and quantities will be computed from spare parts unit prices submitted by the Bidder and added to the bid price.
or

iii. The Procuring agency will estimate the cost of spare parts usage in the initial period of operation specified in the Bid Data Sheet, based on information furnished by each Bidder, as well as on past experience of the Procuring agency or other procuring agencies in similar situations. Such costs shall be added to the bid price for evaluation.

e. *Spare parts and after sales service facilities in the Procuring agency's country.*
The cost to the Procuring agency of establishing the minimum service facilities and parts inventories, as outlined in the Bid Data Sheet or elsewhere in the bidding documents, if quoted separately, shall be added to the bid price.

f. *Operating and maintenance costs.*
Since the operating and maintenance costs of the goods under procurement form a major part of the life cycle cost of the equipment, these costs will be evaluated in accordance with the criteria specified in the Bid Data Sheet or in the Technical Specifications.

g. *Performance and productivity of the equipment.*

i. Bidders shall state the guaranteed performance or
efficiency in response to the Technical Specification.
For each drop in the performance or efficiency below
the norm of 100, an adjustment for an amount specified in the Bid Data Sheet will be added to the
bid price, representing the capitalized cost of additional operating costs over the life of the plant,
using the methodology specified in the Bid Data Sheet or in the Technical Specifications.

Or

ii. Goods offered shall have a minimum productivity specified under there levant provision in the Technical Specifications to be considered responsive. Evaluation shall be based on the cost per unit of the actual productivity of goods offered in the bid, and adjustment will be added to the bid price using the methodology specified in the Bid Data Sheet or in the Technical Specifications

h. *Specific additional criteria indicated in the Bid Data Sheet and/or in the Technical Specifications.*
The relevant evaluation method shall be detailed in the Bid Data Sheet and/or in the Technical Specifications.

Alternative 25.4 Merit Point System:

The following merit point system for weighing evaluation factors can be applied if none of the evaluation methods listed in25.4 above has been retained in the Bid Data Sheet. The number of points allocated to each factor shall be specified in the Bid Data Sheet and minimum technical qualification criteria annexure.

26 **Contacting the Procuring agency**

26.1 Subject to ITB Clause 23, no Bidder shall contact the Procuring Agency on any matter relating to its bid, from the time of the bid opening to the time the contract is awarded. If the Bidder wishes to bring additional information to the notice of the Procuring agency, it should do so in writing.

26.2 Any effort by a Bidder to influence the Procuring Agency in its decisions on bid evaluation, bid comparison, or contract award may result in the rejection of the Bidder's bid.

F. Award of Contract

27 **Post-qualification**

27.1 In the absence of prequalification, the Procuring Agency will determine to its satisfaction whether the Bidder that is selected as having submitted the lowest evaluated responsive bid is qualified to perform the contract satisfactorily, in accordance with the criteria listed in ITB Clause 13.3.

27.2 The determination will take into account the Bidder's financial, technical, and production capabilities. It will be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB Clause 13.3, as well as such other information as the Procuring agency deems necessary and appropriate.

27.3 An affirmative determination will be a prerequisite for award of the contract to the Bidder. A negative determination will result in rejection of the Bidder's bid, in which event the Procuring agency will proceed to the next lowest evaluated bid to make a similar determination of that Bidder's capabilities to perform satisfactorily.

28 **Award Criteria**

28.1 Subject to ITB Clause 30, the Procuring agency will award the contract to the successful Bidder whose bid has been determined
to be substantially responsive and has been determined to be the
lowest evaluated bid, provided further that the Bidder is determined to be qualified to perform the contract satisfactorily.

29 **Procuring agency's Right to Vary**

29.1 The Procuring Agency reserves the right at the time of contract award to increase or decrease, by the percentage indicated in the
Bid Data Sheet, the quantity of goods and services originally

	Quantities at Time of Award		specified in the Schedule of Requirements without any change in unit price or other terms and conditions.
30	**Procuring agency's Right to Accept any Bid and to Reject any or All Bids**	30.1	The Procuring agency reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to contract award, without thereby incurring any liability to the affected Bidder or bidders or any obligation to inform the affected Bidder or bidders of the grounds for the Procuring agency's action.
31	**Notification of Award**	31.1	Prior to the expiration of the period of bid validity, the Procuring Agency will notify the successful Bidder in writing by registered letter or by cable, to be confirmed in writing by registered letter, that its bid has been accepted.
		31.2	The notification of award will constitute the formation of the Contract.
		31.3	Upon the successful Bidder's furnishing of the performance security pursuant to ITB Clause 33, the Procuring agency will promptly notify each unsuccessful Bidder and will discharge its bid security, pursuant to ITB Clause 15.
32	**Signing of Contract**	32.1	At the same time as the Procuring agency notifies the successful Bidder that its bid has been accepted, the Procuring Agency will send the Bidder the Contract Form provided in the bidding documents, incorporating all agreements between the parties.
		32.2	Within thirty (30) days of receipt of the Contract Form, the successful Bidder shall sign and date the contract and return it to the Procuring agency.
33	**Performance Security**	33.1	Within twenty (20) days of the receipt of notification of award from the Procuring agency, the successful Bidder shall furnish the performance security in accordance with the Conditions of Contract, in the Performance Security Form provided in the Standard Bidding Documents, or in another form acceptable to the Procuring agency.
		33.2	Failure of the successful Bidder to comply with the requirement of ITB Clause 32 or ITB Clause 33.1 shall constitute sufficient grounds for the annulment of the award and forfeiture of the bid security, in which event the Procuring agency may make the award to the next lowest evaluated Bidder or call for new bids.

34 **Corrupt or Fraudulent Practices**

34.1 The Government of Sindh requires that Procuring agency's (including beneficiaries of donor agencies' loans), as well as Bidders / Suppliers / Contractors under Government-financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, the SPPRA, in accordance with the SPP Act, 2009 and Rules made thereunder:

a. defines, for the purposes of this provision, the terms set forth below as follows:

(i) "corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement processor in contract execution; and

(ii) "fraudulent practice" means a misrepresentation of facts in order to influence a procurement processor the execution of a contract to the detriment of the Procuring agency, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Procuring Agency of the benefits of free and open competition;

b. will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;

c. will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a Government-financed contract if it at any time determines that the firm has engaged in corruptor fraudulent practices in competing for, or in executing, a Government-financed contract.

34.2 Furthermore, Bidders shall be aware of the provision stated in sub-clause 5.4 and sub-clause 24.1 of the General Conditions of Contract.

Part One - Section II.

General Conditions of Contract

Table of Clauses

General Conditions of Contract

1 **Definitions**

1.1 In this Contract, the following terms shall be interpreted as indicated:

a) "The Contract" means the agreement entered into between the Procuring agency and the Supplier, as recorded in the Contract Form signed by the parties, including all attachments and appendices there to and all documents incorporated by reference therein.
b) "The Contract Price" means the price payable to the Supplier under the Contract for the full and proper performance of its contractual obligations.
c) "The Goods" means all of the equipment, machinery, and / or other materials which the Supplier is required to supply to the Procuring agency under the Contract.
d) "The Services" means those services ancillary to the supply of the Goods, such as transportation and insurance, and any other incidental services, such as installation, commissioning, provision of technical assistance, training, and other such obligations of the Supplier covered under the Contract.
e) "GCC" means the General Conditions of Contract contained in this section.
f) "SCC" means the Special Conditions of Contract.
g) "The Procuring agency" means the organization purchasing the Goods, as named in SCC
h) "The Procuring agency's country" is the country named in SCC.
i) "The Supplier" means the individual or firm supplying the Goods and Services under this Contract.
j) ".The Project Site," where applicable, means the place or places named in SCC
k) "Day" means calendar day

2 **Application**

2.1 These General Conditions shall apply to the extent that they are not superseded by provisions of other parts of the Contract.

3	**Country of Origin**	3.1	All Goods and Services supplied under the Contract shall have their origin in the countries and territories eligible under the rules and `further elaborated in the SCC.
		3.2	For purposes of this Clause, "origin" means the place where the Goods were mined, grown, or produced, or from which the Services are supplied. Goods are produced when, through manufacturing, processing, or substantial and major assembly of components, a commercially recognized new product results that is substantially different in basic characteristics or in purpose or utility from its components.
		3.3	The origin of Goods and Services is distinct from the nationality of the Supplier
4	**Standards**	4.1	The Goods supplied under this Contract shall conform to the standards mentioned in the Technical Specifications, and, when no applicable standard is mentioned, to the authoritative standards appropriate to the Goods' country of origin. Such standards shall be the latest issued by the concerned institution.
5	**Use of Contract Documents and Information; Inspection and Audit by the Government**	5.1	The Supplier shall not, without the Procuring agency's prior written consent, disclose the Contract, or any provision thereof, or any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of the Procuring agency in connection there with, to any person other than a person employed by the Supplier in the performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.
		5.2	The Supplier shall not, without the Procuring agency's prior written consent, make use of any document or information enumerated in GCC Clause 5.1 except for purposes of performing the Contract.
		5.3	Any document, other than the Contract itself, enumerated in GCC Clause 5.1 shall remain the property of the Procuring agency and shall be returned (all copies) to the Procuring

agency on completion of the Supplier's performance under the Contract if so required by the Procuring agency.

5.4 The Supplier shall permit the Procuring agency to inspect the Supplier's accounts and records relating to the performance of the Supplier and to have them audited by auditors appointed by the procuring agency, if so required.

6 **Patent Rights**

6.1 The Supplier shall indemnify the Procuring agency against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the Goods or any part thereof in the Procuring agency's country

7 **Performance Security**

7.1 Within twenty (20) days of receipt of the notification of Contract award, the successful Bidder shall furnish to the Procuring agency the performance security in the amount specified in SCC.

7.2 The proceeds of the performance security shall be payable to the Procuring agency as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.

7.3 The performance security shall be denominated in the currency of the Contract acceptable to the Procuring agency and shall be in one of the following forms:

a) a bank guarantee or an irrevocable letter of credit issued by a reputable bank located in the Procuring agency's country, in the form provided in the Standard Bidding Documents or another form acceptable to the Procuring agency; or
b) a cashier's or certified check.

7.4 The performance security will be discharged by the Procuring agency and returned to the Supplier not later than thirty (30) days following the date of completion of the Supplier's performance obligations under the Contract, including any warranty obligations, unless specified otherwise in SCC.

8 **Inspections and Tests**

8.1 The Procuring agency or its representative shall have the right to inspect and / or to test the Goods to confirm their

conformity to the Contract specifications at no extra cost to the Procuring agency. SCC and the Technical Specifications shall specify what inspections and tests the Procuring agency requires and where they are to be conducted. The Procuring agency shall notify the Supplier in writing, inatimely manner, of the identity of any representatives retained for these purposes.

8.2 The inspections and tests may be conducted on the premises of the Supplier or its subcontractor(s), at point of delivery, and/or at the Goods' final destination. If conducted on the premises of the Supplier or its subcontractor(s),all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to the Procuring agency.

8.3 Should any inspected or tested Goods fail to conform to the Specifications, the Procuring agency may reject the Goods, and the Supplier shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to the Procuring agency.

8.4 The Procuring agency's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival in the Procuring agency's country shall in no way be limited or waived by reason of the Goods having previously been inspected, tested, and passed by the Procuring agency or its representative prior to the Goods' shipment from the country of origin.

8.5 Nothing in GCC Clause 8 shall in any way release the Supplier from any warranty or other obligations under this Contract.

9 **Packing**

9.1 The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the Contract. The packing shall be sufficient to with stand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packing casesize and weights shall take into consideration, where appropriate, there muteness of

the Goods' final destination and the absence of heavy handling facilities at all points in transit.

9.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements, if any, specified in SCC, and in any subsequent instructions ordered by the Procuring agency.

10 **Delivery and Documents**

10.1 Delivery of the Goods shall be made by the Supplier in accordance with the terms specified in the Schedule of Requirements. The details of shipping and/or other documents to be furnished by the Supplier are specified in SCC.

10.2 Documents to be submitted by the Supplier are specified in SCC.

11 **Insurance**

11.1 The Goods supplied under the Contract shall be delivered Cost, Insurance and Freight (CIF) under which risk is transferred to the buyer after having been delivered, hence insurance coverage is sellers responsibility.

12 **Transportation**

12.1 The Supplier is required under the Contact to transport the Goods to a specified place of destination within the Procuring agency's country, transport to such place of destination in the Procuring agency's country, including insurance and storage, as shall be specified in the Contract, shall be arranged by the Supplier, and related costs shall be included in the Contract Price.

13 **Incidental Services**

13.1 The Supplier may be required to provide any or all of the following services, including additional services, if any, specified in SCC:

a) performance or supervision of on-site assembly and / or start-up of the supplied Goods;
b) furnishing of tools required for assembly and / or maintenance of the supplied Goods;
c) furnishing of a detailed operations and maintenance manual

for each appropriate unit of the supplied Goods;

d) performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Supplier of any warranty obligations under this Contract; and
e) training of the Procuring agency's personnel, at the Supplier's plant and / or on-site, in assembly, start-up, operation, maintenance, and / or repair of the supplied Goods.

13.2 Prices charged by the Supplier for incidental services, if not included in the Contract Price for the Goods, shall be agreed upon in advance by the parties and shall not exceed the pre vailingrates charged for other parties by the Supplier for similar services.

14 **Spare Parts**

14.1 As specified in SCC, the Supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier

a) such spare parts as the Procuring agency may elect to purchase from the Supplier, provided that this election shall not relieve the Supplier of any warranty obligations under the Contract; and
b) in the event of termination of production of the spare parts:
    i. advance notification to the Procuring agency of the pending termination, in sufficient time to permit the Procuring Agency to procure needed requirements; and
    ii. following such termination, furnishing at no cost to the Procuring agency, the blueprints, drawings, and specifications of the spare parts, if requested

15 **Warranty**

15.1 The Supplier warrants that the Goods supplied under the Contract are new, unused, of the most recent or current models, and that they incorporate all recent improvements in design and materials unless provided otherwise in the Contract. The Supplier further warrants that all Goods supplied under this Contract shall have no defect, arising from design, materials, or workmanship (except when the

design and/or material is required by the Procuring agency's specifications) or from any act or omission of the Supplier, that may develop under normal use of the supplied Goods in the conditions prevailing in the country of final destination

15.2 This warranty shall remain valid for twelve (12) months after the Goods or any portion there of as the case may be have been delivered to and accepted at the final destination indicated in the Contract, or for eighteen (18) months after the date of shipment from the port or place of loading in the source country, whichever period concludes earlier, unless specified otherwise in SCC.

15.3 The Procuring agency shall promptly notify the Supplier in writing of any claims arising under this warranty.

15.4 Upon receipt of such notice, the Supplier shall, within the period specified in SCC and with all reasonable speed, repair or replace the defective Goods or parts thereof, without costs to the Procuring agency.

15.5 If the Supplier, having been notified, fails to remedy the defect(s) within the period specified in SCC, within a reasonable period, the Procuring Agency may proceed to take such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Procuring agency may have against the Supplier under the Contract.

16 **Payment**

16.1 The method and conditions of payment to be made to the Supplier under this Contract shall be specified in SCC.

16.2 The Supplier's request(s) for payment shall be made to the Procuring agency in writing, accompanied by an invoice describing, as appropriate, the Goods delivered and Services performed, and by documents submitted pursuant to GCC Clause 10, and upon fulfillment of other obligations stipulated in the Contract.

16.3 Payments shall be made promptly by the Procuring agency, but in no case later than sixty (60) days after submission of an invoice or claim by the Supplier.

16.4 The currency of payment is Pak. Rupees.

17 **Prices**

17.1 Prices charged by the Supplier for Goods delivered and Services performed under the Contract shall not vary from the prices quoted by the Supplier in its bid, with the exception of any price adjustments authorized in SCC or in the Procuring agency's request for bid validity extension, as the case may be.

18 **Change Orders**

18.1 The Procuring agency may at any time, by a written order given to the Supplier pursuant to GCC Clause 31, make changes within the general scope of the Contract in anyone or more of the following:

a) drawings, designs, or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Procuring agency;
b) the method of shipment or packing;
c) the place of delivery; and/or
d) the Services to be provided by the Supplier.

18.2 If any such change causes an increase or decrease in the cost of, or the time required for, the Supplier's performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or delivery schedule, or both, and the Contract shall accordingly be amended. Any claims by the Supplier for adjustment under this clause must be asserted within thirty (30) days from the date of the Supplier's receipt of the Procuring agency's change order.

19 **Contract Amendments**

19.1 Subject to GCC Clause 18, no variation in or modification of the terms of the Contract shall be made except by written amendment signed by the parties.

20	**Assignment**	20.1	The Supplier shall not assign, in whole or in part, its obligations to perform under this Contract, except with the Procuring agency's prior written consent.
21	**Subcontracts**	21.1	The Supplier shall notify the Procuring agency in writing of all subcontracts awarded under this Contract if not already specified in the bid. Such notification, in the original bid or later, shall not relieve the Supplier from any liability or obligation under the Contract.
		21.2	Subcontracts must comply with the provisions of GCC Clause 3.
22	**Delays in the Supplier's Performance**	22.1	Delivery of the Goods and performance of Services shall be made by the Supplier in accordance with the time schedule prescribed by the Procuring agency in the Schedule of Requirements.
		22.2	If at any time during performance of the Contract, the Supplier or its subcontractor(s) should encounter conditions impeding timely delivery of the Goods and performance of Services, the Supplier shall promptly notify the Procuring agency in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the Supplier's notice, the Procuring agency shall evaluate the situation and may at its discretion extend the Supplier's time for performance, with or without liquidated damages, in which case the extension shall be ratified by the parties by amendment of Contract
		22.3	Except as provided under GCC Clause 25, a delay by the Supplier in the performance of its delivery obligations shall render the Supplier liable to the imposition of liquidated damages pursuant to GCC Clause 23, unless an extension of time is agreed upon pursuant to GCC Clause 22.2 without the application of liquidated damages
23	**Liquidated Damages**	23.1	Subject to GCC Clause 25, if the Supplier fails to deliver any or all of the Goods or to perform the Services within the period(s) specified in the Contract, the Procuring agency shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as liquidated

damages, a sum equivalent to the percentage specified in SCC of the delivered price of the delayed Goods or unperformed Services for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of the percentage specified in SCC. Once the maximum is reached, the Procuring agency may consider termination of the Contract pursuant to GCC Clause 24.

24 **Termination for Default**

24.1 The Procuring agency, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the
Supplier, may terminate this Contract in whole or in part:

a) if the Supplier fails to deliver any or all of the Goods within the period(s) specified in the Contract, or within any extension thereof granted by the Procuring agency pursuant to GCC Clause 22; or
b) if the Supplier fails to perform any other obligation(s) under the Contract.
c) if the Supplier, in the judgment of the Procuring agency has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.

For the purpose of this clause:

"corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution.

"fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition.

24.2 In the event the Procuring agency terminates the Contract in whole or in part, pursuant to GCC Clause 24.1, the Procuring agency may procure, upon such terms and in such manner as it deems appropriate, Goods or Services similar to those un

delivered, and the Supplier shall be liable to the Procuring agency for any excess costs for such similar Goods or Services. However, the Supplier shall continue performance of the Contract to the extent not terminated.

25 **Force Majeure**

25.1 Notwithstanding the provisions of GCC Clauses 22, 23, and 24, the Supplier shall not be liable for forfeiture of its performance security, liquidated damages, or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

25.2 For purposes of this clause "Force Majeure" means an event beyond the control of the Supplier and not involving the Supplier's fault or negligence and not fore seeable. Such events may include, but are not restricted to, acts of the Procuring agency in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.

25.3 If a Force Majeure situation arises, the Supplier shall promptly notify the Procuring agency in writing of such condition and the cause there of Unless otherwise directed by the Procuring agency in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

26 **Termination for Insolvency**

26.1 The Procuring agency may at any time terminate the Contract by giving written notice to the Supplier if the Supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the Procuring agency.

27 **Termination for Convenience**

27.1 The Procuring agency, by written notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Procuring agency's convenience,

the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.

27.2 The Goods that are complete and ready for shipment within thirty (30) days after the Supplier's receipt of notice of termination shall be accepted by the Procuring agency at the Contract terms and prices. For the remaining Goods, the Procuring agency may elect:

a) to have any portion completed and delivered at the Contract terms and prices; and/or
b) to cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and Services and for materials and parts previously procured by the Supplier.

28 **Resolution of Disputes**

28.1 The Procuring agency and the Supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.

28.2 If, after thirty (30) days from the commencement of such informal negotiations, the Procuring agency and the Supplier have been unable to resolve amicably a Contract dispute, either party may require that the dispute be referred for resolution to the formal mechanisms specified in SCC. These mechanisms may include, but are not restricted to, conciliation mediated by a third party, adjudication in an agreed manner and/or arbitration.

29 **Governing Language**

29.1 The Contract shall be written in the language specified in SCC. Subject to GCC Clause 30, the version of the Contract written in the specified language shall govern its interpretation. All correspondence and other documents pertaining to the Contract which are exchanged by the parties shall be written in the same language.

30 **Applicable Law**

30.1 The Contract shall be interpreted in accordance with the laws of the Procuring agency's country, unless otherwise specified in SCC.

31	**Notices**	31.1	Any notice given by one party to the other pursuant to this Contract shall be sent to the other party in writing or by cable, telex, or facsimile and confirmed in writing to the other party's address specified in SCC.
		31.2	A notice shall be effective when delivered or on the notice's effective date, whichever is later.
32	**Taxes and Duties**	32.1	Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted Goods to the Procuring agency.

PART TWO (PROCUREMENT SPECIFIC PROVISIONS)

- Invitation for Bids (IFB)
- Bid Data Sheet (BDS)
- Special Conditions of Contract (SCC)
- Scope of Works – (SoW)
- Schedule of Requirements
- Eligibility and Minimum Technical Qualification Criteria.
- Price Schedule / Bill of Quantities-BoQ
- Technical Specifications
- Sample Form

Table of Contents - Part Two

Part Two

Section I. Invitation for Bids

Annexure "A"

KARACHI METROPOLITAN CORPORATION

CONTRACT MANAGEMENT WING, (F&A)
Room No. 19, 2nd Floor, KMC Building, M.A. Jinnah Road, Karachi
Telephone No: 021-99216095, 99216038, 99215795 Fax No: 021-99216011

No. Dir (CMW)/F&A/KMC/750-A/2026 Karachi, Dated: 19-6-2026

SUBJECT: **NOTICE INVITING TENDER (INTERNATIONAL COMPETITIVE BIDDING THROUGH e-PADS, SPPRA PORTAL, GOVERNMENT OF SINDH).**

Reference: Tender. No. 750 dated:19-06-2026.

NOTICE INVITING TENDER
(INTERNATIONAL COMPETITIVE BIDDING THROUGH e-PADS SPPRA)

The Contract Management Wing, Finance & Accounts Department, Karachi Metropolitan Corporation (KMC), Province of Sindh, Pakistan invites electronic bids from eligible Manufacturers, Authorized Dealers, Suppliers, Joint Ventures and Firms having relevant experience, financial capability and technical expertise for the following procurement under International Competitive Bidding through the e-Pak Acquisition & Disposal System (e-PADS) SPPRA Portal, in accordance with **Single Stage - two Envelope** of Sindh Public Procurement Rules, 2010 (Amended), and applicable Government procurement regulations.

Sr.#	Tender Reference No.	Name of Scheme	Bid Security in shape of Pay Order or Demand Draft or Deposit at Call or Bank Guarantee in favour of Karachi Metropolitan Corporation (Refundable)	Tender Cost In shape of Pay Order in favour of Karachi Metropolitan Corporation (Non-Refundable)
1	2	3	4	5
1	750	Modernization of Fire Brigade Department, KMC in accordance with recognized International Standards (EN/NFPA).	**Rs. 230.7 million (PKR)**	**Rs. 3,000/- (PKR)**

Interested bidders may download the bidding documents from the EPADS available at www.portalsindh.eprocure.gov.pk or through their respective e-PADS dashboards. Bidders who are not already registered with e-PADS are required to complete their registration on the system prior to submission of bids.

The bids, duly completed in all respects and signed by the authorized representative of the bidder, shall be submitted electronically through EPADS SPPRA Portal on or before **3rd August 2026 at 1300 PST.** The bids shall be opened electronically through EPADS on **3rd August 2026 at 1400 PST**.

The original Bid Security and original Bidding Document Fee must be delivered to the office of the Director Contract Management Wing (F&A), KMC, Room No. 19th, 2nd Floor, KMC Head Office, M.A. Jinnah Road, Karachi, before the deadline prescribed for submission of bids. Any bid not accompanied by the original Bid Security and Bidding Document Fee within the stipulated time shall be considered non-responsive and shall be rejected.

Detailed technical specifications, scope of work, eligibility requirements, minimum qualification criteria, evaluation criteria, and all other relevant terms and conditions are provided in the Bidding Documents.

The Procuring Agency reserves the right to reject any or all bids at any time prior to the acceptance of a bid, subject to the relevant provisions of the Sindh Public Procurement Rules, 2010 (as amended).

Sd/=

Director (Contract Management Wing)
Finance & Accounts, KMC

Section II.

Bid Data Sheet

Annexure "B"

Bid Data Sheet

The following specific data for the goods to be procured shall complement, supplement, or amend the provisions in the Instructions to Bidders (ITB) Part One. Whenever there is a conflict, the provisions herein shall prevail over those in ITB.

Introduction

ITB 1.1	Karachi Metropolitan Corporation Through its Director, Contract Management Wing, Finance & Accounts, Karachi Metropolitan Corporation.
ITB 1.1	Modernization of Fire Brigade Department, KMC in accordance with Recognized International Standards (EN/NFPA) including 5 Years Warranty & Preventative Maintenance
ITB 4.1	Karachi Metropolitan Corporation Through its Director, Contract Management Wing, Finance & Accounts, Karachi Metropolitan Corporation
ITB 6.1	3
ITB 8.1	English

Bid Price and Currency

ITB 11.2	The price quoted shall be on Cost, Insurance, and Freight (CIF) Any Port in Karachi. The Bid must clearly state which Currency is being used in the Price Schedule. **(For Foreign Manufacturer)**
ITB 11.5	The price shall be fixed

Preparation and Submission of Bids

ITB 13.3 (d)	Minimum Qualification requirements is attached herewith below **As attached at Annexure "D"**
ITB 14.3 (b)	Spare parts required for five (05) years of operation.
ITB 15.1	**As Mentioned in Notice Inviting Tender (NIT).**

ITB 16.1	Bid validity period 120 days which can be extended for further 30 or 90 days as per SPP Rules 2010 (amended up to date).
ITB 17.1	One original plus Nil copies.
ITB 18.2 (a)	Address for bid submission. **As Mentioned in Notice Inviting Tender (NIT) Viz.** Address: Room-19 2nd Floor Main KMC Head Office Building M. A. Jinnah Road Karachi. Ph # 021-99215795. Email Address:**directorcm15@gmail.com** All communications for any queries, clarifications or additional information regarding this tender document, bidder are advised to contact with the PA at the above address, telephone number & email address. Tender reference number must be mentioned in all correspondences / communications.
ITB 18.2 (b)	Modernization of Fire Brigade Department, KMC in accordance with Recognized International Standards (EN/NFPA) including 5 Years Warranty & Preventative Maintenance
ITB 19.1	Deadline for bid submission. **As Mentioned in Notice Inviting Tender (NIT) Viz.** Address: Room-19 2nd Floor Main KMC Head Office Building M. A. Jinnah Road Karachi. Ph # 021-99215795.
ITB 22.1	Time, date, and place for bid opening. **As Mentioned in Notice Inviting Tender (NIT).**

Bid Evaluation

ITB 25.3	Criteria for bid evaluation. **As attached at Annexure "D".**
ITB 25.4 (a)	**Not Applicable in this case.**
ITB 25.4 (b)	***Delivery schedule***. **12 Months.** In the event of failure by the Contractor to adhere to the prescribed delivery schedule, liquidated damages at the rate of PKR 25,000 (Pak Rupees Twenty-Five Thousand only) per calendar day of delay shall be imposed, without prejudice to any other rights or remedies available to KMC under the Contract or applicable law." Or
Option (i)	Price Adjustment for evaluation purpose is Rs. 0.5% per week delay over & above 10-12 months, (adjustment expressed in an amount in the currency of bid evaluation), **or**
Option (ii)	adjustment expressed as a percentage
Option (iii)	*[A rate of one-half (0.5) percent per week is a reasonable figure. The percentage of liquidated damages specified in SCC should be higher.]*

ITB 25.4 (c) (ii) Deviation in payment schedule. Yes / No
Annual interest rate_____ (Applicable / Not Applicable)

ITB 25.4 (d) Cost of spare parts.
***For 5 years operation on period of Quoted bid for All Months or its parts*.**

ITB 25.4 (e) Spare parts and after sales service facilities in the Procuring agency's country. **Reflected in Qualification Criteria**

*[Minimum service facilities and parts inventories **or** reference to the Technical Specifications.]*

ITB 25.4 (f) Operating and maintenance costs.

i. Life Cycle Period: The life cycle period shall be ten (10) years from the date of commissioning or the normal service life of the Goods before a planned major overhaul, whichever is earlier.

ii. Operating Costs: Operating costs shall include fuel, electricity, lubricants, consumables, operators' requirements and all other operational inputs necessary for the intended use of the Goods, based on the annual consumption and prevailing market rates.

iii. Maintenance Costs: Maintenance costs shall include routine and preventive maintenance, replacement of spare parts, consumables, servicing, repairs and all other maintenance inputs required during the life cycle of the Goods.

Preventive maintenance shall be provided for a period of 5 years subject to annual renewal base on contractors satisfactory performance

Where applicable, the Life Cycle Cost shall be evaluated in accordance with the methodology specified in the Technical Specifications
[The contractual liquidated damages specified in the SCC shall be higher than the evaluation advantage.]

ITB 25.4 (g) Performance and productivity of equipment.
The performance and productivity of the equipment shall be evaluated in accordance with the criteria, guaranteed values and methodology specified in the Technical Specifications. Any adjustment for performance or productivity shall be made in Pakistani Rupees (PKR) solely for the purpose of bid evaluation.

[Specify the applicable procedure and the adjustment factor (in the currency used for bid evaluation, as applicable), as required. The adjustment factor should apply to the norm that shall be used and that shall either be specified in the Technical Specifications or shall be the value committed in the responsive bid with the best guaranteed performance or productivity; the contractual liquidated damages specified in the SCC shall be higher than the evaluation advantage.]

ITB 25.4 (h) The detailed evaluation criteria and methodology are provided in Annexure "F". Where detailed quantification is impracticable or unjustified due to the nature or value of the procurement, evaluation shall be carried out in accordance with the Technical Specifications.

ITB 25.4 Alternative Specify the evaluation factors.
[The method shall be used only when a more elaborate quantification is either impractical or unjustified due to the small value of the procurement.]

Contract Award

ITB 29.1 Percentage for quantity increase or decrease. $\pm$ 15%

Section III. Special Conditions of Contract

Table of Clauses

Annexure "C"

Special Conditions of Contract

The following Special Conditions of Contract shall supplement the General Conditions of Contract. Whenever there is a conflict, the provisions herein shall prevail over those in the General Conditions of Contract. The corresponding clause number of the GCC is indicated in parentheses.

1. Definitions (GCC Clause 1)

GCC 1.1 (g)—The Procuring agency is: Karachi Metropolitan Corporation

GCC 1.1 (h)—The Procuring agency's country is: Pakistan

GCC 1.1 (i)—The Lowest Evaluated Responsive Bidder will be the Supplier.

GCC 1.1 (j)—The site of handing over the procured equipments / machinery / vehicles shall be the concerned office of the Head of the Fire Brigade Department, KMC.

2. Country of Origin (GCC Clause 3)

All countries and territories as indicated in Part Two Section VI of the bidding documents, "Eligibility for the Provisions of Goods, Works, and Services in Government-Financed Procurement".

3. Performance Security (GCC Clause 7)

GCC 7.1—The amount of performance security, as a percentage of the Contract Price, shall be 10% in shape of Bank Guarantee issued / counter issued by schedule bank of Pakistan.
GCC 7.4—After delivery and acceptance of the Goods, the performance security shall be reduced to two (2) percent of the Contract Price to cover the Supplier's warranty obligations in accordance with Clause GCC 15.2.

4. Inspections and Tests (GCC Clause 8)

GCC 8.6—Inspection and tests as follows:

(i) Third Party Inspection by SGS / TUV / COTECNA / Lloyds to be held at Manufacturer's Factory with final acceptance by KMC / GOS prior to shipment / delivery of Goods

5. Packing (GCC Clause 9)

GCC 9.3—The following SCC shall supplement GCC Clause 9.2:

6. Delivery and Documents (GCC Clause 10)

GCC 10.3—Upon shipment through the **Cost, insurance, and freight (CIF)** Incoterm under Incoterms 2010 edition or as selected by the client, the Supplier shall notify the Procuring Agency of the full details of the shipment, including Contract number, description of Goods,

quantity and usual transport document. The Supplier shall mail the following documents to the Procuring agency:

(i) copies of the Supplier's invoice showing Goods' description, quantity, unit price, and total amount;

(ii) original and two copies of the usual transport document (for example, a negotiable bill of landing, a non-negotiable sea waybill, an inland waterway document, an air waybill, a railway consignment note, a road consignment note, or a multimodal transport document) which the buyer may require to take the goods;

(iii) copies of the packing list identifying contents of each package;

(v) Manufacturers or Suppliers warranty certificate;

(vi) third party inspection report issued by either SGS / TUV / COTECNA / Lloyds;

(vii) certificate of origin.

7. Insurance (GCC Clause 11)

GCC 11.1—The Goods supplied under the Contract shall be **Cost, insurance, and freight (CIF).** However, Clause 10 of the National Insurance Corporation Act of 1976 only sanctions the provision of insurance of government assets through the National Insurance Company Limited (NICL). Therefore, GOS will arrange and pay for transit insurance from Foreign's Factory to GOS Stores in Karachi.

8. Incidental Services (GCC Clause 13)

GCC 13.1—Incidental services to be provided are:

All Incidental Charges from Manufacturing with the delivery at site to be covered by the contractor.

9. Spare Parts (GCC Clause 14)

GCC 14.1—Additional spare parts requirements are:

Sample provision

GCC 14.1—Supplier shall carry sufficient inventories to ensure ex-stock supply of consumable spares for the Goods. Other spare parts and components shall be supplied as promptly as possible, but in any case, within six (6) months of placing the order and opening the letter of credit.

10. Warranty (GCC Clause 15)

Sample provision

GCC 15.2—In partial modification of the provisions, the warranty period shall be 60 months from date of acceptance of the Goods of shipment in Karachi Pakistan.

GCC 15.4 & 15.5—The period for correction of defects in the warranty period is from same day to 15 days as finally agreed by Procuring Agency & Successful Bidder. The proposal of default removing time period shall be included by the bidder accordingly, which will be negotiated at the time of agreement.

11. Payment (GCC Clause 16)

GCC 16.1—The method and conditions of payment to be made to the Supplier under this Contract shall be as follows:

Payment for Goods supplied:

In case of Local Manufacturer, payment shall be made in Pak. Rupees in the following manner:

(i) **Advance Payment:** Up to Fifty (50) percent of the Contract Price shall be paid within thirty (30) days of signing of the Contract, and upon submission of a bank guarantee for equivalent amount valid until the Goods are delivered and in the form provided in the Standard Bidding Documents or another form acceptable to the Executing Department.

(ii) **On Shipment:** Up to Ninety (90) percent of the Contract Price of the Goods shipped shall be paid through irrevocable confirmed letter of credit opened in favor of the Supplier in a bank in its country, upon submission of documents specified in GCC Clause 10.

(iii) **On Acceptance:** Ten (10) percent of the Contract Price of Goods received shall be paid within thirty (30) days of receipt of the Goods upon submission of claim supported by the acceptance certificate issued by the Executing Department.

Payment of foreign/local currency portion shall be made in *[currency quoted by the Supplier]* within thirty (30) days of presentation of claim supported by a certificate from the Procuring agency declaring that the Goods have been delivered and that all other contracted Services have been performed.

(iv) 100% of the Contract Price on complete delivery of store within thirty (30) days on submission of claim supported by acceptance certificate from procuring agency declaring Goods have been delivered and that all contracted services have been performed.

(v) Part payment on part supply may be allowed.

(vi) Up to 80% advance payment against bank guarantee

In case of Foreign Manufacturer through the Local Agent, payment shall be made in the following manner:

(i) Hundred (100) percent of the CIF price shall be paid through irrevocable sight Letter of Credit (import) to be opened directly on the Foreign Manufacturer in the quoted Foreign Currency, permitting up to Fifty (50) percent Advanced Payment against submission of bank guarantee for equivalent amount valid until the Goods are delivered and in the form provided in the Standard Bidding Documents or another form acceptable to the Procuring agency and Executing Department. The Advanced Payment bank guarantee shall become void upon shipment of Goods and the original instrument will be returned;

(ii) Hundred (100) percent of the Local Maintenance Component shall be paid to the Local Agent in Pak. Rupees, permitting up to Fifty (50) percent Advanced Payment against submission of bank guarantee for equivalent amount upon delivery of the Goods to the Executing Department. The Advanced Payment bank guarantee shall become void upon expiry and original instrument will be returned to the Bidder.

12. Prices (GCC Clause 17) (NOT APPLICABLE)

GCC 17.1—Prices shall be adjusted in accordance with provisions in the Attachment to SCC.

13. Liquidated Damages (GCC Clause 23)

Liquidated damages shall be paid to the Procuring agency (Executing Department) with respect to the failure to meet the contractual guarantees. The rate of these liquidated damages shall be 0.01% per day per vehicle cost for non-functional / operation days but maximum to 10% of contractual cost. After this action the process will start from forfeiting Bid Securities/Retention Money, Blacklisting of firm, or any other action as per existing rule.

14. Resolution of Disputes (GCC Clause 28)

GCC 28.3—The dispute resolution mechanism to be applied pursuant to GCC Clause 28.2 shall be as follows:

In the case of a dispute between the Procuring agency and the Supplier, the dispute shall be referred to adjudication or arbitration in accordance with the laws of the Procuring agency's country.

15. Governing Language (GCC Clause 29)

GCC 29.1—The Governing Language shall be: English

16. Applicable Law (GCC Clause 30)

GCC 30.1—-The Contract shall be interpreted in accordance with the laws of Islamic Republic of Pakistan which includes the following legislation:

The Employment of Children (ECA) Act 1991
The Bonded Labour System (Abolition) Act of 1992
The Factories Act 1934
The Arbitration Act, 1940
Sindh Public Procurement Regulatory Authority Rules, 2010
The Contract Act, 1872
The Industrial Relations Act, 2012

17. Notices (GCC Clause 31)

GCC 31.1 —Procuring agency's address for notice purposes:

—Supplier's address for notice purposes:

Annexure :"D"

MODERNIZATION OF FIRE BRIGADE DEPARTMENT, KMC IN ACCORDANCE WITH RECOGNIZED INTERNATIONAL STANDARDS (EN/NFPA)

SCOPE OF WORK SUPPLY

I. SCOPE OF WORK / SUPPLY

S/No.	Description	Quantity
1	Modernization of Fire Brigade Department, KMC in Accordance with Recognized International Standards (EN/NFPA)	As per Scope of Work listed in Parts A + B, Annex **)

All supplies of vehicles must include 5 Years Warranty and Preventive Maintenance included in Bid Price.

II. QUANTITY:

As indicated in "I" above.

III. STANDARDS & CERTIFICATION:

A) Chassis excluding Main Components as mentioned in "III-B" shall be manufactured according relevant EN or NFPA standards as per attached tender specifications.

B) Superstructure manufacturer must be certified to all relevant EN or NFPA standards, specifically EN 1846 or NFPA 1900.

C) Main components such as Pumps, Water Monitor, Foam Mixer, Fire Hose Reel, etc. should be manufactured according to the relevant EN or NFPA standards. PTO should be from chassis manufacturer.

IV. TRAINING & FAMILIARIZATION

Operator Training: The Manufacturer should ensure proper operator training of 05 days training at nominated KMC premises in Karachi for the operational training of the vehicles and equipment provided.

V. PRE-SHIPMENT 3RD PARTY INSPECTION

The Manufacturer will arrange 3rd Party Inspection of Unit(s) at their own cost through TUV or SGS or COTECNA or Lloyds and submit copy to KMC. It is incumbent that the Manufacturer receives approval of 3rd Party Inspection Report from Contract Management Secretariat, KMC before shipment / delivery.

VI. OEM FACTORY INSPECTION VISIT

Manufacturers shall arrange an inspection visit for 03 officials nominated by Director Contract Management, KMC to survey Manufacturer's overseas production facility / factory for 05 days. This shall be at the expense of the Manufacturer (including flights, accommodation, local transport only).

VII. DESIGN, DRAWINGS & WEIGHT CALCULATIONS:

A mandatory requirement shall be for Manufacturer to provide the Drawings and Weight Calculations of the quoted Water and Foam Fire Tender, Water Bowser, Aerial Ladder Platform Snorkel, Fire Truck with Drones and Fire Truck with Robots. All supplied fire vehicles shall be designed for operational stability and structural strength based on the criteria laid in EN 1846 or NFPA 1900 as well as other related European CE or NFPA norms and standards applicable for Firefighting and rescue operations.

VIII. THIRD PARTY VERIFICATION OF QUOTED STANDARDS / CERTIFICATION ETC:

The procurement agency has the rights to conduct a third-party verification for the quoted standards / certification etc. by the manufacturer, during evaluation and / or during manufacturing / supply period.

All Compliance Certificates of International Standards must be signed by the Original Equipment Manufacturer (OEM) and attached with Technical Offer. Any modifications in chassis to increase the original chassis GVW is strictly not allowed, if any modification found will lead to rejection and disqualification from the tender.

Section IV

Price Schedule / Schedule of Requirements

Annexure "E"

SCHEDULE OF REQUIREMENTS

General

The Karachi Metropolitan Corporation (KMC), through the Fire Brigade Department, intends to procure, supply, install, test, commission and hand over state-of-the-art Firefighting and Rescue Vehicles, Equipment, Fire Stations and Real-Time Monitoring System under the scheme titled:
"Modernization of Fire Brigade Department, KMC in accordance with Recognized International Standards (EN/NFPA)."
The Goods and Related Services shall be supplied strictly in accordance with the Technical Specifications contained in the bidding documents.
The successful Bidder shall be responsible for:

- Manufacturing/Supply of all Goods;
- Transportation, Freight, Insurance and Customs Clearance (where applicable);
- Delivery at designated KMC locations in Karachi;
- Installation, Testing and Commissioning;
- Integration of all electronic systems;
- Operational Acceptance;
- Comprehensive Training of KMC Personnel;
- Supply of complete Operation & Maintenance Manuals;
- Five (05) Years Comprehensive Warranty;
- Five (05) Years Preventive Maintenance Services;
- Supply of Genuine Spare Parts during Warranty Period;
- Real-Time Fleet Tracking System including software, hardware and licenses.

The following table details the goods to be procured.

Item No.	Description of Goods	Quantity	Physical Unit
A1	**Fire Fighting & Rescue Vehicles**		
A1.1	Water and Foam Fire Truck (EN-1846 / NFPA 1901 compliant)	21	Units
A1.2	Water Bowser Truck (EN-1846 / NFPA 1901 compliant)	4	Units
A1.3	54m Aerial Platform Snorkel Fire Truck (EN280, EN1846, EN1777 compliant)	4	Units

Item No.	Description of Goods	Quantity	Physical Unit
A1.4	Fire Fighting Truck with 2 Drones (EN-1846 / NFPA 1901 compliant)	2	Units
A1.5	Fire Fighting Truck with 2 Robots (EN-1846 / NFPA 1901 compliant)	2	Units
A1.6	Small Fire Fighting Vehicle (4-Wheels All Terrain Fire Motorcycle) (EN-1846 / NFPA 1901 compliant)	9	Units
A1.7	Small Fire Fighting Vehicle (2-Wheels Fire Motorcycle) (EN-1846 / NFPA 1901 compliant)	10	Units
A1.8	Centralized Dashboard for Real Time Monitoring – Fleet Movement	1	Complete System
A2	**Additional Fire Fighting & Rescue Equipment**		
A2.1	Full Face Mask for Firefighters	50	Sets
A2.2	Multi-Purpose Fire Nozzle (230 L/Min.)	30	Sets
A2.3	Multi-Purpose Fire Nozzle (475 L/Min.)	30	Sets
A2.4	Multi-Purpose Fire Nozzle (950 L/Min.)	30	Sets
A2.5	Hydro Vent Nozzle	30	Sets
A2.6	Foam Making Branch Pipe Nozzle	30	Sets
A2.7	Foam Fire Nozzle (480 L/Min.)	30	Sets
A2.8	Fire Fighting Hose 2 1/2" with BSS Coupling 100ft	200	Sets
A2.9	Fire Fighting Hose 2 1/2" with BSS Coupling 50ft	200	Sets
A2.10	Fire Fighting Hose 2" with BSS Coupling 100ft	200	Sets
A2.11	Fire Fighting Hose 2" with BSS Coupling 50ft	200	Sets

Item No.	Description of Goods	Quantity	Physical Unit
A2.12	Fire Fighting Hose 1.75" with BSS Coupling 100ft	200	Sets
A2.13	Fire Fighting Hose 1.75" with BSS Coupling 50ft	200	Sets
A2.14	Portable Gasoline Cutter	10	Sets
A2.15	Oscillating Portable Fire Monitor	30	Sets
A2.16	Rescue Air Cushion	8	Sets
A2.17	Wireless Talkie (Intrinsically Safe)	100	Sets
A2.18	UHF Base Station / Repeater System (40W)	32	Sets
A2.19	Hardware for Base Station (with Accessories)	2	Sets
A2.20	SCBA (Breathing Apparatus) - 75 Mins Duration	200	Sets
A2.21	High Performance Battery Operated PPV	10	Sets
A2.22	Structural Firefighting PPE Ensemble	200	Sets
A2.23	Proximity Firefighting Suit	20	Sets
A2.24	Air Breathing Apparatus Trolley	5	Sets
A2.25	Mobile Air Filling Compressor for SCBA	5	Sets
A2.26	Complete SCUBA Set for Water Rescue	10	Sets
A2.27	Inflatable Rescue Boat with Petrol Engine	5	Units
A2.28	Rescue Diving Fins	10	Sets
A2.29	Lifebuoy Tube	20	Units
A2.30	Marine Rescue Binoculars	5	Units

Item No.	Description of Goods	Quantity	Physical Unit
A2.31	Sewer Camera Fiberscope	2	Units
A2.32	Battery-operated Combi Rescue Tool with Charger	10	Sets
A2.33	Thermal Imaging Camera (TIC)	10	Units
A2.34	Mobile Lighting Tower	5	Units
0	Portable Plasma Gas Cutter	5	Units

The following table lists pertaining to the additional services required from the supplier, which must be included in the total bid price.

Service No.	Description of Service	Qty	Physical Unit	Place where Services shall be performed	Final Completion Date of Services
B1	**Comprehensive 5-Year Warranty & Preventive Maintenance Contract**	1	Complete Service	Various KMC Fire Stations	All vehicles to be covered from the date of final acceptance. Service schedule to be maintained for 5 years.
B2	**On-site Operator & Maintenance Training**	1	Complete Service	KMC Fire Headquarters/ Training Premises, Karachi	To be completed prior to the final acceptance and issuance of the Final Acceptance Certificate.
B3	**Train-the-Trainer Program for Senior Officers**	1	Complete Service	KMC Fire Headquarters/ Training Premises, Karachi	To be completed prior to the final acceptance and issuance of the Final Acceptance Certificate.

Service No.	Description of Service	Qty	Physical Unit	Place where Services shall be performed	Final Completion Date of Services
B4	**Third-Party Pre-Shipment Inspection**	1	Complete Service	Country of Origin (Supplier's Facility)	The final inspection report must be approved by KMC & Rescue 1122 before shipment.
B5	**Delivery, Installation & Commissioning**	1	Complete Service	Various KMC Fire Stations	To be completed as per the delivery schedule in Section A.

Delivery Locations

The Goods shall be delivered at locations designated by the Procuring Agency within Karachi Metropolitan Corporation, including:

- Fire Brigade Headquarters, KMC
- Existing Fire Stations of KMC
- Newly Constructed Fire Stations
- Any other KMC premises specified by the chief Fire officer, Fire Brigade, KMC.

Related Services

The successful Bidder shall provide, without limitation:

- Packing and Transportation;
- Marine Insurance;
- Customs Documentation Assistance;
- Unloading at Site;
- Installation;
- Testing;
- Commissioning;
- Calibration;
- Integration of Electronic Systems;
- Operator Training;
- Maintenance Training;
- Preparation of O&M Manuals;
- Spare Parts Catalogue;
- Software Licenses;
- Preventive Maintenance;
- Corrective Maintenance;
- Emergency Breakdown Support.

Training Requirements

The Supplier shall conduct comprehensive training at Karachi for KMC personnel including:

- Vehicle Operations;

- Firefighting Systems;
- Rescue Equipment;
- Drone Operations;
- Robotic Firefighting Systems;
- SCBA Operations;
- Maintenance Procedures;
- GPS Tracking System;
- Monitoring Dashboard;
- Train-the-Trainer Programme.

All costs relating to training shall be included in the Contract Price.

Warranty

The Supplier shall provide a comprehensive warranty for a period of **Five (05) Years** from the date of Final Acceptance covering:

- Manufacturing Defects;
- Components;
- Spare Parts;
- Labour;
- Software;
- Calibration;
- Repair;
- Replacement;
- Preventive Maintenance.

The warranty shall include quarterly preventive maintenance visits and emergency breakdown support.

Spare Parts

The Supplier shall guarantee the availability of genuine spare parts for a minimum period of **ten (10) years** after expiry of the warranty.

Inspection

Inspection shall include:

- Factory Acceptance Test (FAT);
- Third-Party Inspection by an internationally recognized inspection agency SGS / TUV / COTECNA / Lloyds acceptable to KMC;
- Pre-Shipment Inspection;
- Site Acceptance Test (SAT);
- Performance Testing;
- Operational Acceptance.

Documentation

The Supplier shall furnish:

- Manufacturer's Certificates;
- EN/NFPA Compliance Certificates;
- Certificates of Origin;
- Factory Test Certificates;
- Inspection Reports;

- Warranty Certificates;
- Maintenance Manuals;
- Spare Parts Manuals;
- Service Manuals;
- Electrical Drawings;
- Hydraulic Drawings;
- Software Documentation.

Acceptance

Final Acceptance shall be issued only after:

- Successful Delivery;
- Installation;
- Testing;
- Commissioning;
- Completion of Training;
- Submission of Complete Documentation;
- Rectification of all Defects;
- Certification by the Inspection Committee decided by KMC.

Implementation Period

The overall implementation period of the Contract shall not exceed **Twenty-Four (24) Months**, in accordance with the approved bidding document implementation schedule.

Applicable Standards

All Goods shall strictly comply with the relevant recognized international standards including, but not limited to European Norms or National Fire Protection Agency Standard or equivalent internationally recognized standards.

NOTES FOR BIDDERS:

1. **Specifications:** All goods must comply strictly with the detailed technical specifications provided in the tender documents, including compliance with specified EN and NFPA standards .
2. **Warranty & Maintenance:** The bid price must include the cost of a 5-year warranty and preventive maintenance contract for all vehicles and equipment.
3. **Training:** The bid price must include the cost of all specified training services.
4. **Inspection:** The supplier is responsible for arranging and covering the costs of mandatory pre-shipment inspection by an approved agency (TUV, SGS, COTECNA, or Lloyds Register) .
5. **Delivery:** The final delivery date for all goods and completion of related services will be determined and specified in the final contract award and bidding documents. Bidders shall propose their delivery schedule within the required timeframe.
6. **Pricing:** Bidders shall provide a priced offer for each item in this Schedule of Requirements. The total bid price must be inclusive of all taxes, duties, and costs associated with the delivery and completion of services as per the Incoterms specified in the bidding documents.

ELIGIBILITY CRITERIA

MINIMUM TECHNICAL QUALIFICATION / EVALUATION CRITERIA

MODERNIZATION OF FIRE BRIGADE DEPARTMENT, KMC IN ACCORDANCE WITH RECOGNIZED INTERNATIONAL STANDARDS.

SINGLE STAGE TWO ENVELOP

BIDDER & MANUFACTURER ELIGIBILITY CRITERIA

The evidence / documents for the following eligibility and minimum qualification criteria will be checked during evaluation process of bidding documents.

STAGE-1: Bidder Eligibility Criteria

This evaluation against Bidder Eligibility Criteria shall be conducted during the Technical Bid Opening. These criteria must be complied with in all conditions – if any document is missing, then the bid will be immediately rejected by the Procurement Committee. Only bids that comply with all Eligibility Criteria will be eligible for Minimum Technical Qualification / Evaluation Criteria.

1) NTN Certificate / Income Tax Certificate of Local Bidder or JV partner.
2) Sales Tax Certificate of Local Bidder or JV partner.
3) Valid Professional Tax of Local Bidder or JV partner.
4) Income Tax Return for Last 5 Years of both Bidder and Manufacturer.
5) Company Profile of Bidder and Manufacturer.
6) The Fire Vehicle Manufacturer shall have a minimum of twenty (20) years of proven experience in the design, engineering, manufacturing, and supply of firefighting vehicles and emergency response apparatus. The manufacturer shall provide verifiable documentary evidence of its business experience including international project references and details of firefighting fleets / vehicles supplied to fire services, municipalities, airports, industrial facilities or government organizations, its company profile and manufacturing facilities.

7) The Manufacturer and the offered firefighting vehicles, rescue vehicles, Firefighting & rescue equipment and systems shall comply with the international standards as specified in the Bidding Documents, such as EN, NFPA, ISO and other recognized international standards, where applicable. The Bidder shall submit verifiable certificates of conformity, type approvals, independent test reports, third-party certifications and other documentary evidence issued by recognized and accredited certification, testing or inspection bodies. Failure to submit the required documentary evidence shall render the bid non-responsive and liable to rejection.

8) It is mandatory for all bidders to submit detailed brochure having specifications for each quoted item as part of the tender submission. Failure to provide the required documentation may result in the bid being declared non-responsive and liable for rejection
9) Foreign Manufacturer must enclose a letter on its official letterhead duly signed & stamped stating that Local Bidder is their Sole Local Authorized Agent for this Project. Only one local bidder will be allowed to represent each Foreign Manufacturer.
10) Verifiable externally audited financial statements, including audited balance sheets of the Manufacturer for the last five (05) financial years.
11) Evidence of successful supply of similar firefighting vehicles to Government, Municipal, Airport, Industrial or Emergency Services Organizations internationally, having an aggregate contract value upto USD 60,000,000 during the last five (05) years.

12) Bid Security enclosed with Technical Bid / Offer as mentioned in the NIT & Bidding Documents, is furnished.

13) The Bidder shall submit a declaration certifying that the Bidder, Manufacturer, Joint Venture Partner, Consortium Partner, or any of their Directors, Officers or Principal Shareholders have never been blacklisted, suspended or debarred by any Government, Semi-Government, Autonomous, Regulatory or Public Sector Organization in Pakistan or abroad, never been involved in any Corrupt Procurement Practices and are not involved in any litigation affecting their ability to perform the Contract, nor subject to any order, investigation, reference, plea bargain, voluntary return or similar proceedings by the National Accountability Bureau (NAB), Anti-Corruption Establishment (ACE), Federal Investigation Agency (FIA), Securities and Exchange Commission of Pakistan (SECP), Public Procurement Regulatory Authority (PPRA), Sindh Public Procurement Regulatory Authority (SPPRA), or any other competent authority.

    The Local Bidder shall submit this declaration on Rs. 1,000/- judicial E-Stamp Paper duly signed and stamped, whereas the Foreign Bidder and/or Foreign Manufacturer shall submit the declaration on their official letterhead duly signed and stamped. Failure to submit the required declaration shall render the bid non-responsive and liable to rejection.

14) The bid shall be properly signed, named & stamped by the authorized person of the local bidding firm, and authorization letter for signatory shall be enclosed with the tender by the authorized person, if other than the signatory of the firm.

15) **Fleet Management Telematics, Licensed Google Maps API, Real-Time Monitoring and Wireless Integration Capability and Dashboard.**
   a. The Manufacturer and/or its proposed technology partner shall submit documentary evidence of similar completed Fleet Management Telematics / IoT projects and undertaking confirming provision of all associated hardware, software, Licensed Google Maps API services, integration, support and maintenance for a minimum period of five (05) years (only fully licensed software and hardware are acceptable).
   b. The bidder must have proven experience in managing and supporting a minimum of 50,000 active devices.
   c. The bidder must have a dedicated 24/7 network operations center and customer support facility.

16) **Certificates**:
   a. Chassis / Super Structure of Fire Tender excluding Component as mentioned in "III-B", the origin shall be as mentioned in the attached tender specifications.
   b. Main components of Fire Tender, i.e. Fire Pump, Water Monitor, Foam Mixer, Fire Hose Reel, PTO should from Chassis manufacturer.
   c. Fire truck, Fire Pump, Foam Mixer& Water Monitor.
   d. Proposed technical specifications must be certified and complied with the tender requirement.
   e. Fire tender must be certified with EN 1846, EN 1028-1 and EN 1028-2, ECE-R29, ECE-R13, ISO 9001, ISO 14001 with certificate for confirmation / durability of the project NIT goods.

17) The maximum operational weight must not be more than 90% of each Axles' pay load. Bidders must provide the weight calculations and drawings of the quoted Vehicle made by the manufacturer.
   Delivery time should be within 10-12 months. Partial delivery is allowed. A written undertaking on Rs. 1000/- Judicial E-Stamp Paper duly signed and stamped confirming delivery schedule within 10-12 months including staged deliveries must be submitted with bid.

For Financial Bids (When opened)

18) The total amount of the bid shall be in figures & words (both). All corrections / overwriting shall be clearly re-written with initials & duly stamped by the Bidder.
19) Any discrepancy between the total amount of the bid quoted figures & words, then the higher amount shall be taken as the official bid.
20) **NOTE: Please attach all the above-mentioned mandatory evidential documents according to above mentioned serial nos. and also attach the flag mark.**

MODERNIZATION OF FIRE BRIGADE DEPARTMEN, KMC IN ACCORDANCE WITH RECOGNIZED INTERATIONAL STANDARDS (EN/NFPA)

MINIMUM QUALIFICATION CRITERIA

STAGE-2: Technical Evaluation upon compliance of Eligibility Criterion:

Evaluation against the following conditions of Minimum Technical Qualification will be conducted during Stage-2 of Bid Evaluation. Only firms which have passed Stage-1 will be evaluated in Stage-2. All bids must provide valid & verifiable support documents. Only bids that score at least 90% will be considered technically compliant & progress to Financial Bid opening.

SN	DESCRIPTION		TOTAL MARKS
PART – A (Establishment and Experience of the Bidder)			
1.	**Establishment of Bidding Firm** a) In Last 14 Years b) 15 to 20 Years c) More than 20 Years	 01 03 05	**05**
2.	**Experience of Bidder providing Preventive Maintenance and Warranty to one single customer for similar Firefighting and Rescue Vehicles in last 05 Years** i. Maintaining up to 20 Vehicles ii. Maintaining between 20 to 49 Vehicles iii. Maintaining over 50 Vehicles **Client satisfactory service statement must be submitted**	 02 05 10	**10**
3.	**Bidder's Number of Units Sold of Fire Fighting & Rescue Vehicles in Pakistan since 2021 to present date** a) Up to 25 Vehicles sold b) Up to 50 Vehicles sold c) Up to 75 and above Vehicles sold	 02 05 10	**10**
	Sub-Total (Part – A)		**25**

SN	DESCRIPTION		TOTAL MARKS
PART – B (Sales / Manufacturing / Technical Compliance Status of Manufacturer)			
1.	**Foreign Manufacturer's Net Sales of Similar Vehicles Globally in last 05 Years (equivalent currency)** i. US$ 150 Million or equivalent ii. US$ 350 Million or equivalent iii. US$ 650 Million or equivalent iv. US$ 1 Billion or equivalent	 02 05 07 10	**10**
2.	**Manufacturer's Production Experience of Fire Trucks/ Rescue Vehicles (Previous 05 Years)** a) 500 to 750 Units b) 750 to 1000 Units c) More than 1000 Units	 02 05 10	**10**
3.	**Manufacturer and/or Technology Partner Experience of Fleet Management Telematics / IoT projects (Previous 05 Years)** a) Up to 25,000 Units b) Up to 35,000 Units c) Up to 50,000 and above Units	 01 02 05	**05**
Sub-Total (Part – B)			**25**
PART – C (Technical Compatibility of Manufacturer for the said Specific Job)			
1.	**After Sales Support** i. In Pakistan excluding any city of Sindh ii. In Karachi City only iii. In Sindh Province including Karachi	 01 03 05	**05**
3.	**Operational Experience of Manufacturer Brand Vehicle in local market** a) Within Asia b) Within Pakistan (Other than Sindh) c) Within Sindh Province Supporting documents must have client satisfactory completion certificate.	 01 03 05	**05**
4.	**Crew Cabin Design** i. Crew Cabin from Fire Truck manufacturer ii. Original Double Cabin from Chassis Manufacturer	 01 05	**05**

SN	DESCRIPTION		TOTAL MARKS
5.	**Chassis availability of spare parts and servicing**		
	i. Abroad only	02	**05**
	ii. In Pakistan	05	
6 (i)	**Superstructure (i.e. crew cab, equipment and pump compartment) semi monocoque modular frameless, welding and no rivet design in corrosion resistant Aluminium**		
	a) Welded & riveted assembly	02	
	b) Semi monocoque modular frameless design	05	
6 (ii)	**Water & Foam Tank with Body Cover in corrosion-resistant material**		**10**
	a) Stainless Steel	01	
	b) GRP or Polypropylene	05	
7	**Technical Matching of Product described in the Detailed Specifications of Price Schedule.**		
(i)	**Fire Pump EN-1028-1 & EN-1028-2 Certified**		
	a. Centrifugal Multi Stages Fire Pump 3000 l/min at 10 bar (normal pressure=NP) 250 l/min at 40 bar (high pressure=HP) with EN 1028-1 & EN-1028-2 certified.	02	
	b. Fire Pump Light alloy aluminium body, HP impeller sea water resistant alloy Dry Powder CO2 and shaft stainless steel	02	
(ii)	**Foam Mixer**	02	
	c. Manual "Round-the-pump" foam mixer and fire pump are same brand.		
(iii)	**Water Monitor**	02	**10**
	d. Water Monitor Rotation: 360°, Max Elevation: vertically -15 degrees to +75 degrees, Throw Range: Water 60m, Foam 50m, Output: 1200 / 2000 LPM at 10 bar, Control: Manual control with dual hand wheel directly, Monitor Nozzle, Lightweight alloy max. 2000 LPM		
(iv)	**Priming system**	02	
	e. Automatic Priming System, Integrated system driven by the pump shaft 0…8m suction height, only working in time of suction, oil free maintenance free.		

SN	DESCRIPTION		TOTAL MARKS
8 (i)	**Origin of Power Take-Off**		**20**
	a) PTO from third party	02	
	b) Original PTO from Chassis manufacturer	10	
8 (ii)	**Origin of Water Pump, Foam Mixer, Water Monitor and Fire Trucks**		
	a) Different Manufacturer	03	
	b) Same Manufacturer	10	
		Sub-Total (Part – C)	**60**
		GRAND TOTAL (PART A+B+C)	**110**

NOTE

: I. Bidders are required to provide NTN Certificate, Sales Tax, Income Tax Returns for past 5 Years. Manufacturer Accreditation including EN 1846 or Equivalent NPFA, certified ISO 9001:2015 &ISO 14001, EN 1028-1 & EN-1028-2 compliance (Fire Pump), Crew Cab certification to ECE standard, and the manufacturer's audited balance sheet for past 5 Years is a mandatory requirement. **If required certificates and accreditation are not included with the technical bid, this will lead to <u>immediate</u> disqualification.**

II. The Bidder shall quote for the complete scope of supply, works and services specified in the Tender Documents. Partial, incomplete or conditional bids, or bids that do not cover all items included in the Schedule of Requirements, shall be considered non-responsive and shall be rejected without further evaluation.

III. **Minimum Qualifying Marks of 90% out of 110** as per the Criteria will be declared as a Responsive Bid and hence be eligible for Financial Bid Evaluation. Otherwise, the bid will be rejected, and their sealed Financial Offer will be returned unopened with the approval of the competent authority.

IV. Please attach all necessary documents according to abovementioned serial numbers as evidence for evaluation purpose & to prove the scoring. The supplementary documents shall be enclosed by the bidder along with signature & stamp on each page from the bidder. No paper without signature & stamp will be considered in evaluation.

V. **COMPARISON:** Bidders must prepare their bid in accordance with sequence of bid documents as highlighted in Tender Document for ease of Evaluation. Manufacturer must provide original Material Test Certificates to verify quality / grade meets required standards as per requisite tender assignment containing detailed technical specifications for Water / Foam Tanks during Pre-Shipment Inspection.

Annexure "G"

PRICE SCHEDULE / BILL OF QUANTITIES (BoQ)

PART: A

PROVISION OF FIREFIGHTING & RESCUE VEHICLES, REGARDING MODERNIZATION OF KMC FIRE BRIGADE IN ACCORDANCE WITH RECOGNIZED INTERNATIONAL STANDARDS

S#	Description	Qty	Unit	Unit CIF Price	Total CIF Price
1	Water and Foam Fire Truck	29	Unit		
2	Water Bowser	6	Unit		
3	Aerial Ladder Platform Snorkel 54 Meters Height		Unit		
4	Fire Truck with 2 Drones	2	Unit		
5	Fire Truck with 2 Drones	2	Unit		
6	Small Fire Vehicles (Four Wheeled)	12	Unit		
7	Small Fire Vehicle (Two Wheeled Fire Motorcycle)	17	Unit		
8	Centralized Dashboard for Real-Time Monitoring of Fire Vehicle Fleet at KMC Head Office	1	Complete Job		
Incoterms	**Cost, Insurance and Freight (CIF) Karachi basis**				

Maintenance	**5 years warranty & preventive maintenance**	
Part :A: Total Amount of <u>FIRE VEHICLES</u> on Cost, Insurance, and Freight (CIF) Karachi basis in Foreign Currency in figures in PKR		

Total Amount of <u>FIRE VEHICLES</u> on Cost, Insurance and Freight (CIF) Karachi basis in Foreign Currency in words

Pakistan Rupees _____

_____

PART: B - PRICE SCHEDULE / BILL OF QUANTITIES (BoQ)

PART:B

PROVISION OF ADDITIONAL FIREFIGHTING & RESCU EQUIPMENT, REGARDING MODERNIZATION OF KMC FIRE BRIGADE IN ACCORDANCE WITH RECOGNIZED INTERNATIONAL STANDARDS

S#	Description	Qty	Unit	Unit Price	Total Price
1	Full Face Mask for firefighters	50	Sets		
2	Multi-Purpose Fire Nozzle (230 L/Min.)	30	Sets		
3	Multi-Purpose Fire Nozzle (475 L/Min.)	30	Sets		
4	Multi-Purpose Fire Nozzle (950 L/Min.)	30	Sets		
5	Hydro Vent Nozzle. 1-1/2" turbojet nozzle	30	Sets		
6	Foam Making Branch Pipe Nozzle	30	Sets		
7	Foam Fire Nozzle (480L/Min.)	30	Sets		
8	Fire Fighting Hose 2 1/2" with BSS Coupling 100ft.	200	Sets		
9	Fire Fighting Hose 2 1/2" with BSS Coupling 50 feet.	200	Sets		
10	Fire Fighting Hose 2" with BSS Coupling 100ft.	30	Sets		
11	Fire Fighting Hose 2" with BSS Coupling 50ft.	200	Sets		
12	Fire Fighting Hose 1 .75" with BSS Coupling 100 feet.	200	Sets		
13	Fire Fighting Hose 1 .75" with BSS Coupling 50 feet.	200	Sets		
14	Potable Gasoline Cutter.	5	Sets		
15	Oscillating Portable Fire Monitor.	20	Sets		
16	Rescue Air Cushion	5	Sets		
17	Wireless Talkie Motorola/ Kenwood intrinsically safe, UHF 403–527 MHz frequency range with getting license & NOC from relevant authorities	100	Sets		

18	UHF Base Station / Repeater System, license software with Supply and Installation – (40 W UHF) compactible with Walke Talkie Wire.	32	Sets		
19	Hardware requirement for base station for turbocar application including Palm microphone, DC Cable, Bracket, PC Interface Cable, 220 V DC Supply 3dBd gain UHF Omni directional fiber glass whip antenna	2	Set		
20	Complete SCBA (Breathing Apparatus) with full face mask and harness Light Weight Carbon Composite 75 Mins Duration	170	Sets		
21	High Performance Battery Operated Centrifugal Positive Pressure Ventilator with External quick charger, 100m electric extension in drum with lockable EU plugs, carrying harness, duct for Blowing and Extraction	30	Sets		
22	Complete Firefighting Suit, Helmet, Gloves, Neck Protector and Boots, fully designed with Relevant EN / NFPA.	20	Sets		
23	Proximity Suit for high-temperature aluminized firefighting	20	Sets		
24	Air Breathing Apparatus Trolley for HAZMAT, confined - space, and extended-duration rescue operations	5	Sets		
25	Mobile Air Filling Compressor for SCBA	5	Sets		
26	Complete SCUBA Set with Uniform for lifeguards	10	Sets		
27	Inflatable Rescue Boats with Petrol Engine for rescue	5	Sets		
28	Rescue diving fins for lifeguards	10	Unit		
29	Lifebuoy Tube for lifeguards	20	Unit		
30	The binoculars for beach rescue	5	Unit		
31	Sewer Camera Fiberscope	2	Unit		
32	Battery-operated combi tool with charger	10	Sets		
33	Thermal imaging camera as per relevant EN/ NFPA.	10	Unit		

34	Mobile lighting tower shall be a compact, rapid - deployment rescue lighting system powered by a gasoline generator	5	Unit		
35	The plasma gas cutter shall be a compact, high-performance air-plasma cutting system designed for rescue-support operations.	5	Sets		
Incoterms	**Cost, Insurance and Freight (CIF) Karachi basis**				
Maintenance	**5 years warranty & preventive maintenance**				
Part: B" Total Amount of <u>ADDITIONAL EQUIPMENT</u> on Cost, Insurance and Freight (CIF) Karachi basis in Foreign Currency in figures in PKR					
In Words Pakistan Rupees _____ _____					

CONSOLIDATED SUMMARY OF BOQ (PART "A" & "B")

Total Amount of (Part "A:) Regarding Fire Fighting & Rescue Fleets including on Cost, Insurance and Freight (CIF) Karachi basis in Foreign Currency in figures in PKR	
Total Amount of (Part "B") Regarding Additional Firefighting & Rescue equipment on Cost, Insurance and Freight (CIF) Karachi basis in Foreign Currency in figures in PKR	
Grand Total in Figures (PKR)	
In Words Pakistan Rupees _____ _____	

Note – 1: The Bidder shall quote for the complete scope of supply, works and services specified in the Tender Documents. Partial, incomplete or conditional bids, or bids that do not cover all items included in the Schedule of Requirements, shall be considered non-responsive and shall be rejected without further evaluation.

Note – 2: The prevailing Interbank Rate on the date of Bid Received / Technical Bid Opening shall be applied for Bid Evaluation purposes and for Bid Security amount purposes. For the opening of the LC, the prevailing Interbank Rate on the date of LC opening shall be applied.

Note – 3: The bid from Manufacturer having lowest quoted price may be declared lowest evaluated bid.

Note – 4: Shipment may be made in the name of Chief Fire Officer, Fire Brigade Department, Karachi Metropolitan Corporation(KMC).

Checked & verified by:

I/We have quoted the price schedule and bound ourselves to comply the terms and conditions of this contract with all existing rules and regulations of KMC and I have attached Bid Security (as mentioned in the Note Bidding Data) in shape of Pay Order/ Demand Draft / Bank Guarantee No. _____ Dated _____ issued from _____ amounting Rs._____ in favour of Karachi Metropolitan Corporation.

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Signature of Bidder with Stamp

Section V. Technical Specifications

Annexure "H"

MODERNIZATION OF FIRE BRIGADE DEPARTMEN, KMC IN ACCORDANCE WITH RECOGNIZED INTERATIONAL STANDARDS (EN/NFPA)
(TECHNICAL SPECIFICATIONS)

PART-A: DETAILED SPECIFICATIONS OF FLEETS

ITEM 1: WATER AND FOAM FIRE TRUCK

1. The Whole Fire Truck

- **Weight:** Approx. 21,000kg
- **Number of the Crew:** 2+4
- **Max. Speed:** 90km/h
- **Wheel Base:**4600mm
- **ROH:** 2300mm
- **Capacity of Extinguishing Agent:** 7750L Water and 250L Foam
- **Fire pump flow rate:** 3000L/Min at 10 Bar HP, 250 L/min at 40 bar
- **Roof Fire monitor flow rate:** 2000 L/min
- **Manufactured:** Accordance to EN 1028-1, EN 1028-2, and EN1846/ Equivalent NFPA Standard.
- Combined weight of all components mentioned in the specifications should not exceed chassis GVW. Modification in the chassis is strictly not allowed.

2. Chassis

- **Chassis Series:** Heavy-Duty Chassis for Fire Truck Right Hand Drive Airconditioned
- **Driving Manner:** 4x2
- **Regulation:** ECE R10+R16+R28+R39+R43+R46+R48
- **Mandatory ECE Certificate:** ECE-R29, ECE-R13
- **Type of Suspension:** Leaf Spring
- **Clutch:** Hydraulically operating with air assistance
- **Tire:** 315/80R22.5
- **Rated Power:** 300 Hp
- **Gearbox Form:** Manual, 9 forward gears, 1 reverse gear
- **Power take-off:** With PTO to drive the pump (Original PTO from Chassis Manufacturer)
- **Fuel tank type:** 300L Diesel Oil Tank
- **Braking System:** ABS, latest braking system as per International Standard ECE-R13 & NFPA 1901 (2016)
- **Emission Standard:** Min Euro 3
- **Reverse Camera:** Drivers Cabin
- **PTO: Functions:**
  - Engine dependent PTO (PTO be owned and certified by chassis manufacturer)
  - PTO usage both withstanding still vehicle as well as in mobile conditions (pump and roll)
  - PTO mounting position between engine and gearbox
  - Assembling without any "special" dedicated tools.

3. Superstructure

3.1 Cabin

- **Structure:** Double Row Cabin with four doors air-conditioned. Crew Cabin having ECE R29 Compliance shall be provided for accommodation of 3-4 Fire Fighters, behind Driver's Cab with Doors & Windows

and shall be fabricated with fine quality galvanized sheet with plastic/foam seats, interior lights (Preferably by Chassis manufacturer)

- **Seats:** 1+1+4
- **Safety:** 3-point seat belt
- **SCBA Seats:** SCBA frame is installed at the rear 4 seats and they are adjustable to place 6.8L-9L SCBA.
- **Interior:** PTO switch, alarm and warning light switches are installed in the cabin.
- **Stairs:** Anti-slip stairs
- **Anti-slip handrails** are installed.

3.2 Standardized Sub-frame

- **Material:** High-strength rectangular tube made of special steel.
- **Performance:** The liquid tank and the sub-frame are connected by an elastic connecting seat with torque reduction performance, which not only increases the flexibility of the connection between the frame and the tank body, prevents deformation and cracking of the upper body, but also increases the strength of the upper body to give full play to chassis performance, while standardizing the sub-frame to achieve flexible assembly of upper parts.

3.3 Compartment

- **Material:** Aluminum alloy profiles and Never Rust
- **Structure:** The outer frame with a special aluminum alloy frame overall welded structure, the skeleton, the surface for the aluminum alloy profiles, beautiful appearance and durable. The outer skin is bonded through an air-fed high-strength adhesive, and the inner floor is an anodized aluminum alloy plate.
- **Equipment door:** The use of light high-quality aluminum alloy, with aluminum alloy large shutter doors (with pull rod door handle), open and close flexible, good sealing, low noise, beautiful appearance, light and reliable, all shutter doors can be a common key.
- **Internal structure:** The internal skeleton with aluminum lap technology, to maximize the increase in space utilization and variability, make full use of limited space inside the compartment, pick and place equipment convenient and solid.
- The rear compartment is fitted with aluminum alloy ladder to the roof.
- Anti-skid treatment on the top, water naturally downstream.

3.4 Roller Shutter Door

- Made by high strength composite material, mounted with safe lock. Roller shutter will slide up automatically after pulling out the Lever from holder.

3.5 Foot Pedal

- **Material:** high quality aluminum alloy
- **Width:** 50cm, bear more than 150kg, anti-slip design on the pedals with double lock function.
- **Location:** on the both sides of compartment and pump room

3.6 Superstructure Electric Appliance

- **Warning Light and alarm:** Long-row Alarm Light is mounted above cabin. Single tone 100W alarm and warning light, circuit is a separate additional circuit, the control switch is in the cabin.
- **Storage Compartment Light:** LED white light strips on both sides of the equipment box and pump room shutter door, which can meet the illumination of the whole compartment, the lighting switch and the roller shutter door state are linked.
- **Strobe Light:** Mounted on top aluminum frame, at the both sides of the compartment.
- **External Lighting:** Long life lamps are installed on both sides of compartment for lighting in night.
- **Roof Light:** Mounted on the inside of the roof of the compartment.
- **Side Indicator Light:** Inline yellow warning light is mounted on the side of the compartment and pedal.
- **360-degree panoramic reversing image system.**

3.7 Paint Color: Red

3.8 Fire Pump

- **Normal Pressure & Flow:** 3000 l/min at 10 bar (normal pressure=NP)
- **Nominal data:** 3000 l/min at 10 bar (normal pressure=NP) 250 l/min at 40 bar (high pressure=HP)
- **Power:** 140/155 kW/211HP (NP+HP)
- **Nominal speed:** 3000/3250 rpm
- **Pump:** Normal Pressure Pump
- **Pump cover**: Sea-water resistant light alloy,
- **Pump Shaft and Split Rings:** Duplex Stainless steel
- **Standard:** Compliance with regional standard equivalent to EN1028-1 & EN1028-2 / Equivalent NFPA
- **Pump Impeller:** Standard steel
- **Priming Manner:** Automatic
- **Suction Height:** 8m
- **Priming Time:** ≤60s
- **Installation Mode:** Rear-mounted

3.9 Roof Fire Monitor

- **Max Rotation:** 360 degree
- **Max Elevation:**+75 -15 Degree
- **Throw Range:** Water 60 meter
- **Flow Rate:** 2000 L/min
- **Shot Range: Throw Range:**
    - a) Water: 60m
    - b) Foam: 50m
- **Output capacity**:1200 / 2000 LPM at 10 bar
- **Installation location:** On the top of tank
- **Control manner:** Manual Control
- **Horizontal rotation angle:** 0°~360°
- **Pitch rotation angle:** -15°~60°
- **Standard:** NFPA 414 or Equivalent EN
- **Location:** Fitted on the vehicle's top (on pump compartment)

3.10 Liquid Tank

- **Capacity:** Water Tank 7,750L, Foam 250L
- **Material:** High-quality GRP/ PP composite material and Never Rust min 20mm thickness (chemical/corrosion resistant)
- **Structure:** Two Tank Manhole; One Overflow Device/Pressure Relief Device; Two Liquid Level Indicators; One Foam tank Drain Outlets with Valves; One Water tank Drain Outlets with Valves.
- **Baffle Plates:** Horizontal & vertical partition inside the tank to absorb the surge.

3.11 Fire Pipeline

- 1pc suction inlet from the hydrant to the pump
- 2pcs water inlet from hydrant to tank directly
- 4pcs pump outlets to connect the fire hose
- Drain Pipeline: In order to protect water pump and ball valves, drain ball valve is mounted in the pipeline.

3.12 Fire Control System

- Dashboard equipped with pressure gauge, vacuum gauge, liquid level display, throttle etc. All switches and dashboard instructions indicate the use of water-proof corrosion-resistant signs.
- **Language:** English

3.13 Foam Mixing System

- **Foam mixing ratio:** Manual "Round-the-pump" foam mixer should be provided, foam connection for internal or external foam tank (max 1.5m suction lift), driver water line manual operated ball valve, manual adjustable foam flow with ball valve and scale (%), foam flow can be 3%, 6% and 8%.
- **Control manner:** Electric and Automatic manner

3.15 Priming System

- **Drive:** Automatic Priming System
- **Type & Model**: Integrated system driven by the pump shaft 0…8m suction height, only working in time of suction, oil free Maintenance free.

3.16 Fire Aid Real

- **High pressure hose**: High Pressure Hose Reel with minimum working pressure of 40 bars size 3/4" x 45 m High Pressure Hose terminated with a spray/jet nozzle; manual rewinding located at the rear.
- **Hose Real assembly compliant**: NFPA 1900 requirements (US market) or EN 671-1
- **Design:** Robust and dirt-resistant due to non-corroding materials. Top-quality stainless-steel reel and wheels.

Digital Control System and operating platform used in firefighting vehicles and firefighting equipment to allow firefighters to control pumps, water/foam monitors (turrets), lighting systems, and other vehicle functions through a single standardized interface.

Control System shall be able to manage:

- Fire pumps
- Roof and bumper turrets
- Foam proportioning systems
- Light masts and scene lighting
- Vehicle status monitoring
- Diagnostics and maintenance information
- Telematics and remote diagnostics features

4. Files Along with the Vehicle (In English)

- User Manual of Chassis
- Chassis Certification
- User Manual of Vehicle
- Vehicle Certification

5. Accessories

OTHERS

a) Access Ladder is provided at the rear

b) Suction hose suitably located on the roof

c) Suitable brackets and clamping devices shall be provided for the mounting light alloy extension ladder along the roof.

d) Spare wheel shall be suitably fitted.

STANDARD ACCESSORIES HAVING COMPLIANCE OF APPLICABLE EN OR EQUIVALENT NFPA

S. No	DESCRIPTION	Quantity
1.	LED light bar with built in PA System	01 No.
2.	Search Light heavy duty adjustable Located 2 x Front of cabin & 1 x Rear of roof	03 Nos
3.	Suction wrenches	02 Nos.
4.	Suction Hose 5” x 2.5m long with light alloy coupling	04 Nos.
5.	Delivery hose 2-1/2” x 20m long with Light Alloy coupling size 2-1/2”	08 Nos.
6.	5’’ Suction Strainer (SS)	01 No.
7.	Basket Strainer with 15m rope (12mm)	01 No.
8.	Fire Axe	02 Nos.
9.	2-1/2” Adjustable pistol Nozzle	02 Nos.
10.	Fire Hook	01 No.
11.	Crowbar	01 No.
12.	Standard tool for vehicle	01 Set.
13.	First Aid Kit	01 Set.
14.	Aluminium (3 Section) extension Ladders – 15 meters Load Requirement is minimum 120 Kgs	01 No.
15.	Turnout Suits made of Fire-Retardant Material comprising of Jacket and Plant Complete with Fire Fighting Helmet, Long Rubber Boots (Chemical & Water Resistant) Fire Fighter Gloves with Nomex Lining Complete Suit Packed in a Carrying Bag	04 Pairs.
16.	Breathing apparatus SCBA Approved-Type 2 complete with Full Face Mask and Steel Cylinder Capacity 6L x 300 Bars. Minimum 30 minutes duration Packed in Plastic Carrying Case	04 Set.
17.	Fire Hose Bridges/Ramp	02 Sets.
18.	Rechargeable flashlight	04 No.

S. No	DESCRIPTION	Quantity
19.	Full Face mask with combined Filter	04 Nos.
20.	Spare Bottle for SCBA capacity 6L x 300 Bars.	01 for 05 Vehicles
21.	Bolt cutter	01 No.
22.	Generator 1200W	01 Set.
23.	Hydraulic rescue tools with: Max. Cutting Capacity: Φ32 (Circle steel), 15 (Steel Plate) Pulling Distance: 260 mm Spreading Distance: 360 mm Max. Working Pressure: 720 bar Max. Spreading Force: 230 kN / 23.4 ton Max. Squeezing Force: 80 kN / 8.2 ton Max. Pulling Distance: 220 mm Max. Pulling Force: 86 kN / 8.8 ton Working Temperature Range: -30°C~ 55°C Weight: max. 15 kg Dimension (LxWxH): 800 x 240 x 190 (mm)	01 Set.
24.	Auto-locator and GPS System installed	01 No

ITEM 2: WATER BOWZER

Truck Chassis

Right Hand Drive Air-conditioned RHD 6 x 4 Diesel Engine Min EURO III Truck Chassis, 430HP, Min GVW 41 Tons with ABS Braking System. Drum brakes with ABS (Automatic Brake System). Factory Built Driver's Airconditioned Cabin, Seating capacity Driver + 2 (i.e. total 3 Person) complete with Standard Accessories/Tool Kit

- **Rated power:** 430Hp
- **Regulation:** ECE R10+R16+R28+R39+R43+R46+R48
- **Mandatory ECE Certificate:** ECE-R29, ECE-R13
- **Type of Suspension:** Leaf Spring
- **Clutch:** Hydraulically operating with air assistance
- **Tire:** 315/80R22.5
- **Drive model:** Right hand drive air conditioned
- **Braking System:** ABS, latest braking system as per International Standard ECE-R13 & NFPA 1901 (2016)
- **Suspension:** Taper leaf suspension
- **Warning Control:** The controls for the visual and acoustic warning system are integrated in the chassis dashboard.
- **Reverse Camera:** Drivers Cabin

Water Tank

a) Capacity — 20,000 liters

b) Material — High strength Polypropylene/GRP (Chemical / Corrosion Resistant)

c) Suspension — Torsion free duly padded

d) Battle Plates — Horizontal & Vertical partition inside the tank to absorb the surge.

e) Connection
1. Tank is filled from a male 2 ½" coupling as hydrant filling.
2. Overflow and breather is of 2 x 4 " bore designed to minimize water loss and arranged to discharge away from chassis frame and brake.
3. Feed from tank to pump is of 5" bore fitted with 5" Butterfly valve.

f) Manhole — Qty 01, Quick release hatch type of 450 mm x 450 mm (approx.) with Lid and Lockable.

g) Water Drainage Point — 2 1/2" drainage plug

Fire Pump

Standard: EN-1028-1 & EN-1028-2.
Type: Centrifugal double stage fire pump (NP),
Nominal data: 3000 l/min at 10bar (normal pressure=NP)
Power: 102 kW/139HP
Nominal speed: 3250 rpm

Material: Normal Pressure pump (NP), housing, diffuser, guide wheels and pump cover from sea-water resistant light alloy, pump shaft and split rings from stainless steel. Sealing of the pump shaft by radial seals in an exchangeable sealing bush.

The fire pump must have the following characteristics:

- Fully automatic pressure governor thermal (to be provided as standard component of the fire pump).
- The automatic pressure governor will regulate the working pressure at a pre-set level without occasionally shutting down the system.
- Fully automatic priming system TROKOMAT PLUS simplifies maximally the operation of the pump.
- Fully Automatic Priming System, Integrated system driven by the pump shaft 0…8m suction height, only working in time of suction, oil free, maintenance free.

SPLIT SHAFT/ ENGINE FLYWHEEL POWER-TAKE-OFF:

The PTO is operated pneumatically with an indication light of engagement and disengagement of PTO is provided in the Driver's Cabin.

Functions:

- Engine dependent PTO (PTO be owned and certified by chassis manufacturer)
- PTO usage both withstanding still vehicle as well as in mobile conditions (pump and roll)
- PTO mounting position between engine and gearbox
- Assembling without any "special" dedicated tools.

Water Turret / Monitor

a) Standard : NFPA or EN Standard

b) Location : Fitted on the vehicle's top (on pump compartment)

c) Performance :

1) Max Rotation: 270 degree

2) Max Elevation: +75 -15 Degree

3) Throw Range:

a) Water: 60m

b) Foam: 50m

4) Output capacity:1200 / 2000 LPM at 10 bar

d) Control: 3" dia Valve fitted beneath the Monitor

e) Nozzle: Fitted with multi-gallon age nozzle with SS / Fog Pattern.

Suction / Delivery

Suction / Delivery is provided on the both sides of the vehicle.

Piping & Valves

Piping & Valves will be provided and fixed complete in all respect as mentioned below:

- 2 1/2 ” Steel pipes Butterfly Valves with 2 ½” female Coupling on each side of vehicle.
- 4” Suction Inlet with Butterfly Valve and threaded coupling with blank cap on each side only (for external source).
- Arrangement for suction through external source / reservoir to tank or direct delivery.

Controls:

The control panel will be installed on rear side of the vehicle having following gauges / controls:

- Engine throttle control
- Pump pressure gauge
- Pump compound gauge
- Tank to pump control
- Visual gauge
- Panel lights & switches

4. Files Along with the Vehicle (In English)

- User Manual of Chassis
- Chassis Certification
- User Manual of Vehicle
- Vehicle Certification

Other Features

- Enough space for 02 lengths of 4” dia x 8 feet long armored suction hoses.
- Lockers / Box shall be provided at left side of vehicle to accommodate 05 length of 2 ¾” x 100 ft long delivery hoses.
- Chequered standing space provided at top and rear of the tank
- Aluminium alloy fixed ladder with antiskid steps for easy access to manholes.

Standard Accessories

Following accessories shall be provided with the vehicle

S . No.	Description	Qty
1.	4” dia x 8 ft long Armoured Suction Hoses complete with coupling	02
2.	2 ½” dia x 100 ft long delivery hoses with instantaneous coupling	05
3.	Suction Wrenches	01
4.	Copper Suction Strainer	01

5.	1 Kg DCP Fire Extinguisher fitted in the Driver's Cabin (Chassis Part)	01
6.	Standard Tool Kit	01

Paint / Lettering

As per Customer's requirements.

Note:

The vehicle shall be able to perform the following functions:

- Filling tank through top hatch.
- External suction from Hydrant or tank through pump for tank filling or indirect delivery
- Gravity delivery from vehicle tank.
- 02 Sprinklers at rear of the vehicle.

ITEM 3: 54M AERIAL PLATFORM FIRE TRUCK

1. Main Parameters

Vehicle Parameters:

- **Gross Weight:** 42000kg
- **Maximum Speed:** 80km/h

Chassis Parameters:

- **Engine Power:** 430hp
- **Emission Standard:** Min Euro III
- **Regulation:** ECE R10+R16+R28+R39+R43+R46+R48
- **Mandatory** ECE Certificate: ECE-R29, ECE-R13
- **Type of Suspension:** Leaf Spring
- **Clutch:** Hydraulically operating with air assistance
- **Tire:** 315/80R22.5
- **Drive model:** Right hand drive air conditioned
- **Braking System:** ABS, latest braking system as per International Standard ECE-R13 & NFPA 1901 (2016)
- **Emission Standard:** Min Euro III
- **Suspension:** Taper leaf suspension

The Aerial Platform Fire Truck shall be designed for operational stability and structural strength based on the criteria laid and manufactured according to international standards (EN280, EN1846, EN1777 or equivalent NFPA) applicable for elevated raised platforms used for Fire Fighting and rescue operations built on Right Hand Drive Air-Conditioned Chassis.

Support System:

- **Outriggers Structural Type:** ★H-type outriggers
- **Longitudinal Span:** 7650mm
- **Lateral Span:** 6015mm
- ★**Leveling Method:** Automatic Leveling

Boom System:

- **Outrigger Full Extension and Leveling Time:** ≤35 s
- **Working Bucket Load:** 450kg
- **Maximum Working Height:** 54.3m
- **Maximum Working Radius:** 19.1m
- ★**Boom Type:** Forward-tilting structure, good control stability: Five-section synchronous telescopic boom + folding boom
- ★**Boom Operation Methods:** Working bucket control, overhead control panel remote control, manual multi-way valve operation
- **Boom Luffing Angle:** Lower telescopic boom 0°-88°, Upper telescopic boom and lower telescopic boom 0°-174°
- **Swing Range:** 360° full swing

Fire Water System:

- **Time to raise to rated height and rotate 90°:** 231.4 s
- **Fire Pump Model:** Single-stage Centrifugal Pump
- **Rated Working Flow Rate:** Rated Flow Rate: 6000 lpm

- **Fire Monitor Model:** Water/Foam Dual-purpose Electric Remote Control Fire Monitor NFPA 414 Standard
- **Maximum Range of the Water Monitor:** Range (Water) ≥ 60m, (Foam) ≥ 60m
- **Fire Monitor Horizontal Swing Angle:** ±45 degrees
- The centrifugal pump shall be mounted in its own compartment equipped with roller shutter door and shall be hydraulically driven through the chassis PTO. The pump performance shall be minimum 4000 l/min at 10 bar.

2. Detailed Specifications

2. Chassis Parameters

- **Drive Type:** 6x4, Single Cab
- **Engine Rated Power:** 430hp
- **Power Take-Off (PTO):** With PTO (Original PTO from Chassis Manufacturer)
- **Braking System:** ABS
- **Fuel Tank:** 300L
- **Manufacturing Standard of Aerial Platform:** In accordance to EN280, EN1846, EN1777 or equivalent NFPA
- **Cab:** Single-row, double-door cab, accommodating 2 people air conditioned right hand drive

3. Support System

- **Type:** H-type (four horizontal outriggers, four vertical outriggers). The horizontal outer frame is made of high-strength alloy steel profiles, and the subframe is a box-type structure welded from high-strength steel plates after cold bending, ensuring the safety and reliability of the support mechanism.
- **Span:** Longitudinal span: 7650mm; Transverse span: 6015mm
- **Operation:** Electrically controlled one-button leveling; hydraulic manual operation is possible in emergencies.
- **Outrigger Position Detection System:** Each outrigger is equipped with two sensors to detect the outrigger extension/retraction status.
- **Leveling Method:** Automatic leveling
- **Manufacturing Features:** All outriggers are promptly derusted after welding and undergo non-destructive testing according to GB 7956.12. The chassis connections are all installed using 10.9 grade high-strength bolts. After the main beam was drilled, the drilled areas were all treated with anti-corrosion measures.

4. Boom and Slewing Mechanism

- **Bucket Load:** 450kg
- **Maximum Working Height:** 54.3m
- **Maximum Working Radius:** 19.1m
- **Slewing Mechanism:** The motor-driven reducer enables continuous 360° slewing. The slewing mechanism consists of a planetary gear transmission mechanism, a braking device, and a hydraulic motor. The overall structure is compact, easy to maintain, small in size, and lightweight. The normally closed brake uses an upper-mounted friction narrow spring for clamping, providing high braking torque and rapid, reliable braking.
- **Boom Structure:** Composed of a five-section synchronous telescopic boom + folding boom. The boom is a box-type structure cold-bent and welded from high-strength alloy steel plate (HQ70). The telescopic boom's movement is accomplished by telescopic cylinders and chains, enabling the extension and retraction of each boom section. The upper boom achieves relative luffing movement with the lower boom via a double-acting cylinder.

- **Manned Platform (Work Bucket):** The manned platform is welded from seamless steel and is mounted at the top of the boom. It is equipped with a computer control system and a boom movement display system. The computer control uses a CAN bus. The platform can rotate left and right, has a load capacity of 450 kg, and carries a high-flow-rate remote-controlled water cannon, a lighting system, and an intercom system. When the aerial ladder truck enters the site for operation, the work bucket automatically adjusts to be level by the leveling mechanism as the boom moves. The bottom surface of the work bucket always remains parallel to the ground. After the boom movement stops, the work bucket automatically locks.

5. Firefighting Water System

- **Tank Body:** Without Tank
- **Pump:** Single-Stage Centrifugal Pump. Water Pump: 6000 l/min at 10 bar
- Inlet Flange: DN150, Outlet Flange: DN100.
- **Vacuum Pump:** Matching electric vacuum pump (24V). Vacuum degree ≥85kPa; Suction depth ≥7 meters; Priming time less than 80 seconds.
- **Mixer:** Equipped with foam proportioner.
- **Fire Monitor:** Maximum flow rate: 4000 L/min; Working pressure: 0.55 MPa. Range (water): ≥65 m, (foam): ≥60 m. Horizontal rotation angle: ±45 degrees; Elevation angle: 90 degrees; Depression angle: -45 degrees. ≥100-meter wireless remote control operation.
- **Standard:** Compliance with regional standard equivalent to EN1028-1 & EN1028-2
- **Foam Monitor Head:** Matching Foam Monitor Head.
- **Optional Configurations:** For severely cold northern regions: Water purging, electrically heated ball valve at the outlet.
- **Water System Control:** Solenoid valve control. Control Panel Location: Left side of the vehicle body.

6. Safety Protection Functions

- **Hydraulic Filter Clog Protection:** When the filter is clogged, a color or light alarm will be triggered.
- **Boom Buffer Protection:** The system automatically decelerates at extreme positions and upon sudden operation of the handle.
- **Boom Width Limit Protection:** The system automatically and slowly stops when the boom approaches its maximum reach.
- **Slewing Buffer Protection:** The system effectively buffers sudden stops in slewing.
- **Slewing Alignment:** The system automatically reduces speed when approaching the center position to ensure precise alignment.
- **Vehicle Collision Avoidance:** To prevent the boom from colliding with the vehicle body during small-amplitude slewing, the system automatically stops slewing in the dangerous direction when it reaches a certain position.
- **Upper and Lower Vehicle Interlock:** The boom cannot move if the outriggers are not deployed; the outriggers cannot move if the boom is removed from the support.
- **Emergency Functions:** Both the overhead control valve and outrigger control valve are equipped with emergency manual operation; the system includes an emergency pump for retracting the boom and outriggers in case of engine or oil pump failure.
- **Outrigger Operation Alarm:** An automatic audible and visual alarm sounds when the outriggers are in operation to prevent injury from contact.
- **Outrigger Deficiency:** If the outriggers become partially extended during boom operation, the system automatically cuts off the movement in the dangerous direction.
- **Outrigger Not Retracted Warning:** An automatic audible and visual alarm sounds if the outriggers are not fully retracted to prevent accidents.
- **Water System Overpressure Protection:** An alarm sounds and limits engine acceleration when the water system pressure exceeds the rated value.

- **Water Tank Expansion Protection:** In addition to a sufficiently large overflow port, a pressure relief device is installed at the tank opening to prevent accidental overpressure during water tank replenishment.
- **Engine Speed Limiter:** The engine speed is automatically limited during boom operation; when the water pump is operating, the engine speed is automatically limited to prevent overpressure in the water system or overspeed of the water pump.
- **Over-Wind Speed Alarm:** When the wind speed exceeds 12.5 m/s, an automatic audible and visual alarm is triggered, and movement in the dangerous direction is cut off.
- **Equipment Box Door Open Warning:** An automatic audible and visual alarm is triggered if the equipment box door is not closed to prevent accidents.
- **Work Bucket Spray Self-Protection Function:** Used to protect the fire truck from high-temperature heat radiation damage at the fire scene, ensuring the safety of the vehicle and firefighters.
- **Work Bucket Collision Avoidance Safety System:** The ultrasonic radar sensor in the work bucket detects the distance between the work bucket and the building; if the distance is too close, the work bucket is prohibited from moving towards the building.
- **Work Bucket Position Safety Function:** The boom must not be retracted when the work bucket is not in the centered position.
- **Auxiliary Ladder Safety Function:** The boom must not be retracted when the guardrails on both sides of the auxiliary ladder are not folded into place.

7. Electrical System

- ★**Electrical Control System Operation:** Operating from the work platform, upper vehicle control panel, and outrigger control panel at the rear of the lower vehicle. Water pump control panel is located on the side of the lower vehicle.
- **Upper Vehicle Control Panel Location:** Left side of the turntable, with seat.
- **Vehicle Control:** Touchscreen interface, computer control.
- **Cab:** Two round warning lights are installed on the top of the cab; a siren is installed inside the cab. A reversing monitor is installed inside the cab; a vehicle radio interface is provided inside the cab.
- ★**Water Cannon Operation:** The water cannon can be operated and stopped via the work platform, upper vehicle control panel, and remote-control box.
- ★**Water Pump Operation:** The water pump can be operated and stopped via the work platform, upper vehicle control panel, and lower vehicle control panel.
- ★**Boom Electrical Control Operation:** Electrically controlled operation of the work platform and upper vehicle control panel. Allows both high-altitude and ground operations.
- ★**Convenient Outrigger Operation:** One-button extension and retraction of outriggers via control panel.
- ★**Swing Mechanism:** The work platform is equipped with a swing mechanism, allowing it to swing left and right, making it easier to approach buildings and facilitate rescue operations.
- **Other:** Automatic disconnection from charging device. Anemometer installed in the work platform. Overload alarm for the work platform. Optional video monitoring and hard disk recording. Automatic pressure stabilization control of water pump output.

8. Vehicle Body and Equipment Boxes

- **Truck Body:** The truck body is painted with fire-fighting red paint. To ensure safety during nighttime operations, the vehicle body is equipped with fluorescent reflective strips that meet safety standards.
- **Color:** Conforms to R03 bright red in GB/T3181 "Paint Film Color Standard" as specified in GB7258. The entire upper structure and the tank's crossbars are bright white.
- **Roller Shutter Door:** Made of lightweight, high-quality aluminum alloy, large-format roller shutter door, flexible opening and closing, good sealing, low noise, beautiful appearance, lightweight and

reliable. A guide channel is provided at the top, and sealing strips are installed around the perimeter, providing excellent rainproof and dustproof sealing performance. Equipped with a pull-rod type bar lock handle, a one-point pull strap, and a two-point fixing seat; and sensors are installed, allowing the driver to monitor the roller shutter door's opening and closing status via indicator lights in the cab.

- **Equipment Box Structure:** The frame is a welded all-aluminum alloy frame, and the outer skin is made of bonded aluminum alloy plates. The equipment frame inside the compartment uses a welded aluminum alloy profile structure, which can be flexibly arranged according to customer requirements to maximize space utilization.

Accompanying Equipment:

No.	Name	Unit	Quantity	Remarks
1	Fire Hose	Sets	9	
2	Dry Powder Fire Extinguisher	Sets	1	2kg, Class ABC fire extinguisher
3	Water Filter	Pieces	1	
4	DN150 Suction Hose (2 meters/piece)	Pieces	4	Total length 8 meters
5	DN50 Foam Suction Hose	Sets	1	
6	Hose Bridge	Sets	2	Rubber
7	Hose Cover	Pieces	8	
8	Suction Hose Wrench	Pieces	2	Suction hose interface (internal snap-fit, slow speed) included
9	Foam Suction Hose Wrench	Pieces	1	
10	Emergency Manual Valve Wrench	Pieces	1	
11	Hex Wrench	Sets	1	(Applicable to onboard equipment)
12	Rubber Hammer	Pieces	1	(Included when suction hose is available)
13	Rechargeable Portable Light	Pieces	2	

No.	Name	Unit	Quantity	Remarks
14	Outrigger Pads	Pieces	4	
15	Foam Cannon Nozzle (Foaming Cylinder)	Pieces	1	Matches the boom main cannon model (original low-expansion foam cartridge)
16	Vehicle Tools	Sets	1	Chassis included
17	Spare Tire	Pieces	1	Chassis included
18	Wheel Brake Blocks	Pieces	2	Chassis included
19	Hydraulic System Wear Parts	Sets	1	
20	Full-body Safety Belt (with Hook)	Sets	5	(One set per 75kg load capacity of the work bucket)
21	General Firefighting Safety Rope	Pieces	5	1.5 meters (preferably used with a full-body safety harness)

ITEM 4: FIRE FIGHTING TRUCK WITH 2 DRONES

1. Chassis Specifications

- **Drive form:** 4×2 right hand drive airconditioned
- **GVW:** 16000kg
- **Number of axes:** 2
- **Number of steering axles/number of drive axles:** 1(front)/1(rear)
- **Number of seats in the cab:** 2+4
- **Manufacturing Standard:** In accordance to EN1846/ equivalent NFPA
- **Minimum ROH:** 2000 (mm)
- **Regulation: ECE R10+R16+R28+R39+R43+R46+R48**
- **Mandatory** ECE Certificate: ECE-R29, ECE-R13
- **Type of Suspension:** Leaf Spring
- **Clutch**: Hydraulically operating with air assistance
- **Tire:** 315/80R22.5
- **Drive model:** Right hand drive air conditioned
- **Braking System:** ABS, latest braking system as per International Standard ECE-R13 & NFPA 1901 (2016)
- **Emission Standard: Min Euro III**
- **Suspension: Taper leaf suspension**
- **Engine power:** 300Hp
- **Engine displacement:** 9.726L
- **Engine Emission Level:** Min Euro III

2. The Whole Fire Truck Details

- **Weight:** Including fire truck bodywork (no load when water and foam are not added): Approx. 15000kg. After the water tank and foam tank are filled up (excluding firefighters): Approx. 20000kg.
- **Material:** The carriage is welded with high-quality aluminum alloy profiles, which ensures the structural strength, improves the anti-corrosion ability, and reduces the weight of the body.
- **Equipment compartment door:** Lightweight high-quality aluminum alloy, with aluminum alloy rolling door, light and reliable, each equipment box is equipped with LED environmental protection and energy-saving lighting.
- **Electrical System:** Equipped with an automatic separate charging system and a mains (220V) charging device to prevent the vehicle from being unable to start after electricity leakage, and to provide power protection for the chassis and engine starting.
- **Warning Light:** The upper part of both sides of the carriage is equipped with 3 integrated strobe lighting lamps. The rest of the lighting and warning equipment conforms to the regulations and requirements of the electrical system in GA39.5-92. It meets the R03 bright red in GB/T3181 "paint film color standard" stipulated by GB7258. The surface of the carriage is sprayed with imported bright red glossy paint. The performance of the whole vehicle conforms to the provisions of GB7956-1988 "performance requirements and test methods for fire trucks". The quality of the whole vehicle conforms to the provisions of GA39.5-92 "General Technical Conditions for Foam Fire Trucks".
- **Standard Equipment:** Hose assembly: 4 discs. DC switch water gun: 1 piece. Blossom water gun: 1 piece. Original vehicle tools: 1 set. Vehicle warning triangle: 2.
- **Generator Compartment:** The generator compartment on the right side of the carriage is equipped with a generator and charger for charging the drone, which can ensure the battery life of the drone during firefighting and rescue operations.
- **Ladder:** A stainless-steel ladder is installed on the right side of the rear of the carriage. The ladder is a two-stage swing type, which ensures that the ladder can meet the requirements of fire protection standards, and at the same time ensures that the appearance is beautiful and the portability is ergonomic.

- **Drone Platform:** Two UAVs can be loaded at the same time, and the UAV lifting platform can be pushed out, lowered, raised and retracted by remote control, and two UAVs with a maximum size can be placed. The whole mechanism is driven by an electric hydraulic pump to drive a push-out cylinder and a lift cylinder respectively, and the sequential actions of the two cylinders are controlled by the travel switch and PLC program. The lifting and lowering of the mechanism can be realized only through the retraction and release buttons on the remote control. There are equipment pallets on both sides of the drone compartment, which can place rescue equipment such as dry powder tanks for drone firefighting.

3. Fire Pump

- **Rated flow:** At 30L/s, the pressure is 1.0MPa, and the suction depth is 3 meters; At 21L/s, the pressure is 1.3MPa, and the suction depth is 3 meters; At 15L/s, the pressure is 1.0MPa, and the suction depth is 7 meters Compliance with regional standard equivalent to EN1028-1 & EN1028-2

4. Class A Foam Fire Extinguishing System (Truck-Mounted CAFS System)

- **Foam pump output flow:** 12L/min
- **Work pressure:** Automatically match with the system about 0.8MPa
- **Maximum working pressure of foam pump:** 14MPa
- **Air compressor displacement:** 5.5m³/min
- **Air compressor working pressure:** 0.85MPa
- **Air compressor cooling method:** Forced water cooling
- **Control method:** Automatic pressure balance, overload protection, automatic alarm for high temperature

5. UAV Fire Fighting Platform with 2 Drones

- **Drone net weight:** ≤40kg (empty machine)
- **Symmetrical motor wheelbase:** ≤1800mm
- **Max cruising speed:** 12m/s (unloaded), 6m/s (loaded)
- **Max flight altitude:** ≥4500m
- **Max load:** 50KG
- **Working time:** ≥20min (one set of batteries, replaceable)
- **Working height:** ≥100 meters (dry foam)
- **Maximum withstand wind speed:** Level 6
- **Protection class:** Ip54 level, can fly in light rain
- **Power Battery:** Lithium-ion battery, 22000mAh×4, 51.8V
- **Obstacle Avoidance:** All-weather forward obstacle avoidance radar (can effectively identify obstacles within 25m and display the distance, and automatically brake according to the set braking distance)
- **Positioning:** RTK base station and network integrated positioning (stable signal, less interference, automatic switching to base station mode when there is no network differential signal, dual antenna high-precision orientation, high positioning accuracy, strong anti-magnetic interference ability. In high-voltage lines, metal buildings and other strong magnetic interference environments it can also ensure reliable operational flight), GPS, A-GPS
- **Positioning accuracy:** RTK: ≤0.5m, GPS: ≤2m
- **Communication distance:** Image transmission distance: 10KM. Data transmission distance: 10KM.
- **Control mode:** Fully Autonomous Mode, RTK Mode, GPS Mode, Attitude Mode
- **Protective function:** The aircraft will automatically switch to the safe mode when the vibration is abnormal, the GPS is lost, or the signal is lost.
- **UI:** It can display the temperature and humidity information around the drone in real time and the power saturation prompt.
- **Support mode:** Route flight, one-key take-off, one-key landing, autonomous cruise, low pressure return, runaway return, electronic fence, etc.

- **Material:** aluminum alloy
- **Operating temperature:** -25° to 65°
- **Number of stable axes:** 3 axes
- **Working voltage:** 12V
- **Output method:** network port

- **30x 4K Zoom GimbalCamera:**
  - Image sensor: CMOS: 1/1.7
  - Zoom ratio: 100x zoom (35× optical ×4 digital)
  - Lens: F6-180mm (equivalent focal length 27.8-833.4mm)
  - Aperture: 1.5-4.8
  - Total pixels: 12 million
  - Control mode: UART/S.BUS/network port
  - Weight: 842g
  - Size: 175×100×162mm
  - Other functions: Identify and track moving targets
  - Waterproof and dustproof grade: IP54 (provide relevant test report)
- **Remote Control (Ground Station Terminal) Specifications:**
  - Display device: 5.5-inch high-definition high-brightness LCD touch display (the maximum screen brightness is 1000cd/m2, nearly twice that of common smartphones)
  - System configuration: Android 9.0, 2G running memory, 16G storage space
  - Body size (without antenna and handle): 189 x 138 x 41 mm
  - Weight: ≤900 g
  - Battery capacity and type: 10200 mAh 7.4V 2S lithium-ion battery
  - Charging time: ≤3.5H (30W fast charge), ≤5H (20W fast charge)
  - Operation battery life: 12H
  - Waterproof grade: IP53
  - Working temperature: -10°C ~ 55°C
  - Multi-machine interconnection function: multi-machine interconnection supports remote control relay and one machine dual control
  - Remote control relay: For ultra-long-distance flight, it supports up to two remote controllers to relay control of one receiver to achieve twice the limit flight distance of a single remote controller
  - One machine dual control: It is for specific industry application scenarios, supports up to two remote controllers to control one receiver at the same time, one is used to control the power of the drone, and the other is used to control the load such as the gimbal servo.
  - Range extension function (optional): With the extended-range antenna, it can realize full-HD image transmission, real-time data transmission and control distance of up to 30 kilometers.
  - Functional interface: Charging: Type-C; Firmware upgrade: DATA (4-Pin); Mobile network: SIM card slot; External storage: TF card slot; Tripod mount: 1/4 threaded hole; Video output: Standard HDMI; External RTK: DATA (4-Pin); External U disk: USB-A
- **Searchlight (Mounted on Drone):**
  - Power: 80W
  - Sufficient heat dissipation, full load power 80w
  - Input power: 20~60Vdc
  - Current: 1.3~4A
  - Starting point of automatic temperature protection: 60 °C. 60~79°C, reduce the power, and the LED light will be extinguished above 85°C
  - Working method: light up when power is on
  - LED lamp beads: CREE
  - Luminous flux: 10000lm
  - Arm diameter: 20~40cm, D=40cm max

- **Directional Lights (Mounted on Drone):**
  - Power: 120W
  - Color temperature: 5000K-7000K
  - Working mode: always on
  - Working voltage: 12-68V
  - Search angle: 90°
  - Irradiation distance: ≥200 meters
- **Megaphone (Mounted on Drone):**
  - Working voltage: 24V
  - Power: 200W
  - Sound decibel: 180db
  - Sound propagation distance: ≥300 meters
  - Signal receiving distance: ≥5KM
  - Handheld ground terminal: walkie-talkie mode
  - Air terminal: can call in real time, insert card to play promotional audio
- **Three-stage Thrower (Mounted on Drone):**
  - Weight: 900g
  - Size: 300mm×60mm×100mm
  - Rated power: 6W
  - Rated voltage: 7V
  - Gear Material: Metal
  - Rated torque: 20N m
  - Rated current: 3A
  - Maximum throwing total mass: 50kg
  - Throwing mode: You can throw materials at the same time or multiple times.

ITEM 5: FIRE FIGHTING TRUCK WITH 2 ROBOTS

1. The Whole Fire Truck

- **Weight:** Approx. 16,000kg
- **Number of the Crew:** 2+4
- **Max. Speed:** 90km/h

2. Chassis

- **Chassis Series:** Heavy-Duty Chassis for Fire Truck. Right Hand Drive Airconditioned
- **Driving Manner:** 4x2
- **Rated Power:** Approx. 300 Hp
- **Manufacturing Standard:** In accordance to EN1846/ equivalent NFPA
- **Minimum ROH:** 2000 (mm)
- **Regulation: ECE R10+R16+R28+R39+R43+R46+R48**
- **Mandatory** ECE Certificate: ECE-R29, ECE-R13
- **Type of Suspension:** Leaf Spring
- **Clutch**: Hydraulically operating with air assistance
- **Tire:** 315/80R22.5
- **Fuel tank type:** 300L Diesel Oil Tank
- **Manufacturing Standard:** In accordance to EN1846/ equivalent NFPA
- **Braking System:** ABS
- **Emission Standard:** Min Euro III

3. Superstructure

3.1 Cabin

- **Structure:** Double Row Cabin with four doors manufactured by chassis manufacturer
- **Seats:** 1+1+4
- **Safety:** 3-point seat belt
- **SCBA Seats:** SCBA frame is installed at the rear 4 seats and they are adjustable to place 6.8L-9L SCBA.
- **Interior:** Alarm and warning light switches are installed in the cabin.
- **Stairs:** Anti-slip stairs
- **Anti-slip handrails** are installed.

3.2 Standardized Sub-frame

- **Material:** Rectangular tubes welded from high-strength steel.
- **Performance:** Formed using a grid-shaped welding method; post-weld alignment and vibration eliminate welding stress; fixed to the chassis beams and superstructure using a rigid or flexible hybrid connection method.
- **Corrosion Protection:** Sandblasting to remove oil and rust, followed by heavy-duty anti-corrosion paint coating.

3.3 Compartment

- **Material:** The entire cargo compartment (equipment boxes and internal frame) is made of high-strength aluminum alloy profiles, and the interior panels are made of smooth brushed anodized aluminum sheets.
- **Structure:** The cargo compartment frame is a welded all-aluminum alloy frame structure, and the outer skin is made of aluminum alloy sheet bonding technology. The equipment frame inside the cargo compartment uses an overlapping aluminum alloy profile structure, which can be flexibly laid out according to customer

requirements to maximize space utilization. New sliding brackets, trays, or high-strength plastic storage boxes can be used in the equipment boxes to fully utilize the limited space inside the cargo compartment. The interior panels and floor are both made of smooth brushed aluminum alloy sheets.

- **Roof Cover:** Made of integrally drawn aluminum alloy, with flashing warning lights and exterior lighting installed on the outside, and LED roof lighting installed on the inside.
- **Layout:** The cargo compartment has space for simultaneously parking 2 firefighting robots. It is equipped with four-corner fixing devices for the robots, ensuring a robust structure and preventing the robots from sliding, tipping, or bumping due to vehicle movement.

3.4 Roller Shutter Door

- Made by high strength composite material, mounted with safe lock. Roller shutter will slide up automatically after pulling out the Lever from holder.

3.5 Foot Pedal

- **Material:** high quality aluminum alloy
- **Width:** 50cm, bear more than 150kg, anti-slip design on the pedals with double lock function.
- **Location:** on the both sides of compartment and pump room

3.6 Superstructure Electric Appliance

- **Warning Light and alarm:** Long-row Alarm Light is mounted above cabin. Single tone 100W alarm and warning light, circuit is a separate additional circuit, the control switch is in the cabin.
- **Storage Compartment Light:** LED white light strips on both sides of the equipment box and pump room shutter door, which can meet the illumination of the whole compartment, the lighting switch and the roller shutter door state are linked.
- **Strobe Light:** Mounted on top aluminum frame, at the both sides of the compartment.
- **External Lighting:** Long life lamps are installed on both sides of compartment for lighting in night.
- **Roof Light:** Mounted on the inside of the roof of the compartment.
- **Side Indicator Light:** Inline yellow warning light is mounted on the side of the compartment and pedal.
- **360-degree panoramic reversing image system.**

3.7 Paint Color: Red

3.8 Robot Loading Ramp

- **Structure:** Electro-hydraulic control; lifting mechanism is tilting lifting. When the tailgate is raised, it serves as the rear door of the container; when the tailgate is tilted down, it serves as the robot loading ramp.
- **Angle between the tailgate and the ground after landing:** ≤30°
- **Load Capacity:** ≤3 tons.

3.9 Fire Fighting Robot

Quantity: 2 Units
Application fields: For the fire fighting and reconnaissance in all areas

The robot shall include the following minimum capabilities:

- Integrated detection module capable of detecting 14 gases (O_2, CH_4, CO, H_2S, CO_2, Cl_2, NH_3, H_2, SO_2, NO_2, C_3H_8, C_2H_4O, C_2H_2, VOC) plus 2 environmental parameters (“Able to detect 14 gases… + 2 environmental parameter”)
- Acceleration capability up to 8.2 km/h
- Traction force minimum 6.6–6.8 kN
- Explosion proof construction with IP67 protection (IP68 for chassis)
- Multi purpose use: firefighting, reconnaissance, and equipment transport

(“Acceleration is up to 8.2 km/h… High traction force up to 6.6 kN… IP67 protection (IP68 for chassis)… Multi function use”)

Main Parameters:

- **Climbing ability**: 35°
- **Obstacle crossing**: 300 mm
- **Wading depth**: 600 mm
- **Straight running bias**: ≤0.08%
- **Braking distance**: ≤0.25 m
- **Traction mechanism:** All-terrain high-intensity track, track internal adopts metal frame
- **Tractive force:** 1900N
- **Speed:** 1.8m/s
- **Obstacle crossing height:** 150mm
- **Roll angle:** 30°
- **Control mode:** Wireless remote control
- **Continuous running time:** 3h
- **Working hours:** 10h
- **Communication distance:** 1km (Affected by weather, environment, terrain, etc.)
- **Wading depth:** 250mm
- **Protection grade:** IP67

(“Climbing Ability: Max. 35°… Obstacle Crossing: Max. 300 mm… Wading Depth: 600 mm”)

Firefighting Function

- Integrated fire monitor (water/foam)
- Spray angle up to 120°
- Range: ≥85 m (water) and ≥73.2 m (foam)
- Flow rate: 81.3 L/s
- Elevation: –14° to +90°
- Horizontal rotation: –90° to +90°

(“Spray angle Max. 120°… ≥85M water… 81.3 L/s… Horizontal -90° to 90°; vertical -14° to 90°”)

Reconnaissance Function

Multiple HD infrared cameras for:

- Front and rear view
- Robot body tracking
- Water cannon tracking
- Real time angle monitoring
- Audio collection with sensitivity ≥40 dB
- Optional thermal imaging camera

(“Multiple HD infrared cameras… Audio collection… sensitivity ≥40dB… Heat eye detection”)

Gas Detection

- Integrated gas detection module for 14 gases
- Optional radioactive detection

(“Gas detection: integrated gas detection module… optional for radioactive detection”)

Temperature Monitoring

- Infrared temperature sensors inside and outside the robot
- Temperature measurement range: –50°C to +350°C (IR sensor)
- Thermal camera: –20°C to +150°C (optional)

Mobility

- Ranging diameter: 2500 mm
- Turning diameter: 1390 mm
- Climbing ability: 35°
- Obstacle crossing: 300 mm
- Wading depth: 600 mm
- Straight running bias: ≤0.08%
- Braking distance: ≤0.25 m

Power & Endurance

- Continuous walking time: ≥32 hours
- Total endurance time: ≥16 hours
- Automatic power generation during water spray

Protection

- Chassis protection: IP68
- Accessories: IP67

Control System

- Wireless control range: 1000 m
- Remote control unit:
- Weight: 3.8 kg
- Size: 380 × 190 × 95 mm
- 10 inch display
- Charging time: 3 hours

Safety Features

- Obstacle avoidance: 2 m
- Self cooling via water curtain
- Explosion proof construction

Fire fighting monitor parameters:

- **Material:** Body: 304 stainless steel; head: aluminium alloy hard anodizing
- **Working pressure:** 0.7MPa
- **Spraying mode:** Low pressure straight stream nozzle, water column and atomization
- **Maximum flow:** 40L/s
- **Range:** 60m
- **Rotation angle:** Horizontal 360°, Vertical 0°~+90°(±5°)

4. Accessories

No.	Name	Qty.	Specification
1	Shovel	1	2#
2	Axe	1	
3	Crowbar	1	
4	Bolt Cutter	1	
5	Portable Fire Extinguisher	1	2kg
6	Tools of Chassis	1	
7	Triangle Warning Board for Vehicle	1	

ITEM 6: SMALL FIRE FIGHTING VEHICLE (4-WHEELS ALL TERRAIN FIRE MOTORCYCLE)

1. Brief Introduction

- All Terrain Fire Fighting Motorcycles are mainly used for fire patrol in forest farms, forest scenic spots, large industrial parks, big specialized markets, cities and towns, ancient architecture community etc. These vehicles are the most ideal fire-fighting equipment for public security fire forces and enterprise fire brigades. Manufactured accordance to EN1846/ equivalent NFPA

2. Chassis Specification

- **Engine Model:** Single cylinder, four strokes, water cooling
- **Displacement:** 686 cc
- **Compression ratio:** 9.2:1
- **Max. Power:** 25.5KW/5500RPM
- **Max. Torque:** 46.1N.M/5000RPM
- **Start Method:** Electric
- **Transmission:** Automatic, CVT+L-H-N-R
- **Transfer Method:** Through Axle
- **Dimension:** 2980×1550×1950mm
- **Wheelbase:** 1950mm
- **Seat Height:** 890mm
- **Ground Clearance:** 310mm
- **Net Weight:** 621kg
- **Oil Tank:** 28L
- **Front Tyre:** AT26×9-14
- **Rear Tyre:** AT26×11-14
- **Brake (Front/Rear):** Disc Brake
- **Battery:** 12V30AH

3. The Fire Motorcycle's Specification

- **Overall Dimension (mm):** Approx. Length: 3010, Width: 1575, Height: 2200
- **Total weight with full load (kg):** Approx. 1200
- **Engine:** Gasoline, 686cc, water cooled, 4-stroke, 1-cylinder
- **Max. Power:** 25.5KW/5500RPM
- **Driving manner:** Front engine, four-wheel drive 4x4
- **Max. speed (km/h):** 60
- **Ground clearance (mm):** 310
- **Emission standard:** Euro IV
- **Motor for water pump:** HONDA (Japanese Brand)
- **Structure of motor:** Four-stroke, 1 cylinder
- **Manufactured:** In accordance to EN1846/ equivalent NFPA
- **Rated Power (KW):** 4
- **Starting method:** Electric
- **Rotation speed (r/min):** 3600
- **Flow rate of Water Pump (l/min):** 40
- **Work Pressure (bar):** 40

- **Self-suction function (m):** 5
- **Rotation speed (r/min):** 650
- **Length of hose (m):** 30
- **Test Pressure of hose (bar):** 100
- **Internal and external diameter (mm):** 13/19
- **Model of Water Nozzle:** GYQ30
- **Shot range of straight stream (m):** 15
- **Shot range of mist spray (m):** 7
- **Flow rate of water nozzle (l/min):** 30
- **Control rate of foam proportioner:** 0.4~6%
- **Flow rate (l/min):** adjustable
- **Water tank (L):** 180
- **Independent Foam Tank (L):** 20

4. Main Components

- Honda/Yamaha/ Suzuki Motor
- AR Water Pump NFPA/ EN Standard
- Hose Reel NFPA/ EN Standard
- Water Nozzle

ITEM 7: SMALL FIRE FIGHTING VEHICLE (2-WHEELS FIRE MOTORCYCLE)

1. Overview

The 2-wheels Fire motorcycle is produced on the motorcycle of SUZUKI/Honda/Yamaha with ABS and it is a mobile all-terrain fire extinguishing device. It can be widely used in high-ways, factories, schools, communities, hospitals, forests, field towns, cultural relics and other places. It could quickly extinguishing the fire in the early stages and also help in clearing the road in close traffic moment manufactured in accordance to EN1846 or equivalent NFPA Standards.

2. Structure

2.1 Motorcycle: Motorcycles is with small size and convenient to go different places. Equipped with ABS.

2.2 Fire Fighting System: The firefighting system use water mist to extinguish the fire. It could be with bigger heat absorption area and better heat absorption capacity. The effect is much better than normal fire extinguishing agent.

3. Technical Specifications

3.1 The Parameters of Whole Vehicle

- **Full load total mass:** Approx. 300kg
- **Water tank capacity:** 45L (2*22.5L)
- **Number of crew:** 1 person
- **Maximum speed with full load:** 90km/h
- **Ground clearance:** 155mm
- **Wheelbase:** 1430mm
- **Paint color:** black and red

3.2 The Parameters of Motorcycle

- **Curb weight:** 206kg
- **Engine model:** 250cc, 4 strokes, two cylinders
- **Cooling method:** water cooling
- **Fuel supply method:** EFI
- **Start mode:** Electric start
- **Maximum power:** 18.4KW / 8000rpm
- **Maximum torque:** 23.4N.m / 6500rpm
- **Compression ratio:** 11.5:1
- **Fuel tank capacity:** 17.3L
- **Front brake:** 290mm disc brake
- **Rear brake:** 240mm disc brake
- **Front wheel size:** 110/80-17 M/C 57H
- **Rear wheel size:** 140/70-17 M/C 66H

3.3 The Parameters of Fire Fighting System

- **Water Tank capacity:** 45L (2*22.5L)
- **Air Cylinder Bottle:** 6.8L
- **Air Cylinder Pressure:** 30Mpa
- **Mixing Ratio:** 3% or 6%
- **Spray Nozzle Pressure:** 0.7-1.1 Mpa
- **Spray distance with jet mode:** 15m
- **Spray distance with fog mode:** 7m
- **Water mist particle size of jet mode:** ≤160μm
- **Water mist particle size of fog mode:** ≤70μm
- **Fire Class:** 4A or 55b

ITEM 8: CENTRALIZED DASHBOARD FOR REAL TIME MONITORING FLEET MOVEMENT

The Contractor shall design, supply, install, configure, test, commission, operate, maintain and support a comprehensive Fleet Management Telematics / IoT Platform delivered as a Software-as-a-Service (SaaS) solution for real-time monitoring and management of KMC Fire Brigade vehicles and operational fleet assets. The system shall provide centralized command, control, monitoring, reporting and analytics capabilities through a Unified Single-Window Centralized Monitoring Dashboard installed at KMC Head Office. The Contractor — whether acting as a Fire Vehicle Manufacturer, Authorized Dealer, Supplier, System Integrator, Joint Venture or Consortium Partner — shall be responsible for the complete supply, installation, integration, commissioning, operation and maintenance of the Fleet Management Telematics Platform and Command Center in accordance with the requirements of this Contract.

1. FLEET MANAGEMENT TELEMATICS / IoT PLATFORM

The Contractor shall provide a proven, enterprise-grade Fleet Management Telematics / IoT Platform deployed as a SaaS-based Single Window solution, capable of real-time monitoring, tracking and management of all Fire Brigade vehicles and operational fleet assets being procured under this Tender, including but not limited to:

- Water & Foam Fire Tenders
- Municipal Fire Pumpers
- Aerial Ladder Platform (Snorkel Type)
- Fire Trucks equipped with Drone Systems
- Fire Trucks equipped with Robotic Firefighting Systems
- Small Firefighting Vehicles
- Fire Motorcycles
- Allowing future expansion of fleet

1.1 SaaS Single-Window Platform Requirements

The platform shall be delivered as a cloud-hosted or on-premise Software-as-a-Service (SaaS) solution accessible through a single unified web-based portal, providing:

- Single-login unified access for all fleet monitoring, reporting, analytics, and administration functions
- Role-based access control (RBAC) with configurable user permission levels for KMC administrators, operators, and management
- Multi-device access via desktop web browser, tablet and mobile application (iOS and Android)
- Real-time GPS tracking and live vehicle monitoring across the entire fleet
- Real-time display of vehicle locations, movement status and operational availability
- Historical route playback and complete trip history

- Fleet utilization monitoring and advanced analytics
- Vehicle activity and operational performance reporting
- OBD/CAN vehicle diagnostic data integration and display
- Dashboard-based command and control interface
- Centralized management and administration of all fleet assets
- Automated alert and notification management
- Integrated MIS reporting suite

2. GPS / IoT VEHICLE TRACKING DEVICES

The Contractor shall supply, install and commission industrial-grade GPS/IoT vehicle tracking devices on all designated Fire Brigade vehicles, including all accessories, communication interfaces, SIM connectivity, mounting hardware, wiring and installation materials required for complete operational functionality.

2.1 Minimum Technical Specifications — GPS/IoT Tracking Device

Note: The following specifications define the minimum acceptable technical standard. Devices must meet or exceed all parameters listed below.

Parameter	Minimum Requirement
GNSS Systems	GPS, GLONASS, GALILEO, BeiDou — simultaneous multi-constellation
GNSS Sensitivity	-148 dBm acquisition; -165 dBm tracking (minimum)
GNSS Accuracy	< 2.5 metres CEP (Circular Error Probable)
Supported Networks	Configurable for Pakistani cellular operators (Jazz, Zong, Ufone, Telenor)
Data Transmission	TCP/IP, UDP over cellular — configurable reporting intervals (1 second to 24 hours)
OBD-II / CAN Bus Interface	On-board OBD-II port reader — ISO 15765-4, SAE J1939, SAE J1979 compliant
CAN Bus Data Parameters	Engine RPM, vehicle speed (OBD), fuel level, odometer, coolant temperature, engine load, DTC fault codes, ignition status
Accelerometer / IMU	3-axis accelerometer — harsh braking, acceleration, cornering, crash detection
Operating Temperature	-40°C to +85°C (automotive grade)

Parameter	Minimum Requirement
Power Supply	10–30V DC vehicle power with internal backup battery
Backup Battery	Minimum 170 mAh — GPS operation continuity on power loss; low battery alert
Tamper Detection	Device removal and case-open detection alert
Over-the-Air (OTA) Updates	Remote firmware and configuration update capability
Data Storage (Offline)	Minimum 128 MB internal flash — offline data logging when no network coverage
Certifications	CE, E-Mark (automotive), RoHS compliant
Ingress Protection	IP54 or higher — dust and splash resistant
Communication Protocol	Open, standardized protocol — compatible with third-party platforms and SaaS integration
Geofencing On-Device	Supported — configurable alert triggers for zone entry/exit

2.2 OBD / CAN Bus Vehicle Diagnostics

The GPS/IoT tracking device shall interface with each vehicle's OBD-II port or CAN bus to retrieve and transmit real-time vehicle diagnostic data to the Fleet Management Platform. The following diagnostic parameters shall be captured, transmitted and displayed on the Centralized Dashboard:

- Engine RPM (real-time and historical trending)
- Vehicle speed via OBD/CAN (cross-referenced with GPS speed)
- Fuel level monitoring — real-time percentage and volume estimation
- Engine coolant temperature with overheat alerts
- Engine load percentage
- Total odometer reading (vehicle lifetime mileage)
- Ignition ON/OFF status with timestamp logging
- Diagnostic Trouble Codes (DTCs) — fault code reading and clearing capability
- Battery voltage monitoring with low-voltage alerts
- PTO (Power Take-Off) engagement status — critical for fire pump activation monitoring

Note: OBD/CAN interface compatibility must be confirmed for each vehicle type prior to installation. The Contractor shall submit a compatibility matrix covering all fleet vehicle makes and models.

2.3 System Connectivity

The Contractor shall be responsible for procurement, provisioning and management of SIM cards and cellular data plans for the entire device fleet for the full five (05) year contract period. Requirements:

- Minimum data plan: 50 MB per device per month (to be sized appropriately based on reporting frequency)
- Dual-SIM or network-switchable device preferred for network redundancy
- SIM cards may be provisioned on any licensed Pakistani network operator
- All SIM and data plan costs for five (05) years to be included in the Contractor's bid price
- The Contractor shall ensure continuous cellular connectivity across Karachi's and Sindh operational zones

2.4 GPS Reporting Frequency

The device reporting intervals shall be configurable by the platform administrator. Minimum required reporting performance:

Vehicle State	Minimum Reporting Interval
Moving (Active)	Every 10 seconds or every 100 metres — whichever occurs first
Idle / Stationary	Every 60 seconds (heartbeat position update)
Emergency / Alert Mode	Every 5 seconds (triggered by emergency button or alert event)
Offline / No Network	Data buffered in device memory — transmitted on network restoration

3. LICENSED MAPPING & LOCATION INTELLIGENCE PLATFORM

The system shall utilize a fully licensed mapping and location intelligence platform and shall include all software licenses, subscriptions, usage rights and associated costs required during the five (05) year contract period.

The platform shall provide:

- Real-time vehicle visualization on digital map interface
- Route mapping, navigation and route history replay
- Geocoding and reverse geocoding location services

- Routing and navigation support for incident response
- Configurable geofencing zones with automated alerting
- Incident location mapping and incident management overlay
- Location intelligence, heatmaps and fleet analytics visualization

Note: All mapping API usage costs, subscription fees and license renewals for the five (05) year period shall be included in the Contractor's bid. No additional mapping costs shall be payable by KMC during this period.

4. CENTRALIZED MONITORING DASHBOARD & COMMAND CENTER

The Contractor shall design, supply, install, configure, test and commission a Centralized Monitoring Dashboard at KMC Head Office as a unified Single-Window Command and Control Center. The scope shall include provision of all necessary hardware, software, networking equipment, display systems, licenses, accessories and associated infrastructure required for complete operational functionality.

4.1 Command Center Hardware

The Contractor shall provide, at a minimum, the following hardware:

- One (01) Centralized Fleet Monitoring Dashboard — unified single-window interface
- One (01) minimum 85-inch (measured diagonally) Professional Grade Commercial Display, minimum 4K UHD resolution (3840 x 2160), minimum 500 nits brightness, 178° horizontal and vertical viewing angle, with a minimum rated operational lifespan of 50,000 hours, suitable for continuous 24/7 Command Center operations.
- Dashboard Workstations and Operator Consoles — quantity as required for operational capacity
- Central Monitoring Servers — sized for full fleet scale with N+1 redundancy
- Networking equipment including managed switches, routers and communication interfaces
- Licensed mapping API integration
- Fleet Management Software Platform (SaaS)
- Data storage and backup facilities — minimum 2 years on-site data retention
- Dashboard visualization, OBD diagnostics display and reporting software
- Wall mounting brackets, display supports, structured cabling and accessories
- UPS and power protection equipment for all command center hardware
- All software licenses, subscriptions and operating rights for complete system operation

4.2 Dashboard — Real-Time Display Capabilities

The Single-Window Dashboard shall provide real-time visualization and monitoring of:

- Live vehicle locations on digital map — all fleet assets simultaneously
- Fleet deployment status and operational availability
- Vehicle availability and readiness indicators
- Geofence zone status and geofence event alerts

- OBD/CAN diagnostic data: fuel level, engine RPM, coolant temperature, fault codes, ignition status per vehicle
- Fuel monitoring information and consumption trends
- Route history and trip replay
- Real-time alerts and notifications — over speeding, geofence violations, communication loss, DTC faults
- Fleet Key Performance Indicators (KPIs) and performance analytics
- UHF wireless communication integration status
- Drone operational status and deployment tracking
- Robotic firefighting system deployment status
- PTO / fire pump activation status per vehicle
- Management reports and operational analytics
- Vehicle health status indicators based on OBD/CAN data

5. GEOFENCING AND AUTOMATED ALERT MANAGEMENT

The system shall provide a fully configurable geofencing and automated alert management module including but not limited to:

- Unauthorized vehicle movement outside designated operational zones
- Geofence zone entry and exit events
- Route deviation from assigned routes
- Overspeeding — configurable speed thresholds per vehicle type
- Excessive engine idling beyond configurable duration
- Vehicle inactivity / non-movement alerts
- Emergency alerts triggered by in-vehicle panic/emergency button
- Communication loss and device offline alerts
- OBD/CAN fault alerts — engine fault code (DTC) detection
- Low fuel level alerts — configurable threshold
- Engine overheat alerts
- Battery voltage low alerts
- Device tampering / removal alerts
- PTO activation / deactivation events for fire pump operations

6. FUEL MONITORING, OBD DIAGNOSTICS & FLEET ANALYTICS

6.1 Fuel Monitoring

- Real-time fuel level monitoring via OBD/CAN interface
- Fuel consumption calculation and reporting per trip, per day, per vehicle
- Fuel efficiency analysis and benchmarking across fleet
- Fuel drain / theft detection alerts (rapid fuel level drop detection)
- Fuel consumption vs. mileage correlation reporting

6.2 OBD / CAN Vehicle Health Monitoring

- Continuous monitoring of engine parameters via OBD/CAN interface
- Diagnostic Trouble Code (DTC) real-time reading and alert notification
- Predictive maintenance indicators based on engine parameter trends
- Vehicle health summary dashboard per vehicle and fleet-wide
- Service due alerts based on mileage and engine hours
- Historical engine parameter trending and analysis

6.3 Fleet Analytics

- Vehicle utilization analysis — active hours vs. idle hours vs. downtime
- Operational hours monitoring per vehicle and fleet aggregate
- Mileage and trip analysis — distance, duration, frequency
- Driver / operator behavior monitoring — harsh events, speeding, excessive idling
- Fleet efficiency reporting and benchmarking
- Exception reporting — flagged anomalies and non-compliant events
- Fleet performance KPI dashboard with trend analysis

7. REPORTING AND MANAGEMENT INFORMATION SYSTEM (MIS)

The platform shall generate automated, scheduled and on-demand reports including but not limited to:

- Vehicle utilization and operational availability reports
- Daily, weekly and monthly fleet movement reports
- Fuel consumption and efficiency reports
- OBD diagnostic summary reports — fault codes, engine health status
- Geofence violation and zone compliance reports
- Overspeeding incident reports
- Idle time and engine-on reports
- Route deviation and compliance reports
- PTO / fire pump activation logs
- Fleet performance and KPI reports
- Executive management summary reports
- Custom report builder for ad-hoc reporting requirements

All reports shall be exportable in PDF, Excel (XLSX) and CSV formats. Automated report scheduling and email delivery to designated recipients shall be supported.

8. INTEGRATION — UHF COMMUNICATIONS, DRONE & ROBOTIC PLATFORMS

The Fleet Management Telematics Platform and Centralized Dashboard shall be integrated with and capable of monitoring all Fire Brigade fleet assets, including all vehicle types as listed in Section 1.

8.1 UHF Communication System Integration

The system shall support interoperability and status monitoring with:

- Handheld UHF Walkie Talkies
- Mobile Vehicle-Mounted UHF Radio Sets
- Fixed UHF Base Stations
- UHF Repeater Stations

The system shall be fully integrated with the existing UHF wireless communication infrastructure available at KMC Fire Brigade. The Contractor shall ensure complete interoperability and seamless integration with the installed UHF radio systems without requiring replacement of any existing communication equipment.

8.2 Drone System Integration

- Real-time GPS position tracking of Firefighting Drones on the unified dashboard map
- Drone operational status display — active, standby, deployed, returning
- Battery / fuel level status of drone systems
- Drone deployment event logging and alert generation
- Integration via drone manufacturer API or standard telemetry protocol

8.3 Robotic Firefighting System Integration

- Real-time status monitoring of Robotic Firefighting and Rescue Systems
- Deployment status display on unified dashboard
- Operational event logging for robotic assets

8.4 Unified Command Interface

The Single-Window Dashboard shall facilitate sharing and unified display of:

- Vehicle location information across all fleet assets
- Fleet availability and readiness status
- Incident deployment information
- Drone operational and deployment status
- Robotic asset deployment status
- Operational alerts and notifications from all integrated systems
- Command, control and communication (C3) support functions

9. FUTURE INTEGRATION CAPABILITY & OPEN ARCHITECTURE

The proposed platform shall be based on an open, scalable and API-driven architecture and shall support future integration, as an option, with:

- CCTV Surveillance Systems
- Smart City Command and Control Applications
- Computer Aided Dispatch (CAD) Systems
- Emergency Response Management Systems
- Dispatch Consoles and Command Center Infrastructure
- Geographic Information Systems (GIS)
- Other public safety and emergency management technologies

The platform shall support open RESTful APIs, standard communication protocols (MQTT, HTTP/HTTPS, TCP/IP) and standard data exchange formats (JSON, XML) to facilitate future interoperability without requiring replacement of the core system.

10. REGULATORY COMPLIANCE

The Contractor shall ensure compliance with all applicable regulatory requirements, statutory obligations, Pakistan Telecommunication Authority (PTA) telecommunications regulations, SIM/device registration requirements, licensing requirements and all applicable laws necessary for uninterrupted operation of the system throughout the five (05) year contract period.

11. NETWORK OPERATIONS CENTRE (NOC)

The Contractor shall provide a dedicated twenty-four (24) hours a day, seven (07) days a week, three hundred and sixty-five (365) days a year Network Operations Centre (NOC) for continuous monitoring, management and support of the Fleet Management System.

The NOC shall be responsible for:

- Continuous system performance monitoring and health checking
- Incident detection, logging and management
- Fault management and escalation
- Service availability monitoring — minimum 99.5% platform uptime SLA
- Proactive alert management and resolution
- GPS device connectivity monitoring — flagging offline devices within 15 minutes
- Cellular SIM data plan monitoring and renewal management
- OTA firmware and configuration update management for field devices
- NOC infrastructure shall include dedicated servers, workstations, display systems and networking equipment

12. CUSTOMER SUPPORT AND MAINTENANCE

The Contractor shall provide dedicated 24/7 customer support and maintenance services including:

- Dedicated helpdesk support — response within 2 hours for critical issues
- Technical assistance and remote diagnostics
- Corrective and preventive maintenance for all hardware and software
- Software support, bug fixes, security patches and version upgrades at no additional cost
- Hardware replacement and repair services — field device replacement within 48 hours of fault confirmation
- System troubleshooting and fault rectification services
- Spare parts inventory to be maintained by Contractor for field device replacement

13. TRAINING AND DOCUMENTATION

The Contractor shall provide comprehensive training to KMC personnel covering:

- System operation and SaaS platform administration
- Dashboard management and single-window interface operation
- OBD diagnostic data interpretation
- Report generation and MIS module usage
- Fleet monitoring and alert management
- System administration, user management and RBAC configuration

The Contractor shall provide all associated user manuals, operating procedures, system administration guides and technical documentation in English language.

14. SOFTWARE LICENSING, UPDATES AND RENEWAL

- The Contractor shall provide all software licenses, SaaS platform subscriptions, mapping API licenses, dashboard licenses and any other third-party software licenses required for complete operation of the system
- All software licenses, subscriptions and usage rights shall remain valid for a minimum period of Five (05) years from the date of commissioning and acceptance of the system
- The Contractor shall ensure uninterrupted validity of all licenses throughout the initial five-year period and shall be responsible for all licensing, subscription and renewal costs during this period
- Upon expiry of the initial five-year period, the licenses shall be renewable by KMC upon payment of applicable renewal fees prevailing at that time
- The Contractor shall provide all software updates, patches, bug fixes, security updates, version upgrades and performance improvements during the five-year contract period at no additional cost to KMC
- No additional charges shall be payable by KMC for software maintenance, updates, security patches, bug fixes or version upgrades during the initial five-year period
- All software licenses and SaaS platform accounts shall be registered and issued in the name of Karachi Metropolitan Corporation (KMC), wherever applicable

- KMC shall retain full ownership of all data generated by the system throughout and beyond the contract period
- The platform shall support data export in standard formats to facilitate future migration or platform transition

15. DELIVERABLES

The Contractor shall provide the following deliverables under this Contract:

- GPS/IoT vehicle tracking devices (with OBD/CAN interface) for all Fire Brigade vehicles procured under the Contract — including all accessories, SIM cards, mounting hardware, wiring and installation materials
- Fleet Management Telematics / IoT Platform — SaaS-based Single Window unified solution
- Licensed mapping and location intelligence API integration
- Centralized Single-Window Monitoring Dashboard at KMC Head Office
- One (01) minimum 85-inch Professional Grade Commercial Display for continuous 24/7 Command Center operations
- Dashboard Workstations, Operator Consoles, Servers, Networking Equipment and Associated Hardware
- OBD/CAN Vehicle Diagnostic Monitoring Module — integrated into dashboard
- Geofencing and Automated Alert Management System
- Fuel Monitoring and Fleet Analytics Modules
- Management Information System (MIS) Reporting Module
- Integration-ready interfaces for UHF Radio Systems, Firefighting Drones and Robotic Firefighting Systems
- Dedicated 24/7 Network Operations Centre (NOC) Services
- Dedicated 24/7 Customer Support and Helpdesk Services
- Comprehensive Training, User Documentation, Technical Manuals
- All Software Licenses, SaaS Subscriptions, Mapping API Licensing, Software Updates, Upgrades and associated services for a minimum period of Five (05) years
- Complete monitoring coverage of 100% of Fire Brigade fleet assets procured under this Contract through the Centralized Single-Window Dashboard

PART-B: DETAILED SPECIFICATIONS FOR ADDITIONAL FIRE FIGHTING AND RESCUE EQUIPMENT

Item 1: Full Face Respirator Mask

Type: Full Face Respirator compatible with Rd40 filters for Firefighting, Rescue, Industrial Safety, and Hazardous Materials Response

Minimum Specifications

The Full-Face Respirator Mask shall provide comprehensive respiratory, eye, and face protection for firefighting support, rescue operations, industrial safety applications, and hazardous materials response. The facepiece shall be manufactured from EPDM or equivalent high-performance material resistant to heat, chemicals, aging, and environmental degradation. The mask shall incorporate a double-sealing edge design to provide a secure, leak-tight fit and enhanced wearer comfort during prolonged operations.

The respirator shall be equipped with a large panoramic visor manufactured from impact-resistant PMMA acrylic, polycarbonate, or equivalent material, providing an approximately 180-degree field of vision without optical distortion. An integrated anti-fog airflow system with internal oro-nasal mask shall be provided to minimize visor fogging and maintain clear visibility in demanding operational environments.

The mask shall feature a five-point adjustable head harness for rapid donning, secure fit, and even pressure distribution. The connection interface shall utilize a standard Rd40 threaded connection conforming to relevant EN or equivalent NFPA standards, enabling compatibility with approved filter canisters. The respirator shall provide low breathing resistance to reduce wearer fatigue and shall incorporate a speech diaphragm or equivalent communication feature to facilitate clear voice transmission.

The unit shall be compatible with firefighting helmets, protective clothing, and other personal protective equipment and shall be of reusable design with replaceable components to facilitate cleaning, maintenance, and long service life. The respirator shall be suitable for protection against toxic gases, vapors, smoke, airborne particulates, and hazardous contaminants when used with appropriate filters and shall be certified in accordance with EN 136:1998 EN or equivalent NFPA respiratory protection standards.

Item 2: Multi-Purpose Fire Nozzle (230 LPM)

Type: Adjustable Combination Firefighting Nozzle

Minimum Specifications

The Multi-Purpose Fire Nozzle shall be an adjustable combination firefighting nozzle designed for structural, industrial, municipal, and emergency firefighting operations. The nozzle shall incorporate an ergonomically designed operating handle with a ball valve shut-off mechanism

for smooth opening, closing, and flow control. The body shall be manufactured from high-strength aluminum alloy or equivalent lightweight corrosion-resistant material and protected by a hard anodized finish to provide enhanced durability, wear resistance, and long service life in demanding firefighting environments.

The nozzle shall provide selectable stream patterns including straight jet, spray, fog, and flashover protection mode, enabling firefighters to effectively perform fire attack, cooling, exposure protection, and compartment protection operations. The nozzle shall provide selectable flow rates of 50, 100, 150, and 230 litres per minute at 6 bar operating pressure and shall be capable of operating within a pressure range of 3.5 to 16 bar. The inlet connection shall be 2.5 inches (65 mm) and compatible with standard firefighting hose couplings.

The nozzle shall be designed to minimize reaction forces while maintaining optimum stream reach, water distribution, and firefighting effectiveness. It shall be suitable for use with water, foam solutions, and other approved firefighting agents and shall be manufactured and tested in accordance with NFPA 1964 and other applicable international firefighting equipment standards.

Item 3: Multi-Purpose Fire Nozzle (475 LPM)

Type: Adjustable Combination Firefighting Nozzle

Minimum Specifications

The Multi-Purpose Fire Nozzle shall be an adjustable combination firefighting nozzle designed for structural, industrial, municipal, and emergency firefighting operations. The nozzle shall incorporate an ergonomically designed operating handle with a ball valve shut-off mechanism for smooth opening, closing, and flow control. The body shall be manufactured from high-strength aluminum alloy or equivalent lightweight corrosion-resistant material and protected by a hard anodized finish to provide enhanced durability, wear resistance, and corrosion protection.

The nozzle shall provide selectable stream patterns including straight jet, narrow spray, wide-angle fog, and flashover protection mode. It shall provide selectable flow rates of 115, 230, 360, and 475 litres per minute at 6 bar operating pressure and shall operate effectively within a pressure range of 3.5 to 16 bar. The inlet connection shall be fitted with a John Morris (BS 336) instantaneous coupling or equivalent and shall have a nominal inlet size of 2.5 inches (65 mm).

The nozzle shall be capable of providing effective fire attack, cooling, exposure protection, compartment cooling, and firefighter protection during structural, industrial, and municipal firefighting operations. It shall permit smooth and rapid adjustment between flow settings and stream patterns while minimizing nozzle reaction and maintaining optimum stream reach, water distribution, and firefighting performance. The nozzle shall be suitable for use with water, foam solutions, and other approved firefighting agents and shall be manufactured, tested, and certified in accordance with NFPA 1964 and other applicable international firefighting equipment standards.

Item 4: Multi-Purpose Fire Nozzle (950 LPM)

Type: High-Capacity Adjustable Combination Firefighting Nozzle

Minimum Specifications

The Multi-Purpose Fire Nozzle shall be a high-capacity adjustable combination firefighting nozzle designed for structural, industrial, petrochemical, warehouse, and large-scale fire suppression operations. The nozzle shall incorporate an ergonomically designed operating handle with a ball valve shut-off mechanism for effective flow control. The body shall be constructed from high-strength aluminum alloy or equivalent corrosion-resistant material and protected with a hard anodized finish to ensure long-term durability and resistance to wear and corrosion.

The nozzle shall provide selectable stream patterns including straight jet, narrow spray, wide-angle fog, and flashover protection mode. It shall provide selectable flow rates of 350, 450, 580, 780, and 950 litres per minute at 6 bar operating pressure and shall operate effectively within a pressure range of 3.5 to 16 bar. The inlet connection shall be fitted with a British Standard instantaneous coupling or equivalent and shall have a nominal inlet size of 2.5 inches (65 mm).

The nozzle shall be capable of delivering high-volume water flow for major firefighting incidents while maintaining effective stream reach, water distribution, and operational efficiency. It shall allow rapid adjustment between flow settings and stream patterns and shall be suitable for use with water, foam solutions, and other approved firefighting agents. The equipment shall be manufactured, tested, and certified in accordance with NFPA 1964 and other applicable international firefighting equipment standards.

Item 5: Hydro Vent Nozzle

Type: 1½ Inch Turbojet / Combination Firefighting Nozzle

Minimum Specifications

The Hydro Vent Nozzle shall be a 1½-inch turbojet combination firefighting nozzle designed for fire suppression, ventilation support, cooling, exposure protection, and general firefighting operations. The nozzle shall be compatible with standard 1½-inch firefighting hose lines and shall provide adjustable discharge patterns ranging from straight stream to wide-angle fog spray. The design shall permit effective fire attack while supporting smoke movement and cooling operations during structural firefighting incidents.

The nozzle shall incorporate an ergonomically designed operating handle for controlled opening and shut-off and may be supplied with or without a pistol grip according to operational requirements. The body shall be manufactured from durable corrosion-resistant materials suitable for prolonged fire service use and shall provide smooth transition between discharge patterns while maintaining reliable performance under firefighting operating pressures. The nozzle shall be compatible with standard fire service couplings and shall be manufactured in

accordance with applicable NFPA, EN, or equivalent international firefighting equipment standards.

Item 6: Foam Making Branch Pipe Nozzle

Type: Low Expansion Foam Branch Pipe Nozzle

Minimum Specifications

The Foam Making Branch Pipe Nozzle shall be designed for the application of low-expansion firefighting foam in municipal, industrial, petrochemical, aviation, and hazardous materials firefighting operations. The nozzle shall be manufactured from high-strength corrosion-resistant aluminum alloy, stainless steel, brass, or equivalent durable materials suitable for prolonged firefighting service and harsh operating environments.

The nozzle shall incorporate an integrated air-aspirating foam generation system capable of producing stable and uniform low-expansion foam. The inlet connection shall be 2.5 inches (65 mm) fitted with a British Standard (BS 336) instantaneous coupling or equivalent. The nozzle shall be suitable for use with both Class A and Class B firefighting foam concentrates and shall provide optimized foam expansion characteristics for fire suppression, vapour suppression, cooling, and spill fire protection.

The equipment shall be lightweight, ergonomically designed, and capable of providing consistent foam quality and discharge performance under varying operating conditions. It shall be compatible with standard firefighting foam proportioning systems and suitable for hydrocarbon fuel fires, flammable liquid incidents, industrial hazards, aircraft incidents, storage facilities, and municipal firefighting operations. The nozzle shall be manufactured, tested, and certified in accordance with applicable NFPA, EN, or equivalent international standards governing foam-making equipment and firefighting nozzles.

Item 7: Foam Fire Nozzle (480 LPM)

Type: Low Expansion Foam Firefighting Nozzle

Minimum Specifications

The Foam Fire Nozzle shall be a low-expansion firefighting nozzle designed for the application of water and firefighting foam during municipal, industrial, petrochemical, aviation, fuel storage, and tanker fire operations. The nozzle shall incorporate an ergonomically designed operating handle with a ball valve shut-off mechanism and shall be manufactured from high-strength aluminum alloy or equivalent corrosion-resistant material protected by a hard anodized finish.

The nozzle shall provide selectable water and foam discharge patterns and shall deliver a flow rate of 480 litres per minute at 6 bar operating pressure while operating effectively within a pressure range of 3.5 to 16 bar. The inlet connection shall be fitted with a British Standard (BS

336) instantaneous coupling or equivalent and shall have a nominal inlet size of 2.5 inches (65 mm).

The nozzle shall be suitable for use with Class A and Class B firefighting foam concentrates and shall be capable of producing a stable and effective foam stream for suppression of flammable liquid fires and hazardous material incidents. The equipment shall be lightweight, ergonomically designed, compatible with standard foam proportioning systems, and suitable for prolonged firefighting operations. The nozzle shall be manufactured, tested, and certified in accordance with

NFPA 11, and other applicable international firefighting equipment standards.

Item 8 and 9: Fire Fighting Hose Size: 2.5 inch (65 mm) × 20 meters and 10 meters.

Type: Delivery Fire Hose

Minimum Technical Specifications

The Fire Fighting Hose shall be a high-performance delivery hose with a nominal diameter of 2.5 inches (65 mm) and a length of 20 meters, & 10 meters designed for municipal, industrial, structural, and emergency firefighting operations. The hose shall be lightweight, flexible, abrasion-resistant, and suitable for prolonged operational use under demanding firefighting conditions. It shall be capable of operating at a minimum working pressure of 16 bar and shall have a minimum burst pressure of 48 bar. The hose shall be supplied complete with British Standard (BS 336) instantaneous couplings and shall exhibit elongation and diameter expansion not exceeding 5 percent under working pressure conditions. The adhesion strength between the hose lining and jacket shall be not less than 25 N per 25 mm. The hose shall be manufactured, tested, and certified in accordance with NFPA 1961, NFPA 1962, or equivalent EN standards.

Item 10 & 11: Fire Fighting Hose 2" with BSS Coupling (100 ft) & (50ft)

Minimum Technical Specifications

The Fire Fighting Hose shall have a nominal diameter of 2 inches (50 mm) and a length of 100 feet & 50 feet and shall be constructed with a dual-jacket design comprising a synthetic rubber inner lining and an abrasion-resistant polyester outer jacket. The hose shall be designed for structural, municipal, industrial, and emergency firefighting operations and shall provide a minimum working pressure of 16 bar and a minimum burst pressure of 48 bar. Elongation and diameter expansion shall not exceed 5 percent under operating conditions, while the adhesion strength between the lining and jacket shall be not less than 25 N per 25 mm. The hose shall be supplied complete with British Standard (BS 336) instantaneous couplings and shall be manufactured, tested, and certified in accordance with NFPA 1961, NFPA 1962, or equivalent EN standards.

Item 12 & 13: Fire Fighting Hose 1.75" with BSS Coupling (50 ft) & (100ft)

Minimum Technical Specifications

The Fire Fighting Hose shall have a nominal diameter of 1.75 inches (45 mm) and a length of 50 feet & 100 feet and shall be constructed using a dual-jacket configuration comprising a synthetic rubber inner lining, polyester woven inner jacket, and heavy-duty abrasion-resistant outer jacket. The hose shall be lightweight, flexible, and suitable for rapid deployment during structural, municipal, industrial, and emergency firefighting operations. The hose shall provide a minimum working pressure of 16 bar and a minimum burst pressure of 48 bar. Elongation and diameter expansion shall not exceed 5 percent under operating conditions, while adhesion strength between the lining and jacket shall be not less than 25 N per 25 mm. The hose shall be supplied complete with British Standard (BS 336) instantaneous couplings and shall be manufactured, tested, and certified in accordance with NFPA 1961, NFPA 1962, and/or equivalent EN standards.

Item 14: Portable Gasoline Cutter for Fire & Rescue

Minimum Specifications

The Portable Gasoline Cutter shall be powered by a two-stroke, air-cooled gasoline engine with a minimum displacement of 74 cc and a power output of not less than 3.7 kW, providing reliable cutting performance for firefighting, rescue, and emergency response operations. The unit shall be capable of accommodating both 300 mm and 350 mm cutting blades, enabling maximum cutting depths of 100 mm and 125 mm respectively. The cutter shall have a fuel tank capacity of at least 0.77 liters and an operational weight between 9.8 kg and 10.1 kg, excluding the cutting blade, to ensure ease of handling and reduced operator fatigue during prolonged use. The equipment shall be suitable for cutting steel, reinforced concrete, masonry, metal components, and other materials encountered during firefighting, Urban Search and Rescue (USAR), road traffic accident response, forcible entry, and disaster management operations. The cutter shall incorporate an ergonomic design, anti-vibration features, and a reliable starting system suitable for demanding field conditions. The equipment shall be manufactured and tested in accordance with NFPA 70 or NFPA 241. or equivalent internationally recognized standards.

Item 15: Oscillating Portable Fire Monitor

Minimum Specifications

The Oscillating Portable Fire Monitor shall be capable of delivering a minimum rated flow of 30 liters per second and achieving a water throw distance of not less than 60 meters, providing

effective wide-area fire suppression capability for municipal, industrial, petrochemical, and emergency firefighting operations. The monitor shall incorporate an ultra-low-pressure self-oscillating mechanism capable of reliable operation at inlet pressures as low as 0.1 MPa, ensuring continuous sweeping coverage even under limited water supply conditions. The oscillation system shall include an automatic obstacle-avoidance function that reverses the oscillation direction upon encountering obstructions within the preset sweep angle, thereby maintaining uninterrupted firefighting operations. The monitor shall be equipped with a fully rotating 360-degree hose connection to facilitate rapid deployment, enhanced manoeuvrability, and flexible positioning during incident response. The unit shall be constructed from corrosion-resistant materials suitable for harsh operational environments and shall be designed for stable operation under demanding firefighting conditions. The monitor shall be manufactured, tested, and certified in accordance with NFPA 1901 standards, or equivalent EN standards.

Item 16: Rescue Air Cushion (23 Meters Capacity)

Minimum Specifications

The Rescue Air Cushion shall be a rapid-deployment life-saving system designed for emergency evacuation and rescue of persons from buildings, structures, and elevated locations during fire, disaster, and emergency incidents. The cushion shall be capable of safely accommodating jumps from heights of up to 23 meters manufactured in Europe/ USA / Japan.

The rescue cushion is a rapid deployment lifesaving device designed for evacuating people from heights up to 23 meters when ladders, aerial platforms, or internal escape routes cannot be used. It inflates instantly using an 8-liter, 300 bar compressed air cylinder and becomes fully operational within 60 seconds. The cushion absorbs impact safely by collapsing inward with no bounce back and automatically re-erects within 30 seconds, remaining ready for repeated use. Constructed from reinforced polyester with multi-layer PVC, it is flame retardant, weather resistant, and compatible with standard fire brigade air fittings, and particularly with the standard connexion 5/8". The system operates at 0.30 bar, measures 450 × 450 × 240 cm, and weighs 80 kg excluding the cylinder. Engineered in accordance with the state of the art, it provides a safe, stable, and compliant landing solution for emergency evacuations.

Item 17: Supply of Intrinsically Safe Digital Portable Radio (Motorola / Kenwood or Equivalent) with installation and getting all relevant NOC from relevant authorities

Minimum Specifications

The Intrinsically Safe Digital Portable Radio shall operate within the UHF frequency range of 403–527 MHz and provide a maximum RF output power of 4 watts for reliable communication during firefighting, rescue, and emergency response operations. The radio shall support a minimum of 1,000 programmable channels to facilitate flexible communication grouping and incident management. The unit shall be equipped with integrated GPS capability for real-time location tracking and shall support IP Site Connect or equivalent digital networking technology to enable seamless communication across multiple sites and extended operational areas.

The radio shall utilize secure digital voice communication technology and be powered by a rechargeable Li-Ion battery with a minimum capacity of 1,500 mAh, providing extended operational endurance. The unit shall be supplied with a high-performance antenna optimized for the UHF frequency band and shall be designed to operate reliably under harsh environmental and emergency response conditions. The radio shall be intrinsically safe and suitable for use in hazardous environments where flammable gases, vapours, or combustible materials may be present.

Each radio set shall be supplied complete with one additional 1,500 mAh Li-Ion battery, battery retaining clip, reinforced leather carrying case with belt loop, multi-unit rapid charging station, standard UHF antenna, belt clip, and all necessary user accessories. The equipment shall be manufactured and tested in accordance with applicable international communication, safety, and intrinsic safety standards and shall be suitable for firefighting, rescue, disaster management, and emergency communication operations.

Item 18: Supply and Installation of UHF Base Station / Repeater System (40 Watt)

Minimum Specifications

The UHF Base Station / Repeater System shall provide reliable voice communication coverage for firefighting, rescue, disaster management, and emergency response operations. The system shall include a 40-watt UHF digital/analogue repeater operating within the designated UHF frequency band and fully compatible with the supplied handheld portable radios. The repeater shall support continuous-duty operation and provide stable, high-quality communication across the designated operational coverage area.

The system shall be equipped with a high-performance UHF duplexer designed for a minimum transmit/receive frequency separation of 4.5 MHz to ensure effective signal isolation and uninterrupted repeater performance. The antenna system shall comprise a 6 dBd gain omni-directional dipole array antenna with a minimum operational bandwidth of 20 MHz, utilizing a

four-dipole configuration to provide uniform 360-degree coverage and enhanced signal penetration in urban, industrial, and built-up environments.

The complete system shall include all necessary mounting brackets, antenna support hardware, low-loss RF feeder cables, lightning protection devices, connectors, power supply units, grounding arrangements, programming software licenses, configuration tools, testing, commissioning, and installation services required for a fully operational communication system. The repeater shall support integration with IP Site Connect or equivalent networking capability for future system expansion and interoperability.

The equipment shall be manufactured and tested in accordance with applicable international telecommunications standards and shall be suitable for continuous operation under emergency service conditions. The supplier shall provide complete installation, programming, testing, commissioning, user training, and operational handover of the system.

Item 19: Base Station Hardware Package for TurboCare/ Equivalent Application

Minimum Specifications

The Base Station Hardware Package shall be designed for integration with the proposed UHF communication system and TurboCare/ Equivalent application, providing reliable fixed-site communication capability for fire stations, emergency operation centers, and control rooms. The package shall include a compatible base station radio complete with palm microphone, DC power cable, mounting bracket, PC interface/programming cable, and regulated 220V AC to DC power supply unit suitable for continuous-duty operation.

The system shall be supplied with a minimum 3 dBd gain UHF omni-directional fiberglass whip antenna designed for fixed installation and capable of providing uniform communication coverage within the operational service area. All necessary RF connectors, mounting accessories, feeder cables, surge protection devices, and interconnection hardware required for complete installation and operation shall be included.

The equipment shall be fully compatible with the supplied portable radios, repeater system, and communication management software, enabling reliable voice communication, dispatch operations, and network integration. The supplier shall provide complete installation, configuration, testing, commissioning, and operational handover of the system.

Item 20: Self-Contained Breathing Apparatus (SCBA) – 75 Minutes Duration

Minimum Specifications

The Self-Contained Breathing Apparatus (SCBA) shall be a lightweight, high-performance respiratory protection system designed for structural firefighting, rescue operations, and hazardous environment response. The complete unit shall incorporate a lightweight carbon-fibre composite cylinder providing a minimum rated duration of 75 minutes under standard operating conditions. The SCBA shall be supplied complete with a full-face mask featuring a wide field-of-view anti-fog visor to ensure clear visibility during operations in smoke-filled and hazardous environments.

The carrying frame shall be constructed from lightweight, high-strength carbon composite or equivalent material with an ergonomic hollow back-plate design to maximize wearer comfort and reduce operational fatigue. The pressure reducer, pneumatic system, and associated pipework shall be integrated within the back-plate assembly to minimize snagging hazards and improve operational safety during interior firefighting and rescue operations.

The harness system shall be fully adjustable and designed for rapid donning and doffing. The apparatus shall incorporate a waterproof and wear-resistant protective liner or equivalent system providing enhanced durability in wet, contaminated, and harsh firefighting environments. All major components shall be modular in design to facilitate rapid inspection, cleaning, maintenance, and replacement.

The SCBA shall include a pressure gauge, warning alarm device, demand valve, pressure reducer, carrying harness, composite cylinder, and full-face mask as a complete operational package. The apparatus shall be suitable for firefighting, rescue operations, hazardous materials response, confined-space entry, and other emergency service applications requiring respiratory protection.

The equipment shall be manufactured, tested, and certified in accordance with EN 137:2006 Type 2 for firefighting breathing apparatus, EN 136 for full-face masks, or equivalent NFPA firefighting respiratory protection standards.

Item 21: High Performance Battery Operated Centrifugal Positive Pressure Ventilator (PPV) with External quick charger, 100m electric extension in bag with lockable EU plugs, carrying harness, duct 5M Blowing and Extraction

Minimum Specifications

The High-Performance Battery-Operated Positive Pressure Ventilator (PPV) shall be a portable, cordless ventilation system designed to rapidly remove smoke, heat, toxic gases, and airborne contaminants from fire-affected structures, thereby improving visibility, reducing interior temperatures, and enhancing conditions for firefighting and rescue operations manufactured in EU/USA/Japan. The unit shall utilize a high-efficiency centrifugal fan system capable of generating powerful and controlled airflow suitable for structural firefighting, rescue, and emergency response applications.

The ventilator shall be powered by a rechargeable battery system providing reliable operation without dependence on external power sources, enabling rapid deployment in confined spaces, high-rise buildings, underground facilities, and other locations where electrical supply may be unavailable or compromised. The unit shall be lightweight, compact, and suitable for operation by a single firefighter.

The fan housing and structural components shall be manufactured from durable, impact-resistant, corrosion-resistant materials suitable for demanding firefighting environments. The ventilator shall incorporate variable speed control and adjustable airflow direction to optimize ventilation effectiveness under different operational conditions. The battery system shall support rapid charging and extended operational endurance suitable for emergency service applications.

PRODUCT CHARACTERISTICS

AUTONOMOUS

Equipped with a Lithium battery, E-FAN allows operations in complete autonomy with a battery life of 50 minutes of running time with only one battery

- Open air flow: 35050 m3/h / 18500 m3/h PPV air flow according to AMCA
- Reference: I63.12.102EU= E-FAN 18'' 220v (without ext. charger or battery)
- Protection: IP65
- Noise level: 82 dB à 3m
- Battery Duration: Minimum 50 minutes
- Built in Charger
- Can perform during charging
- CE Certified

ACCESSORIES

- 50m electric extension in bag with lockable UK plugs/ Round Pin - cable 3x2.5 mm²
- 5m blowing duct (5m - dia 500mm)
- External fast charger Rehab misting adaptor 3/4'' BSP M

MINIMUM GUARANTTEE

- E-FAN = 2 years / engine 2 years / battery 1 year or 300 cycles

Item 22: Complete Structural Firefighting Personal Protective Equipment (PPE)

Minimum Specifications

The Structural Firefighting PPE Ensemble shall comprise a firefighting suit, helmet, gloves, neck protector, and firefighting boots designed to provide comprehensive protection for firefighters engaged in structural firefighting, rescue, and emergency response operations. The complete ensemble shall be fully compliant with EN 469 standards, or equivalent NFPA standards.

The firefighting suit shall be constructed from Aramid IIIA or equivalent high-performance flame-resistant fabric with a minimum outer shell weight of 200 g/m² ±10 g/m² and water-repellent treatment. The moisture barrier shall consist of aramid spun-lace laminated with a flame- and heat-resistant PTFE membrane of approximately 108 g/m², while the thermal barrier shall comprise meta-aramid and para-aramid spun-lace materials to provide enhanced thermal insulation, heat protection, breathability, and wearer comfort.

The structural firefighting helmet shall comply with NFPA 1971 standards and feature a lightweight nylon-reinforced composite shell or equivalent high-strength material, equipped with an adjustable ratchet suspension system suitable for head sizes ranging from 52 cm to 64 cm. The helmet shall incorporate flame-resistant aramid chin straps, impact protection, electrical insulation properties, a heat-resistant neck protector, and a clear visor with anti-fog and anti-scratch treatment to ensure optimum visibility and protection under firefighting conditions.

The firefighting gloves shall comply with NFPA 1971 or equivalent EN standards and be constructed using a Kevlar silicone-coated palm, Nomex flame-resistant outer shell, Kevlar knit inner lining, moisture barrier, thermal insulation layer, and extended Kevlar wristlet for enhanced protection. The gloves shall provide high levels of dexterity, heat resistance, abrasion resistance, and mechanical protection while incorporating reflective elements for improved visibility.

The firefighting boots shall comply with NFPA 1971 or equivalent EN standards and provide protection against heat, flame, puncture hazards, chemicals, impact, compression, and slipping. The boots shall be specifically designed for structural firefighting operations and provide comfort, durability, and reliable performance in demanding emergency response environments.

The complete PPE ensemble shall be suitable for structural firefighting, rescue operations, disaster response, and other emergency service activities requiring certified firefighter protection.

Item 23: Proximity Firefighting Suit

Minimum Specifications

The Proximity Firefighting Suit shall be a high-temperature aluminized protective ensemble designed for aircraft rescue and firefighting (ARFF), petrochemical, industrial, refinery, LNG, and other extreme heat firefighting operations. The complete suit shall be certified to NFPA 1971 or equivalent EN standards.

The outer shell shall be manufactured from aluminized fiberglass, aluminized aramid, or equivalent high-performance heat-reflective material capable of reflecting at least 95% of radiant heat and providing protection against radiant heat exposure up to 1650°C. The suit shall incorporate a multi-layer construction comprising a heat-resistant outer shell, moisture barrier, thermal insulation layer, and inner comfort lining to provide protection against radiant heat, convective heat, flame exposure, and molten splash hazards.

The complete ensemble shall consist of an aluminized jacket, aluminized trousers, SCBA-compatible aluminized hood, high-temperature protective visor, aluminized insulated gloves, and protective over-boots, providing full-body protection for firefighters operating in extreme thermal environments. The hood and visor assembly shall provide full face and neck protection while maintaining adequate visibility and compatibility with self-contained breathing apparatus (SCBA).

All materials and components shall comply with the performance requirements of NFPA 1971 or equivalent EN standards governing radiant heat resistance, flame resistance, thermal protection, and firefighter safety. The suit shall provide ergonomic mobility, durability, and wearer comfort during prolonged emergency operations while maintaining protection under severe thermal exposure conditions.

The proximity suit shall be suitable for aircraft rescue and firefighting, fuel storage fires, petrochemical incidents, refinery emergencies, LNG facilities, industrial fire suppression, and other specialized firefighting operations involving extreme radiant heat exposure.

Item 24: Air Breathing Apparatus Trolley

Minimum Specifications

The Air Breathing Apparatus Trolley shall be a mobile compressed-air supply system designed for industrial firefighting, hazardous materials response, confined-space entry, rescue operations,

and other extended-duration breathing air applications. The system shall be compliant with CE marked in accordance with EN139, or equivalent NFPA standards.

The trolley shall be constructed from heavy-duty steel, stainless steel, or equivalent corrosion-resistant material and shall be capable of accommodating a minimum of 2 to 4 high-pressure breathing air cylinders with capacities ranging from 6 litres to 50 litres and operating pressures of 200 to 300 bar. The system shall incorporate quick-change cylinder connections to permit uninterrupted air supply during cylinder replacement.

The trolley shall be equipped with a high-performance pressure reduction system capable of reducing cylinder pressure to a stable medium-pressure output of 6 to 10 bar. The pneumatic system shall include pressure gauges, pressure regulators, pressure-relief valves, non-return valves, bleed valves, and other safety devices necessary for safe and reliable operation.

The system shall include a hose reel fitted with a reinforced, kink-resistant breathing airline hose having a minimum length of 30 meters and extendable up to 90 meters. A distribution manifold shall be provided to simultaneously supply breathing air to a minimum of one and up to four users with stable and uninterrupted airflow.

Safety features shall include an audible low-pressure warning alarm activating at approximately 55 bar cylinder pressure, over-pressure protection devices, locking castor wheels, and user-side warning systems where applicable. The trolley shall be designed for ease of transport, rapid deployment, and reliable operation under harsh industrial, firefighting, rescue, and hazardous environment conditions.

The complete system shall be supplied ready for operational use and suitable for firefighting support, confined-space rescue, hazardous materials incidents, industrial emergency response, and prolonged-duration breathing air applications.

Item 25: Mobile Air Filling Compressor for SCBA Cylinders

Minimum Specifications

The Mobile Air Filling Compressor shall be a compact, high-pressure breathing-air compressor specifically designed for refilling Self-Contained Breathing Apparatus (SCBA) cylinders used in firefighting, rescue, hazardous materials response, and emergency operations. The unit shall be capable of filling both 200 bar and 300 bar SCBA cylinders and shall be compatible with EN-compliant and internationally recognized breathing apparatus systems. The compressor shall deliver breathing-quality compressed must be compliant with NFPA 1989, Standard on Breathing Air Quality for Fire and Emergency Services Respiratory Protection or equivalent EN standards.

Charging Rate 320 l/min, CFM 11.5, Max operating pressure 350 bar, No of stages 4, Speed 1450 RPM, 3 Phase Motor, 7.5kW

The compressor shall incorporate a multi-stage compression system equipped with automatic condensate drains, moisture separators, and a high-efficiency filtration system capable of removing oil, carbon monoxide (CO), carbon dioxide (CO_2), water vapour, and particulate contaminants to ensure safe breathing air quality. The system shall include a protected filling panel capable of charging one or more SCBA cylinders simultaneously and shall be provided complete with pressure gauges, filling hoses, charging connections, and operational controls.

The compressor shall incorporate integrated safety features including automatic over-temperature shutdown, low-oil protection, pressure-relief devices, and other safety systems necessary for continuous and reliable operation. The complete unit shall be mounted on a rugged mobile frame fitted with heavy-duty wheels and transport handles to facilitate rapid deployment and operation at fire stations, training facilities, emergency incidents, and disaster response locations.

The equipment shall be designed for continuous-duty operation and shall provide reliable on-site refilling capability for SCBA cylinders, ensuring uninterrupted respiratory protection support during firefighting, rescue, and emergency response operations.

Item 26: Complete SCUBA Set with Uniform for Water Rescue Divers

Minimum Specifications

The Complete SCUBA Set shall comprise a professional diving ensemble designed for water rescue, search and recovery, flood response, underwater inspection, and emergency rescue operations. The set shall include a jacket-style or wing-style Buoyancy Control Device (BCD) with integrated weight system, a full-face diving mask compatible with underwater communication systems, and a balanced regulator assembly consisting of a first-stage regulator, primary second-stage regulator, alternate air source (octopus), and complete pressure/depth gauge console.

The system shall be supplied with a lightweight aluminium or composite diving cylinder rated for operating pressures of 200–300 bar, complete with approved cylinder valve, hydrostatic certification, and all associated fittings. Exposure protection shall be provided through a professional-grade dry suit suitable for cold-water and contaminated-water operations, incorporating watertight seals, reinforced knee and elbow panels, durable construction materials, and thermal undergarments for diver protection and comfort.

The set shall further include open-heel diving fins, neoprene diving boots, quick-release weight system, diving gloves, protective hood, backup mask, dive knife, underwater torch, compass, surface marker buoy (SMB), reel or spool, emergency whistle, and a dive computer capable of monitoring depth, dive time, water temperature, ascent rate, and decompression information.

All components shall be manufactured from corrosion-resistant materials suitable for prolonged use in fresh water, seawater, and floodwater environments. The complete system shall be designed for professional rescue diving operations and comply with applicable EN/ ISO / CE, or equivalent internationally recognized diving equipment standards. The equipment shall be suitable for repeated operational deployment under demanding emergency response conditions.

Item 27: Inflatable Rescue Boat with Petrol Engine

Minimum Specifications

The Inflatable Rescue Boat shall be designed for flood rescue, swift-water rescue, coastal emergency response, evacuation operations, and waterborne search and rescue missions. The boat shall be constructed from heavy-duty marine-grade inflatable material with high resistance to abrasion, puncture, UV exposure, fuel, oil, and harsh environmental conditions. The design shall provide high buoyancy, stability, and manoeuvrability for operation in rivers, canals, lakes, floodwaters, and near-shore coastal environments.

The boat shall have a minimum carrying capacity of five (05) persons including rescue personnel, victims, and essential rescue equipment. It shall be supplied complete with a suitable petrol-powered outboard engine, fuel tank, control system, and all necessary mounting accessories to ensure reliable propulsion and rapid deployment during emergency operations.

The inflatable hull shall incorporate multiple independent air chambers to enhance operational safety and buoyancy in the event of accidental damage. The boat shall be capable of operating in shallow water conditions and navigating debris-filled waterways commonly encountered during flood and disaster response operations. Reinforced lifting handles, towing points, grab lines, and non-slip deck surfaces shall be provided to facilitate rescue activities and safe boarding.

The complete package shall include oars or paddles, repair kit, inflation pump, carrying bag, anchor system, safety ropes, and all standard accessories required for operational deployment. All materials and components shall be corrosion-resistant and suitable for repeated use in both fresh-water and salt-water environments.

The inflatable rescue boat shall comply with NFPA 1670 or equivalent EN standards governing inflatable rescue craft and shall be suitable for professional emergency response, disaster management, flood rescue, and water rescue operations.

Item 28: Rescue Diving Fins

Minimum Specifications

The Rescue Diving Fins shall be designed for professional water rescue, flood response, swift-water rescue, and underwater search and recovery operations. The fins shall provide high thrust, efficient propulsion, and excellent manoeuvrability, enabling divers to operate effectively in strong currents, floodwaters, coastal environments, and low-visibility underwater conditions.

The fins shall feature a durable open-heel design with adjustable quick-release straps to accommodate a wide range of diving boots, including dry-suit and rescue-diving footwear. The blade design shall provide optimum power transfer, directional stability, and controlled movement, allowing divers to maintain position, conduct victim recovery operations, and manoeuvre safely in confined or challenging environments.

The fins shall be manufactured from high-strength, impact-resistant, corrosion-resistant materials suitable for prolonged use in fresh-water, salt-water, and contaminated-water conditions. The design shall ensure durability, comfort, and reliable performance under demanding emergency response conditions.

The fins shall be suitable for professional rescue diving operations and compatible with the complete rescue diving ensemble used by emergency services, disaster response teams, and water rescue units.

Item 29: Lifebuoy Tube

Minimum Specifications

The Lifebuoy Tube shall be a high-visibility flotation device designed for water rescue, flood response, swift-water rescue, coastal rescue, and emergency victim recovery operations. The device shall be constructed from durable closed-cell foam, marine-grade polyurethane, or equivalent impact-resistant buoyant material capable of maintaining flotation performance under prolonged operational use.

The lifebuoy tube shall be finished in bright orange or other internationally recognized high-visibility color and shall be fitted with a continuous perimeter grab line to facilitate rapid victim stabilization, handling, and rescue. Reflective markings shall be provided to enhance visibility during night operations and low-light conditions. The unit shall incorporate a reinforced attachment point for connection of rescue ropes, throw lines, or towing systems.

The flotation device shall provide sufficient buoyancy to support rescue operations in rivers, canals, floodwaters, lakes, harbours, and coastal environments. All materials shall be resistant to water absorption, UV exposure, abrasion, corrosion, and harsh environmental conditions commonly encountered during emergency response operations.

The lifebuoy tube shall comply with applicable EN or equivalent NFPA standards for personal flotation and rescue equipment and shall be suitable for professional use by water rescue teams, emergency services, and disaster response personnel.

Item 30: Marine Rescue Binoculars

Minimum Specifications

The Marine Rescue Binoculars shall be designed for beach rescue, coastal surveillance, water rescue operations, and emergency response activities requiring long-range visual observation. The binoculars shall provide 7×50 magnification with a wide field of view and fully multi-coated optical lenses to ensure clear, bright, and high-contrast images under varying environmental conditions including bright sunlight, haze, fog, and sea spray.

The binocular body shall be waterproof to a minimum IPX7 rating or higher and nitrogen-filled or equivalent to prevent internal fogging during operation in humid and marine environments. The housing shall be constructed from durable shock-resistant materials with a non-slip protective coating suitable for prolonged outdoor and maritime use.

The binoculars shall preferably incorporate an integrated compass and/or range-finding reticle to assist in distance estimation, navigation, and directional reporting during search and rescue operations. The optical system shall provide reliable performance in coastal, riverine, flood, and marine rescue environments while maintaining image clarity and operational durability.

The equipment shall be supplied complete with a floating neck strap, protective carrying case, lens covers, cleaning accessories, and all standard operational accessories. The binoculars shall be suitable for continuous use by rescue personnel, lifeguards, disaster response teams, and emergency services engaged in water rescue and coastal surveillance operations.

Item 31: Sewer Camera Fiberscope

Minimum Specifications

The Sewer Camera Fiberscope all-terrain Pipeline Robot shall be a rugged, high-performance visual inspection system designed for municipal drainage pipelines, box culverts, covered channels, and river inspections. The system shall incorporate a 2MP 360° high-definition Pan-Tilt-Zoom (PTZ) camera mounted on a spiral propulsion crawler, enabling the inspection of complex environments with a minimum diameter of DN600mm, especially in areas with heavy siltation and high water levels where conventional CCTV robots cannot function.

The crawler shall be equipped with high-intensity LED illumination—including four groups of 12x 10W LEDs forward and one group of 3x 10W LEDs rearward—to provide clear visibility in dark, low-light, and muddy environments. The system shall provide real-time video transmission to a PC-based control terminal for pipeline defect analysis, visualization of subaqueous conditions, deformation tracking, and alignment assessment. The system shall utilize a patented floating drum design and an automatic electric reel with a standard 150-meter floating cable (featuring a 300 kg Kevlar tensile strength), capable of navigating thick silt and achieving speeds of up to 0.5 m/s in still water, supporting a maximum single-survey distance of up to 2,050 meters.

The complete system's sensitive components, such as the camera lens and optional sonar probe, shall be waterproof to a minimum IP68 rating and submersible up to 10 meters. The system is constructed for harsh field conditions, featuring an imported polyurethane cable sheath that is abrasion-resistant, acid/alkali-resistant, and corrosion-resistant, alongside a protective buffer pad installed in front of the lens to resist impact. The display unit shall provide simultaneous front and rear live video monitoring, support image and video recording, integrate sonar and 2D laser scanning data, and allow for one-click automatic on-site report generation.

The equipment shall be suitable for extensive over-water inspection operations, heavy siltation management, and municipal pipeline infrastructure assessments.

Item 32: Battery-Operated Hydraulic Combi Rescue Tool with Charger

Minimum Specifications

The Battery-Operated Hydraulic Combi Rescue Tool shall be a compact, cordless rescue device designed for cutting, spreading, squeezing, and pulling operations during vehicle extrication, structural collapse rescue, and technical rescue incidents. The tool shall be powered by a high-

capacity rechargeable lithium-ion battery system and supplied complete with charger, spare battery, and carrying accessories necessary for operational deployment.

The combi tool shall deliver a minimum cutting force of 300–400 kN and a spreading force of 250–300 kN, providing multi-functional rescue capability in a single lightweight unit. The rescue blades shall be manufactured from heat-treated, high-strength, corrosion-resistant steel suitable for cutting vehicle components, structural materials, and other obstacles encountered during rescue operations.

- **Working Pressure:** 70 MPa
- **Spreading distance:** 368 mm
- **Spreading force (25mm to TIPS):** 35-45kN
- **Max. Spreading force:** 1500 kN
- **EN-Cutting category:** I
- **NFPA Cutting Class:** A7, B8, C7, D8, E7, F4
- **Max. Cutting force:** Min 492 kN
- **Pulling distance:** Min 380 mm
- **Pulling force:** Min 50 kN
- **Battery:** 25.2V / 5.0Ah
- **Degree of protection level:** IP58

The tool shall be ergonomically designed for single-operator use and capable of operating effectively in confined spaces, low-visibility environments, and adverse weather conditions. The housing shall be constructed from durable impact-resistant materials and provide protection against dust and water ingress through an appropriate IP-rated design.

The equipment shall be suitable for road traffic accident rescue, Urban Search and Rescue (USAR), structural collapse incidents, industrial emergencies, and disaster response operations. The tool shall comply with relevant EN/ NFPA standards, or equivalent internationally recognized rescue equipment standards, and shall be supplied complete with battery charger, operational accessories, and protective carrying case.

Item 33: Thermal Imaging Camera (TIC)

Minimum Specifications

The Thermal Imaging Camera (TIC) shall be a compact, rugged, firefighter-grade infrared imaging device designed for single-hand operation in total darkness, dense smoke, and high-temperature

firefighting environments. The camera shall be suitable for search and rescue operations, fire attack, victim location, hotspot detection, overhaul activities, and situational assessment during emergency response operations. The unit shall be provided with a secure hanging assembly or gear-attachment system for convenient attachment to firefighting PPE.

The TIC shall incorporate a dual thermal and visual imaging system with an integrated LED flashlight, glove-friendly controls, and a minimum of eight selectable color palettes with image enhancement technology for improved target recognition. The thermal imaging sensor shall provide a minimum resolution of 256 × 192 pixels with a thermal sensitivity (NETD) of less than 40 mK, a pixel pitch of 12 µm, a 3.6 mm F1.0 lens, field of view of approximately 37.2° × 50°, and real-time image refresh rate of 25 Hz or higher.

The camera shall provide temperature measurement capability from –20°C to +550°C and shall be capable of operating in ambient temperatures up to 115°C. Temperature monitoring shall include center point, hottest point, coldest point, and user-defined measurement points with measurement accuracy of ±2°C or ±2% of reading. Visual and audible high-temperature alarms shall be incorporated to alert the user when preset temperature thresholds are exceeded.

The display shall comprise a minimum 3.2-inch LCD screen capable of presenting thermal, visual, fusion, and picture-in-picture (PIP) viewing modes. The visual camera shall provide a minimum resolution of 2 megapixels. The unit shall include a minimum of 16 GB internal memory for storage of images and videos and shall support image and video recording functions with USB-C data transfer capability.

The TIC shall be powered by a rechargeable lithium-ion battery providing a minimum operating time of six hours under normal operating conditions. The housing shall be manufactured from heat-resistant, impact-resistant materials and incorporate a high-performance infrared lens suitable for firefighting applications. The design shall provide an ergonomic viewing angle and intuitive user interface suitable for operation while wearing structural firefighting gloves.

Each unit shall be supplied complete with rechargeable battery, USB-C charging/data cable, carrying case, protective lens cover, hanging strap, and all accessories required for operational use. The equipment shall be suitable for firefighting, rescue, disaster response, hazardous materials incidents, and emergency service applications.

Item 34: Mobile Lighting Tower

Minimum Specifications

The Mobile Lighting Tower shall be a compact, rapidly deployable emergency lighting system designed for firefighting, rescue, disaster response, Urban Search and Rescue (USAR), and night-time emergency operations. The unit shall be powered by an integrated gasoline generator capable of providing stable and continuous electrical power for prolonged field deployment.

The lighting system shall incorporate a minimum of four to six high-intensity LED floodlights with a total light output ranging from 80,000 to 160,000 lumens. The lighting assembly shall be

mounted on a telescopic mast extendable to a height of not less than 4 meters and up to 9 meters, with a minimum rotational capability of 350 degrees to provide wide-area illumination. The floodlights shall be suitable for outdoor operation and comply with relevant EN or equivalent NFPA standards, with a minimum IP65 or IP67 ingress protection rating.

The integrated generator shall provide a continuous power output of 2–5 kW and incorporate automatic voltage regulation, overload protection, low-oil shutdown, and other safety features necessary for reliable operation. The (diesel) fuel system shall provide a minimum operational endurance of 6–12 hours under normal operating conditions.

The lighting tower shall be mounted on a robust frame or trailer-type platform equipped with stabilizing outriggers, transport handles, and durable wheels suitable for deployment on uneven terrain and disaster environments. All operating controls shall be designed for use while wearing firefighting or rescue gloves.

The complete system shall be suitable for incident scene illumination, rescue operations, disaster management, structural collapse incidents, flood response, firefighting support, and emergency service applications. The equipment shall meet or exceed all NFPA 1901-16 requirements OR equivalent emergency response international standards.

Item 35: Portable Plasma Gas Cutter

Minimum Specifications

The Portable Plasma Gas Cutter shall be a compact, high-performance air-plasma cutting system designed for firefighting support, rescue operations, technical rescue, industrial maintenance, fabrication, and emergency response applications. The unit shall operate on single-phase or three-phase electrical power supply and utilize compressed air or nitrogen as the plasma gas.

The cutter shall provide a minimum rated cutting capacity of 22.2 mm (7/8 inch) and a maximum severance capacity of 32 mm (1-1/4 inch) for carbon steel and equivalent materials. The system shall deliver a minimum output current of 60 amperes and provide duty-cycle performance suitable for continuous operational use, including 100% duty cycle at 40 amperes or equivalent performance.

The equipment shall incorporate automatic air regulation, pilot arc technology, and non-high-frequency (non-HF) starting systems to minimize interference with electronic equipment and ensure reliable operation in sensitive environments. The cutting torch shall feature an ergonomic handle, flexible cable assembly, and be supplied complete with standard consumables and operational accessories.

The system shall require an air supply of approximately 6.75 CFM at 90 PSI and shall include integrated temperature protection, status indicators, post-flow cooling optimization, overload protection, and other safety features necessary for reliable field operation. The unit shall be compatible with portable generator power supplies and designed with advanced cooling and dust-protection systems for operation in harsh environmental conditions.

The cutter shall be suitable for cutting steel, stainless steel, structural members, vehicle components, pipes, plates, and other materials encountered during firefighting, Urban Search and Rescue (USAR), disaster response, vehicle extrication, and technical rescue operations. The equipment shall support operational requirements referenced in NFPA 1670 and comply with applicable EN safety, electrical, and equipment standards for portable plasma cutting systems.

RELEVANCE NOTES; (FOR PROCUREMENT & COMPLIANCE)

Operational Training Requirement

The successful bidder/manufacturer shall be obligated to provide comprehensive operational training for each category of equipment supplied under this project. The training shall be conducted at the premises of the Government of Sindh (GoS) / Karachi Metropolitan Corporation (KMC) in Karachi, with a minimum duration of five (05) working days per equipment type. The training curriculum shall cover safe operation, routine maintenance, troubleshooting, and emergency procedures. All training costs, including personnel, materials, and certification, shall be borne by the supplier.

Standards Compliance

Furthermore, each item must fully comply with the relevant European Norms (EN) and standards or the equivalent National Fire Protection Association (NFPA) standards as explicitly mentioned in the technical specifications. Certificates of origin and compliance, duly attested by the Original Equipment Manufacturer (OEM), shall be submitted as part of the bid documentation.

Mandatory Third-Party Pre-Shipment Inspection

The bidder/manufacturer shall, at their own cost and expense, arrange for a comprehensive third-party inspection of all equipment and vehicles prior to shipment. The inspection shall be carried out by an internationally recognized inspection agency, namely TÜV, SGS, COTECNA, or Lloyds Register. A copy of the detailed inspection report, along with photographic evidence and a certificate of conformity, must be submitted electronically and in hard copy to Fire Brigade Department, KMC.

Approval of Inspection Report

It shall be incumbent upon the bidder/manufacturer to obtain explicit written approval of the third-party inspection report from Fire Brigade Department, KMC prior to the shipment of any equipment from the country of origin. Shipments made without prior approval shall be rejected at the port of entry, and all associated demurrage, storage, and return costs shall be the sole responsibility of the supplier.

Final Acceptance

No equipment shall be considered accepted, and no final payment shall be released, until the successful completion of:

- Pre-shipment third-party inspection with approval from both authorities;
- On-site delivery, installation (if applicable), and verification of all items;
- Successful completion of the mandatory five (05) days operational training for KMC personnel;
- Issuance of a final acceptance certificate by Karachi Metropolitan Corporation.

Section VI. Sample Forms

1. Bid Form and Price Schedules

Date: IFB N:

To: [name and address of Procuring Agency]

Gentlemen and/or Ladies:

Having examined the Standard Bidding Documents including Addenda Nos. *[insert numbers],* the receipt of which is hereby duly acknowledged, we, the undersigned, offer to supply and deliver *[description of goods and services]* in conformity with the said Standard Bidding Documents for the sum of *[total bid amount in words and figures]* or such other sums as may be ascertained in accordance with the Schedule of Prices attached herewith and made part of this Bid.

We undertake, if our Bid is accepted, to deliver the goods in accordance with the delivery schedule *specified* in the Schedule of Requirements.

If our Bid is accepted, we will obtain the guarantee of a bank in a sum equivalent to _____ percent of *the* Contract Price for the due performance of the Contract, in the form prescribed by the Procuring agency.

We agree to abide by this Bid for a period of *[number]* days from the date fixed for Bid opening under Clause 22 of the Instructions to Bidders, and it shall remain binding upon us and may be accepted at any *time* before the expiration of that period.

Until a formal Contract is prepared and executed, this Bid, together with your written acceptance thereof and your notification of award, shall constitute a binding Contract between us.

Commissions or gratuities, if any, paid or to be paid by us to agents relating to this Bid, and to contract execution if we are awarded the contract, are listed below:

Name and address of agent	Amount and Currency	Purpose of Commission or gratuity
_____	_____	_____
_____	_____	_____
_____	_____	_____

(if none, state “none”)

2. Bid Security Form

Whereas *[name of the Bidder]* (hereinafter called "the Bidder") has submitted its bid dated *[date of submission of bid]* for the supply of *[name and/or description of the goods]* (hereinafter called "the Bid").

KNOW ALL PEOPLE by these presents that WE *[name of bank]* of *[name of country]*, having our registered office at *[address of bank]* (hereinafter called "the Bank"), are bound unto *[name of Procuring agency]* (hereinafter called "the Procuring agency") in the sum of for which payment well and truly to be made to the said Procuring agency, the Bank binds itself, its successors, and assigns by these presents. Sealed with the Common Seal of the said Bank this _____ day of _____ 20____.

THE CONDITIONS of this obligation are:

1. If the Bidder withdraws its Bid during the period of bid validity

specified by the Bidder
on the Bid Form; or

2. If the Bidder, having been notified of the acceptance of its Bid by the Procuring agency during the period of bid validity:

   (a) fails or refuses to execute the Contract Form, if required; or

   (b) fails or refuses to furnish the performance security, in accordance with the

   Instructions to Bidders;

we undertake to pay to the Procuring agency up to the above amount upon receipt of its first written demand, without the Procuring agency having to substantiate its demand, provided that in its demand the Procuring agency will note that the amount claimed by it is due to it, owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including twenty eight (28) days after the period of bid validity, and any demand in respect thereof should reach the Bank not later than the above date.

_____

[signature of the bank]

3. Contract Form

THIS AGREEMENT made the _____ day of _____ 20_____ between *[name of Procuring Agency]* of *[country of Procuring agency]* (hereinafter called "the Procuring agency") of the one part and *[name of Supplier]* of *[city and country of Supplier]* (hereinafter called "the Supplier") of the other part:

WHEREAS the Procuring agency invited bids for certain goods and ancillary services, viz., *[brief description of goods and services]* and has accepted a bid by the Supplier for the supply of those goods and services in the sum of *[contract price in words and figures]* (hereinafter called "the Contract Price").

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.

2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:

   a. the Bid Form and the Price Schedule submitted by the Bidder;
   b. the Schedule of Requirements;
   c. the Technical Specifications;
   d. the General Conditions of Contract;
   e. the Special Conditions of Contract; and
   f. the Procuring agency's Notification of Award.

3. In consideration of the payments to be made by the Procuring agency to the Supplier as hereinafter mentioned, the Supplier hereby covenants with the Procuring agency to provide the goods and services and to remedy defects therein in conformity in all respects with the provisions of the Contract

4. The Procuring agency hereby covenants to pay the Supplier in consideration of the provision of the goods and services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the contract at the times and in the manner prescribed by the contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with their respective laws the day and year first above written.

Signed, sealed, delivered by _____ the _____(for the Procuring agency)

Signed, sealed, delivered by_____ the _____ (for the Supplier)

4. FORM OF PERFORMANCE SECURITY

(Bank Guarantee)

Guarantee No._____

Executed on _____

Expiry Date

(Letter by the Guarantor to the Procuring Agency)

Name of Guarantor (Scheduled Bank in Pakistan) with address:_____

Name of Principal (Contractor) with address:_____

_____

Penal Sum of Security (express in words and figures)_____

_____

Letter of Acceptance No._____ Dated _____

KNOW ALL MEN BY THESE PRESENTS, that in pursuance of the terms of the Bidding Documents and above said Letter of Acceptance (hereinafter called the Documents) and at the request of the said Principal we, the Guarantor above named, are held and firmly bound unto the _____ (hereinafter called the Procuring Agency) in the penal sum of the amount stated above, for the payment of which sum well and truly to be made to the said Procuring Agency, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has accepted the Procuring Agency's above said Letter of Acceptance for _____ _____ (Name of Contract) for the _____ _____ (Name of Project).

NOW THEREFORE, if the Principal (Contractor) shall well and truly perform and fulfill all the undertakings, covenants, terms and conditions of the said Documents during the original terms of the said Documents and any extensions thereof that may be granted by the Procuring Agency, with or without notice to the Guarantor, which notice is, hereby, waived and shall also well and truly perform and fulfill all the undertakings, covenants terms and conditions of the Contract and of any and all modifications of the said Documents that may hereafter be made, notice of which modifications to the Guarantor being hereby waived, then, this obligation to be void; otherwise to remain in full force and virtue till all requirements of Clause 9, Remedying Defects, of Conditions of Contract are fulfilled.

Our total liability under this Guarantee is limited to the sum stated above and it is a condition of any liability attaching to us under this Guarantee that the claim for payment in writing shall be received by us within the validity period of this Guarantee, failing which we shall be discharged of our liability, if any, under this Guarantee.

We, _____ (the Guarantor), waiving all objections and defenses under the Contract, do hereby irrevocably and independently guarantee to pay to the Procuring Agency without delay upon the Procuring Agency's first written demand without cavil or arguments and without requiring the Procuring Agency to prove or to show grounds or reasons for such demand any sum or sums up to the amount stated above, against the Procuring Agency's written declaration that the Principal has refused or failed to perform the obligations under the Contract, for which payment will be effected by the Guarantor to Procuring Agency‘s designated Bank & Account Number.

PROVIDED ALSO THAT the Procuring Agency shall be the sole and final judge for deciding whether the Principal (Contractor) has duly performed his obligations under the Contract or has defaulted in fulfilling said obligations and the Guarantor shall pay without objection any sum or sums up to the amount stated above upon first written demand from the Procuring Agency forthwith and without any reference to the Principal or any other person.

IN WITNESS WHEREOF, the above bounded Guarantor has executed this Instrument under its seal on the date indicated above, the name and corporate seal of the Guarantor being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

_____

Guarantor (Bank)

1. Signature _____
2. Name _____
3. Title _____

Witness:

1. _____

   _____

   Corporate Secretary (Seal)

2. _____

   _____ _____

   (Name, Title & Address) Corporate Guarantor (Seal)

5. Bank Guarantee for Advance Payment

To: *[name of Procuring agency]*

[name of Contract]

Gentlemen and/or Ladies:

In accordance with the payment provision included in the Special Conditions of Contract, which amends Clause 16 of the General Conditions of Contract to provide for advance payment, *[name and address of Supplier]* (hereinafter called "the Supplier") shall deposit with the Procuring agency a bank guarantee to guarantee its proper and faithful performance under the said Clause of the Contract in an amount of *[amount of guarantee in figures and words]*.

We, the *[bank or financial institution]*, as instructed by the Supplier, agree unconditionally and irrevocably to guarantee as primary obligator and not as surety merely, the payment to the Procuring agency on its first demand without whatsoever right of objection on our part and without its first claim to the Supplier, in the amount not exceeding *[amount of guarantee in figures and words]*.

We further agree that no change or addition to or other modification of the terms of the Contract to be performed thereunder or of any of the Contract documents which may be made between the Procuring agency and the Supplier, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition, or modification.

This guarantee shall remain valid and in full effect from the date of the advance payment received by the Supplier under the Contract until *[date]*.

Yours truly,

Signature and seal of the Guarantors

[name of bank or financial institution]

[address]

[date]

6. Manufacturer's Authorization Form

[See Clause 13.3 (a) of the Instructions to Bidders.]

To: *[name of the Procuring agency]*

WHEREAS *[name of the Manufacturer]* who are established and reputable manufacturers of *[name and/or description of the goods]* having factories at *[address of factory]*

do hereby authorize *[name and address of Agent]* to submit a bid, and subsequently negotiate and sign the Contract with you against IFB No. *[reference of the Invitation to Bid]* for the above goods manufactured by us.

We hereby extend our full guarantee and warranty as per Clause 15 of the General Conditions of Contract for the goods offered for supply by the above firm against this Invitation for Bids.

[signature for and on behalf of Manufacturer]

Note: This letter of authority should be on the letterhead of the Manufacturer and should be signed by a person competent and having the power of attorney to bind the Manufacturer. It should be included by the Bidder in its bid.

7. INTEGRITY PACT

DECLARATION OF FEES, COMMISSION AND BROKERAGE ETC. PAYABLE BY THE SUPPLIERS OF GOODS, SERVICES & WORKS IN CONTRACTS

(Note: Must be signed, sealed and submit with sealed bid)

Contract No._____ Dated _____
Contract Value: *[To be filled in at the time of signing of Contract]*
Contract Title: _____

…… [name of Supplier] hereby declares that it has not obtained or induced the procurement of any contract, right, interest, privilege or other obligation or benefit from Karachi Metropolitan Corporation (KMC) or any administrative subdivision or agency thereof or any other entity owned or controlled by KMC through any corrupt business practice.

Without limiting the generality of the foregoing, [name of Supplier] represents and warrants that it has fully declared the brokerage, commission, fees etc. paid or payable to anyone and not given or agreed to give and shall not give or agree to give to anyone within or outside Pakistan either directly or indirectly through any natural or juridical person, including its affiliate, agent, associate, broker, consultant, director, promoter, shareholder, sponsor or subsidiary, any commission, gratification, bribe, finder's fee or kickback, whether described as consultation fee or otherwise, with the object of obtaining or inducing the procurement of a contract, right, interest, privilege or other obligation or benefit in whatsoever form from KMC, except that which has been expressly declared pursuant hereto.

[name of Supplier] certifies that it has made and will make full disclosure of all agreements and arrangements with all persons in respect of or related to the transaction with KMC and has not taken any action or will not take any action to circumvent the above declaration, representation or warranty.

[name of Supplier] accepts full responsibility and strict liability for making any false declaration, not making full disclosure, misrepresenting facts or taking any action likely to defeat the purpose of this declaration, representation and warranty. It agrees that any contract, right, interest, privilege or other obligation or benefit obtained or procured as aforesaid shall, without prejudice to any other rights and remedies available to KMC under any law, contract or other instrument, be voidable at the option of KMC.

Notwithstanding any rights and remedies exercised by KMC in this regard, [name of Supplier] agrees to indemnify KMC for any loss or damage incurred by it on account of its corrupt business practices and further pay compensation to KMC in an amount equivalent to ten time the sum of any commission, gratification, bribe, finder's fee or kickback given by [name of Supplier] as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit in whatsoever form from KMC.

Name of Buyer: ……
Signature: ……

Name of Seller/Supplier: ……
Signature: ……

[Seal]

[Seal]

METHOD OF PROCUREMENT USED

46. PROCEDURES OF OPEN COMPETITIVE BIDDING

(2) SINGLE STAGE – TWO ENVELOPE PROCEDURE

(a) bid shall comprise a single package containing two separate envelopes. Each envelope shall contain separately the financial proposal and the technical proposal;

(b) envelopes shall be marked as "FINANCIAL PROPOSAL" and "TECHNICAL PROPOSAL" in bold and legible letters to avoid confusion;

(c) initially, only the envelope marked "TECHNICAL PROPOSAL" shall be opened;

(d) envelope marked as "FINANCIAL PROPOSAL" shall be retained in the custody of the procuring agency without being opened;

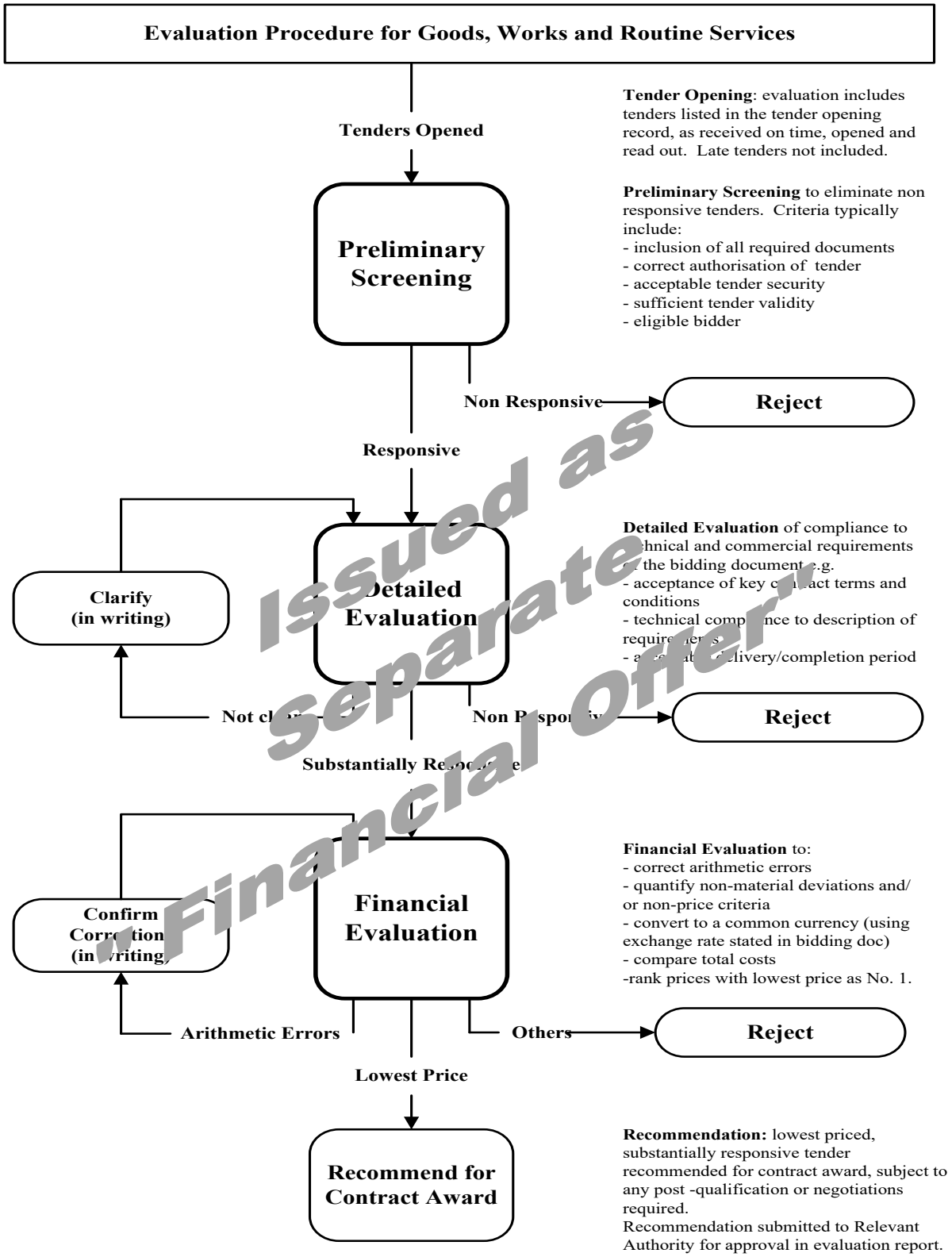
(e) procuring agency shall evaluate the technical proposal in a manner prescribed in advance, without reference to the price and reject any proposal which does not conform to the specified requirements;

(f) no amendments in the technical proposal shall be permitted during the technical evaluation;

(g) financial proposals of technically qualified bids shall be opened publicly at a time, date and venue announced and communicated to the bidders in advance;

(h) financial proposal of bids found technically non-responsive shall be returned un-opened to the respective bidders; and

(i) bid found to be the lowest evaluated or best evaluated bid shall be accepted.



KARACHI METROPOLITAN CORPORATION

FINANCE & ACCOUNTS DEPARTMENT

CONTRACT MANAGEMENT WING-(CMW)

International Competitive Bidding (ICB)
Karachi, Pakistan

SINGLE STAGE – TWO ENVELOPES PROCEDURE
Based on SPP Rule 2010 (Amended up to date), Govt. of Sindh

(Part-B)

FINANCIAL DOCUMENT

NAME OF SCHEME:

"MODERNIZATION OF FIRE BRIGADE DEPARTMENT, KMC IN ACCORDANCE WITH RECOGNIZED INTERATIONAL STANDARDS (EN or NFPA)"

Estimated Cost:-	**PKR 7,190.72 Million**	**Bidding Documents Cost:**	**PKR Rs. 3,000/- (Non-refundable)**
Time Limit:-	**02 years (24 Months)**	**Penalty**	**PKR Rs. 25,000/- Per Day**
To be opened on:-	**3rd August 2026**	**Validity of Tender:**	**As per Clause 16 ITB**

KARACHI METROPOLITAN CORPORATION

CONTRACT MANAGEMENT WING, (F&A)

Room No. 19, 2nd Floor, KMC Building, M.A. Jinnah Road, Karachi

Telephone No: 021-99216095, 99216038, 99215795 Fax No: 021-99216011

No. Dir (CMW)/F&A/KMC/750-A/2026 Karachi, Dated: 19-6-2026

SUBJECT: **NOTICE INVITING TENDER (INTERNATIONAL COMPETITIVE BIDDING THROUGH e-PADS, SPPRA PORTAL, GOVERNMENT OF SINDH).**

Reference: Tender. No. 750 dated:19-06-2026.

NOTICE INVITING TENDER
(INTERNATIONAL COMPETITIVE BIDDING THROUGH e-PADS SPPRA)

The Contract Management Wing, Finance & Accounts Department, Karachi Metropolitan Corporation (KMC), Province of Sindh, Pakistan invites electronic bids from eligible Manufacturers, Authorized Dealers, Suppliers, Joint Ventures and Firms having relevant experience, financial capability and technical expertise for the following procurement under International Competitive Bidding through the e-Pak Acquisition & Disposal System (e-PADS) SPPRA Portal, in accordance with **Single Stage - two Envelope** of Sindh Public Procurement Rules, 2010 (Amended), and applicable Government procurement regulations.

Sr.#	Tender Reference No.	Name of Scheme	Bid Security in shape of Pay Order or Demand Draft or Deposit at Call or Bank Guarantee in favour of Karachi Metropolitan Corporation (Refundable)	Tender Cost In shape of Pay Order in favour of Karachi Metropolitan Corporation (Non-Refundable)
1	2	3	4	5
1	750	Modernization of Fire Brigade Department, KMC in accordance with recognized International Standards (EN/NFPA).	**Rs. 230.7 million (PKR)**	**Rs. 3,000/- (PKR)**

Interested bidders may download the bidding documents from the EPADS available at www.portalsindh.eprocure.gov.pk or through their respective e-PADS dashboards. Bidders who are not already registered with e-PADS are required to complete their registration on the system prior to submission of bids.

The bids, duly completed in all respects and signed by the authorized representative of the bidder, shall be submitted electronically through EPADS SPPRA Portal on or before **3rd August 2026 at 1300 PST.** The bids shall be opened electronically through EPADS on **3rd August 2026 at 1400 PST**.

The original Bid Security and original Bidding Document Fee must be delivered to the office of the Director Contract Management Wing (F&A), KMC, Room No. 19th, 2nd Floor, KMC Head Office, M.A. Jinnah Road, Karachi, before the deadline prescribed for submission of bids. Any bid not accompanied by the original Bid Security and Bidding Document Fee within the stipulated time shall be considered non-responsive and shall be rejected.

Detailed technical specifications, scope of work, eligibility requirements, minimum qualification criteria, evaluation criteria, and all other relevant terms and conditions are provided in the Bidding Documents.

The Procuring Agency reserves the right to reject any or all bids at any time prior to the acceptance of a bid, subject to the relevant provisions of the Sindh Public Procurement Rules, 2010 (as amended).

Sd/=

Director (Contract Management Wing)
Finance & Accounts, KMC

MODERNIZATION OF FIRE BRIGADE DEPARTMENT, KMC IN ACCORDANCE WITH RECOGNIZED INTERNATIONAL STANDARDS (EN/NFPA)

SCOPE OF WORK SUPPLY

I. SCOPE OF WORK / SUPPLY

S/No.	Description	Quantity
1	Modernization of Fire Brigade Department, KMC in Accordance with Recognized International Standards (EN/NFPA)	As per Scope of Work listed in Parts A + B, Annex **)

All supplies of vehicles must include 5 Years Warranty and Preventive Maintenance included in Bid Price.

II. QUANTITY:

As indicated in "I" above.

III. STANDARDS & CERTIFICATION:

A) Chassis excluding Main Components as mentioned in "III-B" shall be manufactured according relevant EN or NFPA standards as per attached tender specifications.

B) Superstructure manufacturer must be certified to all relevant EN or NFPA standards, specifically EN 1846 or NFPA 1900.

C) Main components such as Pumps, Water Monitor, Foam Mixer, Fire Hose Reel, etc. should be manufactured according to the relevant EN or NFPA standards. PTO should be from chassis manufacturer.

IV. TRAINING & FAMILIARIZATION

Operator Training: The Manufacturer should ensure proper operator training of 05 days training at nominated KMC premises in Karachi for the operational training of the vehicles and equipment provided.

V. PRE-SHIPMENT 3RD PARTY INSPECTION

The Manufacturer will arrange 3rd Party Inspection of Unit(s) at their own cost through TUV or SGS or COTECNA or Lloyds and submit copy to KMC. It is incumbent that the Manufacturer receives approval of 3rd Party Inspection Report from Contract Management Secretariat, KMC before shipment / delivery.

VI. OEM FACTORY INSPECTION VISIT

Manufacturers shall arrange an inspection visit for 03 officials nominated by Director Contract Management, KMC to survey Manufacturer's overseas production facility / factory for 05 days. This shall be at the expense of the Manufacturer (including flights, accommodation, local transport only).

VII. DESIGN, DRAWINGS & WEIGHT CALCULATIONS:

A mandatory requirement shall be for Manufacturer to provide the Drawings and Weight Calculations of the quoted Water and Foam Fire Tender, Water Bowser, Aerial Ladder Platform Snorkel, Fire Truck with Drones and Fire Truck with Robots. All supplied fire vehicles shall be designed for operational stability and structural strength based on the criteria laid in EN 1846 or NFPA 1900 as well as other related European CE or NFPA norms and standards applicable for Firefighting and rescue operations.

VIII. THIRD PARTY VERIFICATION OF QUOTED STANDARDS / CERTIFICATION ETC:

The procurement agency has the rights to conduct a third-party verification for the quoted standards / certification etc. by the manufacturer, during evaluation and / or during manufacturing / supply period.

All Compliance Certificates of International Standards must be signed by the Original Equipment Manufacturer (OEM) and attached with Technical Offer. Any modifications in chassis to increase the original chassis GVW is strictly not allowed, if any modification found will lead to rejection and disqualification from the tender.

SCHEDULE OF REQUIREMENTS

General

The Karachi Metropolitan Corporation (KMC), through the Fire Brigade Department, intends to procure, supply, install, test, commission and hand over state-of-the-art Firefighting and Rescue Vehicles, Equipment, Modular Fire Stations and Real-Time Monitoring System under the scheme titled:

"Modernization of Fire Brigade Department, KMC in accordance with Recognized International Standards (EN/NFPA)."

The Goods and Related Services shall be supplied strictly in accordance with the Technical Specifications contained in the bidding documents.

The successful Bidder shall be responsible for:

- Manufacturing/Supply of all Goods;
- Transportation, Freight, Insurance and Customs Clearance (where applicable);
- Delivery at designated KMC locations in Karachi;
- Installation, Testing and Commissioning;
- Integration of all electronic systems;
- Operational Acceptance;
- Comprehensive Training of KMC Personnel;
- Supply of complete Operation & Maintenance Manuals;
- Five (05) Years Comprehensive Warranty;
- Five (05) Years Preventive Maintenance Services;
- Supply of Genuine Spare Parts during Warranty Period;
- Real-Time Fleet Tracking System including software, hardware and licenses.

The following table details the goods to be procured.

Item No.	**Description of Goods**	**Quantity**	**Physical Unit**
A1	**Fire Fighting & Rescue Vehicles**		
A1.1	Water and Foam Fire Truck (EN-1846 / NFPA 1901 compliant)	21	Units
A1.2	Water Bowser Truck (EN-1846 / NFPA 1901 compliant)	4	Units
A1.3	54m Aerial Platform Snorkel Fire Truck (EN280, EN1846, EN1777 compliant)	4	Units
A1.4	Fire Fighting Truck with 2 Drones (EN-1846 / NFPA 1901 compliant)	2	Units

Item No.	Description of Goods	Quantity	Physical Unit
A1.5	Fire Fighting Truck with 2 Robots (EN-1846 / NFPA 1901 compliant)	2	Units
A1.6	Small Fire Fighting Vehicle (4-Wheels All Terrain Fire Motorcycle) (EN-1846 / NFPA 1901 compliant)	9	Units
A1.7	Small Fire Fighting Vehicle (2-Wheels Fire Motorcycle) (EN-1846 / NFPA 1901 compliant)	10	Units
A1.8	Centralized Dashboard for Real Time Monitoring – Fleet Movement	1	Complete System
A2	**Additional Fire Fighting & Rescue Equipment**		
A2.1	Full Face Mask for Firefighters	50	Sets
A2.2	Multi-Purpose Fire Nozzle (230 L/Min.)	30	Sets
A2.3	Multi-Purpose Fire Nozzle (475 L/Min.)	30	Sets
A2.4	Multi-Purpose Fire Nozzle (950 L/Min.)	30	Sets
A2.5	Hydro Vent Nozzle	30	Sets
A2.6	Foam Making Branch Pipe Nozzle	30	Sets
A2.7	Foam Fire Nozzle (480 L/Min.)	30	Sets
A2.8	Fire Fighting Hose 2 1/2" with BSS Coupling 100ft	200	Sets
A2.9	Fire Fighting Hose 2 1/2" with BSS Coupling 50ft	200	Sets
A2.10	Fire Fighting Hose 2" with BSS Coupling 100ft	200	Sets
A2.11	Fire Fighting Hose 2" with BSS Coupling 50ft	200	Sets
A2.12	Fire Fighting Hose 1.75" with BSS Coupling 100ft	200	Sets
A2.13	Fire Fighting Hose 1.75" with BSS Coupling 50ft	200	Sets

Item No.	Description of Goods	Quantity	Physical Unit
A2.14	Portable Gasoline Cutter	10	Sets
A2.15	Oscillating Portable Fire Monitor	30	Sets
A2.16	Rescue Air Cushion	8	Sets
A2.17	Wireless Talkie (Intrinsically Safe)	100	Sets
A2.18	UHF Base Station / Repeater System (40W)	32	Sets
A2.19	Hardware for Base Station (with Accessories)	2	Sets
A2.20	SCBA (Breathing Apparatus) - 75 Mins Duration	200	Sets
A2.21	High Performance Battery Operated PPV	10	Sets
A2.22	Structural Firefighting PPE Ensemble	200	Sets
A2.23	Proximity Firefighting Suit	20	Sets
A2.24	Air Breathing Apparatus Trolley	5	Sets
A2.25	Mobile Air Filling Compressor for SCBA	5	Sets
A2.26	Complete SCUBA Set for Water Rescue	10	Sets
A2.27	Inflatable Rescue Boat with Petrol Engine	5	Units
A2.28	Rescue Diving Fins	10	Sets
A2.29	Lifebuoy Tube	20	Units
A2.30	Marine Rescue Binoculars	5	Units
A2.31	Sewer Camera Fiberscope	2	Units
A2.32	Battery-operated Combi Rescue Tool with Charger	10	Sets
A2.33	Thermal Imaging Camera (TIC)	10	Units

Item No.	Description of Goods	Quantity	Physical Unit
A2.34	Mobile Lighting Tower	5	Units
0	Portable Plasma Gas Cutter	5	Units

The following table lists pertaining to the additional services required from the supplier, which must be included in the total bid price.

Service No.	Description of Service	Qty	Physical Unit	Place where Services shall be performed	Final Completion Date of Services
B1	**Comprehensive 5-Year Warranty & Preventive Maintenance Contract**	1	Complete Service	Various KMC Fire Stations	All vehicles to be covered from the date of final acceptance. Service schedule to be maintained for 5 years.
B2	**On-site Operator & Maintenance Training**	1	Complete Service	KMC Fire Headquarters/ Training Premises, Karachi	To be completed prior to the final acceptance and issuance of the Final Acceptance Certificate.
B3	**Train-the-Trainer Program for Senior Officers**	1	Complete Service	KMC Fire Headquarters/ Training Premises, Karachi	To be completed prior to the final acceptance and issuance of the Final Acceptance Certificate.
B4	**Third-Party Pre-Shipment Inspection**	1	Complete Service	Country of Origin (Supplier's Facility)	The final inspection report must be approved by KMC & Rescue 1122 before shipment.
B5	**Delivery, Installation & Commissioning**	1	Complete Service	Various KMC Fire Stations	To be completed as per the delivery schedule in Section A.

Delivery Locations

The Goods shall be delivered at locations designated by the Procuring Agency within Karachi Metropolitan Corporation, including:

- Fire Brigade Headquarters, KMC
- Existing Fire Stations of KMC
- Newly Constructed Fire Stations
- Any other KMC premises specified by the chief Fire officer, Fire Brigade, KMC.

Related Services

The successful Bidder shall provide, without limitation:

- Packing and Transportation;
- Marine Insurance;
- Customs Documentation Assistance;
- Unloading at Site;
- Installation;
- Testing;
- Commissioning;
- Calibration;
- Integration of Electronic Systems;
- Operator Training;
- Maintenance Training;
- Preparation of O&M Manuals;
- Spare Parts Catalogue;
- Software Licenses;
- Preventive Maintenance;
- Corrective Maintenance;
- Emergency Breakdown Support.

Training Requirements

The Supplier shall conduct comprehensive training at Karachi for KMC personnel including:

- Vehicle Operations;
- Firefighting Systems;
- Rescue Equipment;
- Drone Operations;
- Robotic Firefighting Systems;
- SCBA Operations;
- Maintenance Procedures;
- GPS Tracking System;
- Monitoring Dashboard;
- Train-the-Trainer Programme.

All costs relating to training shall be included in the Contract Price.

Warranty

The Supplier shall provide a comprehensive warranty for a period of **Five (05) Years** from the date of Final Acceptance covering:

- Manufacturing Defects;
- Components;

- Spare Parts;
- Labour;
- Software;
- Calibration;
- Repair;
- Replacement;
- Preventive Maintenance.

The warranty shall include quarterly preventive maintenance visits and emergency breakdown support.

Spare Parts

The Supplier shall guarantee the availability of genuine spare parts for a minimum period of **ten (10) years** after expiry of the warranty.

Inspection

Inspection shall include:

- Factory Acceptance Test (FAT);
- Third-Party Inspection by an internationally recognized inspection agency SGS / TUV / COTECNA / Lloyds acceptable to KMC;
- Pre-Shipment Inspection;
- Site Acceptance Test (SAT);
- Performance Testing;
- Operational Acceptance.

Documentation

The Supplier shall furnish:

- Manufacturer's Certificates;
- EN/NFPA Compliance Certificates;
- Certificates of Origin;
- Factory Test Certificates;
- Inspection Reports;
- Warranty Certificates;
- Maintenance Manuals;
- Spare Parts Manuals;
- Service Manuals;
- Electrical Drawings;
- Hydraulic Drawings;
- Software Documentation.

Acceptance

Final Acceptance shall be issued only after:

- Successful Delivery;
- Installation;
- Testing;
- Commissioning;
- Completion of Training;
- Submission of Complete Documentation;
- Rectification of all Defects;

- Certification by the Inspection Committee decided by KMC.

Implementation Period

The overall implementation period of the Contract shall not exceed **Twenty-Four (24) Months**, in accordance with the approved bidding document implementation schedule.

Applicable Standards

All Goods shall strictly comply with the relevant recognized international standards including, but not limited to European Norms or National Fire Protection Agency Standard or equivalent internationally recognized standards.

NOTES FOR BIDDERS:

1. **Specifications:** All goods must comply strictly with the detailed technical specifications provided in the tender documents, including compliance with specified EN and NFPA standards .
2. **Warranty & Maintenance:** The bid price must include the cost of a 5-year warranty and preventive maintenance contract for all vehicles and equipment.
3. **Training:** The bid price must include the cost of all specified training services.
4. **Inspection:** The supplier is responsible for arranging and covering the costs of mandatory pre-shipment inspection by an approved agency (TUV, SGS, COTECNA, or Lloyds Register) .
5. **Delivery:** The final delivery date for all goods and completion of related services will be determined and specified in the final contract award and bidding documents. Bidders shall propose their delivery schedule within the required timeframe.
6. **Pricing:** Bidders shall provide a priced offer for each item in this Schedule of Requirements. The total bid price must be inclusive of all taxes, duties, and costs associated with the delivery and completion of services as per the Incoterms specified in the bidding documents.

PART: A PRICE SCHEDULE / BILL OF QUANTITIES (BoQ)

PROVISION OF FIREFIGHTING & RESCUE VEHICLES, REGARDING MODERNIZATION OF KMC FIRE BRIGADE IN ACCORDANCE WITH RECOGNIZED INTERNATIONAL STANDARDS

S#	Description	Qty	Unit	Unit CIF Price	Total CIF Price
1	Water and Foam Fire Truck	29	Unit		
2	Water Bowser	6	Unit		
3	Aerial Ladder Platform Snorkel 54 Meters Height	4	Unit		
4	Fire Truck with 2 Drones	2	Unit		
5	Fire Truck with 2 Robots	2	Unit		
6	Small Fire Vehicles (Four Wheeled)	12	Unit		
7	Small Fire Vehicle (Two Wheeled Fire Motorcycle)	17	Unit		
8	Centralized Dashboard for Real-Time Monitoring of Fire Vehicle Fleet at KMC Head Office	1	Complete Job		

Incoterms	**Cost, Insurance and Freight (CIF) Karachi basis**	
Maintenance	**5 years warranty & preventive maintenance**	
Part :A: Total Amount of <u>FIRE VEHICLES</u> on Cost, Insurance, and Freight (CIF) Karachi basis in Foreign Currency in figures in PKR		

Total Amount of <u>FIRE VEHICLES</u> on Cost, Insurance and Freight (CIF) Karachi basis in Foreign Currency in words

Pakistan Rupees _____

_____

PART: B - PRICE SCHEDULE / BILL OF QUANTITIES (BoQ)

PROVISION OF ADDITIONAL FIREFIGHTING & RESCU EQUIPMENT:-

S#	Description	Qty	Unit	Unit Price	Total Price
1	Full Face Mask for firefighters	50	Sets		
2	Multi-Purpose Fire Nozzle (230 L/Min.)	30	Sets		
3	Multi-Purpose Fire Nozzle (475 L/Min.)	30	Sets		
4	Multi-Purpose Fire Nozzle (950 L/Min.)	30	Sets		
5	Hydro Vent Nozzle. 1-1/2" turbojet nozzle	30	Sets		
6	Foam Making Branch Pipe Nozzle.	30	Sets		
7	Foam Fire Nozzle (480L/Min.)	30	Sets		
8	Fire Fighting Hose 2 1/2" with BSS Coupling 100ft.	200	Sets		
9	Fire Fighting Hose 2 1/2" with BSS Coupling 50f.	200	Sets		
10	Fire Fighting Hose 2" with BSS Coupling 100ft.	200	Sets		
11	Fire Fighting Hose 2" with BSS Coupling 50ft.	200	Sets		
12	Fire Fighting Hose 1 .75" with BSS Coupling 100 feet.	200	Sets		
13	Fire Fighting Hose 1 .75" with BSS Coupling 50 feet.	200	Sets		
14	Potable Gasoline Cutter.	5	Sets		
15	Oscillating Portable Fire Monitor.	20	Sets		
16	Rescue Air Cushion	5	Sets		
17	Wireless Talkie Motorola/ Kenwood intrinsically safe, UHF 403–527 MHz frequency range with getting license & NOC from relevant authorities	100	Sets		

S#	Description	Qty	Unit	Unit Price	Total Price
18	UHF Base Station / Repeater System, license software with Supply and Installation – (40 W UHF) compactible with Walke Talkie Wire.	32	Sets		
19	Hardware requirement for base station for turbocar application including Palm microphone, DC Cable, Bracket, PC Interface Cable, 220 V DC Supply 3dBd gain UHF Omni directional fiber glass whip antenna	2	Sets		
20	Complete SCBA (Breathing Apparatus) with full face mask and harness Light Weight Carbon Composite 75 Mins Duration.	170	Sets		
21	High Performance Battery Operated Centrifugal Positive Pressure Ventilator with External quick charger, 100m electric extension in bag with lockable EU plugs, carrying harness, duct 5M Blowing and Extraction	30	Sets		
22	Complete Firefighting Suit, Helmet, Gloves, Neck Protector and Boots, fully aligned with Relevant EN / NFPA.	200	Sets		
23	Proximity Suit for high-temperature aluminized fire fighting	20	Sets		
24	Air Breathing Apparatus Trolley for HAZMAT, confined - space, and extended-duration rescue operations.	5	Sets		
25	Mobile Air Filling Compressor for SCBA	5	Sets		
26	Complete SCUBA Set with Uniform for lifeguards	10	Sets		
27	Inflatable Rescue Boats with Petrol Engine for rescue	5	Sets		
28	Rescue diving fins for lifeguards	10	Unit		
29	Lifebuoy Tube for lifeguards	20	Unit		
30	The binoculars for beach rescue	5	Unit		
31	Sewer Camera Fiberscope	2	Unit		

S#	Description	Qty	Unit	Unit Price	Total Price
32	Battery-operated combi tool with charger	10	Sets		
33	Thermal imaging camera as per relevant EN/ NFPA.	10	Unit		
34	Mobile lighting tower shall be a compact, rapid - deployment rescue lighting system powered by a gasoline generator	5	Unit		
35	The plasma gas cutter shall be a compact, high-performance air-plasma cutting system designed for rescue-support operations.	5	Sets		
Incoterms	**Cost, Insurance and Freight (CIF) Karachi basis**				
Maintenance	**5 years warranty & preventive maintenance**				
Part: B" Total Amount of <u>ADDITIONAL EQUIPMENT</u> on Cost, Insurance and Freight (CIF) Karachi basis in Foreign Currency in figures in PKR					
In Words Pakistan Rupees _____ _____					

<u>CONSOLIDATED SUMMARY OF BOQ (PART "A" & "B")</u>

Total Amount of (Part "A:) Regarding Fire Fighting & Rescue Fleets including on Cost, Insurance and Freight (CIF) Karachi basis in Foreign Currency in figures in PKR	
Total Amount of (Part"B") Regarding additional Firefighting & Rescue equipment on Cost, Insurance and Freight (CIF) Karachi basis in Foreign Currency in figures in PKR	
Grand Total in Figures (PKR)	
In Words Pakistan Rupees _____ _____	

Note:-

a) The Bidder shall quote for the complete scope of supply, works and services specified in the Tender Documents. Partial, incomplete or conditional bids, or bids that do not cover all items included in the Schedule of Requirements, shall be considered non-responsive and shall be rejected without further evaluation.
b) The prevailing Interbank Rate on the date of Bid Received / Technical Bid Opening shall be applied for Bid Evaluation purposes and for Bid Security amount purposes. For the opening of the LC, the prevailing Interbank Rate on the date of LC opening shall be applied.
c) The bid from Manufacturer having lowest quoted price shall be declared lowest evaluated bid.
d) Shipment may be made in the name of Chief Fire Officer, Fire Brigade Department, Karachi Metropolitan Corporation(KMC).

Checked & verified by:

I/We have quoted the price schedule and bound ourselves to comply all terms and conditions of this contract with all existing rules and regulations of KMC and I have attached Bid Security (as mentioned in the NIT/ Bidding Data) in shape of Pay Order/ Demand Draft / Bank Guarantee No. _____ Dated _____ issued from _____ amounting Rs._____ in favour of Karachi Metropolitan Corporation.

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Signature of Bidder with Stamp

(TECHNICAL SPECIFICATIONS)

MODERNIZATION OF FIRE BRIGADE DEPARTMEN, KMC IN ACCORDANCE WITH RECOGNIZED INTERATIONAL STANDARDS (EN/NFPA)

PART-A: DETAILED SPECIFICATIONS OF FLEETS

ITEM 1: WATER AND FOAM FIRE TRUCK

1. The Whole Fire Truck

- **Weight:** Approx. 21,000kg
- **Number of the Crew:** 2+4
- **Max. Speed:** 90km/h
- **Wheel Base:**4600mm
- **ROH:** 2300mm
- **Capacity of Extinguishing Agent:** 7750L Water and 250L Foam
- **Fire pump flow rate:** 3000L/Min at 10 Bar HP, 250 L/min at 40 bar
- **Roof Fire monitor flow rate:** 2000 L/min
- **Manufactured:** Accordance to EN 1028-1, EN 1028-2, and EN1846/ Equivalent NFPA Standard.
- Combined weight of all components mentioned in the specifications should not exceed chassis GVW. Modification in the chassis is strictly not allowed.

2. Chassis

- **Chassis Series:** Heavy-Duty Chassis for Fire Truck Right Hand Drive Airconditioned
- **Driving Manner:** 4x2
- **Regulation:** ECE R10+R16+R28+R39+R43+R46+R48
- **Mandatory ECE Certificate:** ECE-R29, ECE-R13
- **Type of Suspension:** Leaf Spring
- **Clutch:** Hydraulically operating with air assistance
- **Tire:** 315/80R22.5
- **Rated Power:** 300 Hp
- **Gearbox Form:** Manual, 9 forward gears, 1 reverse gear
- **Power take-off:** With PTO to drive the pump (Original PTO from Chassis Manufacturer)
- **Fuel tank type:** 300L Diesel Oil Tank
- **Braking System:** ABS, latest braking system as per International Standard ECE-R13 & NFPA 1901 (2016)
- **Emission Standard:** Min Euro 3
- **Reverse Camera:** Drivers Cabin
- **PTO: Functions:**
  - Engine dependent PTO (PTO be owned and certified by chassis manufacturer)
  - PTO usage both withstanding still vehicle as well as in mobile conditions (pump and roll)
  - PTO mounting position between engine and gearbox
  - Assembling without any “special” dedicated tools.

3. Superstructure

3.1 Cabin

- **Structure:** Double Row Cabin with four doors air-conditioned. Crew Cabin having ECE R29 Compliance shall be provided for accommodation of 3-4 Fire Fighters, behind Driver’s Cab with Doors & Windows and shall be fabricated with fine quality galvanized sheet with plastic/foam seats, interior lights (Preferably by Chassis manufacturer)

- **Seats:** 1+1+4
- **Safety:** 3-point seat belt
- **SCBA Seats:** SCBA frame is installed at the rear 4 seats and they are adjustable to place 6.8L-9L SCBA.
- **Interior:** PTO switch, alarm and warning light switches are installed in the cabin.
- **Stairs:** Anti-slip stairs
- **Anti-slip handrails** are installed.

3.2 Standardized Sub-frame

- **Material:** High-strength rectangular tube made of special steel.
- **Performance:** The liquid tank and the sub-frame are connected by an elastic connecting seat with torque reduction performance, which not only increases the flexibility of the connection between the frame and the tank body, prevents deformation and cracking of the upper body, but also increases the strength of the upper body to give full play to chassis performance, while standardizing the sub-frame to achieve flexible assembly of upper parts.

3.3 Compartment

- **Material:** Aluminum alloy profiles and Never Rust
- **Structure:** The outer frame with a special aluminum alloy frame overall welded structure, the skeleton, the surface for the aluminum alloy profiles, beautiful appearance and durable. The outer skin is bonded through an air-fed high-strength adhesive, and the inner floor is an anodized aluminum alloy plate.
- **Equipment door:** The use of light high-quality aluminum alloy, with aluminum alloy large shutter doors (with pull rod door handle), open and close flexible, good sealing, low noise, beautiful appearance, light and reliable, all shutter doors can be a common key.
- **Internal structure:** The internal skeleton with aluminum lap technology, to maximize the increase in space utilization and variability, make full use of limited space inside the compartment, pick and place equipment convenient and solid.
- The rear compartment is fitted with aluminum alloy ladder to the roof.
- Anti-skid treatment on the top, water naturally downstream.

3.4 Roller Shutter Door

- Made by high strength composite material, mounted with safe lock. Roller shutter will slide up automatically after pulling out the Lever from holder.

3.5 Foot Pedal

- **Material:** high quality aluminum alloy
- **Width:** 50cm, bear more than 150kg, anti-slip design on the pedals with double lock function.
- **Location:** on the both sides of compartment and pump room

3.6 Superstructure Electric Appliance

- **Warning Light and alarm:** Long-row Alarm Light is mounted above cabin. Single tone 100W alarm and warning light, circuit is a separate additional circuit, the control switch is in the cabin.
- **Storage Compartment Light:** LED white light strips on both sides of the equipment box and pump room shutter door, which can meet the illumination of the whole compartment, the lighting switch and the roller shutter door state are linked.
- **Strobe Light:** Mounted on top aluminum frame, at the both sides of the compartment.
- **External Lighting:** Long life lamps are installed on both sides of compartment for lighting in night.
- **Roof Light:** Mounted on the inside of the roof of the compartment.
- **Side Indicator Light:** Inline yellow warning light is mounted on the side of the compartment and pedal.
- **360-degree panoramic reversing image system.**

3.7 Paint Color: Red

3.8 Fire Pump

- **Normal Pressure & Flow:** 3000 l/min at 10 bar (normal pressure=NP)

- **Nominal data:** 3000 l/min at 10 bar (normal pressure=NP) 250 l/min at 40 bar (high pressure=HP)
- **Power:** 140/155 kW/211HP (NP+HP)
- **Nominal speed:** 3000/3250 rpm
- **Pump:** Normal Pressure Pump
- **Pump cover**: Sea-water resistant light alloy,
- **Pump Shaft and Split Rings:** Duplex Stainless steel
- **Standard:** Compliance with regional standard equivalent to EN1028-1 & EN1028-2 / Equivalent NFPA
- **Pump Impeller:** Standard steel
- **Priming Manner:** Automatic
- **Suction Height:** 8m
- **Priming Time:** ≤60s
- **Installation Mode:** Rear-mounted

3.9 Roof Fire Monitor

- **Max Rotation:** 360 degree
- **Max Elevation:**+75 -15 Degree
- **Throw Range:** Water 60 meter
- **Flow Rate:** 2000 L/min
- **Shot Range: Throw Range:**
    - a) Water: 60m
    - b) Foam: 50m
- **Output capacity**:1200 / 2000 LPM at 10 bar
- **Installation location:** On the top of tank
- **Control manner:** Manual Control
- **Horizontal rotation angle:** 0°~360°
- **Pitch rotation angle:** -15°~60°
- **Standard:** NFPA 414 or Equivalent EN
- **Location:** Fitted on the vehicle's top (on pump compartment)

3.10 Liquid Tank

- **Capacity:** Water Tank 7,750L, Foam 250L
- **Material:** High-quality GRP/ PP composite material and Never Rust min 20mm thickness (chemical/corrosion resistant)
- **Structure:** Two Tank Manhole; One Overflow Device/Pressure Relief Device; Two Liquid Level Indicators; One Foam tank Drain Outlets with Valves; One Water tank Drain Outlets with Valves.
- **Baffle Plates:** Horizontal & vertical partition inside the tank to absorb the surge.

3.11 Fire Pipeline

- 1pc suction inlet from the hydrant to the pump
- 2pcs water inlet from hydrant to tank directly
- 4pcs pump outlets to connect the fire hose
- Drain Pipeline: In order to protect water pump and ball valves, drain ball valve is mounted in the pipeline.

3.12 Fire Control System

- Dashboard equipped with pressure gauge, vacuum gauge, liquid level display, throttle etc. All switches and dashboard instructions indicate the use of water-proof corrosion-resistant signs.
- **Language:** English

3.13 Foam Mixing System

- **Foam mixing ratio:** Manual "Round-the-pump" foam mixer should be provided, foam connection for internal or external foam tank (max 1.5m suction lift), driver water line manual operated ball valve, manual adjustable foam flow with ball valve and scale (%), foam flow can be 3%, 6% and 8%.
- **Control manner:** Electric and Automatic manner

3.15 Priming System

- **Drive:** Automatic Priming System
- **Type & Model**: Integrated system driven by the pump shaft 0…8m suction height, only working in time of suction, oil free Maintenance free.

3.16 Fire Aid Real

- **High pressure hose**: High Pressure Hose Reel with minimum working pressure of 40 bars size 3/4" x 45 m High Pressure Hose terminated with a spray/jet nozzle; manual rewinding located at the rear.
- **Hose Real assembly compliant**: NFPA 1900 requirements (US market) or EN 671-1
- **Design:** Robust and dirt-resistant due to non-corroding materials. Top-quality stainless-steel reel and wheels.

Digital Control System and operating platform used in firefighting vehicles and firefighting equipment to allow firefighters to control pumps, water/foam monitors (turrets), lighting systems, and other vehicle functions through a single standardized interface.

Control System shall be able to manage:

- Fire pumps
- Roof and bumper turrets
- Foam proportioning systems
- Light masts and scene lighting
- Vehicle status monitoring
- Diagnostics and maintenance information
- Telematics and remote diagnostics features

4. Files Along with the Vehicle (In English)

- User Manual of Chassis
- Chassis Certification
- User Manual of Vehicle
- Vehicle Certification

5. Accessories

OTHERS

a) Access Ladder is provided at the rear

b) Suction hose suitably located on the roof

c) Suitable brackets and clamping devices shall be provided for the mounting light alloy extension ladder along the roof.

d) Spare wheel shall be suitably fitted.

\STANDARD ACCESSORIES HAVING COMPLIANCE OF APPLICABLE EN OR EQUIVALENT NFPA

S. No	DESCRIPTION	Quantity
1.	LED light bar with built in PA System	01 No.
2.	Search Light heavy duty adjustable Located 2 x Front of cabin & 1 x Rear of roof	03 Nos
3.	Suction wrenches	02 Nos.
4.	Suction Hose 5” x 2.5m long with light alloy coupling	04 Nos.
5.	Delivery hose 2-1/2” x 20m long with Light Alloy coupling size 2-1/2”	08 Nos.
6.	5’’ Suction Strainer (SS)	01 No.
7.	Basket Strainer with 15m rope (12mm)	01 No.
8.	Fire Axe	02 Nos.
9.	2-1/2” Adjustable pistol Nozzle	02 Nos.
10.	Fire Hook	01 No.
11.	Crowbar	01 No.
12.	Standard tool for vehicle	01 Set.
13.	First Aid Kit	01 Set.
14.	Aluminium (3 Section) extension Ladders – 15 meters Load Requirement is minimum 120 Kgs	01 No.
15.	Turnout Suits made of Fire-Retardant Material comprising of Jacket and Plant Complete with Fire Fighting Helmet, Long Rubber Boots (Chemical & Water Resistant) Fire Fighter Gloves with Nomex Lining Complete Suit Packed in a Carrying Bag	04 Pairs.
16.	Breathing apparatus SCBA Approved-Type 2 complete with Full Face Mask and Steel Cylinder Capacity 6L x 300 Bars. Minimum 30 minutes duration Packed in Plastic Carrying Case	04 Set.
17.	Fire Hose Bridges/Ramp	02 Sets.
18.	Rechargeable flashlight	04 No.
19.	Full Face mask with combined Filter	04 Nos.
20.	Spare Bottle for SCBA capacity 6L x 300 Bars.	01 for 05 Vehicles
21.	Bolt cutter	01 No.

S. No	DESCRIPTION	Quantity
22.	Generator 1200W	01 Set.
23.	Hydraulic rescue tools with: Max. Cutting Capacity: Φ32 (Circle steel), 15 (Steel Plate) Pulling Distance: 260 mm Spreading Distance: 360 mm Max. Working Pressure: 720 bar Max. Spreading Force: 230 kN / 23.4 ton Max. Squeezing Force: 80 kN / 8.2 ton Max. Pulling Distance: 220 mm Max. Pulling Force: 86 kN / 8.8 ton Working Temperature Range: -30^{o}C~ 55^{o}C Weight: max. 15 kg Dimension (LxWxH): 800 x 240 x 190 (mm)	01 Set.
24.	Auto-locator and GPS System installed	01 No

ITEM 2: WATER BOWZER

Truck Chassis

Right Hand Drive Air-conditioned RHD 6 x 4 Diesel Engine Min EURO III Truck Chassis, 430HP, Min GVW 41 Tons with ABS Braking System. Drum brakes with ABS (Automatic Brake System). Factory Built Driver's Airconditioned Cabin, Seating capacity Driver + 2 (i.e. total 3 Person) complete with Standard Accessories/Tool Kit

- **Rated power:** 430Hp
- **Regulation:** ECE R10+R16+R28+R39+R43+R46+R48
- **Mandatory ECE Certificate:** ECE-R29, ECE-R13
- **Type of Suspension:** Leaf Spring
- **Clutch:** Hydraulically operating with air assistance
- **Tire:** 315/80R22.5
- **Drive model:** Right hand drive air conditioned
- **Braking System:** ABS, latest braking system as per International Standard ECE-R13 & NFPA 1901 (2016)
- **Suspension:** Taper leaf suspension
- **Warning Control:** The controls for the visual and acoustic warning system are integrated in the chassis dashboard.
- **Reverse Camera:** Drivers Cabin

Water Tank

a) Capacity — 20,000 liters

b) Material — High strength Polypropylene/GRP (Chemical / Corrosion Resistant)

c) Suspension — Torsion free duly padded

d) Battle Plates — Horizontal & Vertical partition inside the tank to absorb the surge.

e) Connection
1. Tank is filled from a male 2 ½" coupling as hydrant filling.
2. Overflow and breather is of 2 x 4 " bore designed to minimize water loss and arranged to discharge away from chassis frame and brake.
3. Feed from tank to pump is of 5" bore fitted with 5" Butterfly valve.

f) Manhole — Qty 01, Quick release hatch type of 450 mm x 450 mm (approx.) with Lid and Lockable.

g) Water Drainage Point — 2 1/2" drainage plug

Fire Pump

Standard: EN-1028-1 & EN-1028-2.
Type: Centrifugal double stage fire pump (NP),
Nominal data: 3000 l/min at 10bar (normal pressure=NP)
Power: 102 kW/139HP
Nominal speed: 3250 rpm

Material: Normal Pressure pump (NP), housing, diffuser, guide wheels and pump cover from sea-water resistant light alloy, pump shaft and split rings from stainless steel. Sealing of the pump shaft by radial seals in an exchangeable sealing bush.

The fire pump must have the following characteristics:

- Fully automatic pressure governor thermal (to be provided as standard component of the fire pump).
- The automatic pressure governor will regulate the working pressure at a pre-set level without occasionally shutting down the system.
- Fully automatic priming system TROKOMAT PLUS simplifies maximally the operation of the pump.
- Fully Automatic Priming System, Integrated system driven by the pump shaft 0…8m suction height, only working in time of suction, oil free, maintenance free.

SPLIT SHAFT/ ENGINE FLYWHEEL POWER-TAKE-OFF:

The PTO is operated pneumatically with an indication light of engagement and disengagement of PTO is provided in the Driver's Cabin.

Functions:

- Engine dependent PTO (PTO be owned and certified by chassis manufacturer)
- PTO usage both withstanding still vehicle as well as in mobile conditions (pump and roll)
- PTO mounting position between engine and gearbox
- Assembling without any "special" dedicated tools.

Water Turret / Monitor

a) Standard : NFPA or EN Standard

b) Location : Fitted on the vehicle's top (on pump compartment)

c) Performance :

1) Max Rotation: 270 degree
2) Max Elevation: +75 -15 Degree
3) Throw Range:
   a) Water: 60m
   b) Foam: 50m
4) Output capacity:1200 / 2000 LPM at 10 bar

d) Control: 3" dia Valve fitted beneath the Monitor

e) Nozzle: Fitted with multi-gallon age nozzle with SS / Fog Pattern.

Suction / Delivery

Suction / Delivery is provided on the both sides of the vehicle.

Piping & Valves

Piping & Valves will be provided and fixed complete in all respect as mentioned below:

- 2 1/2 ” Steel pipes Butterfly Valves with 2 ½” female Coupling on each side of vehicle.
- 4” Suction Inlet with Butterfly Valve and threaded coupling with blank cap on each side only (for external source).
- Arrangement for suction through external source / reservoir to tank or direct delivery.

Controls:

The control panel will be installed on rear side of the vehicle having following gauges / controls:

- Engine throttle control
- Pump pressure gauge
- Pump compound gauge
- Tank to pump control
- Visual gauge
- Panel lights & switches

4. Files Along with the Vehicle (In English)

- User Manual of Chassis
- Chassis Certification
- User Manual of Vehicle
- Vehicle Certification

Other Features

- Enough space for 02 lengths of 4” dia x 8 feet long armored suction hoses.
- Lockers / Box shall be provided at left side of vehicle to accommodate 05 length of 2 ¾” x 100 ft long delivery hoses.
- Chequered standing space provided at top and rear of the tank
- Aluminium alloy fixed ladder with antiskid steps for easy access to manholes.

Standard Accessories

Following accessories shall be provided with the vehicle

S . No.	Description	Qty
1.	4” dia x 8 ft long Armoured Suction Hoses complete with coupling	02
2.	2 ½” dia x 100 ft long delivery hoses with instantaneous coupling	05
3.	Suction Wrenches	01
4.	Copper Suction Strainer	01
5.	1 Kg DCP Fire Extinguisher fitted in the Driver’s Cabin (Chassis Part)	01
6.	Standard Tool Kit	01

Paint / Lettering

As per Customer's requirements.

Note:

The vehicle shall be able to perform the following functions:

- Filling tank through top hatch.
- External suction from Hydrant or tank through pump for tank filling or indirect delivery
- Gravity delivery from vehicle tank.
- 02 Sprinklers at rear of the vehicle.

ITEM 3: 54M AERIAL PLATFORM FIRE TRUCK

1. Main Parameters

Vehicle Parameters:

- **Gross Weight:** 42000kg
- **Maximum Speed:** 80km/h

Chassis Parameters:

- **Engine Power:** 430hp
- **Emission Standard:** Min Euro III
- **Regulation:** ECE R10+R16+R28+R39+R43+R46+R48
- **Mandatory** ECE Certificate: ECE-R29, ECE-R13
- **Type of Suspension:** Leaf Spring
- **Clutch:** Hydraulically operating with air assistance
- **Tire:** 315/80R22.5
- **Drive model:** Right hand drive air conditioned
- **Braking System:** ABS, latest braking system as per International Standard ECE-R13 & NFPA 1901 (2016)
- **Emission Standard:** Min Euro III
- **Suspension:** Taper leaf suspension

The Aerial Platform Fire Truck shall be designed for operational stability and structural strength based on the criteria laid and manufactured according to international standards (EN280, EN1846, EN1777 or equivalent NFPA) applicable for elevated raised platforms used for Fire Fighting and rescue operations built on Right Hand Drive Air-Conditioned Chassis.

Support System:

- **Outriggers Structural Type:** ★H-type outriggers
- **Longitudinal Span:** 7650mm
- **Lateral Span:** 6015mm
- ★**Leveling Method:** Automatic Leveling

Boom System:

- **Outrigger Full Extension and Leveling Time:** ≤35 s
- **Working Bucket Load:** 450kg
- **Maximum Working Height:** 54.3m
- **Maximum Working Radius:** 19.1m
- ★**Boom Type:** Forward-tilting structure, good control stability: Five-section synchronous telescopic boom + folding boom
- ★**Boom Operation Methods:** Working bucket control, overhead control panel remote control, manual multi-way valve operation
- **Boom Luffing Angle:** Lower telescopic boom 0°-88°, Upper telescopic boom and lower telescopic boom 0°-174°
- **Swing Range:** 360° full swing

Fire Water System:

- **Time to raise to rated height and rotate 90°:** 231.4 s
- **Fire Pump Model:** Single-stage Centrifugal Pump
- **Rated Working Flow Rate:** Rated Flow Rate: 6000 lpm
- **Fire Monitor Model:** Water/Foam Dual-purpose Electric Remote Control Fire Monitor NFPA 414 Standard

- **Maximum Range of the Water Monitor:** Range (Water) ≥ 60m, (Foam) ≥ 60m
- **Fire Monitor Horizontal Swing Angle:** ±45 degrees
- The centrifugal pump shall be mounted in its own compartment equipped with roller shutter door and shall be hydraulically driven through the chassis PTO. The pump performance shall be minimum 4000 l/min at 10 bar.

2. Detailed Specifications

2. Chassis Parameters

- **Drive Type:** 6x4, Single Cab
- **Engine Rated Power:** 430hp
- **Power Take-Off (PTO):** With PTO (Original PTO from Chassis Manufacturer)
- **Braking System:** ABS
- **Fuel Tank:** 300L
- **Manufacturing Standard of Aerial Platform:** In accordance to EN280, EN1846, EN1777 or equivalent NFPA
- **Cab:** Single-row, double-door cab, accommodating 2 people air conditioned right hand drive

3. Support System

- **Type:** H-type (four horizontal outriggers, four vertical outriggers). The horizontal outer frame is made of high-strength alloy steel profiles, and the subframe is a box-type structure welded from high-strength steel plates after cold bending, ensuring the safety and reliability of the support mechanism.
- **Span:** Longitudinal span: 7650mm; Transverse span: 6015mm
- **Operation:** Electrically controlled one-button leveling; hydraulic manual operation is possible in emergencies.
- **Outrigger Position Detection System:** Each outrigger is equipped with two sensors to detect the outrigger extension/retraction status.
- **Leveling Method:** Automatic leveling
- **Manufacturing Features:** All outriggers are promptly derusted after welding and undergo non-destructive testing according to GB 7956.12. The chassis connections are all installed using 10.9 grade high-strength bolts. After the main beam was drilled, the drilled areas were all treated with anti-corrosion measures.

4. Boom and Slewing Mechanism

- **Bucket Load:** 450kg
- **Maximum Working Height:** 54.3m
- **Maximum Working Radius:** 19.1m
- **Slewing Mechanism:** The motor-driven reducer enables continuous 360° slewing. The slewing mechanism consists of a planetary gear transmission mechanism, a braking device, and a hydraulic motor. The overall structure is compact, easy to maintain, small in size, and lightweight. The normally closed brake uses an upper-mounted friction narrow spring for clamping, providing high braking torque and rapid, reliable braking.
- **Boom Structure:** Composed of a five-section synchronous telescopic boom + folding boom. The boom is a box-type structure cold-bent and welded from high-strength alloy steel plate (HQ70). The telescopic boom's movement is accomplished by telescopic cylinders and chains, enabling the extension and retraction of each boom section. The upper boom achieves relative luffing movement with the lower boom via a double-acting cylinder.
- **Manned Platform (Work Bucket):** The manned platform is welded from seamless steel and is mounted at the top of the boom. It is equipped with a computer control system and a boom movement display system. The computer control uses a CAN bus. The platform can rotate left and right, has a load capacity of 450 kg, and carries a high-flow-rate remote-controlled water cannon, a lighting system, and an

intercom system. When the aerial ladder truck enters the site for operation, the work bucket automatically adjusts to be level by the leveling mechanism as the boom moves. The bottom surface of the work bucket always remains parallel to the ground. After the boom movement stops, the work bucket automatically locks.

5. Firefighting Water System

- **Tank Body:** Without Tank
- **Pump:** Single-Stage Centrifugal Pump. Water Pump: 6000 l/min at 10 bar
- Inlet Flange: DN150, Outlet Flange: DN100.
- **Vacuum Pump:** Matching electric vacuum pump (24V). Vacuum degree ≥85kPa; Suction depth ≥7 meters; Priming time less than 80 seconds.
- **Mixer:** Equipped with foam proportioner.
- **Fire Monitor:** Maximum flow rate: 4000 L/min; Working pressure: 0.55 MPa. Range (water): ≥65 m, (foam): ≥60 m. Horizontal rotation angle: ±45 degrees; Elevation angle: 90 degrees; Depression angle: -45 degrees. ≥100-meter wireless remote control operation.
- **Standard:** Compliance with regional standard equivalent to EN1028-1 & EN1028-2
- **Foam Monitor Head:** Matching Foam Monitor Head.
- **Optional Configurations:** For severely cold northern regions: Water purging, electrically heated ball valve at the outlet.
- **Water System Control:** Solenoid valve control. Control Panel Location: Left side of the vehicle body.

6. Safety Protection Functions

- **Hydraulic Filter Clog Protection:** When the filter is clogged, a color or light alarm will be triggered.
- **Boom Buffer Protection:** The system automatically decelerates at extreme positions and upon sudden operation of the handle.
- **Boom Width Limit Protection:** The system automatically and slowly stops when the boom approaches its maximum reach.
- **Slewing Buffer Protection:** The system effectively buffers sudden stops in slewing.
- **Slewing Alignment:** The system automatically reduces speed when approaching the center position to ensure precise alignment.
- **Vehicle Collision Avoidance:** To prevent the boom from colliding with the vehicle body during small-amplitude slewing, the system automatically stops slewing in the dangerous direction when it reaches a certain position.
- **Upper and Lower Vehicle Interlock:** The boom cannot move if the outriggers are not deployed; the outriggers cannot move if the boom is removed from the support.
- **Emergency Functions:** Both the overhead control valve and outrigger control valve are equipped with emergency manual operation; the system includes an emergency pump for retracting the boom and outriggers in case of engine or oil pump failure.
- **Outrigger Operation Alarm:** An automatic audible and visual alarm sounds when the outriggers are in operation to prevent injury from contact.
- **Outrigger Deficiency:** If the outriggers become partially extended during boom operation, the system automatically cuts off the movement in the dangerous direction.
- **Outrigger Not Retracted Warning:** An automatic audible and visual alarm sounds if the outriggers are not fully retracted to prevent accidents.
- **Water System Overpressure Protection:** An alarm sounds and limits engine acceleration when the water system pressure exceeds the rated value.
- **Water Tank Expansion Protection:** In addition to a sufficiently large overflow port, a pressure relief device is installed at the tank opening to prevent accidental overpressure during water tank replenishment.

- **Engine Speed Limiter:** The engine speed is automatically limited during boom operation; when the water pump is operating, the engine speed is automatically limited to prevent overpressure in the water system or overspeed of the water pump.
- **Over-Wind Speed Alarm:** When the wind speed exceeds 12.5 m/s, an automatic audible and visual alarm is triggered, and movement in the dangerous direction is cut off.
- **Equipment Box Door Open Warning:** An automatic audible and visual alarm is triggered if the equipment box door is not closed to prevent accidents.
- **Work Bucket Spray Self-Protection Function:** Used to protect the fire truck from high-temperature heat radiation damage at the fire scene, ensuring the safety of the vehicle and firefighters.
- **Work Bucket Collision Avoidance Safety System:** The ultrasonic radar sensor in the work bucket detects the distance between the work bucket and the building; if the distance is too close, the work bucket is prohibited from moving towards the building.
- **Work Bucket Position Safety Function:** The boom must not be retracted when the work bucket is not in the centered position.
- **Auxiliary Ladder Safety Function:** The boom must not be retracted when the guardrails on both sides of the auxiliary ladder are not folded into place.

7. Electrical System

- ★**Electrical Control System Operation:** Operating from the work platform, upper vehicle control panel, and outrigger control panel at the rear of the lower vehicle. Water pump control panel is located on the side of the lower vehicle.
- **Upper Vehicle Control Panel Location:** Left side of the turntable, with seat.
- **Vehicle Control:** Touchscreen interface, computer control.
- **Cab:** Two round warning lights are installed on the top of the cab; a siren is installed inside the cab. A reversing monitor is installed inside the cab; a vehicle radio interface is provided inside the cab.
- ★**Water Cannon Operation:** The water cannon can be operated and stopped via the work platform, upper vehicle control panel, and remote-control box.
- ★**Water Pump Operation:** The water pump can be operated and stopped via the work platform, upper vehicle control panel, and lower vehicle control panel.
- ★**Boom Electrical Control Operation:** Electrically controlled operation of the work platform and upper vehicle control panel. Allows both high-altitude and ground operations.
- ★**Convenient Outrigger Operation:** One-button extension and retraction of outriggers via control panel.
- ★**Swing Mechanism:** The work platform is equipped with a swing mechanism, allowing it to swing left and right, making it easier to approach buildings and facilitate rescue operations.
- **Other:** Automatic disconnection from charging device. Anemometer installed in the work platform. Overload alarm for the work platform. Optional video monitoring and hard disk recording. Automatic pressure stabilization control of water pump output.

8. Vehicle Body and Equipment Boxes

- **Truck Body:** The truck body is painted with fire-fighting red paint. To ensure safety during nighttime operations, the vehicle body is equipped with fluorescent reflective strips that meet safety standards.
- **Color:** Conforms to R03 bright red in GB/T3181 "Paint Film Color Standard" as specified in GB7258. The entire upper structure and the tank's crossbars are bright white.
- **Roller Shutter Door:** Made of lightweight, high-quality aluminum alloy, large-format roller shutter door, flexible opening and closing, good sealing, low noise, beautiful appearance, lightweight and reliable. A guide channel is provided at the top, and sealing strips are installed around the perimeter, providing excellent rainproof and dustproof sealing performance. Equipped with a pull-rod type bar lock handle, a one-point pull strap, and a two-point fixing seat; and sensors are installed, allowing the driver to monitor the roller shutter door's opening and closing status via indicator lights in the cab.

- **Equipment Box Structure:** The frame is a welded all-aluminum alloy frame, and the outer skin is made of bonded aluminum alloy plates. The equipment frame inside the compartment uses a welded aluminum alloy profile structure, which can be flexibly arranged according to customer requirements to maximize space utilization.

Accompanying Equipment:

No.	Name	Unit	Quantity	Remarks
1	Fire Hose	Sets	9	
2	Dry Powder Fire Extinguisher	Sets	1	2kg, Class ABC fire extinguisher
3	Water Filter	Pieces	1	
4	DN150 Suction Hose (2 meters/piece)	Pieces	4	Total length 8 meters
5	DN50 Foam Suction Hose	Sets	1	
6	Hose Bridge	Sets	2	Rubber
7	Hose Cover	Pieces	8	
8	Suction Hose Wrench	Pieces	2	Suction hose interface (internal snap-fit, slow speed) included
9	Foam Suction Hose Wrench	Pieces	1	
10	Emergency Manual Valve Wrench	Pieces	1	
11	Hex Wrench	Sets	1	(Applicable to onboard equipment)
12	Rubber Hammer	Pieces	1	(Included when suction hose is available)
13	Rechargeable Portable Light	Pieces	2	
14	Outrigger Pads	Pieces	4	
15	Foam Cannon Nozzle (Foaming Cylinder)	Pieces	1	Matches the boom main cannon model (original low-expansion foam cartridge)

No.	Name	Unit	Quantity	Remarks
16	Vehicle Tools	Sets	1	Chassis included
17	Spare Tire	Pieces	1	Chassis included
18	Wheel Brake Blocks	Pieces	2	Chassis included
19	Hydraulic System Wear Parts	Sets	1	
20	Full-body Safety Belt (with Hook)	Sets	5	(One set per 75kg load capacity of the work bucket)
21	General Firefighting Safety Rope	Pieces	5	1.5 meters (preferably used with a full-body safety harness)

ITEM 4: FIRE FIGHTING TRUCK WITH 2 DRONES

1. Chassis Specifications

- **Drive form:** 4×2 right hand drive airconditioned
- **GVW:** 16000kg
- **Number of axes:** 2
- **Number of steering axles/number of drive axles:** 1(front)/1(rear)
- **Number of seats in the cab:** 2+4
- **Manufacturing Standard:** In accordance to EN1846/ equivalent NFPA
- **Minimum ROH:** 2000 (mm)
- **Regulation: ECE R10+R16+R28+R39+R43+R46+R48**
- **Mandatory** ECE Certificate: ECE-R29, ECE-R13
- **Type of Suspension:** Leaf Spring
- **Clutch**: Hydraulically operating with air assistance
- **Tire:** 315/80R22.5
- **Drive model:** Right hand drive air conditioned
- **Braking System:** ABS, latest braking system as per International Standard ECE-R13 & NFPA 1901 (2016)
- **Emission Standard: Min Euro III**
- **Suspension: Taper leaf suspension**
- **Engine power:** 300Hp
- **Engine displacement:** 9.726L
- **Engine Emission Level:** Min Euro III

2. The Whole Fire Truck Details

- **Weight:** Including fire truck bodywork (no load when water and foam are not added): Approx. 15000kg. After the water tank and foam tank are filled up (excluding firefighters): Approx. 20000kg.
- **Material:** The carriage is welded with high-quality aluminum alloy profiles, which ensures the structural strength, improves the anti-corrosion ability, and reduces the weight of the body.
- **Equipment compartment door:** Lightweight high-quality aluminum alloy, with aluminum alloy rolling door, light and reliable, each equipment box is equipped with LED environmental protection and energy-saving lighting.
- **Electrical System:** Equipped with an automatic separate charging system and a mains (220V) charging device to prevent the vehicle from being unable to start after electricity leakage, and to provide power protection for the chassis and engine starting.
- **Warning Light:** The upper part of both sides of the carriage is equipped with 3 integrated strobe lighting lamps. The rest of the lighting and warning equipment conforms to the regulations and requirements of the electrical system in GA39.5-92. It meets the R03 bright red in GB/T3181 "paint film color standard" stipulated by GB7258. The surface of the carriage is sprayed with imported bright red glossy paint. The performance of the whole vehicle conforms to the provisions of GB7956-1988 "performance requirements and test methods for fire trucks". The quality of the whole vehicle conforms to the provisions of GA39.5-92 "General Technical Conditions for Foam Fire Trucks".
- **Standard Equipment:** Hose assembly: 4 discs. DC switch water gun: 1 piece. Blossom water gun: 1 piece. Original vehicle tools: 1 set. Vehicle warning triangle: 2.
- **Generator Compartment:** The generator compartment on the right side of the carriage is equipped with a generator and charger for charging the drone, which can ensure the battery life of the drone during firefighting and rescue operations.
- **Ladder:** A stainless-steel ladder is installed on the right side of the rear of the carriage. The ladder is a two-stage swing type, which ensures that the ladder can meet the requirements of fire protection standards, and at the same time ensures that the appearance is beautiful and the portability is ergonomic.

- **Drone Platform:** Two UAVs can be loaded at the same time, and the UAV lifting platform can be pushed out, lowered, raised and retracted by remote control, and two UAVs with a maximum size can be placed. The whole mechanism is driven by an electric hydraulic pump to drive a push-out cylinder and a lift cylinder respectively, and the sequential actions of the two cylinders are controlled by the travel switch and PLC program. The lifting and lowering of the mechanism can be realized only through the retraction and release buttons on the remote control. There are equipment pallets on both sides of the drone compartment, which can place rescue equipment such as dry powder tanks for drone firefighting.

3. Fire Pump

- **Rated flow:** At 30L/s, the pressure is 1.0MPa, and the suction depth is 3 meters; At 21L/s, the pressure is 1.3MPa, and the suction depth is 3 meters; At 15L/s, the pressure is 1.0MPa, and the suction depth is 7 meters Compliance with regional standard equivalent to EN1028-1 & EN1028-2

4. Class A Foam Fire Extinguishing System (Truck-Mounted CAFS System)

- **Foam pump output flow:** 12L/min
- **Work pressure:** Automatically match with the system about 0.8MPa
- **Maximum working pressure of foam pump:** 14MPa
- **Air compressor displacement:** 5.5m^3/min
- **Air compressor working pressure:** 0.85MPa
- **Air compressor cooling method:** Forced water cooling
- **Control method:** Automatic pressure balance, overload protection, automatic alarm for high temperature

5. UAV Fire Fighting Platform with 2 Drones

- **Drone net weight:** ≤40kg (empty machine)
- **Symmetrical motor wheelbase:** ≤1800mm
- **Max cruising speed:** 12m/s (unloaded), 6m/s (loaded)
- **Max flight altitude:** ≥4500m
- **Max load:** 50KG
- **Working time:** ≥20min (one set of batteries, replaceable)
- **Working height:** ≥100 meters (dry foam)
- **Maximum withstand wind speed:** Level 6
- **Protection class:** Ip54 level, can fly in light rain
- **Power Battery:** Lithium-ion battery, 22000mAh×4, 51.8V
- **Obstacle Avoidance:** All-weather forward obstacle avoidance radar (can effectively identify obstacles within 25m and display the distance, and automatically brake according to the set braking distance)
- **Positioning:** RTK base station and network integrated positioning (stable signal, less interference, automatic switching to base station mode when there is no network differential signal, dual antenna high-precision orientation, high positioning accuracy, strong anti-magnetic interference ability. In high-voltage lines, metal buildings and other strong magnetic interference environments it can also ensure reliable operational flight), GPS, A-GPS
- **Positioning accuracy:** RTK: ≤0.5m, GPS: ≤2m
- **Communication distance:** Image transmission distance: 10KM. Data transmission distance: 10KM.
- **Control mode:** Fully Autonomous Mode, RTK Mode, GPS Mode, Attitude Mode
- **Protective function:** The aircraft will automatically switch to the safe mode when the vibration is abnormal, the GPS is lost, or the signal is lost.
- **UI:** It can display the temperature and humidity information around the drone in real time and the power saturation prompt.
- **Support mode:** Route flight, one-key take-off, one-key landing, autonomous cruise, low pressure return, runaway return, electronic fence, etc.
- **Material:** aluminum alloy

- **Operating temperature:** -25° to 65°
- **Number of stable axes:** 3 axes
- **Working voltage:** 12V
- **Output method:** network port

- **30x 4K Zoom GimbalCamera:**
  - Image sensor: CMOS: 1/1.7
  - Zoom ratio: 100x zoom (35× optical ×4 digital)
  - Lens: F6-180mm (equivalent focal length 27.8-833.4mm)
  - Aperture: 1.5-4.8
  - Total pixels: 12 million
  - Control mode: UART/S.BUS/network port
  - Weight: 842g
  - Size: 175×100×162mm
  - Other functions: Identify and track moving targets
  - Waterproof and dustproof grade: IP54 (provide relevant test report)
- **Remote Control (Ground Station Terminal) Specifications:**
  - Display device: 5.5-inch high-definition high-brightness LCD touch display (the maximum screen brightness is 1000cd/m2, nearly twice that of common smartphones)
  - System configuration: Android 9.0, 2G running memory, 16G storage space
  - Body size (without antenna and handle): 189 x 138 x 41 mm
  - Weight: ≤900 g
  - Battery capacity and type: 10200 mAh 7.4V 2S lithium-ion battery
  - Charging time: ≤3.5H (30W fast charge), ≤5H (20W fast charge)
  - Operation battery life: 12H
  - Waterproof grade: IP53
  - Working temperature: -10°C ~ 55°C
  - Multi-machine interconnection function: multi-machine interconnection supports remote control relay and one machine dual control
  - Remote control relay: For ultra-long-distance flight, it supports up to two remote controllers to relay control of one receiver to achieve twice the limit flight distance of a single remote controller
  - One machine dual control: It is for specific industry application scenarios, supports up to two remote controllers to control one receiver at the same time, one is used to control the power of the drone, and the other is used to control the load such as the gimbal servo.
  - Range extension function (optional): With the extended-range antenna, it can realize full-HD image transmission, real-time data transmission and control distance of up to 30 kilometers.
  - Functional interface: Charging: Type-C; Firmware upgrade: DATA (4-Pin); Mobile network: SIM card slot; External storage: TF card slot; Tripod mount: 1/4 threaded hole; Video output: Standard HDMI; External RTK: DATA (4-Pin); External U disk: USB-A
- **Searchlight (Mounted on Drone):**
  - Power: 80W
  - Sufficient heat dissipation, full load power 80w
  - Input power: 20~60Vdc
  - Current: 1.3~4A
  - Starting point of automatic temperature protection: 60 °C. 60~79°C, reduce the power, and the LED light will be extinguished above 85°C
  - Working method: light up when power is on
  - LED lamp beads: CREE
  - Luminous flux: 10000lm
  - Arm diameter: 20~40cm, D=40cm max

- **Directional Lights (Mounted on Drone):**

- Power: 120W
- Color temperature: 5000K-7000K
- Working mode: always on
- Working voltage: 12-68V
- Search angle: 90°
- Irradiation distance: ≥200 meters

- **Megaphone (Mounted on Drone):**
  - Working voltage: 24V
  - Power: 200W
  - Sound decibel: 180db
  - Sound propagation distance: ≥300 meters
  - Signal receiving distance: ≥5KM
  - Handheld ground terminal: walkie-talkie mode
  - Air terminal: can call in real time, insert card to play promotional audio
- **Three-stage Thrower (Mounted on Drone):**
  - Weight: 900g
  - Size: 300mm×60mm×100mm
  - Rated power: 6W
  - Rated voltage: 7V
  - Gear Material: Metal
  - Rated torque: 20N m
  - Rated current: 3A
  - Maximum throwing total mass: 50kg
  - Throwing mode: You can throw materials at the same time or multiple times.

ITEM 5: FIRE FIGHTING TRUCK WITH 2 ROBOTS

1. The Whole Fire Truck

- **Weight:** Approx. 16,000kg
- **Number of the Crew:** 2+4
- **Max. Speed:** 90km/h

2. Chassis

- **Chassis Series:** Heavy-Duty Chassis for Fire Truck. Right Hand Drive Airconditioned
- **Driving Manner:** 4x2
- **Rated Power:** Approx. 300 Hp
- **Manufacturing Standard:** In accordance to EN1846/ equivalent NFPA
- **Minimum ROH:** 2000 (mm)
- **Regulation: ECE R10+R16+R28+R39+R43+R46+R48**
- **Mandatory** ECE Certificate: ECE-R29, ECE-R13
- **Type of Suspension:** Leaf Spring
- **Clutch**: Hydraulically operating with air assistance
- **Tire:** 315/80R22.5
- **Fuel tank type:** 300L Diesel Oil Tank
- **Manufacturing Standard:** In accordance to EN1846/ equivalent NFPA
- **Braking System:** ABS
- **Emission Standard:** Min Euro III

3. Superstructure

3.1 Cabin

- **Structure:** Double Row Cabin with four doors manufactured by chassis manufacturer
- **Seats:** 1+1+4
- **Safety:** 3-point seat belt
- **SCBA Seats:** SCBA frame is installed at the rear 4 seats and they are adjustable to place 6.8L-9L SCBA.
- **Interior:** Alarm and warning light switches are installed in the cabin.
- **Stairs:** Anti-slip stairs
- **Anti-slip handrails** are installed.

3.2 Standardized Sub-frame

- **Material:** Rectangular tubes welded from high-strength steel.
- **Performance:** Formed using a grid-shaped welding method; post-weld alignment and vibration eliminate welding stress; fixed to the chassis beams and superstructure using a rigid or flexible hybrid connection method.
- **Corrosion Protection:** Sandblasting to remove oil and rust, followed by heavy-duty anti-corrosion paint coating.

3.3 Compartment

- **Material:** The entire cargo compartment (equipment boxes and internal frame) is made of high-strength aluminum alloy profiles, and the interior panels are made of smooth brushed anodized aluminum sheets.
- **Structure:** The cargo compartment frame is a welded all-aluminum alloy frame structure, and the outer skin is made of aluminum alloy sheet bonding technology. The equipment frame inside the cargo compartment uses an overlapping aluminum alloy profile structure, which can be flexibly laid out according to customer requirements to maximize space utilization. New sliding brackets, trays, or high-strength plastic storage boxes can be used in the equipment boxes to fully utilize the limited space inside the cargo compartment. The interior panels and floor are both made of smooth brushed aluminum alloy sheets.

- **Roof Cover:** Made of integrally drawn aluminum alloy, with flashing warning lights and exterior lighting installed on the outside, and LED roof lighting installed on the inside.
- **Layout:** The cargo compartment has space for simultaneously parking 2 firefighting robots. It is equipped with four-corner fixing devices for the robots, ensuring a robust structure and preventing the robots from sliding, tipping, or bumping due to vehicle movement.

3.4 Roller Shutter Door

- Made by high strength composite material, mounted with safe lock. Roller shutter will slide up automatically after pulling out the Lever from holder.

3.5 Foot Pedal

- **Material:** high quality aluminum alloy
- **Width:** 50cm, bear more than 150kg, anti-slip design on the pedals with double lock function.
- **Location:** on the both sides of compartment and pump room

3.6 Superstructure Electric Appliance

- **Warning Light and alarm:** Long-row Alarm Light is mounted above cabin. Single tone 100W alarm and warning light, circuit is a separate additional circuit, the control switch is in the cabin.
- **Storage Compartment Light:** LED white light strips on both sides of the equipment box and pump room shutter door, which can meet the illumination of the whole compartment, the lighting switch and the roller shutter door state are linked.
- **Strobe Light:** Mounted on top aluminum frame, at the both sides of the compartment.
- **External Lighting:** Long life lamps are installed on both sides of compartment for lighting in night.
- **Roof Light:** Mounted on the inside of the roof of the compartment.
- **Side Indicator Light:** Inline yellow warning light is mounted on the side of the compartment and pedal.
- **360-degree panoramic reversing image system.**

3.7 Paint Color: Red

3.8 Robot Loading Ramp

- **Structure:** Electro-hydraulic control; lifting mechanism is tilting lifting. When the tailgate is raised, it serves as the rear door of the container; when the tailgate is tilted down, it serves as the robot loading ramp.
- **Angle between the tailgate and the ground after landing:** ≤30°
- **Load Capacity:** ≤3 tons.

3.9 Fire Fighting Robot

Quantity: 2 Units
Application fields: For the fire fighting and reconnaissance in all areas

The robot shall include the following minimum capabilities:

- Integrated detection module capable of detecting 14 gases (O_2, CH_4, CO, H_2S, CO_2, Cl_2, NH_3, H_2, SO_2, NO_2, C_3H_8, C_2H_4O, C_2H_2, VOC) plus 2 environmental parameters (“Able to detect 14 gases… + 2 environmental parameter”)
- Acceleration capability up to 8.2 km/h
- Traction force minimum 6.6–6.8 kN
- Explosion proof construction with IP67 protection (IP68 for chassis)
- Multi purpose use: firefighting, reconnaissance, and equipment transport

(“Acceleration is up to 8.2 km/h… High traction force up to 6.6 kN… IP67 protection (IP68 for chassis)… Multi function use”)

Main Parameters:

- **Climbing ability**: 35°
- **Obstacle crossing**: 300 mm
- **Wading depth**: 600 mm
- **Straight running bias**: ≤0.08%
- **Braking distance**: ≤0.25 m
- **Traction mechanism:** All-terrain high-intensity track, track internal adopts metal frame
- **Tractive force:** 1900N
- **Speed:** 1.8m/s
- **Obstacle crossing height:** 150mm
- **Roll angle:** 30°
- **Control mode:** Wireless remote control
- **Continuous running time:** 3h
- **Working hours:** 10h
- **Communication distance:** 1km (Affected by weather, environment, terrain, etc.)
- **Wading depth:** 250mm
- **Protection grade:** IP67

("Climbing Ability: Max. 35°… Obstacle Crossing: Max. 300 mm… Wading Depth: 600 mm")

Firefighting Function

- Integrated fire monitor (water/foam)
- Spray angle up to 120°
- Range: ≥85 m (water) and ≥73.2 m (foam)
- Flow rate: 81.3 L/s
- Elevation: –14° to +90°
- Horizontal rotation: –90° to +90°

("Spray angle Max. 120°… ≥85M water… 81.3 L/s… Horizontal -90° to 90°; vertical -14° to 90°")

Reconnaissance Function

Multiple HD infrared cameras for:

- Front and rear view
- Robot body tracking
- Water cannon tracking
- Real time angle monitoring
- Audio collection with sensitivity ≥40 dB
- Optional thermal imaging camera

("Multiple HD infrared cameras… Audio collection… sensitivity ≥40dB… Heat eye detection")

Gas Detection

- Integrated gas detection module for 14 gases
- Optional radioactive detection

("Gas detection: integrated gas detection module… optional for radioactive detection")

Temperature Monitoring

- Infrared temperature sensors inside and outside the robot
- Temperature measurement range: –50°C to +350°C (IR sensor)
- Thermal camera: –20°C to +150°C (optional)

Mobility

- Ranging diameter: 2500 mm
- Turning diameter: 1390 mm
- Climbing ability: 35°
- Obstacle crossing: 300 mm
- Wading depth: 600 mm
- Straight running bias: ≤0.08%
- Braking distance: ≤0.25 m

Power & Endurance

- Continuous walking time: ≥32 hours
- Total endurance time: ≥16 hours
- Automatic power generation during water spray

Protection

- Chassis protection: IP68
- Accessories: IP67

Control System

- Wireless control range: 1000 m
- Remote control unit:
- Weight: 3.8 kg
- Size: 380 × 190 × 95 mm
- 10 inch display
- Charging time: 3 hours

Safety Features

- Obstacle avoidance: 2 m
- Self cooling via water curtain
- Explosion proof construction

Fire fighting monitor parameters:

- **Material:** Body: 304 stainless steel; head: aluminium alloy hard anodizing
- **Working pressure:** 0.7MPa
- **Spraying mode:** Low pressure straight stream nozzle, water column and atomization
- **Maximum flow:** 40L/s
- **Range:** 60m
- **Rotation angle:** Horizontal 360°, Vertical 0°~+90°(±5°)

4. Accessories

No.	Name	Qty.	Specification
1	Shovel	1	2#

No.	Name	Qty.	Specification
2	Axe	1	
3	Crowbar	1	
4	Bolt Cutter	1	
5	Portable Fire Extinguisher	1	2kg
6	Tools of Chassis	1	
7	Triangle Warning Board for Vehicle	1	

ITEM 6: SMALL FIRE FIGHTING VEHICLE (4-WHEELS ALL TERRAIN FIRE MOTORCYCLE)

1. Brief Introduction

- All Terrain Fire Fighting Motorcycles are mainly used for fire patrol in forest farms, forest scenic spots, large industrial parks, big specialized markets, cities and towns, ancient architecture community etc. These vehicles are the most ideal fire-fighting equipment for public security fire forces and enterprise fire brigades. Manufactured accordance to EN1846/ equivalent NFPA

2. Chassis Specification

- **Engine Model:** Single cylinder, four strokes, water cooling
- **Displacement:** 686 cc
- **Compression ratio:** 9.2:1
- **Max. Power:** 25.5KW/5500RPM
- **Max. Torque:** 46.1N.M/5000RPM
- **Start Method:** Electric
- **Transmission:** Automatic, CVT+L-H-N-R
- **Transfer Method:** Through Axle
- **Dimension:** 2980×1550×1950mm
- **Wheelbase:** 1950mm
- **Seat Height:** 890mm
- **Ground Clearance:** 310mm
- **Net Weight:** 621kg
- **Oil Tank:** 28L
- **Front Tyre:** AT26×9-14
- **Rear Tyre:** AT26×11-14
- **Brake (Front/Rear):** Disc Brake
- **Battery:** 12V30AH

3. The Fire Motorcycle's Specification

- **Overall Dimension (mm):** Approx. Length: 3010, Width: 1575, Height: 2200
- **Total weight with full load (kg):** Approx. 1200
- **Engine:** Gasoline, 686cc, water cooled, 4-stroke, 1-cylinder
- **Max. Power:** 25.5KW/5500RPM
- **Driving manner:** Front engine, four-wheel drive 4x4
- **Max. speed (km/h):** 60
- **Ground clearance (mm):** 310
- **Emission standard:** Euro IV
- **Motor for water pump:** HONDA (Japanese Brand)
- **Structure of motor:** Four-stroke, 1 cylinder
- **Manufactured:** In accordance to EN1846/ equivalent NFPA
- **Rated Power (KW):** 4
- **Starting method:** Electric
- **Rotation speed (r/min):** 3600
- **Flow rate of Water Pump (l/min):** 40
- **Work Pressure (bar):** 40
- **Self-suction function (m):** 5

- **Rotation speed (r/min):** 650
- **Length of hose (m):** 30
- **Test Pressure of hose (bar):** 100
- **Internal and external diameter (mm):** 13/19
- **Model of Water Nozzle:** GYQ30
- **Shot range of straight stream (m):** 15
- **Shot range of mist spray (m):** 7
- **Flow rate of water nozzle (l/min):** 30
- **Control rate of foam proportioner:** 0.4~6%
- **Flow rate (l/min):** adjustable
- **Water tank (L):** 180
- **Independent Foam Tank (L):** 20

4. Main Components

- Honda/Yamaha/ Suzuki Motor
- AR Water Pump NFPA/ EN Standard
- Hose Reel NFPA/ EN Standard
- Water Nozzle

ITEM 7: SMALL FIRE FIGHTING VEHICLE (2-WHEELS FIRE MOTORCYCLE)

1. Overview

The 2-wheels Fire motorcycle is produced on the motorcycle of SUZUKI/Honda/Yamaha with ABS and it is a mobile all-terrain fire extinguishing device. It can be widely used in high-ways, factories, schools, communities, hospitals, forests, field towns, cultural relics and other places. It could quickly extinguishing the fire in the early stages and also help in clearing the road in close traffic moment manufactured in accordance to EN1846 or equivalent NFPA Standards.

2. Structure

2.1 Motorcycle: Motorcycles is with small size and convenient to go different places. Equipped with ABS.

2.2 Fire Fighting System: The firefighting system use water mist to extinguish the fire. It could be with bigger heat absorption area and better heat absorption capacity. The effect is much better than normal fire extinguishing agent.

3. Technical Specifications

3.1 The Parameters of Whole Vehicle

- **Full load total mass:** Approx. 300kg
- **Water tank capacity:** 45L (2*22.5L)
- **Number of crew:** 1 person
- **Maximum speed with full load:** 90km/h
- **Ground clearance:** 155mm
- **Wheelbase:** 1430mm
- **Paint color:** black and red

3.2 The Parameters of Motorcycle

- **Curb weight:** 206kg
- **Engine model:** 250cc, 4 strokes, two cylinders
- **Cooling method:** water cooling
- **Fuel supply method:** EFI
- **Start mode:** Electric start
- **Maximum power:** 18.4KW / 8000rpm
- **Maximum torque:** 23.4N.m / 6500rpm
- **Compression ratio:** 11.5:1
- **Fuel tank capacity:** 17.3L
- **Front brake:** 290mm disc brake
- **Rear brake:** 240mm disc brake
- **Front wheel size:** 110/80-17 M/C 57H
- **Rear wheel size:** 140/70-17 M/C 66H

3.3 The Parameters of Fire Fighting System

- **Water Tank capacity:** 45L (2*22.5L)
- **Air Cylinder Bottle:** 6.8L
- **Air Cylinder Pressure:** 30Mpa
- **Mixing Ratio:** 3% or 6%
- **Spray Nozzle Pressure:** 0.7-1.1 Mpa
- **Spray distance with jet mode:** 15m
- **Spray distance with fog mode:** 7m
- **Water mist particle size of jet mode:** ≤160μm
- **Water mist particle size of fog mode:** ≤70μm
- **Fire Class:** 4A or 55b

ITEM 8: CENTRALIZED DASHBOARD FOR REAL TIME MONITORING FLEET MOVEMENT

The Contractor shall design, supply, install, configure, test, commission, operate, maintain and support a comprehensive Fleet Management Telematics / IoT Platform delivered as a Software-as-a-Service (SaaS) solution for real-time monitoring and management of KMC Fire Brigade vehicles and operational fleet assets. The system shall provide centralized command, control, monitoring, reporting and analytics capabilities through a Unified Single-Window Centralized Monitoring Dashboard installed at KMC Head Office. The Contractor — whether acting as a Fire Vehicle Manufacturer, Authorized Dealer, Supplier, System Integrator, Joint Venture or Consortium Partner — shall be responsible for the complete supply, installation, integration, commissioning, operation and maintenance of the Fleet Management Telematics Platform and Command Center in accordance with the requirements of this Contract.

1. FLEET MANAGEMENT TELEMATICS / IoT PLATFORM

The Contractor shall provide a proven, enterprise-grade Fleet Management Telematics / IoT Platform deployed as a SaaS-based Single Window solution, capable of real-time monitoring, tracking and management of all Fire Brigade vehicles and operational fleet assets being procured under this Tender, including but not limited to:

- Water & Foam Fire Tenders
- Municipal Fire Pumpers
- Aerial Ladder Platform (Snorkel Type)
- Fire Trucks equipped with Drone Systems
- Fire Trucks equipped with Robotic Firefighting Systems
- Small Firefighting Vehicles
- Fire Motorcycles
- Allowing future expansion of fleet

1.1 SaaS Single-Window Platform Requirements

The platform shall be delivered as a cloud-hosted or on-premise Software-as-a-Service (SaaS) solution accessible through a single unified web-based portal, providing:

- Single-login unified access for all fleet monitoring, reporting, analytics, and administration functions
- Role-based access control (RBAC) with configurable user permission levels for KMC administrators, operators, and management
- Multi-device access via desktop web browser, tablet and mobile application (iOS and Android)
- Real-time GPS tracking and live vehicle monitoring across the entire fleet
- Real-time display of vehicle locations, movement status and operational availability
- Historical route playback and complete trip history
- Fleet utilization monitoring and advanced analytics

- Vehicle activity and operational performance reporting
- OBD/CAN vehicle diagnostic data integration and display
- Dashboard-based command and control interface
- Centralized management and administration of all fleet assets
- Automated alert and notification management
- Integrated MIS reporting suite

2. GPS / IoT VEHICLE TRACKING DEVICES

The Contractor shall supply, install and commission industrial-grade GPS/IoT vehicle tracking devices on all designated Fire Brigade vehicles, including all accessories, communication interfaces, SIM connectivity, mounting hardware, wiring and installation materials required for complete operational functionality.

2.1 Minimum Technical Specifications — GPS/IoT Tracking Device

Note: The following specifications define the minimum acceptable technical standard. Devices must meet or exceed all parameters listed below.

Parameter	Minimum Requirement
GNSS Systems	GPS, GLONASS, GALILEO, BeiDou — simultaneous multi-constellation
GNSS Sensitivity	-148 dBm acquisition; -165 dBm tracking (minimum)
GNSS Accuracy	< 2.5 metres CEP (Circular Error Probable)
Supported Networks	Configurable for Pakistani cellular operators (Jazz, Zong, Ufone, Telenor)
Data Transmission	TCP/IP, UDP over cellular — configurable reporting intervals (1 second to 24 hours)
OBD-II / CAN Bus Interface	On-board OBD-II port reader — ISO 15765-4, SAE J1939, SAE J1979 compliant
CAN Bus Data Parameters	Engine RPM, vehicle speed (OBD), fuel level, odometer, coolant temperature, engine load, DTC fault codes, ignition status
Accelerometer / IMU	3-axis accelerometer — harsh braking, acceleration, cornering, crash detection
Operating Temperature	-40°C to +85°C (automotive grade)
Power Supply	10–30V DC vehicle power with internal backup battery

Parameter	Minimum Requirement
Backup Battery	Minimum 170 mAh — GPS operation continuity on power loss; low battery alert
Tamper Detection	Device removal and case-open detection alert
Over-the-Air (OTA) Updates	Remote firmware and configuration update capability
Data Storage (Offline)	Minimum 128 MB internal flash — offline data logging when no network coverage
Certifications	CE, E-Mark (automotive), RoHS compliant
Ingress Protection	IP54 or higher — dust and splash resistant
Communication Protocol	Open, standardized protocol — compatible with third-party platforms and SaaS integration
Geofencing On-Device	Supported — configurable alert triggers for zone entry/exit

2.2 OBD / CAN Bus Vehicle Diagnostics

The GPS/IoT tracking device shall interface with each vehicle's OBD-II port or CAN bus to retrieve and transmit real-time vehicle diagnostic data to the Fleet Management Platform. The following diagnostic parameters shall be captured, transmitted and displayed on the Centralized Dashboard:

- Engine RPM (real-time and historical trending)
- Vehicle speed via OBD/CAN (cross-referenced with GPS speed)
- Fuel level monitoring — real-time percentage and volume estimation
- Engine coolant temperature with overheat alerts
- Engine load percentage
- Total odometer reading (vehicle lifetime mileage)
- Ignition ON/OFF status with timestamp logging
- Diagnostic Trouble Codes (DTCs) — fault code reading and clearing capability
- Battery voltage monitoring with low-voltage alerts
- PTO (Power Take-Off) engagement status — critical for fire pump activation monitoring

Note: OBD/CAN interface compatibility must be confirmed for each vehicle type prior to installation. The Contractor shall submit a compatibility matrix covering all fleet vehicle makes and models.

2.3 System Connectivity

The Contractor shall be responsible for procurement, provisioning and management of SIM cards and cellular data plans for the entire device fleet for the full five (05) year contract period. Requirements:

- Minimum data plan: 50 MB per device per month (to be sized appropriately based on reporting frequency)
- Dual-SIM or network-switchable device preferred for network redundancy
- SIM cards may be provisioned on any licensed Pakistani network operator
- All SIM and data plan costs for five (05) years to be included in the Contractor's bid price
- The Contractor shall ensure continuous cellular connectivity across Karachi's and Sindh operational zones

2.4 GPS Reporting Frequency

The device reporting intervals shall be configurable by the platform administrator. Minimum required reporting performance:

Vehicle State	Minimum Reporting Interval
Moving (Active)	Every 10 seconds or every 100 metres — whichever occurs first
Idle / Stationary	Every 60 seconds (heartbeat position update)
Emergency / Alert Mode	Every 5 seconds (triggered by emergency button or alert event)
Offline / No Network	Data buffered in device memory — transmitted on network restoration

3. LICENSED MAPPING & LOCATION INTELLIGENCE PLATFORM

The system shall utilize a fully licensed mapping and location intelligence platform and shall include all software licenses, subscriptions, usage rights and associated costs required during the five (05) year contract period.

The platform shall provide:

- Real-time vehicle visualization on digital map interface
- Route mapping, navigation and route history replay
- Geocoding and reverse geocoding location services
- Routing and navigation support for incident response
- Configurable geofencing zones with automated alerting
- Incident location mapping and incident management overlay
- Location intelligence, heatmaps and fleet analytics visualization

Note: All mapping API usage costs, subscription fees and license renewals for the five (05) year period shall be included in the Contractor's bid. No additional mapping costs shall be payable by KMC during this period.

4. CENTRALIZED MONITORING DASHBOARD & COMMAND CENTER

The Contractor shall design, supply, install, configure, test and commission a Centralized Monitoring Dashboard at KMC Head Office as a unified Single-Window Command and Control Center. The scope shall include provision of all necessary hardware, software, networking equipment, display systems, licenses, accessories and associated infrastructure required for complete operational functionality.

4.1 Command Center Hardware

The Contractor shall provide, at a minimum, the following hardware:

- One (01) Centralized Fleet Monitoring Dashboard — unified single-window interface
- One (01) minimum 85-inch (measured diagonally) Professional Grade Commercial Display, minimum 4K UHD resolution (3840 x 2160), minimum 500 nits brightness, 178° horizontal and vertical viewing angle, with a minimum rated operational lifespan of 50,000 hours, suitable for continuous 24/7 Command Center operations.
- Dashboard Workstations and Operator Consoles — quantity as required for operational capacity
- Central Monitoring Servers — sized for full fleet scale with N+1 redundancy
- Networking equipment including managed switches, routers and communication interfaces
- Licensed mapping API integration
- Fleet Management Software Platform (SaaS)
- Data storage and backup facilities — minimum 2 years on-site data retention
- Dashboard visualization, OBD diagnostics display and reporting software
- Wall mounting brackets, display supports, structured cabling and accessories
- UPS and power protection equipment for all command center hardware
- All software licenses, subscriptions and operating rights for complete system operation

4.2 Dashboard — Real-Time Display Capabilities

The Single-Window Dashboard shall provide real-time visualization and monitoring of:

- Live vehicle locations on digital map — all fleet assets simultaneously
- Fleet deployment status and operational availability
- Vehicle availability and readiness indicators
- Geofence zone status and geofence event alerts
- OBD/CAN diagnostic data: fuel level, engine RPM, coolant temperature, fault codes, ignition status per vehicle
- Fuel monitoring information and consumption trends
- Route history and trip replay

- Real-time alerts and notifications — over speeding, geofence violations, communication loss, DTC faults
- Fleet Key Performance Indicators (KPIs) and performance analytics
- UHF wireless communication integration status
- Drone operational status and deployment tracking
- Robotic firefighting system deployment status
- PTO / fire pump activation status per vehicle
- Management reports and operational analytics
- Vehicle health status indicators based on OBD/CAN data

5. GEOFENCING AND AUTOMATED ALERT MANAGEMENT

The system shall provide a fully configurable geofencing and automated alert management module including but not limited to:

- Unauthorized vehicle movement outside designated operational zones
- Geofence zone entry and exit events
- Route deviation from assigned routes
- Overspeeding — configurable speed thresholds per vehicle type
- Excessive engine idling beyond configurable duration
- Vehicle inactivity / non-movement alerts
- Emergency alerts triggered by in-vehicle panic/emergency button
- Communication loss and device offline alerts
- OBD/CAN fault alerts — engine fault code (DTC) detection
- Low fuel level alerts — configurable threshold
- Engine overheat alerts
- Battery voltage low alerts
- Device tampering / removal alerts
- PTO activation / deactivation events for fire pump operations

6. FUEL MONITORING, OBD DIAGNOSTICS & FLEET ANALYTICS

6.1 Fuel Monitoring

- Real-time fuel level monitoring via OBD/CAN interface
- Fuel consumption calculation and reporting per trip, per day, per vehicle
- Fuel efficiency analysis and benchmarking across fleet
- Fuel drain / theft detection alerts (rapid fuel level drop detection)
- Fuel consumption vs. mileage correlation reporting

6.2 OBD / CAN Vehicle Health Monitoring

- Continuous monitoring of engine parameters via OBD/CAN interface
- Diagnostic Trouble Code (DTC) real-time reading and alert notification

- Predictive maintenance indicators based on engine parameter trends
- Vehicle health summary dashboard per vehicle and fleet-wide
- Service due alerts based on mileage and engine hours
- Historical engine parameter trending and analysis

6.3 Fleet Analytics

- Vehicle utilization analysis — active hours vs. idle hours vs. downtime
- Operational hours monitoring per vehicle and fleet aggregate
- Mileage and trip analysis — distance, duration, frequency
- Driver / operator behavior monitoring — harsh events, speeding, excessive idling
- Fleet efficiency reporting and benchmarking
- Exception reporting — flagged anomalies and non-compliant events
- Fleet performance KPI dashboard with trend analysis

7. REPORTING AND MANAGEMENT INFORMATION SYSTEM (MIS)

The platform shall generate automated, scheduled and on-demand reports including but not limited to:

- Vehicle utilization and operational availability reports
- Daily, weekly and monthly fleet movement reports
- Fuel consumption and efficiency reports
- OBD diagnostic summary reports — fault codes, engine health status
- Geofence violation and zone compliance reports
- Overspeeding incident reports
- Idle time and engine-on reports
- Route deviation and compliance reports
- PTO / fire pump activation logs
- Fleet performance and KPI reports
- Executive management summary reports
- Custom report builder for ad-hoc reporting requirements

All reports shall be exportable in PDF, Excel (XLSX) and CSV formats. Automated report scheduling and email delivery to designated recipients shall be supported.

8. INTEGRATION — UHF COMMUNICATIONS, DRONE & ROBOTIC PLATFORMS

The Fleet Management Telematics Platform and Centralized Dashboard shall be integrated with and capable of monitoring all Fire Brigade fleet assets, including all vehicle types as listed in Section 1.

8.1 UHF Communication System Integration

The system shall support interoperability and status monitoring with:

- Handheld UHF Walkie Talkies

- Mobile Vehicle-Mounted UHF Radio Sets
- Fixed UHF Base Stations
- UHF Repeater Stations

The system shall be fully integrated with the existing UHF wireless communication infrastructure available at KMC Fire Brigade. The Contractor shall ensure complete interoperability and seamless integration with the installed UHF radio systems without requiring replacement of any existing communication equipment.

8.2 Drone System Integration

- Real-time GPS position tracking of Firefighting Drones on the unified dashboard map
- Drone operational status display — active, standby, deployed, returning
- Battery / fuel level status of drone systems
- Drone deployment event logging and alert generation
- Integration via drone manufacturer API or standard telemetry protocol

8.3 Robotic Firefighting System Integration

- Real-time status monitoring of Robotic Firefighting and Rescue Systems
- Deployment status display on unified dashboard
- Operational event logging for robotic assets

8.4 Unified Command Interface

The Single-Window Dashboard shall facilitate sharing and unified display of:

- Vehicle location information across all fleet assets
- Fleet availability and readiness status
- Incident deployment information
- Drone operational and deployment status
- Robotic asset deployment status
- Operational alerts and notifications from all integrated systems
- Command, control and communication (C3) support functions

9. FUTURE INTEGRATION CAPABILITY & OPEN ARCHITECTURE

The proposed platform shall be based on an open, scalable and API-driven architecture and shall support future integration, as an option, with:

- CCTV Surveillance Systems
- Smart City Command and Control Applications
- Computer Aided Dispatch (CAD) Systems
- Emergency Response Management Systems
- Dispatch Consoles and Command Center Infrastructure

- Geographic Information Systems (GIS)
- Other public safety and emergency management technologies

The platform shall support open RESTful APIs, standard communication protocols (MQTT, HTTP/HTTPS, TCP/IP) and standard data exchange formats (JSON, XML) to facilitate future interoperability without requiring replacement of the core system.

10. REGULATORY COMPLIANCE

The Contractor shall ensure compliance with all applicable regulatory requirements, statutory obligations, Pakistan Telecommunication Authority (PTA) telecommunications regulations, SIM/device registration requirements, licensing requirements and all applicable laws necessary for uninterrupted operation of the system throughout the five (05) year contract period.

11. NETWORK OPERATIONS CENTRE (NOC)

The Contractor shall provide a dedicated twenty-four (24) hours a day, seven (07) days a week, three hundred and sixty-five (365) days a year Network Operations Centre (NOC) for continuous monitoring, management and support of the Fleet Management System.

The NOC shall be responsible for:

- Continuous system performance monitoring and health checking
- Incident detection, logging and management
- Fault management and escalation
- Service availability monitoring — minimum 99.5% platform uptime SLA
- Proactive alert management and resolution
- GPS device connectivity monitoring — flagging offline devices within 15 minutes
- Cellular SIM data plan monitoring and renewal management
- OTA firmware and configuration update management for field devices
- NOC infrastructure shall include dedicated servers, workstations, display systems and networking equipment

12. CUSTOMER SUPPORT AND MAINTENANCE

The Contractor shall provide dedicated 24/7 customer support and maintenance services including:

- Dedicated helpdesk support — response within 2 hours for critical issues
- Technical assistance and remote diagnostics
- Corrective and preventive maintenance for all hardware and software
- Software support, bug fixes, security patches and version upgrades at no additional cost
- Hardware replacement and repair services — field device replacement within 48 hours of fault confirmation
- System troubleshooting and fault rectification services
- Spare parts inventory to be maintained by Contractor for field device replacement

13. TRAINING AND DOCUMENTATION

The Contractor shall provide comprehensive training to KMC personnel covering:

- System operation and SaaS platform administration
- Dashboard management and single-window interface operation
- OBD diagnostic data interpretation
- Report generation and MIS module usage
- Fleet monitoring and alert management
- System administration, user management and RBAC configuration

The Contractor shall provide all associated user manuals, operating procedures, system administration guides and technical documentation in English language.

14. SOFTWARE LICENSING, UPDATES AND RENEWAL

- The Contractor shall provide all software licenses, SaaS platform subscriptions, mapping API licenses, dashboard licenses and any other third-party software licenses required for complete operation of the system
- All software licenses, subscriptions and usage rights shall remain valid for a minimum period of Five (05) years from the date of commissioning and acceptance of the system
- The Contractor shall ensure uninterrupted validity of all licenses throughout the initial five-year period and shall be responsible for all licensing, subscription and renewal costs during this period
- Upon expiry of the initial five-year period, the licenses shall be renewable by KMC upon payment of applicable renewal fees prevailing at that time
- The Contractor shall provide all software updates, patches, bug fixes, security updates, version upgrades and performance improvements during the five-year contract period at no additional cost to KMC
- No additional charges shall be payable by KMC for software maintenance, updates, security patches, bug fixes or version upgrades during the initial five-year period
- All software licenses and SaaS platform accounts shall be registered and issued in the name of Karachi Metropolitan Corporation (KMC), wherever applicable
- KMC shall retain full ownership of all data generated by the system throughout and beyond the contract period
- The platform shall support data export in standard formats to facilitate future migration or platform transition

15. DELIVERABLES

The Contractor shall provide the following deliverables under this Contract:

- GPS/IoT vehicle tracking devices (with OBD/CAN interface) for all Fire Brigade vehicles procured under the Contract — including all accessories, SIM cards, mounting hardware, wiring and installation materials

- Fleet Management Telematics / IoT Platform — SaaS-based Single Window unified solution
- Licensed mapping and location intelligence API integration
- Centralized Single-Window Monitoring Dashboard at KMC Head Office
- One (01) minimum 85-inch Professional Grade Commercial Display for continuous 24/7 Command Center operations
- Dashboard Workstations, Operator Consoles, Servers, Networking Equipment and Associated Hardware
- OBD/CAN Vehicle Diagnostic Monitoring Module — integrated into dashboard
- Geofencing and Automated Alert Management System
- Fuel Monitoring and Fleet Analytics Modules
- Management Information System (MIS) Reporting Module
- Integration-ready interfaces for UHF Radio Systems, Firefighting Drones and Robotic Firefighting Systems
- Dedicated 24/7 Network Operations Centre (NOC) Services
- Dedicated 24/7 Customer Support and Helpdesk Services
- Comprehensive Training, User Documentation, Technical Manuals
- All Software Licenses, SaaS Subscriptions, Mapping API Licensing, Software Updates, Upgrades and associated services for a minimum period of Five (05) years
- Complete monitoring coverage of 100% of Fire Brigade fleet assets procured under this Contract through the Centralized Single-Window Dashboard

PART-B: DETAILED SPECIFICATIONS FOR ADDITIONAL FIRE FIGHTING AND RESCUE EQUIPMENT

Item 1: Full Face Respirator Mask

Type: Full Face Respirator compatible with Rd40 filters for Firefighting, Rescue, Industrial Safety, and Hazardous Materials Response

Minimum Specifications

The Full-Face Respirator Mask shall provide comprehensive respiratory, eye, and face protection for firefighting support, rescue operations, industrial safety applications, and hazardous materials response. The facepiece shall be manufactured from EPDM or equivalent high-performance material resistant to heat, chemicals, aging, and environmental degradation. The mask shall incorporate a double-sealing edge design to provide a secure, leak-tight fit and enhanced wearer comfort during prolonged operations.

The respirator shall be equipped with a large panoramic visor manufactured from impact-resistant PMMA acrylic, polycarbonate, or equivalent material, providing an approximately 180-degree field of vision without optical distortion. An integrated anti-fog airflow system with internal oro-nasal mask shall be provided to minimize visor fogging and maintain clear visibility in demanding operational environments.

The mask shall feature a five-point adjustable head harness for rapid donning, secure fit, and even pressure distribution. The connection interface shall utilize a standard Rd40 threaded connection conforming to relevant EN or equivalent NFPA standards, enabling compatibility with approved filter canisters. The respirator shall provide low breathing resistance to reduce wearer fatigue and shall incorporate a speech diaphragm or equivalent communication feature to facilitate clear voice transmission.

The unit shall be compatible with firefighting helmets, protective clothing, and other personal protective equipment and shall be of reusable design with replaceable components to facilitate cleaning, maintenance, and long service life. The respirator shall be suitable for protection against toxic gases, vapors, smoke, airborne particulates, and hazardous contaminants when used with appropriate filters and shall be certified in accordance with EN 136:1998 EN or equivalent NFPA respiratory protection standards.

Item 2: Multi-Purpose Fire Nozzle (230 LPM)

Type: Adjustable Combination Firefighting Nozzle

Minimum Specifications

The Multi-Purpose Fire Nozzle shall be an adjustable combination firefighting nozzle designed for structural, industrial, municipal, and emergency firefighting operations. The nozzle shall incorporate an ergonomically designed operating handle with a ball valve shut-off mechanism for smooth opening, closing, and flow control. The body shall be manufactured from high-

strength aluminum alloy or equivalent lightweight corrosion-resistant material and protected by a hard anodized finish to provide enhanced durability, wear resistance, and long service life in demanding firefighting environments.

The nozzle shall provide selectable stream patterns including straight jet, spray, fog, and flashover protection mode, enabling firefighters to effectively perform fire attack, cooling, exposure protection, and compartment protection operations. The nozzle shall provide selectable flow rates of 50, 100, 150, and 230 litres per minute at 6 bar operating pressure and shall be capable of operating within a pressure range of 3.5 to 16 bar. The inlet connection shall be 2.5 inches (65 mm) and compatible with standard firefighting hose couplings.

The nozzle shall be designed to minimize reaction forces while maintaining optimum stream reach, water distribution, and firefighting effectiveness. It shall be suitable for use with water, foam solutions, and other approved firefighting agents and shall be manufactured and tested in accordance with NFPA 1964 and other applicable international firefighting equipment standards.

Item 3: Multi-Purpose Fire Nozzle (475 LPM)

Type: Adjustable Combination Firefighting Nozzle

Minimum Specifications

The Multi-Purpose Fire Nozzle shall be an adjustable combination firefighting nozzle designed for structural, industrial, municipal, and emergency firefighting operations. The nozzle shall incorporate an ergonomically designed operating handle with a ball valve shut-off mechanism for smooth opening, closing, and flow control. The body shall be manufactured from high-strength aluminum alloy or equivalent lightweight corrosion-resistant material and protected by a hard anodized finish to provide enhanced durability, wear resistance, and corrosion protection.

The nozzle shall provide selectable stream patterns including straight jet, narrow spray, wide-angle fog, and flashover protection mode. It shall provide selectable flow rates of 115, 230, 360, and 475 litres per minute at 6 bar operating pressure and shall operate effectively within a pressure range of 3.5 to 16 bar. The inlet connection shall be fitted with a John Morris (BS 336) instantaneous coupling or equivalent and shall have a nominal inlet size of 2.5 inches (65 mm).

The nozzle shall be capable of providing effective fire attack, cooling, exposure protection, compartment cooling, and firefighter protection during structural, industrial, and municipal firefighting operations. It shall permit smooth and rapid adjustment between flow settings and stream patterns while minimizing nozzle reaction and maintaining optimum stream reach, water distribution, and firefighting performance. The nozzle shall be suitable for use with water, foam solutions, and other approved firefighting agents and shall be manufactured, tested, and certified in accordance with NFPA 1964 and other applicable international firefighting equipment standards.

Item 4: Multi-Purpose Fire Nozzle (950 LPM)

Type: High-Capacity Adjustable Combination Firefighting Nozzle

Minimum Specifications

The Multi-Purpose Fire Nozzle shall be a high-capacity adjustable combination firefighting nozzle designed for structural, industrial, petrochemical, warehouse, and large-scale fire suppression operations. The nozzle shall incorporate an ergonomically designed operating handle with a ball valve shut-off mechanism for effective flow control. The body shall be constructed from high-strength aluminum alloy or equivalent corrosion-resistant material and protected with a hard anodized finish to ensure long-term durability and resistance to wear and corrosion.

The nozzle shall provide selectable stream patterns including straight jet, narrow spray, wide-angle fog, and flashover protection mode. It shall provide selectable flow rates of 350, 450, 580, 780, and 950 litres per minute at 6 bar operating pressure and shall operate effectively within a pressure range of 3.5 to 16 bar. The inlet connection shall be fitted with a British Standard instantaneous coupling or equivalent and shall have a nominal inlet size of 2.5 inches (65 mm).

The nozzle shall be capable of delivering high-volume water flow for major firefighting incidents while maintaining effective stream reach, water distribution, and operational efficiency. It shall allow rapid adjustment between flow settings and stream patterns and shall be suitable for use with water, foam solutions, and other approved firefighting agents. The equipment shall be manufactured, tested, and certified in accordance with NFPA 1964 and other applicable international firefighting equipment standards.

Item 5: Hydro Vent Nozzle

Type: 1½ Inch Turbojet / Combination Firefighting Nozzle

Minimum Specifications

The Hydro Vent Nozzle shall be a 1½-inch turbojet combination firefighting nozzle designed for fire suppression, ventilation support, cooling, exposure protection, and general firefighting operations. The nozzle shall be compatible with standard 1½-inch firefighting hose lines and shall provide adjustable discharge patterns ranging from straight stream to wide-angle fog spray. The design shall permit effective fire attack while supporting smoke movement and cooling operations during structural firefighting incidents.

The nozzle shall incorporate an ergonomically designed operating handle for controlled opening and shut-off and may be supplied with or without a pistol grip according to operational requirements. The body shall be manufactured from durable corrosion-resistant materials suitable for prolonged fire service use and shall provide smooth transition between discharge patterns while maintaining reliable performance under firefighting operating pressures. The nozzle shall be compatible with standard fire service couplings and shall be manufactured in accordance with applicable NFPA, EN, or equivalent international firefighting equipment standards.

Item 6: Foam Making Branch Pipe Nozzle

Type: Low Expansion Foam Branch Pipe Nozzle

Minimum Specifications

The Foam Making Branch Pipe Nozzle shall be designed for the application of low-expansion firefighting foam in municipal, industrial, petrochemical, aviation, and hazardous materials firefighting operations. The nozzle shall be manufactured from high-strength corrosion-resistant aluminum alloy, stainless steel, brass, or equivalent durable materials suitable for prolonged firefighting service and harsh operating environments.

The nozzle shall incorporate an integrated air-aspirating foam generation system capable of producing stable and uniform low-expansion foam. The inlet connection shall be 2.5 inches (65 mm) fitted with a British Standard (BS 336) instantaneous coupling or equivalent. The nozzle shall be suitable for use with both Class A and Class B firefighting foam concentrates and shall provide optimized foam expansion characteristics for fire suppression, vapour suppression, cooling, and spill fire protection.

The equipment shall be lightweight, ergonomically designed, and capable of providing consistent foam quality and discharge performance under varying operating conditions. It shall be compatible with standard firefighting foam proportioning systems and suitable for hydrocarbon fuel fires, flammable liquid incidents, industrial hazards, aircraft incidents, storage facilities, and municipal firefighting operations. The nozzle shall be manufactured, tested, and certified in accordance with applicable NFPA, EN, or equivalent international standards governing foam-making equipment and firefighting nozzles.

Item 7: Foam Fire Nozzle (480 LPM)

Type: Low Expansion Foam Firefighting Nozzle

Minimum Specifications

The Foam Fire Nozzle shall be a low-expansion firefighting nozzle designed for the application of water and firefighting foam during municipal, industrial, petrochemical, aviation, fuel storage, and tanker fire operations. The nozzle shall incorporate an ergonomically designed operating handle with a ball valve shut-off mechanism and shall be manufactured from high-strength aluminum alloy or equivalent corrosion-resistant material protected by a hard anodized finish.

The nozzle shall provide selectable water and foam discharge patterns and shall deliver a flow rate of 480 litres per minute at 6 bar operating pressure while operating effectively within a pressure range of 3.5 to 16 bar. The inlet connection shall be fitted with a British Standard (BS 336) instantaneous coupling or equivalent and shall have a nominal inlet size of 2.5 inches (65 mm).

The nozzle shall be suitable for use with Class A and Class B firefighting foam concentrates and shall be capable of producing a stable and effective foam stream for suppression of flammable liquid fires and hazardous material incidents. The equipment shall be lightweight, ergonomically designed, compatible with standard foam proportioning systems, and suitable for prolonged

firefighting operations. The nozzle shall be manufactured, tested, and certified in accordance with

NFPA 11, and other applicable international firefighting equipment standards.

Item 8 and 9: Fire Fighting Hose Size: 2.5 inch (65 mm) × 20 meters and 10 meters.

Type: Delivery Fire Hose

Minimum Technical Specifications

The Fire Fighting Hose shall be a high-performance delivery hose with a nominal diameter of 2.5 inches (65 mm) and a length of 20 meters, & 10 meters designed for municipal, industrial, structural, and emergency firefighting operations. The hose shall be lightweight, flexible, abrasion-resistant, and suitable for prolonged operational use under demanding firefighting conditions. It shall be capable of operating at a minimum working pressure of 16 bar and shall have a minimum burst pressure of 48 bar. The hose shall be supplied complete with British Standard (BS 336) instantaneous couplings and shall exhibit elongation and diameter expansion not exceeding 5 percent under working pressure conditions. The adhesion strength between the hose lining and jacket shall be not less than 25 N per 25 mm. The hose shall be manufactured, tested, and certified in accordance with NFPA 1961, NFPA 1962, or equivalent EN standards.

Item 10 & 11: Fire Fighting Hose 2" with BSS Coupling (100 ft) & (50ft)

Minimum Technical Specifications

The Fire Fighting Hose shall have a nominal diameter of 2 inches (50 mm) and a length of 100 feet & 50 feet and shall be constructed with a dual-jacket design comprising a synthetic rubber inner lining and an abrasion-resistant polyester outer jacket. The hose shall be designed for structural, municipal, industrial, and emergency firefighting operations and shall provide a minimum working pressure of 16 bar and a minimum burst pressure of 48 bar. Elongation and diameter expansion shall not exceed 5 percent under operating conditions, while the adhesion strength between the lining and jacket shall be not less than 25 N per 25 mm. The hose shall be supplied complete with British Standard (BS 336) instantaneous couplings and shall be manufactured, tested, and certified in accordance with NFPA 1961, NFPA 1962, or equivalent EN standards.

Item 12 & 13: Fire Fighting Hose 1.75" with BSS Coupling (50 ft) & (100ft)

Minimum Technical Specifications

The Fire Fighting Hose shall have a nominal diameter of 1.75 inches (45 mm) and a length of 50 feet & 100 feet and shall be constructed using a dual-jacket configuration comprising a synthetic rubber inner lining, polyester woven inner jacket, and heavy-duty abrasion-resistant outer jacket.

The hose shall be lightweight, flexible, and suitable for rapid deployment during structural, municipal, industrial, and emergency firefighting operations. The hose shall provide a minimum working pressure of 16 bar and a minimum burst pressure of 48 bar. Elongation and diameter expansion shall not exceed 5 percent under operating conditions, while adhesion strength between the lining and jacket shall be not less than 25 N per 25 mm. The hose shall be supplied complete with British Standard (BS 336) instantaneous couplings and shall be manufactured, tested, and certified in accordance with NFPA 1961, NFPA 1962, and/or equivalent EN standards.

Item 14: Portable Gasoline Cutter for Fire & Rescue

Minimum Specifications

The Portable Gasoline Cutter shall be powered by a two-stroke, air-cooled gasoline engine with a minimum displacement of 74 cc and a power output of not less than 3.7 kW, providing reliable cutting performance for firefighting, rescue, and emergency response operations. The unit shall be capable of accommodating both 300 mm and 350 mm cutting blades, enabling maximum cutting depths of 100 mm and 125 mm respectively. The cutter shall have a fuel tank capacity of at least 0.77 liters and an operational weight between 9.8 kg and 10.1 kg, excluding the cutting blade, to ensure ease of handling and reduced operator fatigue during prolonged use. The equipment shall be suitable for cutting steel, reinforced concrete, masonry, metal components, and other materials encountered during firefighting, Urban Search and Rescue (USAR), road traffic accident response, forcible entry, and disaster management operations. The cutter shall incorporate an ergonomic design, anti-vibration features, and a reliable starting system suitable for demanding field conditions. The equipment shall be manufactured and tested in accordance with NFPA 70 or NFPA 241. or equivalent internationally recognized standards.

Item 15: Oscillating Portable Fire Monitor

Minimum Specifications

The Oscillating Portable Fire Monitor shall be capable of delivering a minimum rated flow of 30 liters per second and achieving a water throw distance of not less than 60 meters, providing effective wide-area fire suppression capability for municipal, industrial, petrochemical, and emergency firefighting operations. The monitor shall incorporate an ultra-low-pressure self-oscillating mechanism capable of reliable operation at inlet pressures as low as 0.1 MPa, ensuring continuous sweeping coverage even under limited water supply conditions. The oscillation system shall include an automatic obstacle-avoidance function that reverses the oscillation direction upon encountering obstructions within the preset sweep angle, thereby maintaining uninterrupted firefighting operations. The monitor shall be equipped with a fully rotating 360-degree hose connection to facilitate rapid deployment, enhanced manoeuvrability, and flexible

positioning during incident response. The unit shall be constructed from corrosion-resistant materials suitable for harsh operational environments and shall be designed for stable operation under demanding firefighting conditions. The monitor shall be manufactured, tested, and certified in accordance with NFPA 1901 standards, or equivalent EN standards.

Item 16: Rescue Air Cushion (23 Meters Capacity)

Minimum Specifications

The Rescue Air Cushion shall be a rapid-deployment life-saving system designed for emergency evacuation and rescue of persons from buildings, structures, and elevated locations during fire, disaster, and emergency incidents. The cushion shall be capable of safely accommodating jumps from heights of up to 23 meters manufactured in Europe/ USA / Japan.

The rescue cushion is a rapid deployment lifesaving device designed for evacuating people from heights up to 23 meters when ladders, aerial platforms, or internal escape routes cannot be used. It inflates instantly using an 8-liter, 300 bar compressed air cylinder and becomes fully operational within 60 seconds. The cushion absorbs impact safely by collapsing inward with no bounce back and automatically re-erects within 30 seconds, remaining ready for repeated use. Constructed from reinforced polyester with multi-layer PVC, it is flame retardant, weather resistant, and compatible with standard fire brigade air fittings, and particularly with the standard connexion 5/8". The system operates at 0.30 bar, measures 450 × 450 × 240 cm, and weighs 80 kg excluding the cylinder. Engineered in accordance with the state of the art, it provides a safe, stable, and compliant landing solution for emergency evacuations.

Item 17: Supply of Intrinsically Safe Digital Portable Radio (Motorola / Kenwood or Equivalent) with installation and getting all relevant NOC from relevant authorities

Minimum Specifications

The Intrinsically Safe Digital Portable Radio shall operate within the UHF frequency range of 403–527 MHz and provide a maximum RF output power of 4 watts for reliable communication during firefighting, rescue, and emergency response operations. The radio shall support a minimum of 1,000 programmable channels to facilitate flexible communication grouping and incident management. The unit shall be equipped with integrated GPS capability for real-time location tracking and shall support IP Site Connect or equivalent digital networking technology to enable seamless communication across multiple sites and extended operational areas.

The radio shall utilize secure digital voice communication technology and be powered by a rechargeable Li-Ion battery with a minimum capacity of 1,500 mAh, providing extended operational endurance. The unit shall be supplied with a high-performance antenna optimized for the UHF frequency band and shall be designed to operate reliably under harsh environmental and emergency response conditions. The radio shall be intrinsically safe and suitable for use in hazardous environments where flammable gases, vapours, or combustible materials may be present.

Each radio set shall be supplied complete with one additional 1,500 mAh Li-Ion battery, battery retaining clip, reinforced leather carrying case with belt loop, multi-unit rapid charging station, standard UHF antenna, belt clip, and all necessary user accessories. The equipment shall be manufactured and tested in accordance with applicable international communication, safety, and intrinsic safety standards and shall be suitable for firefighting, rescue, disaster management, and emergency communication operations.

Item 18: Supply and Installation of UHF Base Station / Repeater System (40 Watt)

Minimum Specifications

The UHF Base Station / Repeater System shall provide reliable voice communication coverage for firefighting, rescue, disaster management, and emergency response operations. The system shall include a 40-watt UHF digital/analogue repeater operating within the designated UHF frequency band and fully compatible with the supplied handheld portable radios. The repeater shall support continuous-duty operation and provide stable, high-quality communication across the designated operational coverage area.

The system shall be equipped with a high-performance UHF duplexer designed for a minimum transmit/receive frequency separation of 4.5 MHz to ensure effective signal isolation and uninterrupted repeater performance. The antenna system shall comprise a 6 dBd gain omni-directional dipole array antenna with a minimum operational bandwidth of 20 MHz, utilizing a four-dipole configuration to provide uniform 360-degree coverage and enhanced signal penetration in urban, industrial, and built-up environments.

The complete system shall include all necessary mounting brackets, antenna support hardware, low-loss RF feeder cables, lightning protection devices, connectors, power supply units, grounding arrangements, programming software licenses, configuration tools, testing, commissioning, and installation services required for a fully operational communication system. The repeater shall support integration with IP Site Connect or equivalent networking capability for future system expansion and interoperability.

The equipment shall be manufactured and tested in accordance with applicable international telecommunications standards and shall be suitable for continuous operation under emergency service conditions. The supplier shall provide complete installation, programming, testing, commissioning, user training, and operational handover of the system.

Item 19: Base Station Hardware Package for TurboCare/ Equivalent Application

Minimum Specifications

The Base Station Hardware Package shall be designed for integration with the proposed UHF communication system and TurboCare/ Equivalent application, providing reliable fixed-site communication capability for fire stations, emergency operation centers, and control rooms. The package shall include a compatible base station radio complete with palm microphone, DC power cable, mounting bracket, PC interface/programming cable, and regulated 220V AC to DC power supply unit suitable for continuous-duty operation.

The system shall be supplied with a minimum 3 dBd gain UHF omni-directional fiberglass whip antenna designed for fixed installation and capable of providing uniform communication coverage within the operational service area. All necessary RF connectors, mounting accessories, feeder cables, surge protection devices, and interconnection hardware required for complete installation and operation shall be included.

The equipment shall be fully compatible with the supplied portable radios, repeater system, and communication management software, enabling reliable voice communication, dispatch operations, and network integration. The supplier shall provide complete installation, configuration, testing, commissioning, and operational handover of the system.

Item 20: Self-Contained Breathing Apparatus (SCBA) – 75 Minutes Duration

Minimum Specifications

The Self-Contained Breathing Apparatus (SCBA) shall be a lightweight, high-performance respiratory protection system designed for structural firefighting, rescue operations, and hazardous environment response. The complete unit shall incorporate a lightweight carbon-fibre composite cylinder providing a minimum rated duration of 75 minutes under standard operating conditions. The SCBA shall be supplied complete with a full-face mask featuring a wide field-of-view anti-fog visor to ensure clear visibility during operations in smoke-filled and hazardous environments.

The carrying frame shall be constructed from lightweight, high-strength carbon composite or equivalent material with an ergonomic hollow back-plate design to maximize wearer comfort and reduce operational fatigue. The pressure reducer, pneumatic system, and associated pipework

shall be integrated within the back-plate assembly to minimize snagging hazards and improve operational safety during interior firefighting and rescue operations.

The harness system shall be fully adjustable and designed for rapid donning and doffing. The apparatus shall incorporate a waterproof and wear-resistant protective liner or equivalent system providing enhanced durability in wet, contaminated, and harsh firefighting environments. All major components shall be modular in design to facilitate rapid inspection, cleaning, maintenance, and replacement.

The SCBA shall include a pressure gauge, warning alarm device, demand valve, pressure reducer, carrying harness, composite cylinder, and full-face mask as a complete operational package. The apparatus shall be suitable for firefighting, rescue operations, hazardous materials response, confined-space entry, and other emergency service applications requiring respiratory protection.

The equipment shall be manufactured, tested, and certified in accordance with EN 137:2006 Type 2 for firefighting breathing apparatus, EN 136 for full-face masks, or equivalent NFPA firefighting respiratory protection standards.

Item 21: High Performance Battery Operated Centrifugal Positive Pressure Ventilator (PPV) with External quick charger, 100m electric extension in bag with lockable EU plugs, carrying harness, duct 5M Blowing and Extraction

Minimum Specifications

The High-Performance Battery-Operated Positive Pressure Ventilator (PPV) shall be a portable, cordless ventilation system designed to rapidly remove smoke, heat, toxic gases, and airborne contaminants from fire-affected structures, thereby improving visibility, reducing interior temperatures, and enhancing conditions for firefighting and rescue operations manufactured in EU/USA/Japan. The unit shall utilize a high-efficiency centrifugal fan system capable of generating powerful and controlled airflow suitable for structural firefighting, rescue, and emergency response applications.

The ventilator shall be powered by a rechargeable battery system providing reliable operation without dependence on external power sources, enabling rapid deployment in confined spaces, high-rise buildings, underground facilities, and other locations where electrical supply may be unavailable or compromised. The unit shall be lightweight, compact, and suitable for operation by a single firefighter.

The fan housing and structural components shall be manufactured from durable, impact-resistant, corrosion-resistant materials suitable for demanding firefighting environments. The ventilator shall incorporate variable speed control and adjustable airflow direction to optimize

ventilation effectiveness under different operational conditions. The battery system shall support rapid charging and extended operational endurance suitable for emergency service applications.

PRODUCT CHARACTERISTICS

AUTONOMOUS

Equipped with a Lithium battery, E-FAN allows operations in complete autonomy with a battery life of 50 minutes of running time with only one battery

- Open air flow: 35050 m3/h / 18500 m3/h PPV air flow according to AMCA
- Reference: I63.12.102EU= E-FAN 18'' 220v (without ext. charger or battery)
- Protection: IP65
- Noise level: 82 dB à 3m
- Battery Duration: Minimum 50 minutes
- Built in Charger
- Can perform during charging
- CE Certified

ACCESSORIES

- 50m electric extension in bag with lockable UK plugs/ Round Pin - cable 3x2.5 mm²
- 5m blowing duct (5m - dia 500mm)
- External fast charger Rehab misting adaptor 3/4'' BSP M

MINIMUM GUARANTTEE

- E-FAN = 2 years / engine 2 years / battery 1 year or 300 cycles

<u>Item 22: Complete Structural Firefighting Personal Protective Equipment (PPE)</u>

Minimum Specifications

The Structural Firefighting PPE Ensemble shall comprise a firefighting suit, helmet, gloves, neck protector, and firefighting boots designed to provide comprehensive protection for firefighters engaged in structural firefighting, rescue, and emergency response operations. The complete ensemble shall be fully compliant with EN 469 standards, or equivalent NFPA standards.

The firefighting suit shall be constructed from Aramid IIIA or equivalent high-performance flame-resistant fabric with a minimum outer shell weight of 200 g/m² ±10 g/m² and water-repellent treatment. The moisture barrier shall consist of aramid spun-lace laminated with a flame- and heat-resistant PTFE membrane of approximately 108 g/m², while the thermal barrier shall

comprise meta-aramid and para-aramid spun-lace materials to provide enhanced thermal insulation, heat protection, breathability, and wearer comfort.

The structural firefighting helmet shall comply with NFPA 1971 standards and feature a lightweight nylon-reinforced composite shell or equivalent high-strength material, equipped with an adjustable ratchet suspension system suitable for head sizes ranging from 52 cm to 64 cm. The helmet shall incorporate flame-resistant aramid chin straps, impact protection, electrical insulation properties, a heat-resistant neck protector, and a clear visor with anti-fog and anti-scratch treatment to ensure optimum visibility and protection under firefighting conditions.

The firefighting gloves shall comply with NFPA 1971 or equivalent EN standards and be constructed using a Kevlar silicone-coated palm, Nomex flame-resistant outer shell, Kevlar knit inner lining, moisture barrier, thermal insulation layer, and extended Kevlar wristlet for enhanced protection. The gloves shall provide high levels of dexterity, heat resistance, abrasion resistance, and mechanical protection while incorporating reflective elements for improved visibility.

The firefighting boots shall comply with NFPA 1971 or equivalent EN standards and provide protection against heat, flame, puncture hazards, chemicals, impact, compression, and slipping. The boots shall be specifically designed for structural firefighting operations and provide comfort, durability, and reliable performance in demanding emergency response environments.

The complete PPE ensemble shall be suitable for structural firefighting, rescue operations, disaster response, and other emergency service activities requiring certified firefighter protection.

Item 23: Proximity Firefighting Suit

Minimum Specifications

The Proximity Firefighting Suit shall be a high-temperature aluminized protective ensemble designed for aircraft rescue and firefighting (ARFF), petrochemical, industrial, refinery, LNG, and other extreme heat firefighting operations. The complete suit shall be certified to NFPA 1971 or equivalent EN standards.

The outer shell shall be manufactured from aluminized fiberglass, aluminized aramid, or equivalent high-performance heat-reflective material capable of reflecting at least 95% of radiant heat and providing protection against radiant heat exposure up to 1650°C. The suit shall incorporate a multi-layer construction comprising a heat-resistant outer shell, moisture barrier, thermal insulation layer, and inner comfort lining to provide protection against radiant heat, convective heat, flame exposure, and molten splash hazards.

The complete ensemble shall consist of an aluminized jacket, aluminized trousers, SCBA-compatible aluminized hood, high-temperature protective visor, aluminized insulated gloves, and protective over-boots, providing full-body protection for firefighters operating in extreme thermal environments. The hood and visor assembly shall provide full face and neck protection while maintaining adequate visibility and compatibility with self-contained breathing apparatus (SCBA).

All materials and components shall comply with the performance requirements of NFPA 1971 or equivalent EN standards governing radiant heat resistance, flame resistance, thermal protection, and firefighter safety. The suit shall provide ergonomic mobility, durability, and wearer comfort during prolonged emergency operations while maintaining protection under severe thermal exposure conditions.

The proximity suit shall be suitable for aircraft rescue and firefighting, fuel storage fires, petrochemical incidents, refinery emergencies, LNG facilities, industrial fire suppression, and other specialized firefighting operations involving extreme radiant heat exposure.

Item 24: Air Breathing Apparatus Trolley

Minimum Specifications

The Air Breathing Apparatus Trolley shall be a mobile compressed-air supply system designed for industrial firefighting, hazardous materials response, confined-space entry, rescue operations, and other extended-duration breathing air applications. The system shall be compliant with CE marked in accordance with EN139, or equivalent NFPA standards.

The trolley shall be constructed from heavy-duty steel, stainless steel, or equivalent corrosion-resistant material and shall be capable of accommodating a minimum of 2 to 4 high-pressure breathing air cylinders with capacities ranging from 6 litres to 50 litres and operating pressures of 200 to 300 bar. The system shall incorporate quick-change cylinder connections to permit uninterrupted air supply during cylinder replacement.

The trolley shall be equipped with a high-performance pressure reduction system capable of reducing cylinder pressure to a stable medium-pressure output of 6 to 10 bar. The pneumatic system shall include pressure gauges, pressure regulators, pressure-relief valves, non-return valves, bleed valves, and other safety devices necessary for safe and reliable operation.

The system shall include a hose reel fitted with a reinforced, kink-resistant breathing airline hose having a minimum length of 30 meters and extendable up to 90 meters. A distribution manifold shall be provided to simultaneously supply breathing air to a minimum of one and up to four users with stable and uninterrupted airflow.

Safety features shall include an audible low-pressure warning alarm activating at approximately 55 bar cylinder pressure, over-pressure protection devices, locking castor wheels, and user-side warning systems where applicable. The trolley shall be designed for ease of transport, rapid deployment, and reliable operation under harsh industrial, firefighting, rescue, and hazardous environment conditions.

The complete system shall be supplied ready for operational use and suitable for firefighting support, confined-space rescue, hazardous materials incidents, industrial emergency response, and prolonged-duration breathing air applications.

Item 25: Mobile Air Filling Compressor for SCBA Cylinders

Minimum Specifications

The Mobile Air Filling Compressor shall be a compact, high-pressure breathing-air compressor specifically designed for refilling Self-Contained Breathing Apparatus (SCBA) cylinders used in firefighting, rescue, hazardous materials response, and emergency operations. The unit shall be capable of filling both 200 bar and 300 bar SCBA cylinders and shall be compatible with EN-compliant and internationally recognized breathing apparatus systems. The compressor shall deliver breathing-quality compressed must be compliant with NFPA 1989, Standard on Breathing Air Quality for Fire and Emergency Services Respiratory Protection or equivalent EN standards.

Charging Rate 320 l/min, CFM 11.5, Max operating pressure 350 bar, No of stages 4, Speed 1450 RPM, 3 Phase Motor, 7.5kW

The compressor shall incorporate a multi-stage compression system equipped with automatic condensate drains, moisture separators, and a high-efficiency filtration system capable of removing oil, carbon monoxide (CO), carbon dioxide (CO_2), water vapour, and particulate contaminants to ensure safe breathing air quality. The system shall include a protected filling panel capable of charging one or more SCBA cylinders simultaneously and shall be provided complete with pressure gauges, filling hoses, charging connections, and operational controls.

The compressor shall incorporate integrated safety features including automatic over-temperature shutdown, low-oil protection, pressure-relief devices, and other safety systems necessary for continuous and reliable operation. The complete unit shall be mounted on a rugged mobile frame fitted with heavy-duty wheels and transport handles to facilitate rapid deployment and operation at fire stations, training facilities, emergency incidents, and disaster response locations.

The equipment shall be designed for continuous-duty operation and shall provide reliable on-site refilling capability for SCBA cylinders, ensuring uninterrupted respiratory protection support during firefighting, rescue, and emergency response operations.

Item 26: Complete SCUBA Set with Uniform for Water Rescue Divers

Minimum Specifications

The Complete SCUBA Set shall comprise a professional diving ensemble designed for water rescue, search and recovery, flood response, underwater inspection, and emergency rescue operations. The set shall include a jacket-style or wing-style Buoyancy Control Device (BCD) with integrated weight system, a full-face diving mask compatible with underwater communication systems, and a balanced regulator assembly consisting of a first-stage regulator, primary second-stage regulator, alternate air source (octopus), and complete pressure/depth gauge console.

The system shall be supplied with a lightweight aluminium or composite diving cylinder rated for operating pressures of 200–300 bar, complete with approved cylinder valve, hydrostatic certification, and all associated fittings. Exposure protection shall be provided through a professional-grade dry suit suitable for cold-water and contaminated-water operations, incorporating watertight seals, reinforced knee and elbow panels, durable construction materials, and thermal undergarments for diver protection and comfort.

The set shall further include open-heel diving fins, neoprene diving boots, quick-release weight system, diving gloves, protective hood, backup mask, dive knife, underwater torch, compass, surface marker buoy (SMB), reel or spool, emergency whistle, and a dive computer capable of monitoring depth, dive time, water temperature, ascent rate, and decompression information.

All components shall be manufactured from corrosion-resistant materials suitable for prolonged use in fresh water, seawater, and floodwater environments. The complete system shall be designed for professional rescue diving operations and comply with applicable EN/ ISO / CE, or equivalent internationally recognized diving equipment standards. The equipment shall be suitable for repeated operational deployment under demanding emergency response conditions.

Item 27: Inflatable Rescue Boat with Petrol Engine

Minimum Specifications

The Inflatable Rescue Boat shall be designed for flood rescue, swift-water rescue, coastal emergency response, evacuation operations, and waterborne search and rescue missions. The boat shall be constructed from heavy-duty marine-grade inflatable material with high resistance to abrasion, puncture, UV exposure, fuel, oil, and harsh environmental conditions. The design

shall provide high buoyancy, stability, and manoeuvrability for operation in rivers, canals, lakes, floodwaters, and near-shore coastal environments.

The boat shall have a minimum carrying capacity of five (05) persons including rescue personnel, victims, and essential rescue equipment. It shall be supplied complete with a suitable petrol-powered outboard engine, fuel tank, control system, and all necessary mounting accessories to ensure reliable propulsion and rapid deployment during emergency operations.

The inflatable hull shall incorporate multiple independent air chambers to enhance operational safety and buoyancy in the event of accidental damage. The boat shall be capable of operating in shallow water conditions and navigating debris-filled waterways commonly encountered during flood and disaster response operations. Reinforced lifting handles, towing points, grab lines, and non-slip deck surfaces shall be provided to facilitate rescue activities and safe boarding.

The complete package shall include oars or paddles, repair kit, inflation pump, carrying bag, anchor system, safety ropes, and all standard accessories required for operational deployment. All materials and components shall be corrosion-resistant and suitable for repeated use in both fresh-water and salt-water environments.

The inflatable rescue boat shall comply with NFPA 1670 or equivalent EN standards governing inflatable rescue craft and shall be suitable for professional emergency response, disaster management, flood rescue, and water rescue operations.

Item 28: Rescue Diving Fins

Minimum Specifications

The Rescue Diving Fins shall be designed for professional water rescue, flood response, swift-water rescue, and underwater search and recovery operations. The fins shall provide high thrust, efficient propulsion, and excellent manoeuvrability, enabling divers to operate effectively in strong currents, floodwaters, coastal environments, and low-visibility underwater conditions.

The fins shall feature a durable open-heel design with adjustable quick-release straps to accommodate a wide range of diving boots, including dry-suit and rescue-diving footwear. The blade design shall provide optimum power transfer, directional stability, and controlled movement, allowing divers to maintain position, conduct victim recovery operations, and manoeuvre safely in confined or challenging environments.

The fins shall be manufactured from high-strength, impact-resistant, corrosion-resistant materials suitable for prolonged use in fresh-water, salt-water, and contaminated-water

conditions. The design shall ensure durability, comfort, and reliable performance under demanding emergency response conditions.

The fins shall be suitable for professional rescue diving operations and compatible with the complete rescue diving ensemble used by emergency services, disaster response teams, and water rescue units.

Item 29: Lifebuoy Tube

Minimum Specifications

The Lifebuoy Tube shall be a high-visibility flotation device designed for water rescue, flood response, swift-water rescue, coastal rescue, and emergency victim recovery operations. The device shall be constructed from durable closed-cell foam, marine-grade polyurethane, or equivalent impact-resistant buoyant material capable of maintaining flotation performance under prolonged operational use.

The lifebuoy tube shall be finished in bright orange or other internationally recognized high-visibility color and shall be fitted with a continuous perimeter grab line to facilitate rapid victim stabilization, handling, and rescue. Reflective markings shall be provided to enhance visibility during night operations and low-light conditions. The unit shall incorporate a reinforced attachment point for connection of rescue ropes, throw lines, or towing systems.

The flotation device shall provide sufficient buoyancy to support rescue operations in rivers, canals, floodwaters, lakes, harbours, and coastal environments. All materials shall be resistant to water absorption, UV exposure, abrasion, corrosion, and harsh environmental conditions commonly encountered during emergency response operations.

The lifebuoy tube shall comply with applicable EN or equivalent NFPA standards for personal flotation and rescue equipment and shall be suitable for professional use by water rescue teams, emergency services, and disaster response personnel.

Item 30: Marine Rescue Binoculars

Minimum Specifications

The Marine Rescue Binoculars shall be designed for beach rescue, coastal surveillance, water rescue operations, and emergency response activities requiring long-range visual observation. The binoculars shall provide 7×50 magnification with a wide field of view and fully multi-coated

optical lenses to ensure clear, bright, and high-contrast images under varying environmental conditions including bright sunlight, haze, fog, and sea spray.

The binocular body shall be waterproof to a minimum IPX7 rating or higher and nitrogen-filled or equivalent to prevent internal fogging during operation in humid and marine environments. The housing shall be constructed from durable shock-resistant materials with a non-slip protective coating suitable for prolonged outdoor and maritime use.

The binoculars shall preferably incorporate an integrated compass and/or range-finding reticle to assist in distance estimation, navigation, and directional reporting during search and rescue operations. The optical system shall provide reliable performance in coastal, riverine, flood, and marine rescue environments while maintaining image clarity and operational durability.

The equipment shall be supplied complete with a floating neck strap, protective carrying case, lens covers, cleaning accessories, and all standard operational accessories. The binoculars shall be suitable for continuous use by rescue personnel, lifeguards, disaster response teams, and emergency services engaged in water rescue and coastal surveillance operations.

Item 31: Sewer Camera Fiberscope

Minimum Specifications

The Sewer Camera Fiberscope all-terrain Pipeline Robot shall be a rugged, high-performance visual inspection system designed for municipal drainage pipelines, box culverts, covered channels, and river inspections. The system shall incorporate a 2MP 360° high-definition Pan-Tilt-Zoom (PTZ) camera mounted on a spiral propulsion crawler, enabling the inspection of complex environments with a minimum diameter of DN600mm, especially in areas with heavy siltation and high water levels where conventional CCTV robots cannot function.

The crawler shall be equipped with high-intensity LED illumination—including four groups of 12x 10W LEDs forward and one group of 3x 10W LEDs rearward—to provide clear visibility in dark, low-light, and muddy environments. The system shall provide real-time video transmission to a PC-based control terminal for pipeline defect analysis, visualization of subaqueous conditions, deformation tracking, and alignment assessment. The system shall utilize a patented floating drum design and an automatic electric reel with a standard 150-meter floating cable (featuring a 300 kg Kevlar tensile strength), capable of navigating thick silt and achieving speeds of up to 0.5 m/s in still water, supporting a maximum single-survey distance of up to 2,050 meters.

The complete system's sensitive components, such as the camera lens and optional sonar probe, shall be waterproof to a minimum IP68 rating and submersible up to 10 meters. The system is constructed for harsh field conditions, featuring an imported polyurethane cable sheath that is

abrasion-resistant, acid/alkali-resistant, and corrosion-resistant, alongside a protective buffer pad installed in front of the lens to resist impact. The display unit shall provide simultaneous front and rear live video monitoring, support image and video recording, integrate sonar and 2D laser scanning data, and allow for one-click automatic on-site report generation.

The equipment shall be suitable for extensive over-water inspection operations, heavy siltation management, and municipal pipeline infrastructure assessments.

Item 32: Battery-Operated Hydraulic Combi Rescue Tool with Charger

Minimum Specifications

The Battery-Operated Hydraulic Combi Rescue Tool shall be a compact, cordless rescue device designed for cutting, spreading, squeezing, and pulling operations during vehicle extrication, structural collapse rescue, and technical rescue incidents. The tool shall be powered by a high-capacity rechargeable lithium-ion battery system and supplied complete with charger, spare battery, and carrying accessories necessary for operational deployment.

The combi tool shall deliver a minimum cutting force of 300–400 kN and a spreading force of 250–300 kN, providing multi-functional rescue capability in a single lightweight unit. The rescue blades shall be manufactured from heat-treated, high-strength, corrosion-resistant steel suitable for cutting vehicle components, structural materials, and other obstacles encountered during rescue operations.

- **Working Pressure:** 70 MPa
- **Spreading distance:** 368 mm
- **Spreading force (25mm to TIPS):** 35-45kN
- **Max. Spreading force:** 1500 kN
- **EN-Cutting category:** I
- **NFPA Cutting Class:** A7, B8, C7, D8, E7, F4
- **Max. Cutting force:** Min 492 kN
- **Pulling distance:** Min 380 mm
- **Pulling force:** Min 50 kN
- **Battery:** 25.2V / 5.0Ah
- **Degree of protection level:** IP58

The tool shall be ergonomically designed for single-operator use and capable of operating effectively in confined spaces, low-visibility environments, and adverse weather conditions. The housing shall be constructed from durable impact-resistant materials and provide protection against dust and water ingress through an appropriate IP-rated design.

The equipment shall be suitable for road traffic accident rescue, Urban Search and Rescue (USAR), structural collapse incidents, industrial emergencies, and disaster response operations. The tool shall comply with relevant EN/ NFPA standards, or equivalent internationally recognized rescue equipment standards, and shall be supplied complete with battery charger, operational accessories, and protective carrying case.

Item 33: Thermal Imaging Camera (TIC)

Minimum Specifications

The Thermal Imaging Camera (TIC) shall be a compact, rugged, firefighter-grade infrared imaging device designed for single-hand operation in total darkness, dense smoke, and high-temperature firefighting environments. The camera shall be suitable for search and rescue operations, fire attack, victim location, hotspot detection, overhaul activities, and situational assessment during emergency response operations. The unit shall be provided with a secure hanging assembly or gear-attachment system for convenient attachment to firefighting PPE.

The TIC shall incorporate a dual thermal and visual imaging system with an integrated LED flashlight, glove-friendly controls, and a minimum of eight selectable color palettes with image enhancement technology for improved target recognition. The thermal imaging sensor shall provide a minimum resolution of 256 × 192 pixels with a thermal sensitivity (NETD) of less than 40 mK, a pixel pitch of 12 µm, a 3.6 mm F1.0 lens, field of view of approximately 37.2° × 50°, and real-time image refresh rate of 25 Hz or higher.

The camera shall provide temperature measurement capability from –20°C to +550°C and shall be capable of operating in ambient temperatures up to 115°C. Temperature monitoring shall include center point, hottest point, coldest point, and user-defined measurement points with measurement accuracy of ±2°C or ±2% of reading. Visual and audible high-temperature alarms shall be incorporated to alert the user when preset temperature thresholds are exceeded.

The display shall comprise a minimum 3.2-inch LCD screen capable of presenting thermal, visual, fusion, and picture-in-picture (PIP) viewing modes. The visual camera shall provide a minimum resolution of 2 megapixels. The unit shall include a minimum of 16 GB internal memory for storage of images and videos and shall support image and video recording functions with USB-C data transfer capability.

The TIC shall be powered by a rechargeable lithium-ion battery providing a minimum operating time of six hours under normal operating conditions. The housing shall be manufactured from heat-resistant, impact-resistant materials and incorporate a high-performance infrared lens suitable for firefighting applications. The design shall provide an ergonomic viewing angle and intuitive user interface suitable for operation while wearing structural firefighting gloves.

Each unit shall be supplied complete with rechargeable battery, USB-C charging/data cable, carrying case, protective lens cover, hanging strap, and all accessories required for operational use. The equipment shall be suitable for firefighting, rescue, disaster response, hazardous materials incidents, and emergency service applications.

Item 34: Mobile Lighting Tower

Minimum Specifications

The Mobile Lighting Tower shall be a compact, rapidly deployable emergency lighting system designed for firefighting, rescue, disaster response, Urban Search and Rescue (USAR), and night-time emergency operations. The unit shall be powered by an integrated gasoline generator capable of providing stable and continuous electrical power for prolonged field deployment.

The lighting system shall incorporate a minimum of four to six high-intensity LED floodlights with a total light output ranging from 80,000 to 160,000 lumens. The lighting assembly shall be

mounted on a telescopic mast extendable to a height of not less than 4 meters and up to 9 meters, with a minimum rotational capability of 350 degrees to provide wide-area illumination. The floodlights shall be suitable for outdoor operation and comply with relevant EN or equivalent NFPA standards, with a minimum IP65 or IP67 ingress protection rating.

The integrated generator shall provide a continuous power output of 2–5 kW and incorporate automatic voltage regulation, overload protection, low-oil shutdown, and other safety features necessary for reliable operation. The (diesel) fuel system shall provide a minimum operational endurance of 6–12 hours under normal operating conditions.

The lighting tower shall be mounted on a robust frame or trailer-type platform equipped with stabilizing outriggers, transport handles, and durable wheels suitable for deployment on uneven terrain and disaster environments. All operating controls shall be designed for use while wearing firefighting or rescue gloves.

The complete system shall be suitable for incident scene illumination, rescue operations, disaster management, structural collapse incidents, flood response, firefighting support, and emergency service applications. The equipment shall meet or exceed all NFPA 1901-16 requirements OR equivalent emergency response international standards.

Item 35: Portable Plasma Gas Cutter

Minimum Specifications

The Portable Plasma Gas Cutter shall be a compact, high-performance air-plasma cutting system designed for firefighting support, rescue operations, technical rescue, industrial maintenance,

fabrication, and emergency response applications. The unit shall operate on single-phase or three-phase electrical power supply and utilize compressed air or nitrogen as the plasma gas.

The cutter shall provide a minimum rated cutting capacity of 22.2 mm (7/8 inch) and a maximum severance capacity of 32 mm (1-1/4 inch) for carbon steel and equivalent materials. The system shall deliver a minimum output current of 60 amperes and provide duty-cycle performance suitable for continuous operational use, including 100% duty cycle at 40 amperes or equivalent performance.

The equipment shall incorporate automatic air regulation, pilot arc technology, and non-high-frequency (non-HF) starting systems to minimize interference with electronic equipment and ensure reliable operation in sensitive environments. The cutting torch shall feature an ergonomic handle, flexible cable assembly, and be supplied complete with standard consumables and operational accessories.

The system shall require an air supply of approximately 6.75 CFM at 90 PSI and shall include integrated temperature protection, status indicators, post-flow cooling optimization, overload protection, and other safety features necessary for reliable field operation. The unit shall be compatible with portable generator power supplies and designed with advanced cooling and dust-protection systems for operation in harsh environmental conditions.

The cutter shall be suitable for cutting steel, stainless steel, structural members, vehicle components, pipes, plates, and other materials encountered during firefighting, Urban Search and Rescue (USAR), disaster response, vehicle extrication, and technical rescue operations. The equipment shall support operational requirements referenced in NFPA 1670 and comply with applicable EN safety, electrical, and equipment standards for portable plasma cutting systems.

RELEVANCE NOTES; (FOR PROCUREMENT & COMPLIANCE)

Operational Training Requirement

The successful bidder/manufacturer shall be obligated to provide comprehensive operational training for each category of equipment supplied under this project. The training shall be conducted at the premises of the Government of Sindh (GoS) / Karachi Metropolitan Corporation (KMC) in Karachi, with a minimum duration of five (05) working days per equipment type. The training curriculum shall cover safe operation, routine maintenance, troubleshooting, and emergency procedures. All training costs, including personnel, materials, and certification, shall be borne by the supplier.

Standards Compliance

Furthermore, each item must fully comply with the relevant European Norms (EN) and standards or the equivalent National Fire Protection Association (NFPA) standards as explicitly mentioned in the technical specifications. Certificates of origin and compliance, duly attested by the Original Equipment Manufacturer (OEM), shall be submitted as part of the bid documentation.

Mandatory Third-Party Pre-Shipment Inspection

The bidder/manufacturer shall, at their own cost and expense, arrange for a comprehensive third-party inspection of all equipment and vehicles prior to shipment. The inspection shall be carried out by an internationally recognized inspection agency, namely TÜV, SGS, COTECNA, or Lloyds Register. A copy of the detailed inspection report, along with photographic evidence and a certificate of conformity, must be submitted electronically and in hard copy to Fire Brigade Department, KMC.

Approval of Inspection Report

It shall be incumbent upon the bidder/manufacturer to obtain explicit written approval of the third-party inspection report from Fire Brigade Department, KMC prior to the shipment of any equipment from the country of origin. Shipments made without prior approval shall be rejected at the port of entry, and all associated demurrage, storage, and return costs shall be the sole responsibility of the supplier.

Final Acceptance

No equipment shall be considered accepted, and no final payment shall be released, until the successful completion of:

- Pre-shipment third-party inspection with approval from both authorities;
- On-site delivery, installation (if applicable), and verification of all items;
- Successful completion of the mandatory five (05) days operational training for KMC personnel;
- Issuance of a final acceptance certificate by Karachi Metropolitan Corporation.

Sample Forms

1. Bid Form and Price Schedules

Date: IFB N:

To: [name and address of Procuring Agency]

Gentlemen and/or Ladies:

Having examined the Standard Bidding Documents including Addenda Nos. *[insert numbers],* the receipt of which is hereby duly acknowledged, we, the undersigned, offer to supply and deliver *[description of goods and services]* in conformity with the said Standard Bidding Documents for the sum of *[total bid amount in words and figures]* or such other sums as may be ascertained in accordance with the Schedule of Prices attached herewith and made part of this Bid.

We undertake, if our Bid is accepted, to deliver the goods in accordance with the delivery schedule *specified* in the Schedule of Requirements.

If our Bid is accepted, we will obtain the guarantee of a bank in a sum equivalent to _____ percent of *the* Contract Price for the due performance of the Contract, in the form prescribed by the Procuring agency.

We agree to abide by this Bid for a period of *[number]* days from the date fixed for Bid opening under Clause 22 of the Instructions to Bidders, and it shall remain binding upon us and may be accepted at any *time* before the expiration of that period.

Until a formal Contract is prepared and executed, this Bid, together with your written acceptance thereof and your notification of award, shall constitute a binding Contract between us.

Commissions or gratuities, if any, paid or to be paid by us to agents relating to this Bid, and to contract execution if we are awarded the contract, are listed below:

Name and address of agent	Amount and Currency	Purpose of Commission or gratuity
_____	_____	_____
_____	_____	_____
_____	_____	_____

(if none, state “none”)

2. Bid Security Form

Whereas *[name of the Bidder]* (hereinafter called "the Bidder") has submitted its bid dated *[date of submission of bid]* for the supply of *[name and/or description of the goods]* (hereinafter called "the Bid").

KNOW ALL PEOPLE by these presents that WE *[name of bank]* of *[name of country]*, having our registered office at *[address of bank]* (hereinafter called "the Bank"), are bound unto *[name of Procuring agency]* (hereinafter called "the Procuring agency") in the sum of for which payment well and truly to be made to the said Procuring agency, the Bank binds itself, its successors, and assigns by these presents. Sealed with the Common Seal of the said Bank this _____ day of _____ 20____.

THE CONDITIONS of this obligation are:

1. If the Bidder withdraws its Bid during the period of bid validity

specified by the Bidder
on the Bid Form; or

2. If the Bidder, having been notified of the acceptance of its Bid by the Procuring agency during the period of bid validity:

   (a) fails or refuses to execute the Contract Form, if required; or

   (b) fails or refuses to furnish the performance security, in accordance with the

   Instructions to Bidders;

we undertake to pay to the Procuring agency up to the above amount upon receipt of its first written demand, without the Procuring agency having to substantiate its demand, provided that in its demand the Procuring agency will note that the amount claimed by it is due to it, owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including twenty eight (28) days after the period of bid validity, and any demand in respect thereof should reach the Bank not later than the above date.

_____

[signature of the bank]

3. Contract Form

THIS AGREEMENT made the _____ day of _____ 20_____ between *[name of Procuring Agency]* of *[country of Procuring agency]* (hereinafter called "the Procuring agency") of the one part and *[name of Supplier]* of *[city and country of Supplier]* (hereinafter called "the Supplier") of the other part:

WHEREAS the Procuring agency invited bids for certain goods and ancillary services, viz., *[brief description of goods and services]* and has accepted a bid by the Supplier for the supply of those goods and services in the sum of *[contract price in words and figures]* (hereinafter called "the Contract Price").

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.

2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:

   a. the Bid Form and the Price Schedule submitted by the Bidder;
   b. the Schedule of Requirements;
   c. the Technical Specifications;
   d. the General Conditions of Contract;
   e. the Special Conditions of Contract; and
   f. the Procuring agency's Notification of Award.

3. In consideration of the payments to be made by the Procuring agency to the Supplier as hereinafter mentioned, the Supplier hereby covenants with the Procuring agency to provide the goods and services and to remedy defects therein in conformity in all respects with the provisions of the Contract

4. The Procuring agency hereby covenants to pay the Supplier in consideration of the provision of the goods and services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the contract at the times and in the manner prescribed by the contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with their respective laws the day and year first above written.

Signed, sealed, delivered by _____ the _____(for the Procuring agency)

Signed, sealed, delivered by_____ the _____ (for the Supplier)

4. FORM OF PERFORMANCE SECURITY

(Bank Guarantee)

Guarantee No._____

Executed on _____

Expiry Date

(Letter by the Guarantor to the Procuring Agency)

Name of Guarantor (Scheduled Bank in Pakistan) with address:_____

Name of Principal (Contractor) with address:_____

_____

Penal Sum of Security (express in words and figures)_____

_____

Letter of Acceptance No._____ Dated _____

KNOW ALL MEN BY THESE PRESENTS, that in pursuance of the terms of the Bidding Documents and above said Letter of Acceptance (hereinafter called the Documents) and at the request of the said Principal we, the Guarantor above named, are held and firmly bound unto the _____ (hereinafter called the Procuring Agency) in the penal sum of the amount stated above, for the payment of which sum well and truly to be made to the said Procuring Agency, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the Principal has accepted the Procuring Agency's above said Letter of Acceptance for _____ _____ (Name of Contract) for the _____ _____ (Name of Project).

NOW THEREFORE, if the Principal (Contractor) shall well and truly perform and fulfill all the undertakings, covenants, terms and conditions of the said Documents during the original terms of the said Documents and any extensions thereof that may be granted by the Procuring Agency, with or without notice to the Guarantor, which notice is, hereby, waived and shall also well and truly perform and fulfill all the undertakings, covenants terms and conditions of the Contract and of any and all modifications of the said Documents that may hereafter be made, notice of which modifications to the Guarantor being hereby waived, then, this obligation to be void; otherwise to remain in full force and virtue till all requirements of Clause 9, Remedying Defects, of Conditions of Contract are fulfilled.

Our total liability under this Guarantee is limited to the sum stated above and it is a condition of

any liability attaching to us under this Guarantee that the claim for payment in writing shall be received by us within the validity period of this Guarantee, failing which we shall be discharged of our liability, if any, under this Guarantee.

We, _____ (the Guarantor), waiving all objections and defenses under the Contract, do hereby irrevocably and independently guarantee to pay to the Procuring Agency without delay upon the Procuring Agency's first written demand without cavil or arguments and without requiring the Procuring Agency to prove or to show grounds or reasons for such demand any sum or sums up to the amount stated above, against the Procuring Agency's written declaration that the Principal has refused or failed to perform the obligations under the Contract, for which payment will be effected by the Guarantor to Procuring Agency‘s designated Bank & Account Number.

PROVIDED ALSO THAT the Procuring Agency shall be the sole and final judge for deciding whether the Principal (Contractor) has duly performed his obligations under the Contract or has defaulted in fulfilling said obligations and the Guarantor shall pay without objection any sum or sums up to the amount stated above upon first written demand from the Procuring Agency forthwith and without any reference to the Principal or any other person.

IN WITNESS WHEREOF, the above bounded Guarantor has executed this Instrument under its seal on the date indicated above, the name and corporate seal of the Guarantor being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

_____

Guarantor (Bank)

1. Signature _____
2. Name _____
3. Title _____

Witness:

1. _____

   _____

   Corporate Secretary (Seal)

2. _____

   _____ _____

   (Name, Title & Address) Corporate Guarantor (Seal)

5. Bank Guarantee for Advance Payment

To: *[name of Procuring agency]*

[name of Contract]

Gentlemen and/or Ladies:

In accordance with the payment provision included in the Special Conditions of Contract, which amends Clause 16 of the General Conditions of Contract to provide for advance payment, *[name and address of Supplier]* (hereinafter called "the Supplier") shall deposit with the Procuring agency a bank guarantee to guarantee its proper and faithful performance under the said Clause of the Contract in an amount of *[amount of guarantee in figures and words]*.

We, the *[bank or financial institution]*, as instructed by the Supplier, agree unconditionally and irrevocably to guarantee as primary obligator and not as surety merely, the payment to the Procuring agency on its first demand without whatsoever right of objection on our part and without its first claim to the Supplier, in the amount not exceeding *[amount of guarantee in figures and words]*.

We further agree that no change or addition to or other modification of the terms of the Contract to be performed thereunder or of any of the Contract documents which may be made between the Procuring agency and the Supplier, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition, or modification.

This guarantee shall remain valid and in full effect from the date of the advance payment received by the Supplier under the Contract until *[date]*.

Yours truly,

Signature and seal of the Guarantors

[name of bank or financial institution]

[address]

[date]

6. Manufacturer's Authorization Form

[See Clause 13.3 (a) of the Instructions to Bidders.]

To: *[name of the Procuring agency]*

WHEREAS *[name of the Manufacturer]* who are established and reputable manufacturers of *[name and/or description of the goods]* having factories at *[address of factory]*

do hereby authorize *[name and address of Agent]* to submit a bid, and subsequently negotiate and sign the Contract with you against IFB No. *[reference of the Invitation to Bid]* for the above goods manufactured by us.

We hereby extend our full guarantee and warranty as per Clause 15 of the General Conditions of Contract for the goods offered for supply by the above firm against this Invitation for Bids.

[signature for and on behalf of Manufacturer]

Note: This letter of authority should be on the letterhead of the Manufacturer and should be signed by a person competent and having the power of attorney to bind the Manufacturer. It should be included by the Bidder in its bid.

7. INTEGRITY PACT

DECLARATION OF FEES, COMMISSION AND BROKERAGE ETC. PAYABLE BY THE SUPPLIERS OF GOODS, SERVICES & WORKS IN CONTRACTS

(Note: Must be signed, sealed and submit with sealed bid)

Contract No._____ Dated _____
Contract Value: *[To be filled in at the time of signing of Contract]*
Contract Title: _____

…… [name of Supplier] hereby declares that it has not obtained or induced the procurement of any contract, right, interest, privilege or other obligation or benefit from Karachi Metropolitan Corporation (KMC) or any administrative subdivision or agency thereof or any other entity owned or controlled by KMC through any corrupt business practice.

Without limiting the generality of the foregoing, [name of Supplier] represents and warrants that it has fully declared the brokerage, commission, fees etc. paid or payable to anyone and not given or agreed to give and shall not give or agree to give to anyone within or outside Pakistan either directly or indirectly through any natural or juridical person, including its affiliate, agent, associate, broker, consultant, director, promoter, shareholder, sponsor or subsidiary, any commission, gratification, bribe, finder's fee or kickback, whether described as consultation fee or otherwise, with the object of obtaining or inducing the procurement of a contract, right, interest, privilege or other obligation or benefit in whatsoever form from KMC, except that which has been expressly declared pursuant hereto.

[name of Supplier] certifies that it has made and will make full disclosure of all agreements and arrangements with all persons in respect of or related to the transaction with KMC and has not taken any action or will not take any action to circumvent the above declaration, representation or warranty.

[name of Supplier] accepts full responsibility and strict liability for making any false declaration, not making full disclosure, misrepresenting facts or taking any action likely to defeat the purpose of this declaration, representation and warranty. It agrees that any contract, right, interest, privilege or other obligation or benefit obtained or procured as aforesaid shall, without prejudice to any other rights and remedies available to KMC under any law, contract or other instrument, be voidable at the option of KMC.

Notwithstanding any rights and remedies exercised by KMC in this regard, [name of Supplier] agrees to indemnify KMC for any loss or damage incurred by it on account of its corrupt business

practices and further pay compensation to KMC in an amount equivalent to ten time the sum of any commission, gratification, bribe, finder's fee or kickback given by [name of Supplier] as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit in whatsoever form from KMC.

Name of Buyer: ……	Name of Seller/Supplier: ……
Signature: ……	Signature: ……
[Seal]	[Seal]

METHOD OF PROCUREMENT USED

46. PROCEDURES OF OPEN COMPETITIVE BIDDING

(2) SINGLE STAGE – TWO ENVELOPE PROCEDURE

(a) bid shall comprise a single package containing two separate envelopes. Each envelope shall contain separately the financial proposal and the technical proposal;

(b) envelopes shall be marked as “FINANCIAL PROPOSAL” and “TECHNICAL PROPOSAL” in bold and legible letters to avoid confusion;

(c) initially, only the envelope marked “TECHNICAL PROPOSAL” shall be opened;

(d) envelope marked as “FINANCIAL PROPOSAL” shall be retained in the custody of the procuring agency without being opened;

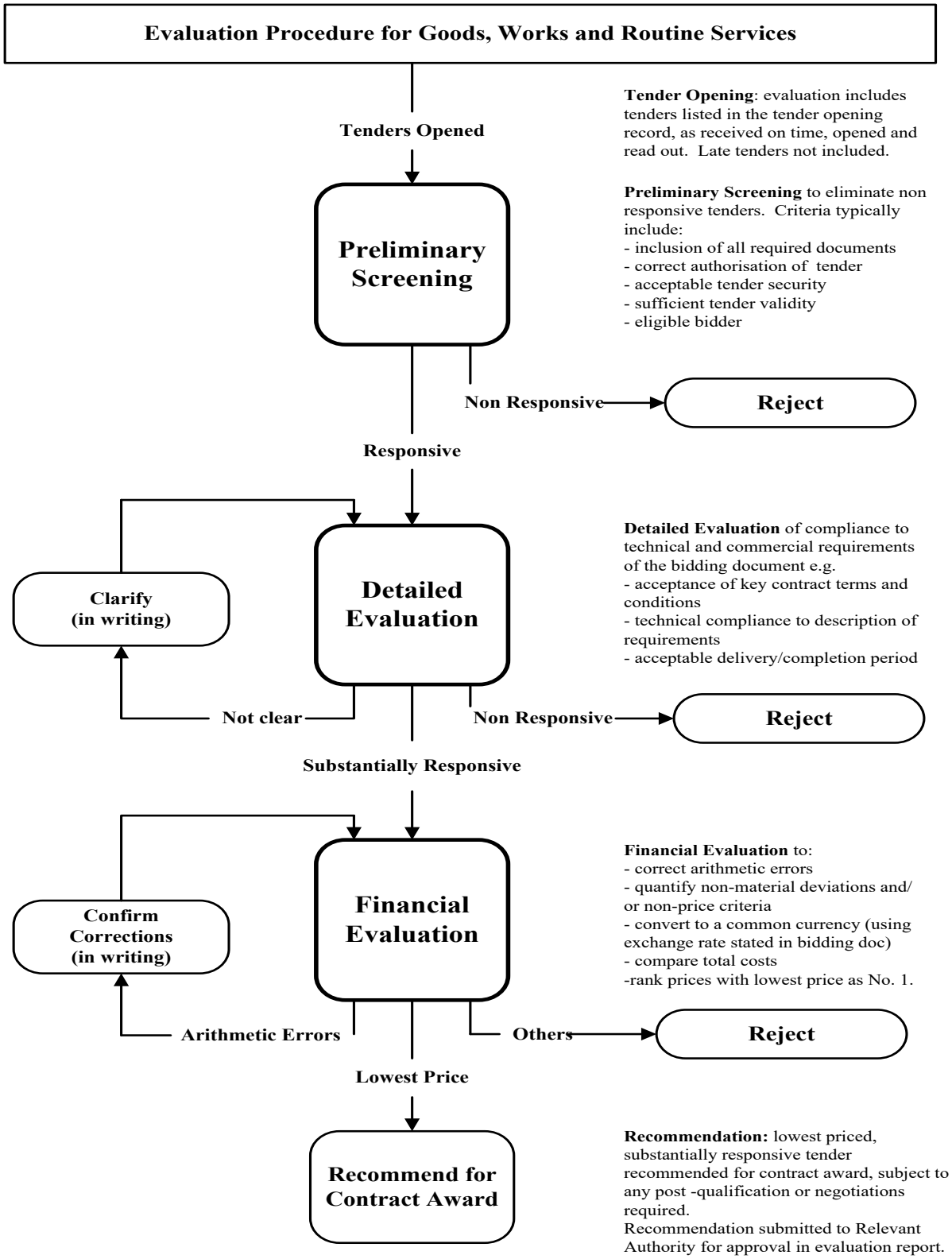
(e) procuring agency shall evaluate the technical proposal in a manner prescribed in advance, without reference to the price and reject any proposal which does not conform to the specified requirements;

(f) no amendments in the technical proposal shall be permitted during the technical evaluation;

(g) financial proposals of technically qualified bids shall be opened publicly at a time, date and venue announced and communicated to the bidders in advance;

(h) financial proposal of bids found technically non-responsive shall be returned un-opened to the respective bidders; and

(i) bid found to be the lowest evaluated or best evaluated bid shall be accepted.


Evaluation Procedure for Goods, Works and Routine Services
Tenders Opened
Tender Opening: evaluation includes tenders listed in the tender opening record, as received on time, opened and read out. Late tenders not included.
Preliminary Screening
Preliminary Screening to eliminate non responsive tenders. Criteria typically include:
- inclusion of all required documents
- correct authorisation of tender
- acceptable tender security
- sufficient tender validity
- eligible bidder
Non Responsive
Reject
Responsive
Clarify (in writing)
Detailed Evaluation
Detailed Evaluation of compliance to technical and commercial requirements of the bidding document e.g.
- acceptance of key contract terms and conditions
- technical compliance to description of requirements
- acceptable delivery/completion period
Not clear
Non Responsive
Reject
Substantially Responsive
Confirm Corrections (in writing)
Financial Evaluation
Financial Evaluation to:
- correct arithmetic errors
- quantify non-material deviations and/ or non-price criteria
- convert to a common currency (using exchange rate stated in bidding doc)
- compare total costs
-rank prices with lowest price as No. 1.
Arithmetic Errors
Others
Reject
Lowest Price
Recommend for Contract Award
Recommendation: lowest priced, substantially responsive tender recommended for contract award, subject to any post -qualification or negotiations required.
Recommendation submitted to Relevant Authority for approval in evaluation report.