

Punjab Masstransit Authority

Clarification Meeting

Subject: DEVELOPMENT, IMPLEMENTATION, OPERATIONS AND LONG - TERM MAINTENANCE OF PROVEN AUTOMATED FARE COLLECTION & BUS SCHEDULING SYSTEM (AFC-BSS) FOR MULTAN METROBUS SYSTEM (MMBS) AND INTEGRATED FEEDER ROUTES

Date: 3rd October, 2024

Time: 1200 Hours

Venue: Committee Room, Punjab Masstransit Authority Lahore

Chair: Mr. Muhammad Ozair Shah, General Manager (Operations), PMA

List of Participants:

1. Mr. Muhammad Abid, Secretary, PMA (Member)
2. Mr. Rehman Afzal, Manager Finance, PMA (Member)
3. Mr. Muhammad Yasin, Manager Operations (Technical), MMBS (Member)
4. Mr. Mian Mudassar, Deputy Manager (IT), PMBS (Member)
5. Mr. Basit Mujeeb, Deputy Manager (IT), MMBS (Member)
6. Mr. Danish Ahmed, Joint Director NPD (ITOPS), PITB (Member)

List of Representatives from Prospective Bidders/Banks:

1. Mr. Sameer Hashmir, Bank of Punjab (Participant)
2. Mr. Mujahid Hussain, Bank of Punjab (Participant)
3. Ms. Sana Jamil, Habib Bank Limited (Participant)
4. Mr. Tariq Anees, HBL (Participant)
5. Mr. Jawad Hafëez, Meezan Bank (Participant)
6. Mr. Rashid Chaudhary, Inbox Business Technologies/UBL (Participant)
7. Mr. Omar Javed, Inbox Business Technologies Limited/UBL (Participant)
8. Mr. Adnan, Inbox Business Technologies Limited/UBL (Participant)
9. Mr. Waseem Iqbal Awan, InfoTech (Participant)
10. Mr. Abdul Mannan, InfoTech (Participant)
11. Mr. Syed Tariq Hussain, Kentkart (Participant)
12. Mr. Jahanzeb Bajwa, GCS (Participant)
13. Mr. Majid Shahid, GCS (Participant)
14. Mr. Awais Arshad, PITB (Participant)
15. Mr. Awais, PITB (Participant)

DECISIONS / DISCUSSIONS

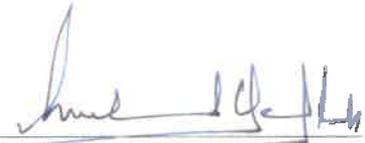
The meeting started at 12:20 PM with the recitation of the Holy Quran. Mr. Muhammad Ozair Shah, General Manager (Operations), PMA, formally welcomed the participants and presented an overview of the general scope of works of Tender Document. Following this, Mr. Muhammad Yasin, Manager Operation (Technical), MMBS, provided a detailed briefing on the RFP Documents. A question-and-answer session was also held subsequently. Detailed minutes of the meeting are enclosed as **Annex-A**, and the list of participants is provided in **Annex-B**. The meeting concluded at 02:30 PM with a closing expression of gratitude.

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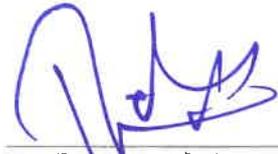
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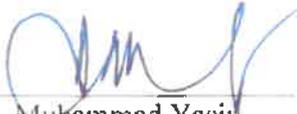
Mr. Muhammad Ozair Shah
General Manager (Operations),
PMA



Mr. Muhammad Abid,
Secretary, PMA



Mr. Rehman Afzal,
Manager Finance, PMA



Mr. Muhammad Yasin,
Manager Operations (Technical),
MMBS



Mr. Mian Mudassar,
Deputy Manager (IT),
PMBS



Mr. Basit Mujeeb,
Deputy Manager (IT),
MMBS



Mr. Danish Ahmed,
Joint Director NPD (IT/OPS), PITB

Rep. of Transport & Masstransit
Department, GoPb

Rep. of Finance Department,
GoPb

RESPONSE TO THE BIDDER'S QUERIES

Sr.	BIDDER QUERIES / COMMENTS	PMA'S RESPONSE
1	If, after the delivery of the equipment, there is a delay exceeding 120 days due to the AFC-BSS software provider to make the system operational then the contractor's monthly payments should commence. Please clarify.	<p>It is clarified that the AFC-BSS Service Provider must handover the sample equipment along with SDKs & APIs* within 45-days from the issuance of LOA to PITB i.e. AFC-BSS Software provider. Subsequently, after confirmation from PMA, the Service Provide will promptly arrange for the deployment of the complete AFC-BSS system within the given timeline of 120-days. However, it is clarified that for no fault of the Service Provider, any delay in commencement of services shall be on part of the Purchaser after elapse of 150-days from the date of Contract. In any case, invoicing shall not be entertained before 150-days or the date of commencement of Services whichever is earlier.</p> <p>*SDK & APIs read as: Standardized interfaces that enables seamless integration of all hardware peripherals (GPS, GSM, Cameras, Card Readers etc.) and software components (payment application, Network Communication, Serial Communication etc.) for all associated platforms e.g. Linux, Android, Windows etc.</p>
2	Campaign to eliminate single journey cash payment mechanism on Metrobus and Feeder Routes.	It is clarified that Clause 9.59 of the RFP is self-explanatory in this matter.
3	Passenger Count cameras in the Feeder Buses and Ticket Management in 69 EV Buses to be procured by PMA in Future.	It is clarified that passenger count cameras in the existing buses and Ticket Management in future 69 EV buses are not in the Scope of Works of this RFP.
4	As per RFP Clause 9.43, the SP must provide additional AFC-BSS equipment to the Purchaser as and when required. Please explain, the timelines and costs for the additional equipment will be determined through mutual agreement between both parties	It is clarified that any additional equipment, if required, will be supplied at the quoted rates in the bid. However, the timelines for providing such equipment will be subject to mutual agreement between both parties.
5	Provide authorized PMA staff (and other authorized Government personnel) secure, 24x7 online access to updated Management Information System reports and features covering all critical aspects of AFC-BSS operations, alerts, faults, and audit logs. The software provider is responsible for this.	It is clarified that the Service Provider's responsibility shall be limited to the scope of its provisioned solution, including the hardware, associated software/patches, communication systems, and any relevant integration etc.
6	Who will provide smart cards? And what will be the initialization process?	Pursuant to Clause 11, Clause 13.3 and item at Sr. No. 7 of Table under Clause 77 of the RFP, it is hereby clarified that the Service Provider shall be responsible for the provision of smart cards at its own expense. However, the initialization of the closed-loop cards shall be performed using the PITB AFC-BSS software.

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7	Is there any provision for charging points for Handheld Ticket Validators in the feeder buses?	It is clarified that no charging points are available in the buses. However, in accordance with Clause 9.48 of the RFP, the Service Provider shall be responsible for providing and maintaining handheld ticket validators for spot checks, ensuring that each device remains operational for a minimum of eight (08) hours to facilitate PMA-assigned ticket inspectors.
8	TKM should also be capable to operate as stand-alone system. Please explain.	It is clarified that the TKM should also be capable to operate as stand-alone system i.e. it shall also function independently without a constant connection to a central system. It shall issue and validate tickets offline, store data locally, and synchronize the data with the central system once connectivity is restored.
9	The Passenger Announcement System (PAS) in buses is the responsibility of the bus service provider. However, the Onboard Unit (OBU) will be capable of connecting with the bus PAS system to make announcements.	In accordance with Clause 13.10.1 of the RFP, it is clarified that buses are already equipped with speakers for announcement and Service Provider will only be responsible for connectivity and integration of OBUs with the Speakers.
10	Connectivity will be available 24/7; however, data transmission can only be ensured during operational hours.	In accordance with Clause 13.14 of the RFP, it is clarified that Service Provider shall be responsible to ensure connectivity at all stations and data transmission to the central data center of PITB on 24/7 basis.
11	Please explain the upgrade of infrastructure.	It is clarified that Clause 13.15 and Clause 14.1 of the RFP are self-explanatory in this matter.
12	The software provider is responsible for the fare policy and its implementation	It is clarified that in accordance with Clause 14.1 of the RFP, the AFC (Automatic Fare Collection) hardware must support various fare policies, including zone-based, distance-based, stage-based, flat fares and also be capable to handle full fare, concessional fare and free fare policies.
13	The service provider (SP) will also be responsible for the security of the equipment. Please clarify this responsibility further.	It is clarified that Clause 9.61.3 of the RFP is self-explanatory in this matter.
14	Given below services fall under AFC-BSS Software provider. Please clarify this responsibility in more detail. i) System Configuration and Report Generation ii) Vehicle Tracking iii) Improper Implementation of Fare Policy iv) Inconsistency within Reports v) Fare Evasion System.	It is clarified that the Service Provider shall be responsible solely for the issues related to its provisioned AFC-BSS system where applicable under the SLA.
15	Violation of Scope of Services. Please explain	It is clarified that violation of Scope of Services pertains to "any act of non-conformance to PMA rules, regulations, instructions, scope of services if not covered in SLA"

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16	Validator specifications should not be fixed, particularly regarding display size and encryption.	It is clarified that Validator specification at Sr. No. 14 has been omitted as discussed in the clarification meeting. <table border="1" data-bbox="903 275 1513 383"> <tr> <td data-bbox="903 275 1166 383">Encryption</td> <td data-bbox="1174 275 1513 383">HASH, MD5, DES, AES, RSA, ECC, SM2, etc.</td> </tr> </table>	Encryption	HASH, MD5, DES, AES, RSA, ECC, SM2, etc.				
Encryption	HASH, MD5, DES, AES, RSA, ECC, SM2, etc.							
17	POS specifications should not be fixed, the equipment must be able to perform the required features and tasks effectively.	It is clarified that POS specifications will remain unchanged as mentioned in the specification given in the RFP.						
18	OBU specifications should not be fixed, particularly regarding RAM, storage, display size, fare collection system integration, encryption and localization and language support. The equipment must be capable of performing the required features and tasks effectively.	It is clarified that the following specifications of OBU from the Sr. No. 2 have been omitted as discussed in the clarification meeting. <table border="1" data-bbox="903 651 1513 992"> <tr> <td data-bbox="903 651 1166 775">Fare Collection System Integration</td> <td data-bbox="1174 651 1513 775">Complete Compatibility with the third-party Automated Fare Collection System</td> </tr> <tr> <td data-bbox="903 781 1166 882">Encryption</td> <td data-bbox="1174 781 1513 882">HASH, MD5, DES, AES, RSA, ECC, SM2, etc.</td> </tr> <tr> <td data-bbox="903 889 1166 992">Localization and Language Support</td> <td data-bbox="1174 889 1513 992">Localization options and support for multiple languages</td> </tr> </table>	Fare Collection System Integration	Complete Compatibility with the third-party Automated Fare Collection System	Encryption	HASH, MD5, DES, AES, RSA, ECC, SM2, etc.	Localization and Language Support	Localization options and support for multiple languages
Fare Collection System Integration	Complete Compatibility with the third-party Automated Fare Collection System							
Encryption	HASH, MD5, DES, AES, RSA, ECC, SM2, etc.							
Localization and Language Support	Localization options and support for multiple languages							
19	The software will be provided by the ITS software provider. Please confirm whether the software is also required, and provide an explanation of the software specifications.	It is clarified that AFC-BSS software is not in the Scope of this RFP. In accordance with Clause 7.10 of the RFP, the provided AFC-BSS equipment shall be integrate-able with PITB Centralized AFC-BSS Software.						
20	Please share PITB data center location	SP shall establish handshake with primary site as well as with DR site. Incase of link failure with primary site, system shall handshake with DR site. Following are the locations of sites: Primary Site: PITB Data Center located at Arfa Software Technology Park, Ferozpur Road, Lahore DR Site: Tier-III datacenter within city – Multan						
21	Please clarify who will be custodian of handheld ticket validators (HHV) SP or Purchaser?	It is clarified that the Handheld Ticket Validators will be handed over to Purchaser for spot checking by the Ticket Inspectors.						
22	Please specify the quantity of standard buses where two validators will be used?	It is clarified that PMA is currently operating 8-meter mini Air-Conditioned feeder buses in Multan, which require only one validator.						
23	If a bus damaged by-fire or some accident and AFC-BSS equipment damaged who will bear the cost of the equipment	It is clarified that in accordance with Clause 38 of the RFP, the provisioned AFC-BSS equipment shall be covered under insurance during the course of the Contract/project.						

24	Turnstile Specialized controller with at least 4 input and 4 Output. Please give understanding for input and outputs?	It is clarified PMA can have two-way fare validation mechanism in future. 4 IOs will be used in this scenario.
26	If our hardware i.e. validator performing same actions then why we need 2 IO's and 4 inputs and outputs in the specification of turnstile and it's also not cost effective.	It is clarified PMA can have two-way fare validation mechanism in future. 4 IOs will be used in this scenario.
27	Two interfaces are enough for the troubleshooting and other purposes please give understanding for 4 interfaces in validators.	It is clarified that there are 4 different interfaces that will be used for specialized purposes.
28	<ul style="list-style-type: none"> i) Penalty due to late payment Clauses, can we remove it or replace it with Charity Clauses. ii) Forfeiture of Performance Security is requested to be amended up to actual cost. iii) Liquidated Damages Clauses is requested to be amended and to be revised for Actual cost in case Breach of Contract, Negligence, Fraud and Misconduct. 	It is clarified that these standard clauses of RFP could not be amended.
29	Deployment (and security) of turnstiles, validators, TKMs, TOMs, UPS, cabling for networks, routers/signal boosters and/or any other component required to run AFC-BSS System efficiently, adequately, and as per industry standards as well as to ensure compliance to parameters mentioned in the Service Level Agreement.	It is clarified that the security of the equipment during deployment shall be the responsibility of the Service Provider. However, after the deployment, the security will be governed by Clause 9.61 (iii) of the RFP.

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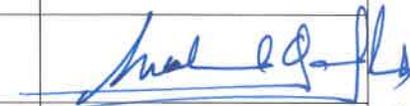
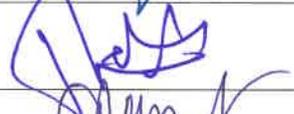
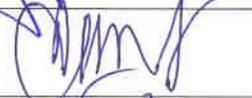
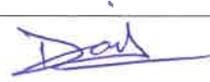
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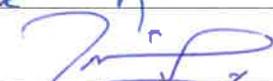
Annex-B

MEMBERS ATTENDANCE SHEET					
DEVELOPMENT, IMPLEMENTATION, OPERATIONS AND LONG - TERM MAINTENANCE OF PROVEN AUTOMATED FARE COLLECTION & BUS SCHEDULING SYSTEM (AFC-BSS) FOR MULTAN METROBUS SYSTEM (MMBS) AND INTEGRATED FEEDER ROUTES					
ATTENDANCE SHEET					
Place:	Conference Room, PMA Office, 5th floor, Arfa Software Technology Park, 346-B, Ferozepur Road, Lahore	Date:	3-Oct-24	Time:	12:00 PM
Sr. No.	Committee Members	Contact No.	Email Address	Signature	
1	General Manager (Operations), PMA, Chairperson				
2	Secretary, PMA, Member	03216805963			
3	Manager Finance, PMA, Member				
4	Manager Operations (Technical), MMBS, Member	0808-6127367	-		
5	Deputy Manager (IT), PMBS, Member	0333 4788931	-		
6	Deputy Manager (IT), MMBS, Member				
7	Representative of Transport & Mass Transit Department, GoPb				
8	Representative of Finance Department, GoPb				
9	Representative of PITB, GoPb <i>Danish Ahmad</i>	0333-6654564			
10	Representative of PITB, Awwais Akshad	0322-4255550			

BIDDERS ATTENDANCE SHEET

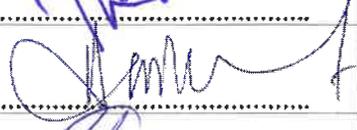
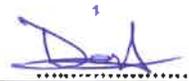
DEVELOPMENT, IMPLEMENTATION, OPERATIONS AND LONG - TERM MAINTENANCE OF PROVEN AUTOMATED FARE COLLECTION & BUS SCHEDULING SYSTEM (AFC-BSS) FOR MULTAN METROBUS SYSTEM (MMBS) AND INTEGRATED FEEDER ROUTES

ATTENDANCE SHEET

Place:	Conference Room, PMA Office, 5th floor, Arfa Software Technology Park, 346-B, Ferozepur Road, Lahore	Date:	3-Oct-24	Time:	12:00 PM
Sr. No.	Bidder (Company/ Firm)	Representative's Name	Contact No.	Email Address	Signature
1	Bank (HBL)	Sana Jamil	0321-4492268	sana.jamil@hbl.com	
2	Meezan Bank	Jawwad Hafeez	0301-1186174	Jawwad.hafeez@meezanbank.com	
3	INFOTECH Pvt Ltd	Waseem ^{Aslam} Aslam	03081752131	waseem.aslam@infotechgroup.com	
4	INFOTECH Pvt. LTD.	ABDUL MANNAN	03006329950	abdul.mannan@infotechgroup.com	
5	Bank of Punjab	Sameer Hashmi	0300820678	Sameer.hashmi@bop.com.pk	
6	Bank of Punjab	Mujahid Hussain	0300-885811	Mujahid.Hussain@bop.com.pk	
7	KENTKART	Syed Tariq Hussain	03233922029	Tariq.hussain@kentkart.com	
8	GCS	Majid Shahid	0316-8887636	majid.shahid@gcspt.com	
9	GCS	Jahanzeb ^{Bejwa}	0323-3922023	jahanzeb.bejwa@gcspt.com	
10	INBOX / UBL	Rashid Ahsan / Omer	0323-8431044	omer.jawad@inboxubj.com	
11	T HBL	Tariq Anees	0300-8888872	tariq.anees@hbl.com	
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Tender Evaluation Committee

		Signature/Date			Signature/Date
1	General Manager (Operations), PMA, Chairperson		6	Deputy Manager (IT), MMBS, Member	
2	Secretary, PMA, Member		7	Rep. of Transport & Masstransit Department, GoPb	
3	Manager Finance, PMA, Member		8	Rep. of Finance Department, GoPb	
4	Manager Operations (Technical), MMBS, Member		9	Rep. of PITB, GoPb DANISH AHMAD	
5	Deputy Manager (IT), PMBS, Member				

Danish Ahmad
Joint Dir. PITB

Addendum No.1 to Tender Document

**DEVELOPMENT, IMPLEMENTATION, OPERATIONS AND LONG -
TERM MAINTENANCE OF PROVEN AUTOMATED FARE COLLECTION
& BUS SCHEDULING SYSTEM (AFC-BSS) FOR MULTAN METROBUS
SYSTEM (MMBS) AND INTEGRATED FEEDER ROUTES**



**THE PUNJAB MASSTRANSIT AUTHORITY
GOVERNMENT OF THE PUNJAB**

5th Floor, Arfa Software Technology Park (ASTP)

346-B, Main Ferozpur Road, Lahore, Pakistan.

Phone: +92 42 3588 0136 Fax: +92 42 9923 2541

URL: www.pma.punjab.gov.pk



Addendum No.1 to the Tender Document

Due to some clarifications required in the RFP document, the following addendum is hereby issued, which shall form a part and parcel of the original tender document titled”

“DEVELOPMENT, IMPLEMENTATION, OPERATIONS AND LONG - TERM MAINTENANCE OF PROVEN AUTOMATED FARE COLLECTION & BUS SCHEDULING SYSTEM (AFC-BSS) FOR MULTAN METROBUS SYSTEM (MMBS) AND INTEGRATED FEEDER ROUTES”

issued and uploaded on 27th September, 2024. The highlighted contents of this addendum shall supersede/replace/add respective parts of the Clauses in pages 7, 48, 33, 97,103 and 106 of the original RFP document, and shall be read as part of the RFP document uploaded on the PPRA’s e-PADS and following websites:

www.pma.punjab.gov.pk

www.ppra.punjab.gov.pk

<https://punjab.eprocure.gov.pk>

- 1.20. **“Proposal”** means the Technical Proposal and the Financial Proposal for the provision of the Services submitted by a bidder in response to RFP.
- 1.21. **“SBD”** means Standard Bidding Documents.
- 1.22. **“SCC”** means the Special Conditions of Contract.
- 1.23. **“Services”** means the tasks to be performed by the bidder pursuant to the Contract as mentioned vide this document.
- 1.24. **“TEC”** means the Tender Evaluation Committee, constituted for the purpose of evaluating the Proposals received.
- 1.25. **“Terms of Reference” or “TOR”** means the document which explains the objectives, scope of work, activities, task to be performed, respective responsibilities of the procuring entity and the bidder, and expected results and deliverables of the assignment.
- 1.26. **“PITB”** means Punjab Information Technology Board, GoPb.
- 1.27. **“Works”** means work to be done by the Service Provider under the Contract.
- 1.28. **“GoPb”** means Government of the Punjab
- 1.29. **“CSC”** means EMV Contactless Smart Card (physical Card)
- 1.30. **“Smart Card”** means EMV card
- 1.31. **“emulated CSC”** means emulated Contactless Smart Card in Mobile Application (NFC & QR code)
- 1.32. **“Concurrent Annual Contract Cost for the purpose of liquidated damages”** shall mean the total annual cost of unfurnished/non-commissioned equipment/services/works
- 1.33. **“ML1SP2”** Multan Line 1 Service Provider 2 means Contractor/AFC-BSS Service Provider for MMBS & MFR
- 1.33.1. **“EMV L1/L2/L3”** Europay, Mastercard and Visa Level 1/Level 2/Level 3
- 1.34. **“SDK API”** means Standardized interfaces that enables seamless integration of all hardware peripherals (GPS, GSM, Cameras, Card Readers etc.) and software components (payment application, Network Communication, Serial Communication etc.) for all associated platforms e.g. Linux, Android, Windows etc.
- 1.35. **“PCI DSS”** means Payment Card Industry Data Security Standard
- 1.36. **“Closed Loop payment systems”** in the context of mass transit system refers to the use of proprietary closed-loop fare media by transit operators and closed loop fare media are typically used for fare payment within the specific transit system or network.
- 1.37. **“Open Loop payment systems”** means passengers can use their bank-issued contactless credit or debit cards, to pay journeys.
- 1.38. **“e-PADS”** means e-Punjab Acquisition and Disposal System as approved by the Punjab Procurement Regulatory Authority.
- 1.39. **“e-bid/bid/proposal”** means electronic bid or proposal (Technical & Financial Proposal).
- 1.40. **“e-Submission”** means submission of bid or proposal either by uploading PDF file or submission by using dynamic forms.

41.5 No advance payments will be made. Monthly payments will be made on a prorated basis by the Purchaser, taking into account the number of stations and number of buses for which AFC- BSS has been successfully provisioned. However, it is clarified that if a station is closed by the Purchaser, not because of the fault of ML1SP2 but, due to riots, strikes, natural calamities or by the action of law or government etc. the Purchaser shall make the prorated deductions in the invoice processing. Subsequently, the ML1SP2 shall submit its separate invoice for incurred costs during such instance of closure and the Purchaser shall evaluate the invoice and pay such agreed costs; however, the Purchaser shall not pay any profits i.e. 15% in such instances. The Purchaser shall make separate deductions in the COP on account of strikes and subsequent revenue loss if such acts are caused by the Service Provider or any of its staff.

41.6 AFC-BSS Service Provider must handover the sample equipment along with SDKs & APIs* within 45-day from the issuance of LOA to PITB i.e. AFC-BSS Software provider. Subsequently, after confirmation from PMA, the Service Provide will promptly arrange for the deployment of the complete AFC-BSS system within the given timeline of 120-days. However, it is clarified that for no fault of the Service Provider, any delay in commencement of services shall be on part of the Purchaser after elapse of 150-days from the date of Contract. In any case, invoicing shall not be entertained before 150-days or the date of commencement of Services whichever is earlier.

*SDK & APIs read as: Standardized interfaces that enables seamless integration of all hardware peripherals (GPS, GSM, Cameras, Card Readers etc.) and software components (payment application, Network Communication, Serial Communication etc.) for all associated platforms e.g. Linux, Android, Windows etc.

These interfaces should be accompanied by comprehensive documentation, including API/SDK guides detailing how to interact with each hardware peripheral, documentation on programmatically interfacing with these peripherals Sample code, libraries, and development tools to facilitate the integration process platform-specific instructions, if any, for compatibility with Linux, Android, and Windows

3	The bank has proven experience of Online Digital Banking Services for at least 5 years.	Evidence of mobile based transactions through a functional customer App to establish proven experience. <i>(In case of JV, applicable to Lead member)</i>
4	The JV partner (if any) must be registered with the Securities and Exchange Commission of Pakistan (SECP)/Registrar of Firms/ In case of foreign entity registration from the concerned authorities of the country of origin.	Registration Certificate with Registrar of Firms or SECP / Certified Copy of Certificate of Incorporation. In case of foreign entity registration from the concerned authorities of the country of origin. <i>(Memorandum of Understanding (MOU) in case of JV)</i>
5	The bank must have Long Term Credit Rating of at least AA+ or above by PACRA or JCR-VIS.	The documentary evidence available on website of State Bank of Pakistan or PACRA or JCR-VIS will be used.
6	The bank shall hold the status of issuer and acquirer for VISA or Master Card services.	A valid contract/license/certificate of VISA/Master Cards.
7	Combined total number of branches in the Multan City must be at least 10.	List of branches with complete addresses.
8	The bank must have at least 3 branches within 3 km range of main corridor / line in Multan City as defined.	A list of bank branches along with their addresses.
9	Valid Registration Certificate for Income Tax and Sales Tax (on goods and services where applicable).	Valid NTN, Sales Tax and PRA registration certificates OR equivalent documents from the country of origin in case of foreign company as JV member in case not registered in Pakistan <i>(In case of JV, applicable to all members)</i>
10	Income Tax & Sales Tax Returns for the last three (03) years (where applicable).	Income tax & Sales Tax returns for the last three (03) years. <i>(In case of JV Applicable to lead member)</i>
11	An Affidavit/sworn statement that the scheduled bank is not presently blacklisted or debarred by any Government/Semi-Government/ Autonomous/ International Body.	Affidavit on Stamp Paper (Annexure-L) <i>(In case of JV, applicable to all members)</i>

15.2 Bidder shall demonstrate that it:

- 15.2.1 has the required relevant qualified personnel and enough financial and technical strength to fulfill the requirements.
- 15.2.2 conforms to the clause of “Responsiveness of Bid” and “Preparation/Submission of Bid” given herein this RFP document.
- 15.2.3 proposes to open an office in Rawalpindi/Islamabad Multan upon award of the Contract in case it has no office in Rawalpindi/Islamabad Multan upon award of bid.

		Have a feature to reject the fare product if the media is outside of its validity period when presented to a validator		
		Capable to reduce the balance of the smart card / emulated CSC to cause deduction of fare, and also capable to store all real-time scanned information		
		Control the access gates based on the validation process		
3	GUI	Provide suitable interface proposed turnstile barriers for operations as defined by the Purchaser Urdu and English language support		
4	Memory	Onboard memory to manage business rules		
5	Connectivity	Integrated Ethernet port (TCP/IP) with separate EDGE/GPRS/UMTS/LTE		
6	User Messages	Audio and visual signal to show the success or failure of the validation to passenger		
7	Processing	Should be capable of handling ridership demand		
8	Operating System	Android 9.0 or higher		
9	Display	7 inches		
10	Contactless Smart Card Reader	Support ISO / IEC 14443 A & B, Mifare EV1 EV2, Felica Card, in line with EMV specifications, NFC enabled		
11	SAM slots	ISO7816 SAM slots x2		
12	Physical Interface	RS232/RS485 interface, RJ45 LAN interface USB 2.0/3.0 interface USB debugging interface		
13	Upgrades, Maintenance and Support	OTA and Locally		
14	Encryption	HASH, MD5, DES, AES, RSA, ECC, SM2, etc.		
15	Wireless Connectivity	4G, Wi-Fi and GPS All interfaces should be registered from concerned authorities		

Minimum Software Specifications	
Operating System	Android 9.0 or above
Fare Collection System Integration	Complete Compatibility with the third-party Automated Fare Collection System
Communication	Real-time communication with the internal/external system and other modules
Encryption	HASH, MD5, DES, AES, RSA, ECC, SM2, etc.
Localization and Language Support	Localization options and support for multiple languages
Maintenance and Support	OTA and Local updates
Compliance	Compliance with relevant industry standards and security regulations
Documentation	Comprehensive documentation, user manuals, and training materials in English Language

- 1) The Driver Console shall comprise of following features:
 - a) The Driver's console must be able to display dispatch plan/schedule, interval information to the bus driver including location, current speed, time headway, distance from the previous and next bus, alert messages and play voice recordings accordingly to timely inform passengers of the next approaching bus.
 - b) Drive console unit shall be used to provide vehicle tracking accurately and reliably utilizing Global Positioning System (GPS).
 - c) Must have fully functional and advanced GPS system that can gather location wise data and transmit to central servers and related software modules.
 - d) Handling and storing MP3-files for announcements, as well as manual override for Passenger Information System.
 - e) Control destination and line number signs.
 - f) Control interior information and display & announcement.
 - g) Keep track of the vehicle's Real-time position via GPS and distance counting etc.
 - h) Map applications, navigation and driver guidance.
 - i) Driver console may receive other information relating to Realtime traffic information (accidents, breakdowns and traffic conditions etc.)

PASSENGER Information System and Scheduler			Compliance (to be filled by Bidder)	
Sr.	ITEM	DESCRIPTION	Yes	No
1	Modules/ Components	Passenger Information System on Buses		
		Voice announcement system on Buses		
		Passenger Information System at Stations		
		Voice announcement system at Stations		
	Integration	All the PIS modules must be capable to integrate with other components of AFC-BSS, PITB AFC-BSS Software and any other third party system		
Passenger Information System on Buses				
2	Features	The Buses are pre fitted with Passenger Information System Display units and service provider shall provide interface and communication mechanism to drive the business process		
		Passenger information system on bus shall function as an independent system and shall not be directly dependent on the central system		
		They shall receive display information and voice announcement commands from the onboard GPS vehicle control module based on stored memory on the bus		
		There shall be scrolling display of destination in Urdu & English alternatively along with fixed route number		
		Simultaneously the route number and destination shall be announced so as to be audible to the passengers on the bus stop		
		The audio messages and the video display shall be clearly audible/ visible in all weathers inside the bus		
VOICE ANNOUNCEMENT SYSTEM ON BUSES				
3	Features	The Voice Passenger Information System play clearly audible pre-recorded voice announcements informing passengers of the next bus station on route		
		The voice PIS interface with the on-bus GPS module to gather location information and make appropriate next station announcement		
PASSENGER INFORMATION SYSTEM AT STATIONS				
4	Features	Smart TFT/LCD screens with a minimum 46-inch diagonal for outdoor usage		
		Multiple feeds of content can be displayed at the same time		
		Different feeds of content can be assigned to different parts of the screen		
		Suitable for split-screen content		
		Best quality image/video resolution		
		Display route and estimated arrival time (ETA)		
		Capable to display public service information, advertisement, news, etc.		
		PIS display system displays the next arriving bus with its color code, transit line and time		
		The Outdoor message shall be readable by a person with 20/20 vision, from a distance of not less than 110 feet		
The Outdoor PAS shall have a viewing cone of equal readability at 65 degrees on either side of a line perpendicular to the centre of the mean plane of the display				

		The intensity of the illumination of the screens shall appear, to the naked eye, to be approximately uniform throughout the full viewing cone		
		The entire display area of all Screens should be readable in direct sunlight, at night, and in all lighting conditions between those two lighting extremes, with evenly distributed illumination appearance to the un-aided eye in all conditions		
		Must be able to operate without any dependency on additional cooling/heating mechanism and must also have weatherproof design.		
		Display Interface: Ethernet and VGA/DVI etc. Durable and long lasting Ability to display information in multiple languages		
		Integration with GPS, Vehicle Location System (VLS), traffic management systems, weather data, other components of AFC-BSS and PITB AFC-BSS Software		
5	Quality Standards	All Outdoor Passenger Information Signs (PIS) shall be enclosed in a manner such as to inhibit entry of dirt, dust, water and other contaminants during normal operation or cleaning		
		The enclosure should be high strength and rust resistance		
		All assembly screws are made of stainless steel, which makes them rust resistant as well		
		The Outdoor PAS should be tested up to IP 54. The IP Code (or International Protection Rating as defined in international standard IEC 60529).		
		All electronic circuit boards used in the Sign System shall be conformal coated to meet the requirements of military specification MIL-I-46058C.		
		All Sign System light board components shall be certified to have been subjected to a "burn-in" test of a minimum of eighteen (18) hours operation in a temperature of 140 degrees F		
VOICE ANNOUNCEMENT SYSTEM AT STATIONS				
6	Feature	Broadcast scheduled and any other information onto the existing Public Address System at stations		
		Capable to gather location information of the next bus and make appropriate announcement using existing Public Address System		
		Capable to integrate with existing Public Address System		