



Tender Document

PROCUREMENT OF EQUIPMENT AND INSTALLATION, OPERATIONS AND MAINTENANCE OF PROVEN GLOBALLY DEPLOYED AUTOMATED FARE COLLECTION & BUS SCHEDULING SYSTEM AFC-BSS

**THE TRANSPORT DEPARTMENT
GOVERNMENT OF THE PUNJAB
THROUGH
PUNJAB INFORMATION TECHNOLOGY BOARD (PITB)
GOVERNMENT OF THE PUNJAB**

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Important Note

Valid registered companies and Joint ventures complying with criteria given in this document are eligible for this tender, hereafter referred to as Bidders.

There are two components to be assumed by bidders:

1. Supply of all necessary AFC-BSS items (including all hardware, software, networking, fare media etc), and configures, customizes, deploys, and maintains the entire AFC-BSS solution.
2. Management of ticketing operations at PMBS stations, utilizing the deployed AFC-BSS solution. This includes bank transactions, ticket sale and refunds, and customer facilitation at turnstiles etc.

For a more elaborate list of roles and responsibilities in each case above, please refer to Clause 8 ("Services Required") in this document.

Purchaser will evaluate received bids in the following order:

Lot# 1 (Bids for supply of all necessary AFC-BSS components (including all hardware, software, networking, fare media etc), and configures, customizes, deploys, and maintains the entire AFC-BSS solution and management of ticketing operations at PMBS stations, utilizing the deployed AFC-BSS solution. This includes bank transactions, ticket sale and refunds, and customer facilitation at turnstiles etc.

Lot # 2 and Lot # 3 will only be opened if the bids as received in Lot# 1 are found non conformant or else found unreasonable by the Purchaser.

Lot# 2 (Bids for supply of all necessary AFC-BSS components (including all hardware, software, networking, fare media etc), and configures, customizes, deploys, and maintains the entire AFC-BSS solution)

Lot# 3 (Bids for managing ticketing operations at PMBS stations, utilizing the deployed AFC-BSS solution)

A bidder may opt to bid for any or multiple Lots stated above. Purchaser reserves the right to select the Lot that it ascertains as best fit for its needs. However,

It is mentioned that the Lot best suitable and opted by the Purchaser, would be awarded accordingly as per rules, while the Purchaser reserves exclusive rights to cancel/annul or reject any one or all bids submitted against any Lot at any time without giving any reason thereof.

Bidders must ensure that they submit all the required documents indicated in the Bidding Documents without fail. Bids received without, undertakings, valid documentary evidence, supporting documents and various requirements mentioned in the Bidding Documents or test certificates are liable to be rejected at the initial stage itself. The data sheets, valid documentary evidences for the critical components as detailed hereinafter should be submitted by the Bidder for scrutiny. It is intimated that no objection/revisions/supplement shall be entertained regarding the terms and conditions of the Bidding Document submitted by the bidder.

Applicability of Punjab Procurement Rules, 2009

This Bidding Process will be governed under Punjab Procurement Rules, 2009, as amended from time to time and instructions of the Government of the Punjab received during the completion of the project

Important Dates

- 1. Last date of Bid Submission: August 17th, 2012 (3pm) – 11th floor Arfa Software Technology Park, Ferozepur Road, Lahore.**
- 2. Pre-bid meeting: Tuesday, August 7th, 2012 (3pm) – 11th floor Arfa Software Technology Park, Ferozepur Road, Lahore.**

1. Invitation to Bid

Punjab Information Technology Board (PITB), Government of the Punjab (The Purchaser), invites bids for the **“Procurement of Equipment and Implementation, Operations and Maintenance of Proven Globally Deployed Automated Fare Collection & Bus Scheduling System (AFC-BSS)”**.

1.1 PPRA Rules to be followed

Punjab Procurement Rules 2009 will be strictly followed. These may be obtained from PPRA's website:

<http://ppra.punjab.gov.pk/PublicPages/prorules1.aspx>

In this document, unless otherwise mentioned to the contrary, "Rule" means a Rule under the Punjab Procurement Rules 2009.

1.2 Mode of Advertisement(s)

As per Rule 12, this Tender is being placed online at PPRA's website, as well as being advertised in print media. The bidding document carrying all details can be downloaded from PPRA's website www.ppra.punjab.gov.pk, PITB's website <http://www.pitb.gov.pk>. All prospective bidders are required to register themselves with the Procurement Assistant, PITB at above given address, collect a Challan Form to submit an amount of Rs. 10,000/- in given head at State Bank of Pakistan or National Bank of Pakistan, the deposit slip must accompany the technical bids, otherwise the bid will stand rejected.

As per Rule 12(1), this Tender is being placed online at PPRA's website, as well as being advertised in print media.

1.3 Type of Open Competitive Bidding

As per Rule 36(b), Single Stage - Two Envelope Procedure shall be followed for each Lot that the bidder is bidding for. This is as follows:

- i. The bid shall comprise of a single package containing two separate envelopes. Each envelope shall contain separately the financial proposal and the technical proposal;
- ii. The envelopes shall be marked as “FINANCIAL PROPOSAL” and “TECHNICAL PROPOSAL” in bold and legible letters to avoid confusion;
- iii. Initially, only the envelope marked “TECHNICAL PROPOSAL” shall be opened;

- iv. The envelope marked as “FINANCIAL PROPOSAL” shall be retained in the custody of the procuring agency without being opened;
- v. The technical proposal will be evaluated in a manner as per the clauses mentioned in this document; and proposals which do not conform to the specified requirements as listed in said document will be rejected.
- vi. During the technical evaluation no amendments in the technical proposal shall be permitted;
- vii. The financial proposals of technically qualified bidders shall be opened publicly at a time, date and venue announced and communicated to the bidders in advance;
- viii. After the evaluation and approval of the technical proposal the procuring agency, shall at a time within the bid validity period, publicly open the financial proposals of the technically accepted and qualified bids only. The financial proposal of bids found technically non-responsive shall be returned un-opened to the respective bidders.
- ix. The technically qualified bidder with lowest financial bid will be the successful bidder.

2. Bidding Details (Instruction to Bidders)

All bids must be accompanied by tender security as part of financial proposal in favor of “**Punjab Information Technology Board**” (As per provisions of Tender Security clause 22 of this document).

The bids along with the Call Deposit Receipt / Demand Draft / Bank Draft, Tender Forms, Affidavits, etc., must be dropped in Tender Box # 1 placed at reception of PITB's office located at 11th floor, Arfa Software Technology Park, 346-B, Ferozepur Road, Lahore, PAKISTAN, on or before **1500 hours on August 17th, 2012**. The Technical bids will be publicly opened in the Committee Room of Punjab Information Technology Board, 11th Floor, Arfa Software Technology Park, 346-B, Main Ferozepur Road, Lahore, at 1520 hours on **August 17th, 2012**.

Queries of the Bidders (if any) for seeking clarifications regarding the specifications of the services must be received in writing to the PITB by **08th August, 2012**. All queries shall be responded to within due time.

The bidder must submit bids in full conformity of the requirements mentioned vide this document. Failure to meet this condition will cause disqualification of the bidder and subsequent rejection of the relevant bid. The attention of bidders is drawn to the provisions of Clauses 20, 27 & 29 on “**Preparation / Submission of Bid**”, “**Determination of Responsiveness of Bid**” and “**Rejection & Acceptance of Tender/Bids**” respectively before preparing and submitting their bids.

The contact detail for all correspondence in relation to this bid is as follows:

Email: afc.bss@pitb.gov.pk

Joint Director (Development & Procurement)

Punjab Information Technology Board (PITB)

11th Floor, Arfa Software Technology Park,

346-B, Ferozepur Road, Lahore, Pakistan.

Bidders should note that during the period from the advertisement of the tender till the receipt of the bid, all queries should be communicated to the above contact in writing via e-mail at the above contact detail.

Bidders are also required to state, in their proposals, the name, title, fax number and e-mail address of the bidder's authorized representative through whom all communications shall be directed until the process has been completed or terminated.

Purchaser will not be responsible for any costs or expenses incurred by bidders in connection with the preparation or delivery of bids.

As authority competent to accept the tender, Purchaser reserves the right to cancel the tender, accept or reject one or all bids without assigning any reason thereof.

3. Definitions

- 3.1 “PMA” is a Punjab Metro Bus Authority, to be established by Government of Punjab.
- 3.2 “MBS-PMU” Metro Bus System (previously known as BRTS) Project Management Unit; as established under Transport Department for Metro Bus System in Lahore. Upon establishment of PMA, all the obligations of MBS-PMU will transfer thereafter to PMA.
- 3.3 “AFC-BSS” Automated Fare Collection and Bus Scheduling System, as asked for in the Tender Document. Initial phase is for AFC-BSS implementation for approximately 31 MBS-PMU stations in Lahore.
- 3.4 “LTC” stands for Lahore Transport Company; LTC is a wholly owned company of the Government of Punjab registered under section 42 of Companies Ordinance 1984.
- 3.5 “Client/Procuring Agency/Purchaser” means Punjab Information Technology Board (PITB), Government of the Punjab or any other person/entity for the time being or from time to time duly appointed in writing by the Purchaser to act as Purchaser.
- 3.6 “AFC-BSS Service Provider” or “Successful Bidder”: The technically qualified bidder with lowest financial bid, who has the probability of award of contract for AFC-BSS Project, subject to necessary approvals and applicable policies.
- 3.7 “Confirmation” means confirmation in writing.
- 3.8 “Bidder/Tenderer” means a registered company or joint venture that has submitted its bid as per the criteria/specifications listed.
- 3.9 “Contractor” means successful Bidder/Tenderer.
- 3.10 “Contract” means the contract proposed to be entered into between the procuring entity and the Bidder, including all attachments, appendices, and all documents incorporated by reference therein.
- 3.11 “Contract Price” means the price payable to the Contractor under the Contract for the full and proper performance of its contractual obligations.
- 3.12 "Pre-Bid Conference/Meeting" means the meeting conducted by the procuring entity on given date and time prior to actual date of bid opening.
- 3.13 “Procurement Methods” means any one of the procurement modes / methods as provided in the Punjab Procurement Rules 2009 published by the Punjab Procurement

Regulatory Authority (PPRA), Government of Punjab. "Proposal" means the Technical Proposal and the Financial Proposal for the provision of the Services submitted by a bidder in response to RFP.

3.14 "RFP" means Request for Proposals, including any amendments that may be made by the procuring entity for the selection of bidder.

3.15 "SBD" means Standard Bidding Documents.

3.16 "SCC" means the Special Conditions of Contract.

3.17 "Services" means the tasks to be performed by the bidder pursuant to the Contract as mentioned vide this document.

3.18 "TEC" means the Technical Evaluation Committee, constituted for the purpose of evaluating the Proposals received.

3.19 "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.

3.20 "VC/Venture Capitalist/Venture Capital firms" means A person or investment firm that makes venture investments

3.21 "Works" means work to be done by the Contractor under the Contract.

3.22 "GoPb" means Government of the Punjab

4. Headings and Titles

In this document, headings and titles shall not be construed to be part thereof or be taken into consideration in the interpretation of the document and words importing the singular only shall also include the plural and vice versa where the context so requires.

5. Notice

5.1 In this document, unless otherwise specified, wherever provision is made for exchanging notice, certificate, order, consent, approval or instructions amongst the Contractor and the Purchaser, the same shall be:

5.1.1 in writing;

- 5.1.2 issued within reasonable time;
- 5.1.3 served by sending the same by courier or registered post to their principal office in Pakistan or such other address as they shall notify for the purpose; and
- 5.1.4 The words "notify", "certify", "order", "consent", "approve", "instruct", shall be construed accordingly.

6. Tender Scope

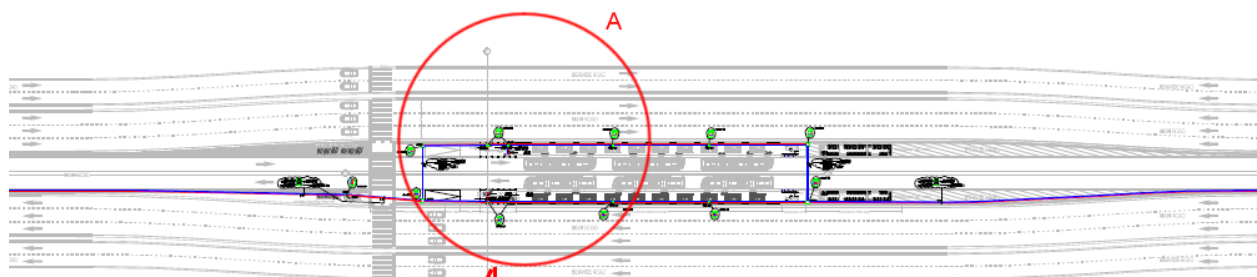
- 6.1 Punjab Information Technology Board (PITB), Government of the Punjab (The Purchaser), invites/requests Proposals (hereinafter referred to as "the Tenders") for the Procurement of Equipment and Installation, Operations and Maintenance of proven, globally deployed Automated Fare Collection and Bus Scheduling System (AFC-BSS) in Lots as defined in this document, for Punjab Metro Bus System.
- 6.2 In the first phase, the AFC-BSS solution needs to be rolled out for approximately 31 stations of MBS-PMU (2 platforms at each station, and 4 turnstiles at each platform). Eventually the system may be rolled out for other routes as well.
- 6.3 The AFC-BSS software comprises of the following core components and its associated equipment and services:

Automated Fare Collection System
Bus Scheduling and Vehicle Location system
Passenger Information System
- 6.4 High-level requirements for these systems are outlined in relevant sections in this document. It is mandatory that interested bidders propose only reliable, proven, globally deployed solutions, incorporating industry best practices.
- 6.5 Bidder is responsible to transfer implementation including equipment, skill set to Purchaser upon contract termination/completion.

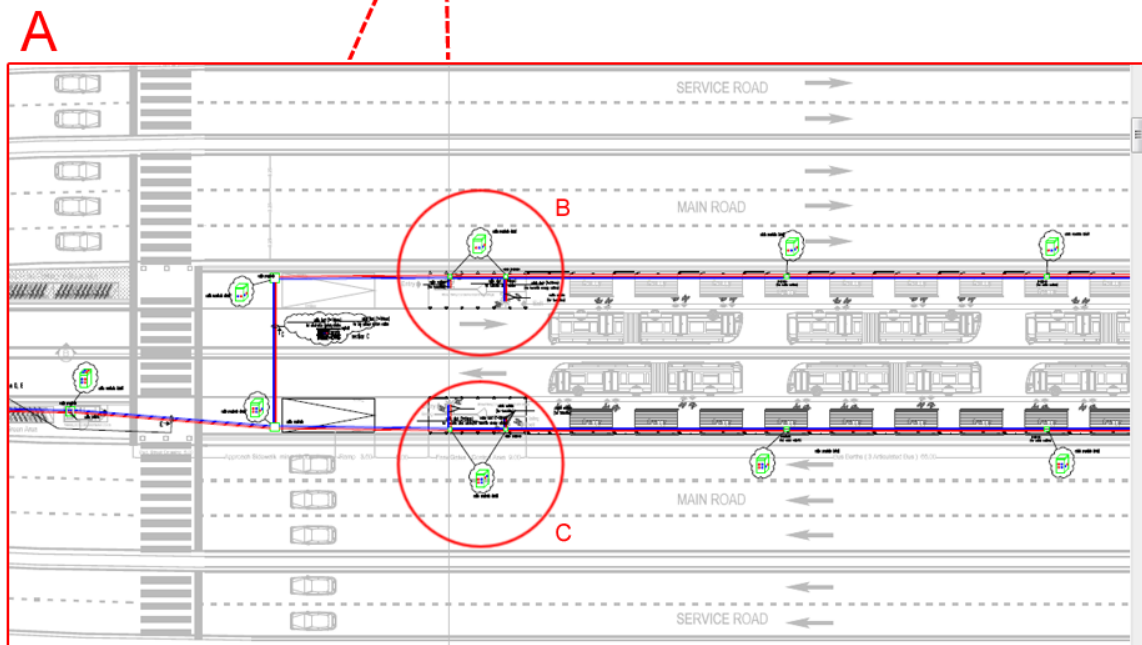
7. Overview and Objectives

- 7.1 Government of Punjab has taken an initiative to improve public transportation in capital of the province. AFC-BSS is one such initiative which aims to introduce modern standards in the transportation sector. The initiative includes restructuring of infrastructure of roads to incorporate dedicated bus lanes, development of bus stations and inclusion of modern buses in the existing fleet.
- 7.2 MBS-PMU initially spans over approximately 32 KM running through the heart of city on Ferozepur Road. Key locations throughout the city are targeted to maximize ridership from all surrounding areas.
- 7.3 Roughly 31 stations have been planned to be built throughout the entire route of MBS-PMU in the initial phase. The whole stretch of 31 stations spans from Gajju Matta to Shahdra in Lahore. The picture below highlights general station layout.

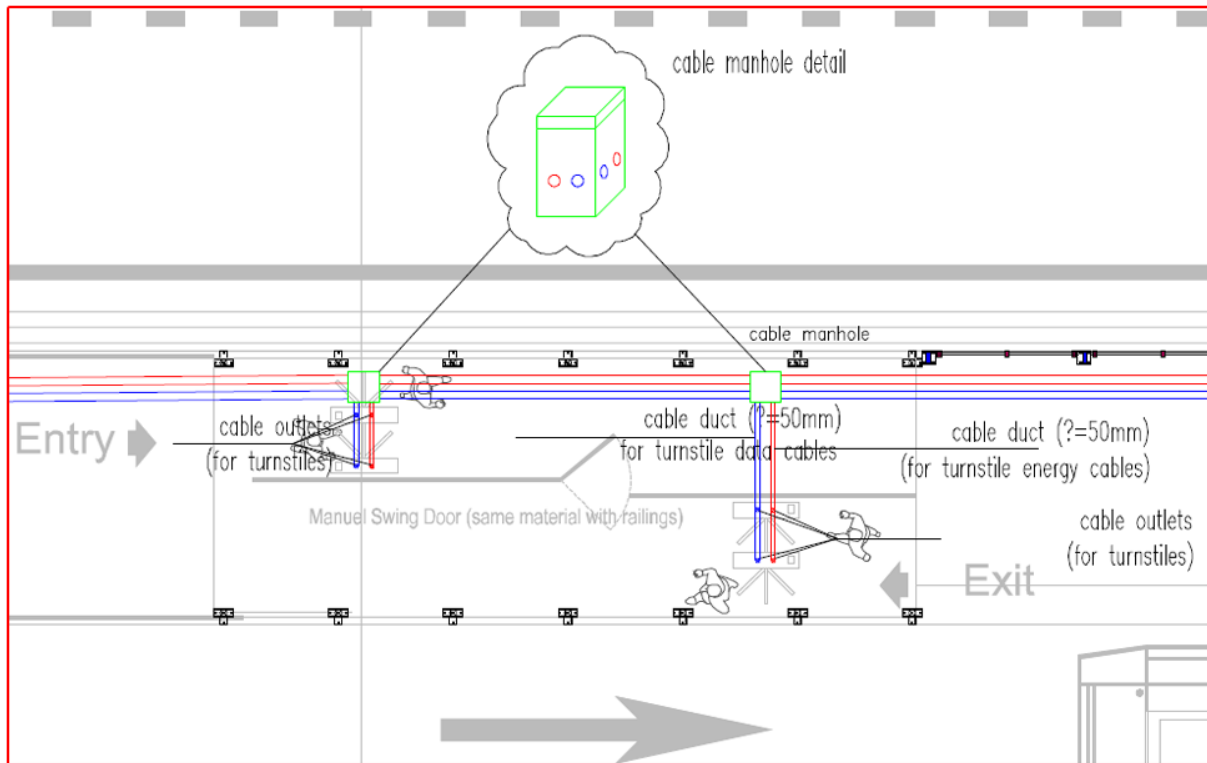




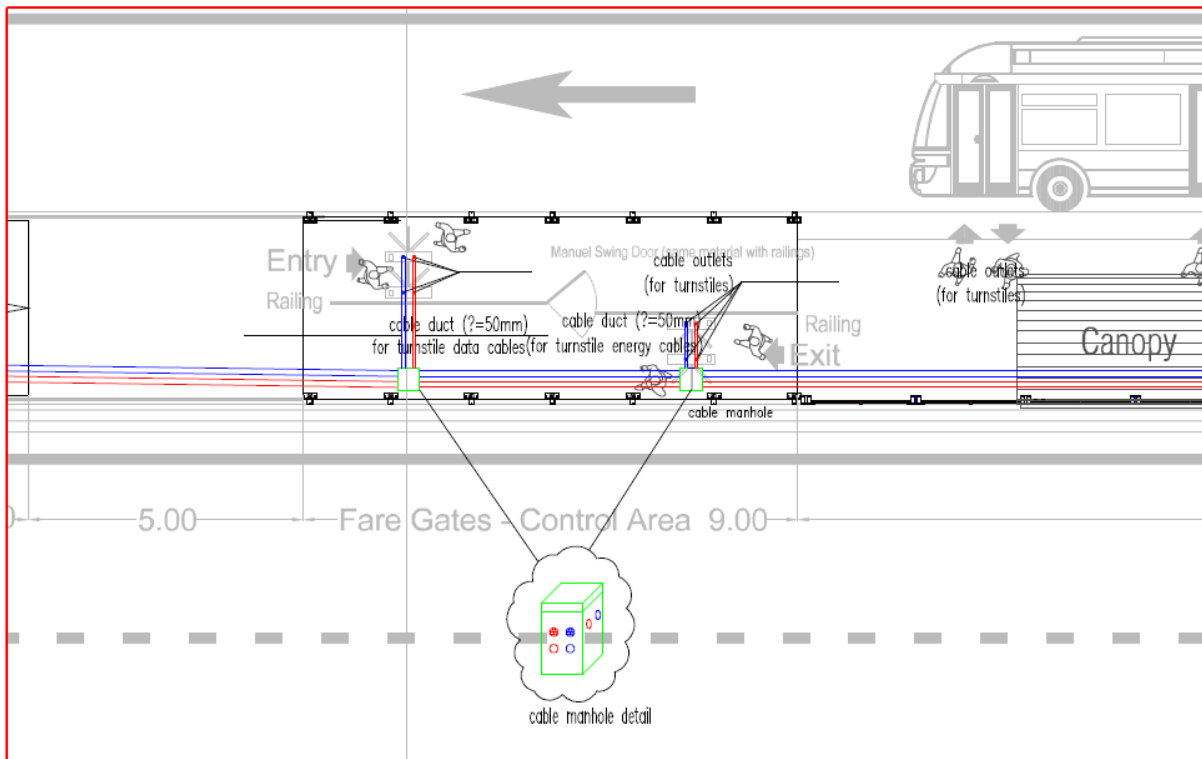
FEROZEPUR BRT SYSTEM - TYPICAL OPPOSITE STATION / AT-GRADE ACCESS



B



C



- 7.4 Automated Fare Collection and Bus Scheduling System (AFC-BSS) serves as an information system coupled with necessary hardware and software to authenticate entry/exit of passengers into bus stations, and to monitor adherence to bus schedules. The system should provide variety of fare media including throwaway cards, reusable RFID tokens, and smart cards. Smart cards may be recharged to a stated, agreed upon max limit, for travel onto BRT stations.
- 7.5 The AFC-BSS system must have the capability to handle flat rate, staged/zone based and distance based fare policies, and must be scalable/expandable to any number of stations, cities, and passenger volumes.
- 7.6 The total numbers of the registered motor vehicles in Lahore in 2005 were 1.2 million as compared to 0.5 million in 1998 (Source: Excise & Taxation Department GoPb 2006). The number has doubled in the time span of just under a decade. The city of Lahore amongst all the five big cities of Punjab has the highest annual vehicle growth rate of about 16 percent. Keeping in view the growth rate of 16 % the total number of vehicles in Lahore in 2009 is approximately 2.30 million. There are around 500 buses operating in Lahore. Maximum daily estimated trips of all modes are around 20.987 million trips /day.

Table: Estimated Daily Passenger Traveling in Lahore (Source: JICA LUTMP Study 2010)

Mode	No of Trips (000)
Walk	3729
Motor Cycle/Bicycle	3263
Car	1517
Wagon, Bus, Mazda	1620
Rickshaw, Qing chi	1363
Other	303
Total	11795

Table: Estimated Daily Passenger Traveling in Lahore. Category wise vehicles (as of December 2010) registered in Lahore are shown below:

CATEGORY WISE VEHICLE REGISTEED IN LAHORE	
CATEGORY	COUNT
AMBULANCE	1,082
BUS	23,500
CRANE	208
DELIVERY VAN	41,040
DOUBLE CABIN	2,633
EARTH MACHINERY	41
EXCAVATOR/GRADER	241
MINI BUS	4,016
MOTOR CAR	623,019
MOTOR CYCLE/SCOOTER	1,492,225
NON A.C BUS	23,527
PICKUP	36,232
RICKSHAW (4-STROKE CNG)	26,119
RICKSHAW	66,413
TAXI CAB	9,596
TRACTOR	26,854
TRUCK	18,839
WAGON	9,220
TOTAL	2,404,805

Travel demand for each type of traffic is also shown below in the table.

Table: Travel Demand Growth of Passenger Trips/Day

S. No.	Type of Traffic	2005	2021
1	Motorcycle	1,200,000	2,000,000
2	Rickshaw	1,100,000	1,800,000
3	Car/taxi/4WD	1,200,000	2,400,000
4	Public Transport	3,400,000	5,000,000
Total		6,900,000	11,200,000

Source: MVA Asia Limited, 2006

7.7 The demand in 2005 was almost 7 million which is expected to rise to more than 11 million by the year 2021 as per the study conducted by MVA Asia Limited, 2006. JICA recorded 8 million Trips per day in the year 2010 which appears in-line with the demand projected by MVA Asia. The current demand is highest for the public transport constituting 50% of the total demand.

7.8 Anticipated ridership volumes on PMA/MBS-PMU system are estimated to be 60,000 per-day in the first 6-months of the operation.

7.9 Future Expansion Plans

Once, the AFC-BSS solution is successfully adopted for current phase of MBS-PMU, there are plans to roll out the solution for later phases of MBS-PMU, and eventually LTC Operations may be included as well.

Following are the key objectives of the project

- To capture ridership and revenue data which can be used in better scheduling and service planning provide accurate data for federal reporting.
- To create a platform based on industry standard technology which can provide a basis for extension and integration.
- Transparent and reliable mechanism of reporting payments due to bus operators - based on agreed upon and approved payment formulas and policies.
- Online secure dashboards, accessible by all stakeholders, via centralized system in order to facilitate timely and informed decisions.
- To Provide better customer experience and convenience through increased reliability, efficiency, and flexibility

8. Contract type and duration

Contract period is (03) three years, extendable based on needs, compliance to defined Service Level Agreement (SLA), audit reports, and other requirements stated in this Tender Document, and formal contract.

9. Services Required

Contractual obligations of the successful bidder's (AFC-BSS Service Provider's roles and Responsibilities):

AFC-BSS Solution Deployment and onsite technical support (Lot # 1):

1. Install, configure, customize, deploy, and thoroughly test all AFC-BSS components - including all related equipment and software necessary for the smooth running of the system., with provisions of this tender document, good industry practices, applicable laws, and technical specifications of components stated in this document.
2. Provision and maintain a robust, scalable, secure, and efficient data communications network connecting PMA stations and other designated network **points (See Annex L for details)**, to the datacenter/hosting site as well as the central PMBS control center.
3. Deploy suitably skilled personnel (dedicated team) for configuration/customization, installation, and prompt and efficient technical support/maintenance of all AFC-BSS components.
4. Adequate spare parts and fully functional maintenance lab must be in place, in order to ensure uptime defined in the Service Level Agreements. Setup local workshop(s) to ensure timely maintenance and replacement of the equipment installed. Cost to be borne by service provider/successful bidder.
5. Submit detailed design, specifications, documentation, and manuals (softcopy) of related AFC-BSS system components being implemented - for approval by PITB and MBS-PMU.
6. Establish formats, standards, database parameters, and protocols for communication among the different sub systems of AFC-BSS.
7. Adhere to timelines of the AFC-BSS project implementation specified in this RFP.
8. Provide monthly reports on progress of AFC-BSS implementation as per scope defined in this tender document.
9. Ensure quality, robustness, security, and functionality of all hardware, software

components associated with AFC-BSS.

10. Implement a secure and protected access control system to control access to AFC-BSS software application systems and databases, limiting access to authorized personnel only. Also setup primary and secondary (disaster recovery) hosting sites and ensure regular and tested data backup.
11. Implement appropriate security measures for the information and data generated from operations of AFC-BSS, and deploy standard disaster management procedures, contingency plans, and back-up plans to cope with any system failure.
12. Impart meaningful and timely training to all staff associated with AFC-BSS as well as selected staff of PMA
13. Document a detailed equipment and AFC-BSS component maintenance plan in consultation with PMA, and implement it. The plan must cover procedures and parameters for preventive and break-down maintenance, as well as maintenance review procedures.
14. Guarantee up-time and adequate performance of AFC-BSS components at Bus Stations, on the Buses, Control Center, Central Datacenter.
15. Guarantee smooth functioning of all AFC-BSS components during the entire contract period
16. Plan and conduct regular disaster recovery drills, security audits, and performance tuning activities. Timely submit associated plans, schedules, and results for review.
17. Coordinate all equipment and software maintenance activities well in advance with authorized/designated personnel at PITB/PMBS-PMU.
18. Raise timely requests for equipment replacement, and seek timely approvals from designated/authorized personnel for issuance of replacement parts.
19. Replace faulty equipment, hardware, software at its own cost so as to ensure adherence to stated service-level parameters.
20. Regularly check, and timely upgrade and maintain all possible ICT infrastructure including hardware, software, and network infrastructure and ensure adherence to stated service-level parameters.
21. Integrate with other Intelligent Transport Systems (ITS) add-ons, if any.
22. Integrate AFC-BSS system with banking software system of the Bank of Punjab, in an efficient and secure manner.

23. Ensure that only authorized personnel of PMA should have secure access to add or change key configuration parameters (related but not limited to smart-card parameters, fare rates/policies etc).
24. Provide authorized Transport Department 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.
25. The validators shall reduce / cancel the value of a card / token to cause deduction of fare, and all real-time scanned information shall be stored.
26. Obtain all necessary permits under all applicable Laws required to proceed with AFC-BSS Project implementation, and comply with applicable laws, regulations, and permits during the contract period.
27. Cooperate with all other service providers and facilitate their operations in the MBS-PMU/PMA system.
28. Be responsible for the conduct and functioning of all staff employed on the AFC-BSS project. The service provider shall ensure efficient services, polite and courteous behavior of its employees. The Service Provider shall be liable for any misconduct or unreasonable offense of its employees and shall take prompt and appropriate action.
29. Participate in all meetings, committees, etc, as directed by MBS-PMU from time to time.
30. Ensure smooth transfer of all hardware, software, and equipment forming the part of AFC-BSS Project, to the procuring agency, upon contract completion/termination – in good running condition.
31. Operate ticket office terminals at all stations under MBS-PMU/PMA. Non-A/C lockable cabin will be provided by MBS-PMU/PMA.
32. In-order to ensure there are no ticketless travelers within the system, the bidder shall also provide manpower at turnstiles.
33. Deploy suitably skilled personnel at PMBS stations to efficiently manage ticket sales (using the implemented AFC-BSS solution interfaces), and to facilitate passengers at turnstiles.
34. Ticket offices must operate during operations of the MBS-PMU buses – tentatively decided as 18 hours a day.
35. Ensure prompt and efficient response time related to all service delivery aspects

associated with ticket sales/refunds, turnstile entry/exit process, etc.

36. Timely raise alerts to the PMBS control center staff in case of issues with equipment or system functioning.
37. Be responsible for the conduct and functioning of all staff employed on the AFC-BSS project towards passengers and PMBS staff as well as authorized staff of other relevant government agencies.
38. The service provider shall ensure efficient services, polite and courteous behavior of its employees. The Service Provider shall be liable for any misconduct or unreasonable offense of its employees and shall take prompt and appropriate action.
39. Cooperate with all other service providers and facilitate their operations in the MBS-PMU/PMA system.
40. Participate in all meetings, committees, etc, as directed by MBS-PMU from time to time.
41. Take prompt and reasonable action for resolution of each complaint – including complaints received from passengers as well as from PMA/MBS-PMU related to ticket sales and turnstile facilitation. What about passenger info system and bss?
42. Agree to and abide by the “Revenue Collection and Payment Mechanism” stated in this document.
43. Ensure integrity of cash collection and reconcile with sales/transaction reports daily to ensure there is no differences.
44. Obtain all necessary permits under all applicable Laws required to proceed with AFC-BSS Project implementation, and comply with applicable laws, regulations, and permits during the contract period

AFC-BSS Solution Deployment and onsite technical support (Lot # 2):

1. Install, configure, customize, deploy, and thoroughly test all AFC-BSS components - including all related equipment and software necessary for the smooth running of the system., with provisions of this tender document, good industry practices, applicable laws, and technical specifications of components stated in this document.
2. Provision and maintain a robust, scalable, secure, and efficient data communications network connecting PMA stations and other designated network **points (See Annex L for details)**, to the datacenter/hosting site as well as the central PMBS control center.
3. Deploy suitably skilled personnel (dedicated team) for configuration/customization, installation, and prompt and efficient technical support/maintenance of all AFC-BSS components.
4. Adequate spare parts and fully functional maintenance lab must be in place, in order to ensure uptime defined in the Service Level Agreements. Setup local workshop(s) to ensure timely maintenance and replacement of the equipment installed. Cost to be borne by service provider/successful bidder.
5. Submit detailed design, specifications, documentation, and manuals (softcopy) of related AFC-BSS system components being implemented - for approval by PITB and MBS-PMU.
6. Establish formats, standards, database parameters, and protocols for communication among the different sub systems of AFC-BSS.
7. Adhere to timelines of the AFC-BSS project implementation specified in this RFP.
8. Provide monthly reports on progress of AFC-BSS implementation as per scope defined in this tender document.
9. Ensure quality, robustness, security, and functionality of all hardware, software components associated with AFC-BSS.
10. Implement a secure and protected access control system to control access to AFC-BSS software application systems and databases, limiting access to authorized personnel only. Also setup primary and secondary (disaster recovery) hosting sites and ensure regular and tested data backup.
11. Implement appropriate security measures for the information and data generated from operations of AFC-BSS, and deploy standard disaster management procedures, contingency plans, and back-up plans to cope with any system failure.
12. Impart meaningful and timely training to all staff associated with AFC-BSS as well as selected staff of PMA

13. Document a detailed equipment and AFC-BSS component maintenance plan in consultation with PMA, and implement it. The plan must cover procedures and parameters for preventive and break-down maintenance, as well as maintenance review procedures.
14. Guarantee up-time and adequate performance of AFC-BSS components at Bus Stations, on the Buses, Control Center, Central Datacenter.
15. Guarantee smooth functioning of all AFC-BSS components during the entire contract period
16. Plan and conduct regular disaster recovery drills, security audits, and performance tuning activities. Timely submit associated plans, schedules, and results for review.
17. Coordinate all equipment and software maintenance activities well in advance with authorized/designated personnel at PITB/PMBS-PMU.
18. Raise timely requests for equipment replacement, and seek timely approvals from designated/authorized personnel for issuance of replacement parts.
19. Replace faulty equipment, hardware, software at its own cost so as to ensure adherence to stated service-level parameters.
20. Regularly check, and timely upgrade and maintain all possible ICT infrastructure including hardware, software, and network infrastructure and ensure adherence to stated service-level parameters.
21. Integrate with other Intelligent Transport Systems (ITS) add-ons, if any.
22. Integrate AFC-BSS system with banking software system of the Bank of Punjab, in an efficient and secure manner.
23. Ensure that only authorized personnel of PMA should have secure access to add or change key configuration parameters (related but not limited to smart-card parameters, fare rates/policies etc).
24. Provide authorized Transport Department 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.
25. The validators shall reduce / cancel the value of a card / token to cause deduction of fare, and all real-time scanned information shall be stored.
26. Obtain all necessary permits under all applicable Laws required to proceed with AFC-BSS Project implementation, and comply with applicable laws, regulations, and permits during the contract period.
27. Cooperate with all other service providers and facilitate their operations in the MBS-PMU/PMA system.

28. Be responsible for the conduct and functioning of all staff employed on the AFC-BSS project. The service provider shall ensure efficient services, polite and courteous behavior of its employees. The Service Provider shall be liable for any misconduct or unreasonable offense of its employees and shall take prompt and appropriate action.
29. Participate in all meetings, committees, etc, as directed by MBS-PMU from time to time.
30. Ensure smooth transfer of all hardware, software, and equipment forming the part of AFC-BSS Project, to the procuring agency, upon contract completion/termination – in good running condition.

Ticket Sales and Station Operations (Lot# 3):

1. Operate ticket office terminals at all stations under MBS-PMU/PMA. Non-A/C lockable cabin will be provided by MBS-PMU/PMA.
2. In-order to ensure there are no ticketless travelers within the system, the bidder shall also provide manpower at turnstiles.
3. Deploy suitably skilled personnel at PMBS stations to efficiently manage ticket sales (using the implemented AFC-BSS solution interfaces), and to facilitate passengers at turnstiles.
4. Ticket offices must operate during operations of the MBS-PMU buses – tentatively decided as 18 hours a day.
5. Ensure prompt and efficient response time related to all service delivery aspects associated with ticket sales/refunds, turnstile entry/exit process, etc.
6. Timely raise alerts to the PMBS control center staff in case of issues with equipment or system functioning.
7. Be responsible for the conduct and functioning of all staff employed on the AFC-BSS project towards passengers and PMBS staff as well as authorized staff of other relevant government agencies.
8. The service provider shall ensure efficient services, polite and courteous behavior of its employees. The Service Provider shall be liable for any misconduct or unreasonable offense of its employees and shall take prompt and appropriate action.
9. Cooperate with all other service providers and facilitate their operations in the MBS-PMU/PMA system.
10. Participate in all meetings, committees, etc, as directed by MBS-PMU from time to time.

11. Take prompt and reasonable action for resolution of each complaint – including complaints received from passengers as well as from PMA/MBS-PMU related to ticket sales and turnstile facilitation. What about passenger info system and bss?
12. Agree to and abide by the “Revenue Collection and Payment Mechanism” stated in this document.
13. Ensure integrity of cash collection and reconcile with sales/transaction reports daily to ensure there is no differences.
14. Obtain all necessary permits under all applicable Laws required to proceed with AFC-BSS Project implementation, and comply with applicable laws, regulations, and permits during the contract period

10. Key Service-level parameters

1. Service level parameters are outlined in **Annexure-J**.

11. Revenue collection and payment mechanism (Applies to Lot# 1 and/or Lot# 3)

1. An escrow account shall be opened by the Government (via MBS-PMU/PMA) in the Bank of Punjab. **The escrow account will be jointly operated by authorized representatives of the Government of Punjab/Transport Department/MBS-PMU, the AFC-BSS Service Provider(s), and Bus Operator(s).**
2. The Bank of Punjab shall issue a set of non-live card/token numbers (series) to the contractor, for printing and selling.
3. The contractor shall arrange printing of the cards/tokens, based on card/token design specified by PMA
4. The contractor shall request the Bank of Punjab to activate the card/token numbers for live online recognition.
5. Prior to card activation, an amount equivalent to the value of the cards being activated, shall be deducted from the contractor’s account and deposited in the escrow account.
6. Sale of tickets (cards/tokens) shall be the responsibility of the contractor.
7. For activation and subsequent recharging of cards (Smart cards) and tokens/throwaway media, the contractor shall arrange “Bulk Initialization Machines (BIM)”, and place BIMs at premises specified by MBS-PMU.
8. BIMs, and/or top-up/Point of Sale (POS) machines will only initialize/top-up media if there is sufficient balance available. Contractor must first transfer sufficient balance amount into the

Government Escrow Account, and the Bank of Punjab will subsequently load credit in the BIM/POS machine.

9. Payments from the Escrow Account will be made to Bus Operators and qualified service providers based upon agreed policies, formulas, and reconciliation reports from AFC-BSS.
10. If there is surplus balance in the Escrow Account, the amount will be retained by Government of the Punjab/MBS-PMU. If there is deficit in the Escrow Account (that is, all service providers cannot be paid) then MBS-PMU/Government of the Punjab will arrange for the deficit amount and make payments that are due.
11. Regular third-party audit (financial as well as technical) to be made an integral part of the project

12. Transport Department/PMA/MBS-PMU Responsibilities

1. Provide fare structure, user roles, and business rules to AFC-BSS service provider
2. Provide AFC-BSS service provider necessary project site so that AFC-BSS service provider can perform its obligations in a timely manner
3. Attempt to grant timely approvals and make timely payments
4. Contract signing, Contract Payments and monitoring project operations.

13. Key components of the solution

13.1.1 Turnstiles

All PMA/MBS-PMU stations will have guarded entry and exit enforced via turnstiles. However, the choice of turnstiles proposed must be governed by factors including robustness, reliability, maintainability, cost effectiveness and conformance to international standards and safety of passengers.

Turnstiles have been proposed on every station which makes the total of approximately 248 operational turnstiles at any given time. Based on design stated above in section 7 each station will have two platforms, with 4 turnstiles on each platform.

13.1.2 Validators

Each turnstile needs to be equipped with validator(s) for each type of media to be used.

13.1.3 Fare Media / Tickets

RFID Smart Cards (stored value) for long term planned repeated journeys is a must, coupled with passenger registration module. For short/occasional or single journeys, Bidder must propose adequate solution based on throwaway or re-usable RFID cards or RFID tokens.

Note: Fare rates will be determined by Government of Punjab and cost of media will not be transferrable to passengers purchasing tickets for single or daily journey.

13.1.4 Automated Fare Collection and Fare Policy

Passengers will be charged distance based fare. Proposed AFC-BSS must be able to handle fare policies based on flat rate, zones/stages, as well as distance travelled. Proposed AFC-BSS must

also be able to handle the full fare, concessional fare and free fare policies. Proposed AFC-BSS must cater to on-board as well as off-board ticketing modes and be able to handle transfers across modes, however, in the first phase off-board ticketing will be employed.

13.1.5 Top Ups/Printing Tickets/Allotting Tokens and Refunds

Ticket Office Machines are to be made available by the AFC-BSS Solutions Provider, at MBS-PMU bus stations, to charge cards with the desired amount paid by the passenger. Ticket office Machines will only work if they contain balance amount that can be transferred onto the fare media. Ticket Office Machines (Top up Machines) must reliably transmit transactional data to any system and/or central database. Ticket Office must be able to refund any reported incidents of overcharging after due diligence to passenger, if it is agreed that such reimbursements are to be adopted as policy. All such functionality must be a typical feature of proposed Top up Machine and AFC-BSS. Every platform must have at least one top up machine available in fully functional condition at any point of time.

13.1.6 Portable Validators (as backup)

Portable validators will be used as backup medium to validate entry of passengers in case of any failure.

13.1.7 Ticket Vending Machines (TVMS)

Ticket Vending Machines are to be deployed at stations; the machines will accept cash (notes and coins) and dispense throwaway fare media accordingly. TVMS will also have the facility to charge smart cards against the cash submitted.

13.1.8 Bus Scheduling and Vehicle Location System

Concerned authority of the Transport Department must be able to enter bus schedule into the system using Bus scheduler, and view/edit schedules via GIS-based interface. AFC-BSS will generate reports that will form a basis for payments to operators - based on agreed formula (determined by scheduled trips/kilometers, distance travelled as fetched via Vehicle Location System and any other associated/integrated components proposed as part of the solution).

Every bus will have to be equipped with GPS devices and relevant components (on bus and off bus), that can gather location wise data and transmit to central servers and related software modules. Data gathered in this fashion will help monitor movement of the bus via GIS interface, in real time against bus schedule defined in the relevant software module. Distance travelled, and number of trips made by every bus, must be reported via AFC-BSS. All such buses need to be equipped with GPS enabled trackers that integrate with the relevant software proposed for implementation as part of the AFC-BSS solution.

The Vehicle Location System shall enable operations team to monitor vehicle movement in real-time and synthesize the field data to deliver the same on the public information system devices installed on Bus Stations, Buses, customer portal etc.

The Driver Console Unit shall be used to provide vehicle tracking accurately and reliably. The back end system shall be able to produce MIS reports of vehicle schedule adherence report and kilometers travelled by each bus, by route and by fleet of each operator.

13.1.9 Passenger Information System

13.1.9.1 Passenger Information System for Bus

Available buses will have display unit(s) to disseminate messages etc, these units are outside the scope of this tender document. The Passenger Information System must be able to gather information from Vehicle Location system installed in the bus and display messages and play voice recordings accordingly to timely inform passengers of the next approaching station as well as to make any other critical announcements. There must be provision to display text messages and play voice messages in English/Urdu. Buses must be equipped with necessary speakers to ensure audible transmission of voice.

13.1.9.2 Passenger Information System for Station

Every station must have at least 1 vandal-proof signboard showing bus schedules and/or other necessary information in English/Urdu. It shall be placed on the place identified by MBS-PMU authorities. Bidder may propose the location based on the station design as provided in the document.

13.1.9.3 All station based Passenger Information signs shall be enclosed in a manner such as to inhibit entry of dirt, dust, water and other contaminants during normal operation or cleaning. All sign displays shall consist of pixels utilizing High Intensity Light Emitting Diodes (“LED”), for superior outdoor environmental performance, of superior UV resistant Epoxy lens and superior resistance to the effects of moisture. Each pixel shall have a dedicated LED for illumination of that pixel in all lighting conditions. The sign system shall have multi-level intensity changes, which adjust automatically as a function of ambient lighting conditions. Equipment installed must be able to operate in normal temperature of Lahore without any dependency on additional cooling/heating mechanism.

Passenger Information System must be able to transmit data to standard LCDs/LEDs as available in the local market.

13.1.10 Disbursement to Operators

Multiple operators are expected to operate buses on designated route of MBS-PMU/Non-MBS-PMU routes. The formula for disbursement of revenue to operators will be shared with the qualified bidder which then must be incorporated to proposed AFC-BSS. The system should be scalable, and must be able to integrate with standardized on-board ticketing systems for buses as well.

13.1.11 Power Backup

UPS are needed to ensure backup power supply for all AFC-BSS equipment/components deployed at each station. UPS backup should last for at least 4 hours at any given time. This does not apply power outages in case of hurricane, flood, earthquake and/or any other extenuating circumstances. Power backup to be proposed must take into account the capacity required to run all components of AFC-BSS at the stations and an additional 10KVA requirement of other existing systems.

13.1.12 Reports

All AFC-BSS components must be equipped with standard reports typically expected from an internationally deployed, proven Automated Fare Collection System, Vehicle Location System, Bus Scheduling and Passenger information System/product - with the provision of at least 30 additional reports that may be required based on data stored in the relevant databases. The solution must also come with a standardized report-writing tool that can be used to generate custom reports as and when required. Bus origin-destination reports and reports regarding bus arrival times, deviations (if any) from the schedule for each day must be available in real time. Reports/summaries of incidents subject to which the penalty clauses may be invoked should also be made available.

13.1.13 System availability and data backup

AFC-BSS solution (including station components as well as back-office systems) must be able to function on a 24x7x365 basis. Data backups are critical features of the overall solution. System should be hosted in adequate data center, providing high availability access. Regular data backups must be maintained.

13.1.14 Connectivity

24/7 connectivity to all stations must be ensured, and data transmission to central data center must also be ensured on 24/7 basis. This shall involve all necessary backup connectivity embedded into the solution to ensure connectivity at all points of time. For details refer to (Annexure L).

13.1.15 Station PCs

Branded Industrial strength Station PCs with adequate processing power to efficiently handle traffic patterns. Requisite software licensing components, if any required, must be provisioned to act as an between data center and turnstiles placed at the stations; this will help make station self-contained in terms of carrying out operations without complete dependency on the data center. However station PCs must synchronize with data center at regular intervals during every hour of operations.

13.1.16 Servers/Storage

Setup of servers, storage devices and any other hardware/software necessary for the proposed solution to work efficiently is an integral component of the system. The AFC-BSS solution must be able to handle daily passenger volumes of up to 500,000 in an efficient, uninterrupted manner. Bidder will be responsible for adequate upgrades in the infrastructure as and when necessitated - to ensure that the system can efficiently cater growing passenger volumes.

13.1.17 Manning Ticket Sales Office

MBS-PMU stations will be manned with professional sales staff; tentative hours of operation initially are 18 hours a day, seven days a week. Subject to change depending upon need and requirements as illustrated by Purchaser.

13.1.18 Escrow Account

All revenue earned from activation and recharging of cards/tokens will be deposited into ESCROW Account in the Bank of Punjab, and revenue collected will be disbursed to all concerned parties via agreed formula.

13.1.19 Call Center

Transport department may setup a call center/helpline for passengers to call into for on bus routes and schedules as well as for any issues on fare. Call center shall be able to log in complaints through call-center operator or via IVR. AFC-BSS solution must be able to provide call center personnel access to bus schedules and related information.

13.1.20 PMA Control Center

PMA shall set-up a central control center for authorized PMA staff allocated to the AFC-BSS project.

All data collected via AFC-BSS components (including audit data, statistical, and operational information) shall be made accessible via secure, online interface to authorized PMA staff on real-time basis, by the Contractor/Service Provider.

Buss Scheduling, bus tracking, and bus alert-management, as well as Passenger Information System shall be managed / monitored via the Control Center.

Card/Token initialization and personalization devices shall be centrally located by the Contractor/Service Provider at the PMA Control Center (or other appropriate location designated by PMA). PMA authorized personnel must be able to control all operations performed by these centrally located devices.

Contractor/Service Provider is responsible to provide adequate AFC-BSS support staff at the PMA Control Center.

14. Other high-level requirements

14.1.1 Automated Fare Collection Application must have following features:

- 14.1.1.1 Provision to specify and compute user-defined distance based, zone based, stage based and flat rate based fare.
- 14.1.1.2 Provision to handle the full fare, concessional fare and free fare policies.
- 14.1.1.3 Provision to manage refunds and top up fare media on stations.
- 14.1.1.4 Availability of user-definable criteria and rules for various functions including but not limited to reimbursement and auto alerts.
- 14.1.1.5 Inventory report of stock in hand of cards/RFID tokens (fare media) and cards in use/circulation.
- 14.1.1.6 Ability to produce various critical reports including but not limited to sales report, cash in hand report by station and analytical passenger turn over trends by station, origin-destination reports by bus and bus operator etc.
- 14.1.1.7 Online dashboard based on configurable parameters.
- 14.1.1.8 Report writer for generating quick on the fly reports/analysis.
- 14.1.1.9 Ability to generate automated alerts – e.g. SMS, email, fax.
- 14.1.1.10 User security roles definition and availability of interface to reassign roles.
- 14.1.1.11 Secure, reliable and password protected system.
- 14.1.1.12 Detailed audit log of critical user activities in the system.

14.1.1.13 Automated data backup facility.

14.1.1.14 The software must have provision of API/web services to interface with any other systems in future.

14.1.1.15 The software must have point of sales system to keep track of daily sales at the stations.

14.1.2 Vehicle Location System

14.1.2.1 Installation of GPS based devices to track location of the MBS-PMU buses and to send location coordinates to centralized system for view via GIS / mapping interface, and to see real-time adherence to defined bus schedules and routes.

14.1.2.2 Computation and tabulation of reports that will form a basis to disburse trips/distance based compensation to operators accordingly.

14.1.3 Passenger Information System and Scheduler

14.1.3.1 Provision to make automated voice announcements (in English and Urdu) inside the bus, regarding approaching station and next station

14.1.3.2 Broadcast schedule and any other information onto Passenger Information System display units available in bus and at stations.

14.1.4 Networks & Data Connectivity

14.1.4.1 Setting up the AFC-BSS related components on each MBS-PMU station/platform, including the data network, so as to ensure timely, un-interrupted transmission of data between AFC-BSS equipment at stations and at central datacenter.

14.1.4.2 Primary medium for internet connectivity must be Fiber optic, however for redundant connection any other medium may be used.

14.1.4.3 Reliable/redundant network availability onto the stations.

14.1.4.4 Linking any network equipment etc to UPS, with at least 4 hours of backup power supply.

14.1.4.5 Usage of automated tools to monitor network performance at every station, access must be provided to stakeholders.

14.1.5 Station Equipment

- 14.1.5.1 Deployment (and security) of Turnstiles, validators, UPS, cabling for networks, routers/signal boosters, top up/refund machines, station PCs 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. A 1x1 meter space will be provided on each platform/station where station PC, router etc can be placed.

14.1.6 Centralized/Back-office systems and reliable hosting

- 14.1.6.1 Deployment of all AFC-BSS Components on industrial strength, branded platforms/servers/equipment in a reliable, high-availability data center. The AFC-BSS solution must be able to pick up the load for off-board and on board ticketing and handle daily passenger volumes of up to 500,000 in an efficient, uninterrupted manner, and must be able to comply with service level agreement.

- 14.1.6.2 All transactional data will remain property of the purchaser and may not be shared with anyone without written consent of the Purchaser.

- 14.1.6.3 Purchaser will have access to all transactional data and audit logs, logged into the system for at least the past twelve months, at all times. And will be provided regular data backups by the contractor for long-term storage and archival purposes on reliable storage media.

14.1.7 Equipment Installation/Maintenance and Software Support

- 14.1.7.1 Installation, maintenance, and operations of all equipment as listed in relevant sections of this tender document.

- 14.1.7.2 Continuous support of all software and hardware components associated with proposed AFC-BSS solution - via dedicated support staff accessible via help desk, all services must be provided based on the service-level parameters defined in this document.

15. Tender/Bidder EligibilityTender Scope

- 15.1 An eligible Tenderer/Bidder is a Tenderer/Bidder who:
 - 15.1.1 is a provider of Services and Equipment as outlined in the document
 - 15.1.2 Services can only be supplied / sourced / routed from “origin” in “eligible” member countries.
 - a. “Eligible” is defined as any country or region that is allowed to do business in Pakistan by the law of Government of Pakistan.
 - b. “Origin” shall be considered to be the place where the company / firm is incorporated
 - 15.1.3 has a registered office in the respective country of origin
 - 15.1.4 has been registered for at least 5 years in country of origin, and has proven experience of deploying state of the art AFC-BSS for transportation sector.
 - 15.1.5 has the required relevant qualified personnel and enough financial and technical strength to fulfill the requirements.
 - 15.1.6 Conforms to the clause of “Responsiveness of Bid” and “Preparation/Submission of Tender” given herein this tender document.
 - 15.1.7 Verifiable proof for all the above shall be required.
 - 15.1.8 Local companies forming part of the joint venture must be registered under the prevailing related rules or Companies Ordinance.

16. Tender Cost

The Tenderer/bidder shall bear all costs / expenses associated with the preparation and submission of the bid and the Purchaser shall in no case be responsible / liable for those costs / expenses.

17. Joint Venture / Consortium

Joint ventures or Consortium are also eligible for this tender, as long as the joint venture complies with the following conditions:

- a. The Tenderers may form a joint venture of maximum four Tenderers/bidders. An Agreement Deed to that effect, legally executed and signed by all the partners shall be submitted with the bid.
- b. One partner of formulated joint venture will be designated the lead partner and would be get into legal contract with Purchaser and would be liable to incur liabilities, receive payments and receive instructions for and on behalf of any or all partners. A power of attorney to that effect, legally executed, signed by all the partners shall be submitted with the Tender/bid.
- c. There must be at least one locally registered company (Partner) of good repute, with relevant experience and proven track record, in the joint venture.
- d. All the partners shall be jointly and severally liable for the execution of the Contract in accordance with the terms and conditions of the Contract. The Tender, and in case of successfully qualifying both technical and financial evaluation, the Contract Deed, to that effect, shall be signed by the lead partner.
- e. Partners other than the lead would also be bound by the terms and conditions of the contract.

18. Examination of the Tender Document

The Tenderer is expected to examine the Tender Document, including all instructions and terms and conditions thereof.

19. Amendment of the Tender Document

- 19.1 The Procurer may, at any time prior to the deadline for submission of the Tender, at its own initiative or in response to a clarification requested by the Bidder(s), amend the Tender Document, on any account, for any reason. All amendment(s) shall be part of the Tender Document and binding on the Bidder(s).
- 19.2 The Procurer shall notify the amendment(s) in writing to the prospective Tenderers.
- 19.3 The Procurer may, at its exclusive discretion, amend the Tender Document to extend the deadline for the submission of the Tender, in which case all rights and obligations of the Procurer / Purchaser and the Tenderers previously subject to the deadline shall thereafter be subject to the deadline as extended.

20. Preparation / Submission of Tender

- 20.1 The Tenderer is allowed to bid for complete services in any of the specified Lot(s).
- 20.2 The Tenderer is allowed to bid for one or more complete specified Lot(s) separately, in the same tender.
- 20.3 The Tenderer is not allowed to bid for partial LOT against All mentioned LOTS in this tender.
- 20.4 The Tender and all documents relating to the Tender, exchanged between the Tenderer/bidder and the Purchaser or Procurer, shall be in English. Any printed literature furnished by the Tenderer/bidder in another language shall be accompanied by an English translation which shall govern for purposes of interpretation of the Tender.
- 20.5 The Tender shall be submitted accompanied by the prescribed Forms, Annexes, Schedules, Charts, Drawings, Documents, Brochures, Literature, detailed design, operations and maintenance plan and detailed project plans with milestones etc. which shall be typed, completely filled in, stamped and signed by the Tenderer or his Authorized Representative. In case of copies, signed and stamped photocopies may be submitted.
- 20.6 Further required information as part of the bid is listed below, as in continuation to other requirements listed in the document:
 - 20.6.1 List of firm's major international and national clientele.
 - 20.6.2 Details related to experience in implementing, maintaining and supporting such solutions with all supporting documents and documented proofs.
 - 20.6.3 Complete details of all the projects being carried out by the bidder with all supporting documents and documented proofs.
 - 20.6.4 Details of similar type of projects executed by the Bidder with all supporting documents and documented proof.
 - 20.6.5 Details/Profile of Staff (Management / Technical) team
 - 20.6.6 Valid GST and NTN company registration certificates (for local company and the same prevalent documents as applicable in the region/origin of operations of enterprise operating outside Pakistan).
 - 20.6.7 SECP Registration Certificate.
 - 20.6.8 Disaster Recovery Plan
 - 20.6.9 Information Security Management practices
 - 20.6.10 Details of proposed solution with logical diagrams, functionality and features and the proposed deployment plan with timelines
 - 20.6.11 Availability confirmation of all resources which will be used in the proposed solution.

- 20.6.12 Bidder must provide sample reports which the system can generate.
- 20.6.13 Detailed Project Plan highlighting timelines, resource allocations and deliverables for each milestone leading to solution roll out.
- 20.6.14 Detailed quality assurance plan including methodology.
- 20.6.15 Detailed Risk Management Plan.
- 20.6.16 Detailed Communications Management Plan.
- 20.6.17 Details of hardware/equipment used along with warranties and service level agreements.
- 20.6.18 Detailed features of the software system.
- 20.6.19 Provide a programmer's guide for each of the programmable computers in the AFC-BSS. For each, the guide shall:
 - 20.6.19.1 Provide an overview of software organization.
 - 20.6.19.2 Define external interfacing data format, semantics, and protocols.
 - 20.6.19.3 Define internal modules, data interfaces, tasking, considerations for timing, priorities, and resource use.
 - 20.6.19.4 Identify and detail use of programming and database maintenance tools used to create the software.
 - 20.6.19.5 Include complete documentation of non-application components such as operating system, communications handlers, database, and report generators.
 - 20.6.19.6 Detail the procedures for building and managing software configuration.
 - 20.6.19.7 Describe the metrics embedded in AFC-BSS to evaluate its performance.
 - 20.6.19.8 Identify the error conditions detected within the software, and the messages or indications for those conditions.
 - 20.6.19.9 Identify parameters used to adjust AFC-BSS operation
- 20.6.20 Ticketing mechanism.
- 20.6.21 Data collection and management methodology.
- 20.6.22 Revenue reporting and handling.
- 20.6.23 Flexibility of system for special cards (citizen, student card).
- 20.6.24 Detailed workflow of proposed AFC-BSS modules.
- 20.6.25 Integration between AFC-BSS modules.
- 20.6.26 Methodologies, mechanisms and tools for
 - 20.6.26.1 Process Testing
 - 20.6.26.2 Compliance Testing
 - 20.6.26.3 Interoperability Testing
 - 20.6.26.4 Acceptance Testing
 - 20.6.26.5 Load and Stress Testing
- 20.7 The Technical and Financial proposals shall be submitted in two different envelopes, the envelopes will be clearly marked 'Technical Proposal' and 'Financial Proposal'. Each proposal shall be in two sets bid i.e. the original and the copy. Also clearly stating the Lot # pertinent to
- 20.8 In the event of any discrepancy between the original and the duplicate, the original shall govern.
- 20.9 The **Technical Proposal** shall contain following, without quoting the price:
 - 20.9.1 Technical Proposal Form (Annexure-A)
 - 20.9.2 Affidavit and Undertaking (All terms & conditions and qualifications listed anywhere in the RFP have been satisfactorily vetted) (Annexure-E&F)
 - 20.9.3 Covering letter duly signed and stamped by authorized representative. (Annexure-C)
 - 20.9.4 Authorized Certificate / document from the principle / manufacturer (if applicable).

- 20.9.5 Evidence of eligibility of the Tenderer and the Services
- 20.9.6 Evidence of conformity of the Services to the Tender Document
- 20.9.7 Technical Brochures / Literature
- 20.9.8 The statement must be signed by the authorized representative of the Bidder
- 20.9.9 Financial Capacity as per Annexure-I
- 20.9.10 Valid Registration Certificate for Income Tax, Sales Tax and / or other allied agencies / organizations / regulatory authorities (Principal, Local Representative Company).
- 20.9.11 Income Tax & Sales Tax Returns for the last three tax years
- 20.9.12 Power of Attorney, if an authorized representative is appointed (Annexure-D)

20.10 The **Financial Proposal** shall comprise the following:

- 20.10.1 Financial Proposal Form (Annexure-B)
- 20.10.2 Price Schedule
- 20.10.3 Tender Security **(02% of the total bid amount as mentioned vide clause 22 regarding Tender Security of this tender document).**

20.11 The Tenderer shall seal the Original Technical Proposal in an envelope duly marked as under:

Original Technical Tender for
Tender Name. [Number/Name of Tender]
LOT No.

[Name of the Procurer]
[Address of the Procurer]

[Name of the Tenderer/Bidder]
[Address of the Tenderer/Bidder]
[Phone No. of the Tenderer/Bidder]

20.12 The Tenderer shall seal the Duplicate Technical Tender in an envelope duly marked as under:

Duplicate Technical Proposal for
Tender Name. [Name of Tender]
LOT No.

[Name of the Procurer]
[Address of the Procurer]

[Name of the Tenderer/Bidder]
[Address of the Tenderer/Bidder]
[Phone No. of the Tenderer/Bidder]

20.13 The Tenderer shall follow the same process for the Financial Tender.

20.14 The Tenderer shall again seal the sealed envelopes of Original Technical Proposal and the Original Financial Proposal in an outer envelope, duly marking the envelope as under:

Original Tender for
Tender Name. [Name of Tender]
LOT No.

Strictly Confidential
Open on [Last Date of submission of the Tender]

[Name of the Procurer]
[Address of the Procurer]

[Name of the Tenderer/Bidder]
[Address of the Tenderer/Bidder]
[Phone No. of the Tenderer/Bidder]

20.15 The Tenderer shall again seal the sealed envelopes of Duplicate Technical Proposal and the Duplicate Financial Proposal in an outer envelope, duly marking the envelope as under:

Duplicate Tender for
Tender Name. [Name of Tender]
LOT No.

Strictly Confidential
Open on [Last Date of submission of the Tender]

[Name of the Procurer]
[Address of the Procurer]

[Name of the Tenderer/Bidder]

[Address of the Tenderer/Bidder]

[Phone No. of the Tenderer/Bidder]

- 20.16 The Tenderer shall enclose soft copies of the Technical Proposal and the Financial Proposals, including all Forms, Annexes, Schedules, Charts, Drawings, Documents, Brochures, Literature, etc., in the form of MS Word Documents, MS Excel Worksheets and Scanned images, with the hard copies.
- 20.17 This is made obligatory to affix authorized signatures with official seal on all original and duplicate (copies) documents, annexures, copies, certificates, brochures, literature, drawings, letters, forms and all relevant documents as part of the bids submitted by the tenderer. **Noncompliance with the same will cause the rejection of bid at the time of opening.**

21. Tender Price

- 21.1 The quoted price shall be:
- 21.1.1 best / final / fixed and valid until completion of all obligations under the Contract i.e. not subject to variation / escalation;
- 21.1.2 Inclusive of all charges up to the delivery point at the Punjab Government's facility for AFC-BSS related components;
- 21.1.3 in Pak Rupees (PKR);
- 21.1.4 inclusive of all taxes, duties, levies, insurance, freight, etc.
- 21.2 If not specifically mentioned in the Tender(s), it shall be presumed that the quoted price is as per the above requirements.
- 21.3 Where no prices are entered against any item(s), the price of that item shall be deemed to have been distributed among the prices of other items, and no separate payment shall be made for that item(s).
- 21.4 The price hereby quoted by the Bidders would cover the whole scope of services for the contract period.

22. Tender Security

- 22.1 The Tenderer shall furnish the Tender Security as under:
- 22.2 **As part of financial bid envelope**, failing which will cause rejection of bid.
- 22.3 LOT wise tender security (Separate for each LOT, if the bidder is participating for more than one LOTs) would be submitted by the Bidder;
- 22.3.1 **if Total Tender Price is less than or equal to PKR 5.00 Million, in the form of Demand Draft / Pay Order / Call Deposit Receipt, in the name of the Procurer;**
- 22.3.2 if the Total Tender Price is more than PKR 5.00 Million, in the form of Bank Guarantee, issued by a scheduled bank operating in Pakistan, in the name of the Purchaser, as per the format provided in the Tender Document or in another format acceptable to the Purchaser;

- 22.3.3 for a sum equivalent to 2% of the Total Tender (LOT) Price;
- 22.3.4 denominated in Pak Rupees;
- 22.3.5 have a minimum validity period of **180 days** from the last date for submission of the Tender or until furnishing of the Performance Security, whichever is later.
- 22.4 The proceeds of the Tender Security shall be payable to the Purchaser, on the occurrence of any / all of the following conditions:
 - 22.4.1 If the Tenderer withdraws the Tender during the period of the Tender validity specified by the Tenderer on the Tender Form; or
 - 22.4.2 If the Tenderer does not accept the corrections of his Total Tender Price; or
 - 22.4.3 If the Tenderer, having been notified of the acceptance of the Tender by the Purchaser during the period of the Tender validity, fails or refuses to furnish the Performance Security, in accordance with the Tender Document.
 - 22.4.4 If the tenderer fails to provide the performance security in stipulated timeframe, format, amount and currency.
 - 22.4.5 The Tenderer refuses or fails to submit the Performance Security as per agreed timelines, amount and format.
- 22.5 The Tender security shall be returned to the technically unsuccessful Tenderer with unopened/sealed financial bid while the unsuccessful bidders of financial bid opening procedure will be returned the tender security only. The Tender Security shall be returned to the successful Tenderer on furnishing the Performance Security.

23. Tender Validity

The Tender shall have a minimum validity period of one hundred and eighty days (180) days from the last date for submission of the Tender. The Procurer may solicit the Tenderer's consent to an extension of the validity period of the Tender. The request and the response thereto shall be made in writing. If the Tenderer agrees to extension of validity period of the Tender, the validity period of the Tender security shall also be suitably extended. The Tenderer may refuse extension of validity period of the Tender, without forfeiting the Tender security.

24. Modification / Withdrawal of the Tender

- 24.1 The Tenderer may, by written notice served on the Procurer, modify or withdraw the Tender after submission of the Tender, prior to the deadline for submission of the Tender.
- 24.2 The Tender, withdrawn after the deadline for submission of the Tender and prior to the expiration of the period of the Tender validity, shall result in forfeiture of the Tender Security.

25. Opening of the Tender

- 25.1 Tenders shall be opened, at the given place, time and date, in the presence of the Tenderer(s), if available, for which they shall ensure their presence without further invitation.
- 25.2 The Tenderer's name, modifications, withdrawal, security, attendance of the Tenderer and such other details as the Procurer may, at its exclusive discretion, consider appropriate, shall

be announced and recorded.

- 25.3 No tenderer or its representative will be allowed to keep any digital device (camera, audio recorder, cell phone etc.) during tender opening meeting at given time and location. Non-compliance will cause the rejection of respective bidder.

26. Clarification of the Tender by the Purchaser

The Procurer shall have the right, at his exclusive discretion, to require, in writing, further information or clarification of the Tender, from any or all the Tenderer(s). No change in the price or substance of the Tender shall be sought, offered or permitted except as required to confirm the corrections of arithmetical errors discovered in the Tender. Acceptance of any such correction is solid discretion of the purchaser

27. Determination of Responsiveness of the Bid (Tender)

- 27.1 The Procurer shall determine the substantial responsiveness of the Tender to the Tender Document, prior to the Tender evaluation, on the basis of the contents of the Tender itself without recourse to extrinsic evidence. A substantially responsive Tender is one which:
- 27.1.1 meets the eligibility criteria for the Tenderer for the Services;
 - 27.1.2 meets the Technical Specifications for the Services;
 - 27.1.3 meets the delivery period / point for the Services;
 - 27.1.4 meets the rate and limit of liquidated damages;
 - 27.1.5 offers fixed price quotations for the Services;
 - 27.1.6 is accompanied by the required Tender Security as part of financial bid envelope;
 - 27.1.7 The original receipt of tender fee submitted, attached with technical bid envelope;
 - 27.1.8 is otherwise complete and generally in order;
 - 27.1.9 Conforms to all terms and conditions of the Tender Document, without material deviation or reservation.
- 27.2 A material deviation or reservation is one which affects the scope, quality or performance of the Services or limits the Purchaser's rights or the Tenderer's obligations under the Contract.
- 27.3 The Tender determined as not substantially responsive shall not subsequently be made responsive by the Bidder by correction or withdrawal of the material deviation or reservation. However, the Purchaser may waive off any minor non-conformity or inconsistency or informality or irregularity in the Tender; but subject to approvals of Tender Evaluation Committee.

28. Correction of errors / Amendment of Tender

- 28.1 The Tender shall be checked for any arithmetic errors which shall be rectified, as follows:
- 28.1.1 if there is a discrepancy between the amount in figures and the amount in words for the Total Tender Price entered in the Tender Form, the amount which tallies with the Total Tender Price entered in the Price Schedule, shall govern.

- 28.1.2 if there is a discrepancy between the unit rate and the total price entered in the price Schedule, resulting from incorrect multiplication of the unit rate by the quantity, the unit rate as quoted shall govern and the total price shall be corrected, unless there is an obvious and gross misplacement of the decimal point in the unit rate, in which case the total price as quoted shall govern and the unit rate shall be corrected.
- 28.1.3 if there is a discrepancy in the actual sum of the itemized total prices and the total tender price quoted in the Price Schedule, the actual sum of the itemized total prices shall govern.
- 28.2 The Tender price as determined after arithmetic corrections shall be termed as the Corrected Total Tender Price which shall be binding upon the Tenderer.
- 28.3 Adjustment shall be based on corrected Tender Prices. The price determined after making such adjustments shall be termed as Evaluated Total Tender Price.
- 28.4 The cost of making good any deficiency resulting from any acceptable, quantifiable variations and deviations from the terms and conditions of the Contract / Technical Specifications, shall be added to the corrected Tender Price for comparison purposes only. No credit shall be given for offering delivery period earlier than the specified period.
- 28.5 The Tenderer shall state the Tender Price for the payment terms outlined in the Conditions of Contract which will be considered for the evaluation of the Tender.
- 28.6 The Tenderers may offer discounts for items which shall be taken into account in the evaluation of the Tenders so as to determine the Tender offering the lowest evaluated cost for the Purchaser in deciding award(s) for whole tender.

29. Rejection & Acceptance of Tender/Bids

- 29.1 The Procurer / Purchaser shall have the right, at his exclusive discretion, to increase / decrease the quantity of any or all item(s) of services required without any change in unit prices or other terms and conditions, accept a Tender reject any or all tender(s), cancel / annul the Tendering process at any time prior to award of formal Contract, without assigning any reason or any obligation to inform the Tenderer of the grounds for the Procurer's / Purchaser's action, and without thereby incurring any liability to the Tenderer and the decision of the Purchaser shall be final.
- 29.2 The Tender shall be rejected if it is:
- 29.2.1 substantially non-responsive; or
- 29.2.2 submitted in other than prescribed forms, annexes, schedules, charts, drawings, documents / by other than specified mode; or
- 29.2.3 incomplete, un-sealed, un-signed, printed (hand written), partial, conditional, alternative, late; or
- 29.2.4 subjected to interlineations / cuttings / corrections / erasures / overwriting; or
- 29.2.5 the Tenderer submits more than one Tenders against one LOT; or
- 29.2.6 the Tenderer refuses to accept the corrected Total Tender Price; or
- 29.2.7 the Tenderer has conflict of interest with the Purchaser; or
- 29.2.8 the Tenderer tries to influence the Tender evaluation / Contract award; or
- 29.2.9 the Tenderer engages in corrupt or fraudulent practices in competing for the Contract award.
- 29.2.10 there is any discrepancy between bidding documents and bidder's proposal i.e. any non-

conformity or inconsistency or informality or irregularity in the submitted bid.

29.2.11 the Tenderer submits any financial conditions as part of its bid which are not in conformity with tender document.

29.2.12 the Tenderer refuses or fails to submit the Performance Security as per agreed timelines, amount, currency and format.

30. Acceptance Letter (Letter of Intent)

The Purchaser shall, send the Acceptance Letter (Letter of Intent) to the successful Tenderer, prior to the expiry of the validity period of the Tender, which shall constitute a contract, until execution of the formal Contract. However, the Purchaser reserves exclusive rights to cancel the Acceptance letter (Letter of Intent) at any time without giving any reason thereof.

31. Performance Security

31.1 The successful Tenderer shall furnish Performance Security as under:

31.1.1 within ten (10) working days of the receipt of the Acceptance Letter from the Purchaser;

31.1.2 in the form of a Bank Guarantee, issued by a scheduled bank operating in Pakistan, as per the format provided in the Tender Document;

31.1.3 denominated in Pak Rupees;

31.1.4 Have a minimum validity period of one year from the date of Award Notification or until the date of expiry of yearly support period.

31.1.5 The technically and financially successful tenderer submits a sum equivalent to 10% of the total contract value for a period of three (03) years, on a yearly basis, with an undertaking to renew the Bank Guarantee before the end of each year, one month before the expiry period of the submitted bank guarantee.

31.2 The proceeds of the Performance Security shall be payable to the Purchaser, on occurrence of any / all of the following conditions:

31.2.1 If the Contractor commits a default under the Contract;

31.2.2 If the Contractor fails to submit the bank guarantee for the next year one month before the expiry of already submitted bank guarantee.

31.2.3 If the Contractor fails to fulfill any of the obligations under the Contract

31.2.4 If the Contractor violates any of the terms and conditions of the Contract.

31.2.5 If the Tenderer refuses or fails to submit the Performance Security as per agreed timelines, amount and format.

31.3 The Contractor shall cause the validity period of the performance security to be extended for such period(s) as the contract performance may be extended. The Performance Security shall be returned to the Tenderer within thirty working days after the expiry of its validity on written request from the Contractor.

32. Redressal of Grievances

32.1 The Procurer shall constitute a committee comprising of odd number of persons, with proper powers and authorizations, to address the complaints of bidders that may occur prior to the entry into force of the procurement contract.

32.2 Any bidder feeling aggrieved by any act of the Procurer after the submission of his bid may lodge a written complaint concerning his grievances not later than fifteen days after the announcement of the bid evaluation report.

- 32.3 The committee shall investigate and decide upon the complaint within fifteen days of the receipt of the complaint.
- 32.4 Mere fact of lodging of a complaint shall not warrant suspension of the procurement process.
- 32.5 Any bidder not satisfied with the decision of the committee of the procuring agency may follow the process mentioned vide Statutes and Regulations.

TERMS & CONDITIONS OF THE DRAFT CONTRACT

Draft Contract for
Procurement of Equipment and Implementation,
Operations and Maintenance of Proven Globally
Deployed Automated Fare Collection & Bus Scheduling
System (AFC-BSS)

between

[Purchaser]

and

[Contractor]

Dated:

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I. Agreement

This CONTRACT AGREEMENT (this “Contract”) made as of the [day] of [month], [year], between [full legal name of the Purchaser] (the “Purchaser”), on the one part,

and

[full legal name of Contractor], on the other part severally liable to the Purchaser for all of the Contractor’s obligations under this Contract and is deemed to be included in any reference to the term “Contractor.”

RECITALS

WHEREAS,

- (a) The Government through the Purchaser intends to spend a part of its budget / funds for making eligible payments under this contract. Payments made under this contract will be subject, in all respects, to the terms and conditions of the Contract in lieu of procurement of equipment and consulting services as described in the contract.
- (b) The Purchaser has requested the Contractor to provide certain services as described in Tender Document; and
- (c) The Contractor, having represented to the Purchaser that it has the required professional skills, and personnel and technical resources, has agreed to provide such services on the terms and conditions set forth in this Contract.

NOW THEREFORE, the Parties to this Contract agree as follows:

- 1. The Contractor hereby covenants with the Purchaser to supply the equipment and services, in conformity in all respects with the provisions of the Contract, in consideration of the payments to be made by the Purchaser to the Contractor.
- 2. The Purchaser hereby covenants with the Contractor to pay the Contractor, the Contract Price or such other sum as may become payable, at the times and in the manner, in conformity in all respects with the provisions of the Contract, in consideration of supply of the Services.
- 3. The following shall be deemed to form and be read and construct as part of this Contract:
 - a. The Tender Document
 - b. Bidder’s Proposal
 - c. Terms and Conditions of the Contract
 - d. Special Stipulations

- e. The Technical bid / Specifications
- f. Tender Form
- g. Price Schedule
- h. Affidavit(s)
- i. Authorized Dealership / Agency Certificate
- j. Performance Security
- k. Service Level Agreement (SLA),
- l. Non-Disclosure Agreement (NDA), if required
- m. Any Standard Clause acceptable for Purchaser

4. This Contract shall prevail over all other documents. In the event of any discrepancy / inconsistency within the Contract, the above Documents shall prevail in the order listed above.

Draft Service Level Agreement is elaborated in Annexure J.

IN WITNESS whereof the Parties hereto have caused this Contract to be executed in accordance with the laws of **Pakistan** as of the day, month and year first indicated above.

For [full legal name of the Purchaser]:

For [full legal name of the Contractor]:

Signature

Signature

Name

Name

Witnessed By:

Witnessed By:

WITNESSES

Signature _____
 CNIC # _____
 Name _____
 Designation _____
 Address _____

Signature _____
 CNIC # _____
 Name _____
 Designation _____
 Address _____

II General Conditions of Contract

33. Contract

The Purchaser shall, after receipt of the Performance Security from the successful Tenderer, send the Contract provided in the Tender Document with any modification mutually agreed between the Purchaser & successful tenderer, to the successful Tenderer. Within ten working days of the receipt of such Contract, the Tenderer shall sign and date the Contract and return it to the Purchaser.

34. Contract Documents and Information

The Contractor shall not, without the Purchaser's prior written consent, make use of the Contract, or any provision thereof, or any document(s), specifications, drawing(s), pattern(s), sample(s) or information furnished by or on behalf of the Purchaser in connection therewith, except for purposes of performing the Contract or disclose the same to any person other than a person employed by the Contractor in the performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only as far as may be necessary for purposes of such performance.

35. Contract Language

The Contract and all documents relating to the Contract, exchanged between the Contractor and the Purchaser, shall be in English. The Contractor shall bear all costs of translation to English and all risks of the accuracy of such translation.

36. Patent Rights and Rights to the Contents of the Program

The Contractor shall indemnify and hold the Purchaser harmless against all third party claims of infringement of patent, trademark or industrial design rights arising from use of the Service or any part thereof. The Purchaser will hold the exclusive rights to the contents of this program.

37. Packing

The Contractor shall provide such packing of the Goods as is sufficient to prevent their damage or deterioration during storage / transit to their final destination as indicated in the Contract. Packing case size and weights shall take into consideration, where appropriate, of the final destination and withstand, without limitation, rough handling, exposure to extreme temperatures, salt and precipitation at all points in storage / transit. The Contractor shall arrange and pay for the packing of the Goods to the place of destination as specified in the Contract, and the cost thereof shall be included in the Contract Price.

38. Insurance

The Contractor shall provide such insurance of the Goods as is sufficient to protect against their damage or deterioration during course of the project, storage / transit to their final destination as indicated in the Contract. The Contractor shall arrange and pay for the insurance of the Goods to the place of destination and time, as required by the Purchaser.

39. Warranty

- 39.1 The Contractor shall warrant to the Purchaser that the Goods/Services supplied by the Contractor, under the Contract are genuine, brand new, non- refurbished, un-altered in any way, of the most recent or current model, imported through proper channel, and incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.
- 39.2 The Contractor shall further warrant that the Goods/Services supplied by the Contractor, under the Contract shall have no defect, arising from design, materials, workmanship or from any act or omission of the Contractor that may develop under normal use of the supplied Goods/Services.
- 39.3 Free, on site repair / replacement of defective / damaged parts and labor. Engage and deploy suitably skilled personnel for development, installation, operation and maintenance of the AFC-BSS Project, and maintenance/replacement of all related equipment/components in a timely manner and at its own cost during the course of the contract.
- 39.4 The Contractor shall clearly mention Terms and Conditions of service agreements for the Goods supplied and supply the same to the Purchaser.

40. Execution Schedule

The Contractor shall submit an Execution Schedule, giving details of services rendered, as required under the Contract, to the Client, within five (5) days of the signing of the Contract.

41. Payment

- 41.1 The Contractor shall submit an Application for Payment (Invoice), in the prescribed form, to the Client. The Application for Payment shall: be accompanied by such invoices, receipts or other documentary evidence as the Client may require; state the amount claimed; and set forth in detail, in the order of the Price Schedule, particulars of the Services provided, up to the date of the Application for Payment and subsequent to the period covered by the last preceding Certificate of Payment, if any.
- 41.2 The Purchaser shall issue a Certificate of Payment, in the prescribed form, with a copy to the Contractor, verifying the amount due, within seven days of receipt of an Application for Payment. The Client may withhold a Certificate of Payment on account of defect(s) / short coming(s) in the services provided. The Client may make any correction or modification in a Certificate of Payment that properly be made in respect of any previous certificate.
- 41.3 The Purchaser shall pay the amount verified in the Certificate of Payment within twenty one (21) days of receipt of a Certificate of Payment. Payment shall not be made in advance. The Purchaser shall make payment for the Services provided, to the Contractor, as per payment schedule **through treasury cheque.**
- 41.4 Payments shall be made against successful delivery of services per each Phase of the Program
- 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.

Payment Schedule for Lot# 1

Sr No	Description	Payment
1	Supply/Delivery of AFC-BSS Hardware and IT equipment	25% of total hardware and IT equipment cost
2	Complete Deployment, Commissioning of Software and Solution Configuration	75% of remaining hardware and IT equipment cost and 100% of software cost
3	Ticket Sales Operations and AFC-BSS Solution Support and Maintenance	Monthly

Payment Schedule for Lot# 2

Sr No	Description	Payment
1	Supply/Delivery of AFC-BSS Hardware and IT equipment	25% of total hardware and IT equipment cost
2	Complete Deployment, Commissioning of Software and Solution Configuration	75% of remaining hardware and IT equipment cost and 100% of software cost
3	Support and Maintenance of AFC-BSS Solution	Monthly

Payment Schedule for Lot# 3

Sr No	Description	Payment
1	Ticket Sales Operations	Monthly

42. Price

The Contractor shall not charge prices for the equipment and services provided and for other obligations discharged, under the Contract, varying from the prices quoted by the Contractor in the Price Schedule or not agreed by the Purchaser as per this Contract

43. Contract Amendment

- 43.1 The Purchaser may, at any time, by written notice served on the Contractor, alter, amend, omit, increase, decrease quantity and scope, of all / any of the Services / the Works, in whole or in part.
- 43.2 The Contractor shall, within ten working days of receipt of such notice, submit a cost estimate and execution schedule of the proposed change (hereinafter referred to as the Change), to the Purchaser.
- 43.3 The Contractor shall not execute the Change until and unless the Purchaser has allowed the said Change, by written order served on the Contractor with a copy to the Client.
- 43.4 The Change, mutually agreed upon, shall constitute part of the obligations under this Contract, and the provisions of the Contract shall apply to the said Change.
- 43.5 No variation in or modification in the Contract shall be made, except by written amendment signed by both the Purchaser and the Contractor.

44. Assignment / Subcontract

- 44.1 The Contractor will not assign or sub-contract its obligations under the Contract, in whole or in part, except with the Purchaser's prior written consent.
- 44.2 The Contractor shall guarantee that any and all assignees / subcontractors of the Contractor shall, for performance of any part / whole of the work under the contract, comply fully with the terms and conditions of the Contract applicable to such part / whole of the work under the contract.

45. Extensions in time for performance of obligations under the Contract

If the Contractor encounters conditions impeding timely performance of any of the obligations, under the Contract, at any time, the Contractor shall, by written notice served on the Purchaser, promptly indicate the facts of the delay, its likely duration and its cause(s). As soon as practicable after receipt of such notice, the Purchaser shall evaluate the situation and may, at its exclusive discretion, without prejudice to any other remedy it may have, by written order served on the Contractor with a copy to the Client, extend the Contractor's time for performance of its obligations under the Contract.

46. Liquidated Damages

If the Contractor fails / delays in performance of any of the obligations, under the Contract / violates any of the provisions of the Contract / commits breach of any of the terms and conditions of the Contract the Purchaser may, without prejudice to any other right of action / remedy it may have, deduct from the Contract Price, as liquidated damages, a sum of money as per following schedule:

- i. @0.25% per day of the concurrent annual contract cost, for first 30-days
- ii. @2% per day of the concurrent annual contract cost for, next one week after expiry of first 30-days
- iii. @3% per day of the concurrent annual contract cost for, next one week and so on after expiry of first 38-days

on which is attributable to such part of the Services / the Works as cannot, in consequence of

the failure / delay, be put to the intended use, between the scheduled delivery date(s), with any extension of time thereof granted by the Purchaser, and the actual delivery date(s). Provided that the amount so deducted shall not exceed, in the aggregate, 50% of the total Contract Price.

47. Forfeiture of Performance Security

If the Contractor fails / delays in performance of any of the obligations, under the Contract / violates any of the provisions of the Contract / commits breach of any of the terms and conditions of the Contract the Purchaser may, without prejudice to any other right of action / remedy it may have, forfeit Performance Security of the Contractor.

Failure to supply required items/services within the specified time period will invoke penalty as specified in this document. In addition to that, Performance Security amount will be forfeited and the company will not be allowed to participate in future tenders as well.

48. Termination for Default

- 48.1 If the Contractor fails / delays in performance of any of the obligations, under the Contract / violates any of the provisions of the Contract / commits breach of any of the terms and conditions of the Contract, or engages in any illegal activities, the Purchaser may, at any time, without prejudice to any other right of action / remedy it may have, by written notice served on the Contractor, indicate the nature of the default(s) and terminate the Contract, in whole or in part, without any compensation to the Contractor. Provided that the termination of the Contract shall be resorted to only if the Contractor does not cure its failure / delay, within fifteen working days (or such longer period as the Client may allow in writing), after receipt of such notice.
- 48.2 If the Purchaser terminates the Contract for default, in whole or in part, the Purchaser may procure, upon such terms and conditions and in such manner as it deems appropriate, Services / Works, similar to those undelivered, and the Contractor shall be liable to the Purchaser for any excess costs for such similar Services / Works. However, the Contractor shall continue performance of the Contract to the extent not terminated.

49. Termination for Insolvency

If the Contractor becomes bankrupt or otherwise insolvent, the Purchaser may, at any time, without prejudice to any other right of action / remedy it may have, by written notice served on the Contractor, indicate the nature of the insolvency and terminate the Contract, in whole or in part, without any compensation to the Contractor.

50. Termination for Convenience

- 50.1 The Purchaser may, at any time, by written notice served on the Contractor, terminate the Contract, in whole or in part.
- 50.2 The Services which are complete or to be completed by the Contractor, within thirty working days after the receipt of such notice, shall be accepted by the Purchaser. For the remaining services, the Purchaser may elect:

50.2.1 to have any portion thereof completed and delivered; and/or

50.2.2 to cancel the remainder and pay the Contractor by:

- Purchasing all equipment provisioned till date by the Contractor (taking into consideration depreciated values)
- Making payments for services already rendered (if any are outstanding),
- Paying a reasonable allowance for overheads, not exceeding 10% of value of utilized equipment and services.

51. Force Majeure

51.1 Force majeure shall mean any event, act or other circumstances not being an event, act or circumstance under the control of the purchaser or of the contractor. Non-availability of materials/supplies or of import license or of export permit shall not constitute Force majeure. If by reasons of Force Majeure supplies or services cannot be delivered by the due delivery date then the delivery date may be extended appropriately by the purchaser keeping in view all the circumstances and requirements of the Purchaser.

51.2 The Contractor shall not be liable for liquidated damages, forfeiture of its Performance Security, blacklisting for future tenders, termination for default, if and to the extent of his failure / delay in performance /discharge of obligations under the Contract is the result of an event of Force Majeure.

51.3 If a Force Majeure situation arises, the Contractor shall, by written notice served on the Purchaser, indicate such condition and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Contractor shall continue to perform 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.

52. Dispute Resolution

52.1 The Purchaser and the Contractor shall make every effort to amicably resolve, by direct informal negotiation, any disagreement or dispute arising between them under or in connection with the Contract.

52.2 If, after thirty working days, from the commencement of such informal negotiations, the Purchaser and the Contractor have been unable to amicably resolve a Contract dispute, either party may, require that the dispute be referred for resolution by arbitration under the Pakistan Arbitration Act, 1940, as amended, by one or more arbitrators selected in accordance with said Law. The place for arbitration shall be Lahore, Pakistan. The award shall be final and binding on the parties.

53. Statutes and Regulations

53.1 The Contract shall be governed by and interpreted in accordance with the laws of Pakistan. The Contractor shall, in all matters arising in the performance of the Contract, conform, in all respects, with the provisions of all Central, Provincial and Local Laws, Statutes, Regulations and

By-Laws in force in Pakistan, and shall give all notices and pay all fees required to be given or paid and shall keep the Purchaser indemnified against all penalties and liability of any kind for breach of any of the same.

- 53.2 The Courts at Lahore shall have the exclusive territorial jurisdiction in respect of any dispute or difference of any kind arising out of or in connection with the Contract.

54. Taxes and Duties

The Contractor shall be entirely responsible for all taxes, duties and other such levies imposed make inquiries on income tax / sales tax to the concerned authorities of Income Tax and Sales Tax Department, Government of Pakistan.

55. Contract Cost

The Contractor shall bear all costs / expenses associated with the preparation of the Contract and the Purchaser shall in no case be responsible / liable for those costs / expenses e.g. Contract Stamp duty charges etc.

56. Authorized Representative

The Purchaser, or the Contractor may, at their exclusive discretion, appoint their Authorized Representative and may, from time to time, delegate any / all of the duties / authority, vested in them, to their authorized Representative(s), including but not limited to, signing on their behalf to legally bind them, and may, at any time, revoke such delegation.

- 55.1 The Authorized Representative shall only carry out such duties and exercise such authority as may be delegated to him, by the Purchaser, or the Contractor.
- 55.2 Any such delegation or revocation shall be in writing and shall not take effect until notified to the other parties to the Contract.
- 55.3 Any decision, instruction or approval given by the Authorized Representative, in accordance with such delegation, shall have the same effect as though it had been given by the Principal.
- 55.4 Notwithstanding above Clause, any failure of the Authorized Representative to disapprove Services or Works shall not prejudice the right of the Client to disapprove such Services or Works and to give instructions for the rectification thereof.
- 55.5 If the Contractor questions any decision or instruction of the Authorized Representative of the Purchaser / the Client, the Contractor may refer the matter to the Purchaser / the Client who shall confirm, reverse or vary such decision or instruction.

57. Waiver

Failure of either party to insist upon strict performance of the obligations of the other party, under the Contract, shall in no way be deemed or construed to affect in any way the right of that party to require such performance.

58. Training

- 57.1 The Contractor shall arrange and undertake a comprehensive training program for the staff nominated by the Purchaser / the Client to ensure that they shall acquire a good working knowledge of supply of such Services to be supplied under the Contract.
- 57.2 In case of non-compliance with instructions, non-cooperation or other difficulties experienced by the Contractor with regard to any of these personnel, the Contractor shall apprise the Purchaser / Client and proceed to implement suitable remedial measures after consultation with them.

59. Special Stipulations

SCHEDULE-A, SPECIAL STIPULATIONS	
For ease of Reference, certain special stipulations are as under:	
Tender Security	LOT wise tender security (Separate for each LOT, if the bidder is participating for more than one LOTs) would be submitted by the Bidder. The Contractor shall furnish the Tender Security as under: for the whole one LOT of Tender; if Total Tender Price is less than or equal to PKR 5 Million, in the form of Demand Draft / Pay Order / Call Deposit Receipt, in the name of the Procurer; if Total Tender Price is more than PKR 5 Million, in the form of Bank Guarantee, issued by a scheduled bank operating in Pakistan, in the name of the Procurer, as per the format provided in the Tender Document; for a sum equivalent to 2% of the Total Tender (LOT) Price; denominated in Pak Rupees; Have a minimum validity period of one hundred and eighty days (180) from the last date for submission of the Tender or until furnishing of the Performance Security, whichever is later
Performance Security	The successful Contractor shall furnish Performance Security as under: within ten (10) working days of the receipt of the Acceptance Letter from the Purchaser; in the form of a Bank Guarantee, issued by a scheduled bank operating in Pakistan, as per the format provided in the Tender

	Document to the Purchaser; denominated in Pak Rupees; Have a minimum validity period of one year from the date of Award Notification or until the date of expiry of yearly support period. The technically and financially successful tenderer submit a sum equivalent to 10% of the total contract value for a period of three (03) years, on a yearly basis, with an undertaking to renew the Bank Guarantee before the end of each year, one month before the expiry period of the submitted bank guarantee.
Start operation of Services after installation, configuration, deployment, commissioning, testing, and training	Fully functional AFC-BSS setup for 31 stations of MBS-PMU/PMA within 100 Calendar Days from the issuance of LOI.
Liquidated damages for failure / configuration of Services by the Contractor	If the Contractor fails / delays in performance of any of the obligations, under the Contract / violates any of the provisions of the Contract / commits breach of any of the terms and conditions of the Contract the Purchaser may, without prejudice to any other right of action / remedy it may have, deduct from the Contract Price, as liquidated damages, a sum of money as per following schedule: i. @0.25% per day of the concurrent annual contract cost, for first 30-days ii. @2% per day of the concurrent annual contract cost for, next one week after expiry of first 30-days iii. @3% per day of the concurrent annual contract cost for, next one week and so on after expiry of first 38-days on which is attributable to such part of the Services / the Works as cannot, in consequence of the failure / delay, be put to the intended use, between the scheduled delivery date(s), with any extension of time thereof granted by the Purchaser, and the actual delivery date(s). Provided that the amount so deducted shall not exceed, in the aggregate, 50% of the total Contract Price.
Legal Status to Work in Pakistan	The Bidder must be allowed and meet all conditions set forth by the Government to work with all concerned parties.

60. Technical Evaluation Criteria

A point system will be used for technical qualifying for the contractors.

PASS MARKS FOR ALL LOTS: A technically eligible bidder for a LOT, based on conditions listed in Section below, not meeting the 70% pass mark limit will be rejected in Technical evaluation of that specific LOT, and its LOT Financial Proposal will be returned to it unopened. All bidders scoring greater than or equal to 70% of the marks will be accepted in LOT technical proposal, and their respective financial bids will be opened as per rules and regulations.

Lot # 2 and Lot # 3 will only be opened if the bids as received in Lot# 1 are found non conformant or else found unreasonable by the Purchaser.

It is mentioned that the Lot best suitable and opted by the Purchaser, would be awarded accordingly as per rules, while the Purchaser reserves exclusive rights to cancel/annul or reject any one or all bids submitted against any Lot at any time without giving any reason thereof.

According to the Technical Proposal, the Technical bids will be rated as follows. Bidders may fill in the below evaluation sheet and do their own evaluation for submission, but the evaluation done by the Procurer/ Evaluator shall be the valid evaluation and shall hold:

For each component listed below, provide detailed specifications with relevant materials including information on standards compliance.

COMPLIANCE SHEET FOR (LOT# 1) BIDS

Sr No	Component	Estimated Quantity	Requirements Met (Y/N)
1	Provisioning and installation of UPS (Necessarily to provide power backup of at least 4 hours at any given time for all AFC-BSS components including but not limited to 8 turnstiles, 8 validators, station PC(s) and at minimum 2 top up/refund machines, ticket vending machine, internet routers and/or other necessary equipment material, also includes additional provisioning of 10KVA per the requirements of existing systems)	31	

2	Provisioning and installation of Top UP/Refund Machines and/or RFID Token Recharge Machine (any/all of them whichever is applicable). Top-Up machines should have feature that they function only when amount/balance is available.	62	
3	Deployment of a reliable, proven, and globally deployed Automated Fare Collection System, Vehicle Location System and Passenger Information System and bus scheduling system and any other components part of AFC-BSS stated in this RFP (Able to handle staged/zone/distance and flat based fare policies and disburse operators on the basis of real data collected via trackers placed in the bus)	1	
4	Turnstiles (8 for each station for roughly 31 stations)	248	
5	Validators (Inclusive of all types proposed)	248	
6	Driver console, including GPS Trackers for Buses	68	
7	Fare Media Smart Cards and Throwaway Media (Inclusive of all types of fare media)	Based on anticipated ridership volumes given in section 7	
8	Provisioning of data connectivity to each station (primary	31 stations	

	medium should be fiber optic, secondary could be any)		
9	Provisioning of reliable data network at each station and its two platforms – including wiring, switches, routers, Station PCs, and all other components necessary to provision and operate AFC-BSS components efficiently. Please list all components.	31	
10	Provisioning of handheld/portable ticket validators	5	
11	Bulk initialization machines. Should have feature to initialize cards/tokens only when amount/balance is available in the machine. If no balance is available, Contractor must first credit the appropriate bank account, so that the machine can initialize tokens.	2	
12	Any other equipment/hardware/software components essential for AFC-BSS operations at the central data center or bus stations. (Please provide detailed list along with justification)	Specify quantity	
13	Ticket Vending Machines (the machines must accept cash (notes and coins) and dispense throwaway/reusable fare media)	31	
14	Support & Maintenance of the AFC-BSS solution including items 1 through 13 above – for 3 years (software support, maintenance of equipment, data network, and overall responsibility of solution)		
15	Operations at Ticket Sales Offices and at Turnstile Locations (Including cash handling)	At least 1 person for ticket sales and at least 1 person for access control at turnstiles (per shift, per platform at each station) at all times during MBS-PMU	

		operating hours.	
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The mandatory requirements given above must be adhered to in order to qualify for evaluation against the criteria given.

COMPLIANCE SHEET FOR (LOT# 2) BIDS

Sr No	Component	Estimated Quantity	Requirements Met (Y/N)
1	Provisioning and installation of UPS (Necessarily to provide power backup of at least 4 hours at any given time for all AFC-BSS components including but not limited to 8 turnstiles, 8 validators, station PC(s) and at minimum 2 top up/refund machines, ticket vending machine, internet routers and/or other necessary equipment material, also includes additional provisioning of 10KVA per the requirements of existing systems)	31	
2	Provisioning and installation of Top UP/Refund Machines and/or RFID Token Recharge Machine (any/all of them whichever is applicable). Top-Up machines should have feature that they function only when amount/balance is available.	62	
3	Deployment of a reliable, proven, and globally deployed Automated Fare Collection System, Vehicle Location System and Passenger Information System and bus scheduling system and any other components part of AFC-BSS stated in this RFP (Able to handle staged/zone/distance and flat based fare policies and disburse operators on the basis of real data collected via trackers placed in the bus)	1	

4	Turnstiles (8 for each station for roughly 31 stations)	248	
5	Validators (Inclusive of all types proposed)	248	
6	Driver console, including GPS Trackers for Buses	68	
7	Fare Media Smart Cards and Throwaway Media (Inclusive of all types of fare media)	Based on anticipated ridership volumes given in section 7	
8	Provisioning of data connectivity to each station (primary medium should be fiber optic, secondary could be any)	31 stations	
9	Provisioning of reliable data network at each station and its two platforms – including wiring, switches, routers, Station PCs, and all other components necessary to provision and operate AFC-BSS components efficiently. Please list all components.	31	
10	Provisioning of handheld/portable ticket validators	5	
11	Bulk initialization machines. Should have feature to initialize cards/tokens only when amount/balance is available in the machine. If no balance is available, Contractor must first credit the appropriate bank account, so that the machine can initialize tokens.	2	
12	Any other equipment/hardware/software components essential for AFC-BSS operations at the central data center or bus stations. (Please provide detailed list along with justification)	Specify quantity	
13	Ticket Vending Machines (the machines must accept cash (notes and coins) and dispense throwaway/reusable fare	31	

	media)		
14	Support & Maintenance of the AFC-BSS solution including items 1 through 13 above – for 3 years (software support, maintenance of equipment, data network, and overall responsibility of solution)		

The mandatory requirements given above must be adhered to in order to qualify for evaluation against the criteria given.

COMPLIANCE SHEET FOR (LOT# 3) BIDS

1	Operations at Ticket Sales Offices and at Turnstile Locations (Including cash handling)	At least 1 person for ticket sales and at least 1 person for access control at turnstiles (per shift, per platform at each station) at all times during MBS-PMU operating hours.	
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The mandatory requirements given above must be adhered to in order to qualify for evaluation against the criteria given.

Technical Evaluation Criteria FOR (LOT# 1)

References and supporting documentation required as evidence for each:

Sr No.	Criteria	Marks	Comment/Description
1	Number of implementations of successful similar projects of proven, globally-deployed automated fare collection systems, automated vehicle location systems and bus scheduling solutions (verifiable list to be provided) (Mandatory feature)	20	1 to 2 = 8 Points 3 to 5 = 16 Points 6 or Greater = 20 Points
2	Maximum passenger journeys per day that the system can handle	5	Highest score will be awarded to the bidder with highest number of passengers journeys per day [5] and every other in descending order will be given Score of Next Available Highest -2. Lowest marks will be zero. No negative marks
3	Total number of passengers served via the proposed system	5	Highest score will be awarded to the bidder with highest number of passengers served [5] and every other in descending order will be given Score of Next Available Highest -2. Lowest marks will be zero. No negative marks
4	Number of public sector projects greater than Rs. 500 million in value	5	1 to 3 = 2 Points 4 to 5 = 3 Points 6 or Greater = 5 Points
5	Team members in the AFC-BSS software team with more than 3 years of experience in the related field.		4 to 5 = 2 Points

	Please ensure to attach updated resumes with date of joining information for each team member.	5	6 to 10 = 3 Points 11 to 15 = 4 Points 16 or Greater = 5 Points
6	Team members in the equipment maintenance team with more than 3 years of experience in the related field	5	4 to 5 = 2 Points 6 to 10 = 3 Points 11 to 15 = 4 Points 16 or Greater = 5 Points
7	Financial Strength of the bidder Annual Revenue	15	Audited Accounts of last 5 years OR Copy of Income Tax Returns of last 5 years. Highest score will be awarded to the bidder with highest annual revenue [15] and every other in descending order will be given Score of Next Available Highest -3. Lowest marks will be zero. No negative marks
8	Setting up local workshops or engaging local partner for maintenance of equipment deployed – detailed plan must be shared	10	1 local workshop [5 Points] 2 or more than 2 local workshops [10 Points]
9	Mean Time Between Failure (MTBF) for turnstiles	5	Highest score will be awarded to the bidder with highest MTBF value [5] and every other in descending order will be given Score of Next Available Highest -2. Lowest marks will be zero. No negative marks
10	Demonstrated capabilities of AFC-BSS to produce reports and query data on the fly	5	

11	AFC-BSS must be able to maintain detailed user activity/transactional logs for review by system administrators and/or auditors at any point of time	10	
12	Number of successful projects with deployment of more than 200 resources onsite in multiple shifts	20	1 to 2 = 8 Points 3 to 5 = 16 Points 6 or Greater = 20 Points
13	Workforce currently working for the enterprise	10	200 to 400 = 4 Points 401 to 600 = 7 Points 601 or more = 10 Points
14	Number of projects with experience of Cash Handling in projects of similar nature	10	1 to 3 = 4 Points 4 to 5 = 7 Points 6 or Greater = 10 Points
15	Project Managers with more than 7 years of Project Management's Experience	10	2 to 3 = 5 Points 4 to 6 = 7 Points 7 or Greater = 10 Points
TOTAL		140	

Technical Evaluation Criteria FOR (LOT# 2)

Lot # 2 will only be opened, processed and evaluated if the bids as received in Lot# 1 are found non conformant or else found unreasonable by the Purchaser.

It is mentioned that the Lot best suitable and opted by the Purchaser, would be awarded accordingly as per rules, while the Purchaser reserves exclusive rights to cancel/annul or reject any one or all bids submitted against any Lot at any time without giving any reason thereof.

References and supporting documentation required as evidence for each:

Sr No.	Criteria	Marks	Comment/Description
1	Number of implementations of successful similar projects of proven, globally-deployed automated fare collection systems, automated vehicle location systems and bus scheduling solutions (verifiable list to be provided) (Mandatory feature)	20	1 to 2 = 8 Points 3 to 5 = 16 Points 6 or Greater = 20 Points
2	Maximum passenger journeys per day that the system can handle	5	Highest score will be awarded to the bidder with highest number of passengers journeys per day [5] and every other in descending order will be given Score of Next Available Highest -2. Lowest marks will be zero. No negative marks
3	Total number of passengers served via the proposed system	5	Highest score will be awarded to the bidder with highest number of passengers served [5] and every other in descending order will be given Score of Next Available Highest -2. Lowest marks will be zero. No negative marks

4	Number of public sector projects greater than Rs. 500 million in value	5	1 to 3 = 2 Points 4 to 5 = 3 Points 6 or Greater = 5 Points
5	Team members in the AFC-BSS software team with more than 3 years of experience in the related field. Please ensure to attach updated resumes with date of joining information for each team member.	5	4 to 5 = 2 Points 6 to 10 = 3 Points 11 to 15 = 4 Points 16 or Greater = 5 Points
6	Team members in the equipment maintenance team with more than 3 years of experience in the related field	5	4 to 5 = 2 Points 6 to 10 = 3 Points 11 to 15 = 4 Points 16 or Greater = 5 Points
7	Financial Strength of the bidder Annual Revenue	15	Audited Accounts of last 5 years OR Copy of Income Tax Returns of last 5 years. Highest score will be awarded to the bidder with highest annual revenue [15] and every other in descending order will be given Score of Next Available Highest -3. Lowest marks will be zero. No negative marks
8	Setting up local workshops or engaging local partner for maintenance of equipment deployed – detailed plan must be shared	10	1 local workshop [5 Points] 2 or more than 2 local workshops [10 Points]
9	Mean Time Between Failure (MTBF) for turnstiles	5	Highest score will be awarded to the bidder with highest MTBF value [5] and every other in descending order will be given Score of Next Available

			Highest -2. Lowest marks will be zero. No negative marks
10	Demonstrated capabilities of AFC-BSS to produce reports and query data on the fly	5	
11	AFC-BSS must be able to maintain detailed user activity/transactional logs for review by system administrators and/or auditors at any point of time	10	
12	Project Managers with more than 7 years of Project Management's Experience	10	2 to 3 = 5 Points 4 to 6 = 7 Points 7 or Greater = 10 Points
TOTAL		100	

Technical Evaluation Criteria FOR (LOT# 3)

Lot # 3 will only be opened, processed and evaluated if the bids as received in Lot# 1 are found non conformant or else found unreasonable by the Purchaser.

It is mentioned that the Lot best suitable and opted by the Purchaser, would be awarded accordingly as per rules, while the Purchaser reserves exclusive rights to cancel/annul or reject any one or all bids submitted against any Lot at any time without giving any reason thereof.

References and supporting documentation required as evidence for each:

Sr No.	Criteria	Marks	Comment/Description
1	Number of projects with deployment of more than 100 resources onsite in multiple shifts	20	1 to 2 = 8 Points 3 to 5 = 16 Points 6 or Greater = 20 Points
2	Workforce currently working for the enterprise	10	200 to 400 = 4 Points 401 to 600 = 7 Points 601 or more = 10 Points
3	Number of projects with experience of Cash Handling in projects of similar nature	10	1 to 3 = 4 Points 4 to 5 = 7 Points 6 or Greater = 10 Points
4	Financial Strength of the bidder Annual Revenue	15	Audited Accounts of last 5 years OR Copy of Income Tax Returns of last 5 years. Highest score will be awarded to the bidder with highest annual revenue [15] and every other in descending order will be given Score of Next Available Highest -3. Lowest marks will be zero. No negative marks

5	Project Managers with more than 7 years of Project Management's Experience	10	2 to 3 = 5 Points 4 to 6 = 7 Points 7 or Greater = 10 Points
TOTAL		65	

61. Financial Cost/ Price Schedule

MUST BE SUBMITTED IN SEPARATE ENVELOPE HIGHLIGHTED AS FINACIAL PROPOSAL

Financial Cost/ Price Schedule for Lot# 1

EQUIPMENT TO BE PURCHASED:

Equipment		COL-A	COL-B	COL-C = COL-A * COL-B
Sr No	Component	Estimated Quantity	Unit Price (Inc. Taxes)	Total Price (Inc. Taxes)
1	Power Backup (with at least 4 hours of backup time) to support all AFC-BSS related equipment and components as well as station (2 platforms) network and communications devices, , also includes additional provisioning of 10KVA per the requirements of existing systems	31		
2	Top UP/Refund Machines and/or RFID Token Recharge Machine (any/all of them whichever is applicable)	62		
3	Turnstiles (8 for each station for roughly 31 stations)	248		
4	Validators (Inclusive of all types proposed)	248		
5	Driver console, including GPS Trackers for Buses	68		
6	Provisioning of data connectivity to each station (primary medium should be fiber optic, secondary could be any)	31 stations (approximat ely)		

7	Provisioning of reliable data network at each station and its two platforms – including wiring, switches (outdoor weather-resistant layer 3 capable), routers, Station PCs, and all other components necessary to provision and operate AFC-BSS components efficiently. Please list all components.	31		
8	Provisioning of handheld ticket validators (for spot checking by ticket inspectors)	5		
9	On Station Sign Boards	31		
10	Bulk Initialization Machines for RFID cards/Tokens	2		
11	Ticket Vending Machines (the machines must accept cash (notes and coins) and dispense throwaway/reusable fare media)	31		
12	Data center related equipment (including servers, routers, firewalls, backup equipment, racks etc). Provide quantities and specifications	1		
13	Any other equipment/hardware components essential for AFC-BSS operations at the central data center or bus stations. (Please provide detailed list along with justification and component price)	Specify quantities		
Software Solution				
14	Reliable, proven, and globally deployed , Automated Fare Collection System (Able to handle staged/zone/distance and flat based fare policies and other related requirements stated in this RFP)	1		
15	Reliable, proven, and globally deployed Vehicle Location System	1		
16	Reliable, proven, and globally deployed Passenger Information System	1		
17	Any other software components required for AFC-BSS operations at the central data center or bus stations. (Please provide detailed list along with justification and component price)			
18	Fare Media, Smart Cards and Throwaway Media	Based on		

	(Inclusive of all types of fare media to be supplied for the period of support i.e 3 years)	anticipated ridership volumes given in section 7		
TOTAL COST				X

$$X = 1+2+3+4+5+6+7+8+9+10+11+12+13+14+15+16+17+18$$

Note:

- 1) Installation of equipment along with successful testing and commissioning will be the responsibility of bidder for which bidder must not quote price separately.
- 2) The Purchaser may, at any time, by written notice served on the Contractor, alter, amend, omit, increase, decrease quantity and scope, of all / any of the Services / the Works, in whole or in part.

OPERATIONS AND MAINTENANCE:

Sr No	Item	Price (Inc. Taxes)
1	Monthly Service Charges for operating and maintaining all AFC-BSS services stated in this tender document – for 31 MBS-PMU stations (including but not limited to operations and maintenance of all hardware, software, data communication, network, security components, top-up/POS machines, ticket issuance and validation, turnstile functioning, etc)	
2	Monthly service charges of providing all back-office processing services associated with AFC-BSS, stated in this tender document (including but not limited to setting-up of all AFC-BSS bandwidth requirements, data communication, and hosting components, etc - associated with central datacenter setup)	
3	Monthly service charges for dedicating adequate human resources to manage AFC-BSS data-center components	
4	Monthly Service Charges for placing adequate human resources at all MBS-PMU station, to manage AFC-BSS related components	

	At least 1 person for ticket sales and at least 1 person for access control at turnstiles (per shift, per platform, at each station) at all times during MBS-PMU operating hours)	
*MONTHLY SERVICE CHARGES		Y
TOTAL MONTHLY SERVICE CHARGES		Z= Y x 36

* Monthly service charges (Y) must remain same throughout the contract period.

$$Y = \underline{1+2+3+4}$$

$$\text{Total Bid Price} = \underline{X+Z}$$

Technically qualified bidder with the lowest bid price (X+Z) will be considered successful.

Important Information:

- i. 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.
- ii. New stations and/or on-board bus modules may be added at any time during the contract period at the same average monthly service charge (per Station, per bus, as the case may be) as mentioned above in Price Table.

Financial Cost/ Price Schedule for LOT#2

EQUIPMENT TO BE PURCHASED:

Equipment		COL-A	COL-B	COL-C = COL-A * COL-B
Sr No	Component	Estimated Quantity	Unit Price (Inc. Taxes)	Total Price (Inc. Taxes)
1	Power Backup (with at least 4 hours of backup time) to support all AFC-BSS related equipment and components as well as station (2 platforms) network and communications devices, , also includes additional provisioning of 10KVA per the requirements of existing systems	31		
2	Top UP/Refund Machines and/or RFID Token Recharge Machine (any/all of them whichever is applicable)	62		
3	Turnstiles (8 for each station for roughly 31 stations)	248		
4	Validators (Inclusive of all types proposed)	248		
5	Driver console, including GPS Trackers for Buses	68		
6	Provisioning of data connectivity to each station (primary medium should be fiber optic, secondary could be any)	31 stations (approximately)		
7	Provisioning of reliable data network at each station and its two platforms – including wiring, switches (outdoor weather-resistant layer 3 capable), routers, Station PCs, and all other components necessary to provision and operate AFC-BSS components efficiently. Please list all	31		

	components.			
8	Provisioning of handheld ticket validators (for backup)	5		
9	On Station Sign Boards	31		
10	Bulk Initialization Machines for RFID cards/Tokens	2		
11	Ticket Vending Machines (the machines must accept cash (notes and coins) and dispense throwaway/reusable fare media)	31		
12	Data center related equipment (including servers, routers, firewalls, backup equipment, racks etc). Provide quantities and specifications	1		
13	Any other equipment/hardware components essential for AFC-BSS operations at the central data center or bus stations. (Please provide detailed list along with justification and component price)			
Software Solution				
14	Reliable, proven, and globally deployed , Automated Fare Collection System (Able to handle staged/zone/distance and flat based fare policies and other related requirements stated in this RFP)	1		
15	Reliable, proven, and globally deployed Vehicle Location System	1		
16	Reliable, proven, and globally deployed Passenger Information System	1		
17	Any other software components required for AFC-BSS operations at the central data center or bus stations. (Please provide detailed list along with justification and component price)			
18	Fare Media, Smart Cards and Throwaway Media (Inclusive of all types of fare media to be supplied for the period of support i.e 3 years)	Based on anticipated ridership volumes		

		given in section 7		
TOTAL COST				X

$$X = 1+2+3+4+5+6+7+8+9+10+11+12+13+14+15+16+17+18$$

Note:

- 1) Installation of equipment along with successful testing and commissioning will be the responsibility of bidder for which bidder must not quote price separately.
- 2) The Purchaser may, at any time, by written notice served on the Contractor, alter, amend, omit, increase, decrease quantity and scope, of all / any of the Services / the Works, in whole or in part.

OPERATIONS AND MAINTENANCE:

Sr No	Item	Price (Inc. Taxes)
1	Monthly Service Charges for support and maintenance of all AFC-BSS services stated in this tender document – for 31 MBS-PMU stations (including but not limited to support and maintenance of all hardware, software, data communication, network, security components, top-up/POS machines and validation, turnstile functioning, etc)	
2	Monthly service charges of providing all back-office processing services associated with AFC-BSS, stated in this tender document (including but not limited to setting-up of all AFC-BSS bandwidth requirements, data communication, and hosting components, etc - associated with central datacenter setup)	
3	Monthly service charges for dedicating adequate human resources to manage AFC-BSS data-center components	
*MONTHLY SERVICE CHARGES		Y
TOTAL MONTHLY SERVICE CHARGES		Z =Y x 36

***Monthly service charges (Y)** must remain same throughout the contract period.

$$Y = \underline{1+2+3}$$

$$\text{Total Bid Price} = \underline{X+Z}$$

Technically qualified bidder with the lowest bid price (X+Z) will be considered successful.

Important Information:

- iii. 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.
- iv. New stations and/or on-board bus modules may be added at any time during the contract period at the same average monthly service charge (per Station, per bus, as the case may be) as mentioned above in Price Schedule.

Financial Cost/ Price Schedule for LOT # 3

OPERATIONS AND MAINTENANCE:

Sr No	Item	Price (Inc. Taxes)
1	Monthly Service Charges for placing adequate human resources at all MBS-PMU station, to manage ticket sales and operations (At least 1 person for ticket sales and at least 1 person for access control at turnstiles (per shift, per platform, at each station) at all times during MBS-PMU operating hours)	
* MONTHLY CHARGES		X
TOTAL MONTHLY CHARGES		Y = X *36

***Monthly service charges (X)** must remain same throughout the contract period.

Total Bid Price = Y

Technically qualified bidder with the lowest bid price (X) will be considered successful.

Important Information:

- i. 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.
- ii. New stations and/or on-board bus modules may be added at any time during the contract period at the same average monthly service charge (per Station, per bus, as the case may be) as mentioned above in Price Schedule.

Date _____

Place _____

Signature of authorized person

Name:

(Company Seal)

In the capacity of

Duly authorized by

Note: No cutting or overwriting is allowed. Any cutting or overwriting will lead to rejection of the financial bid.

Annexure-A: Technical Proposal Submission Form

Technical Proposal Submission Form

[Location, Date]

To _(Name and address of Procurer/Evaluator)_

Dear Sir,

We, the undersigned, offer to provide the _(insert title of assignment)_ in accordance with your Request for Proposal/Tender Document dated _(insert date)_ and our Proposal. We are hereby submitting our Proposal, which includes the Technical Proposal and the Financial Proposal sealed in two separate envelopes.

We undertake, if our Proposal is accepted, to provide supply of _____related to the assignment.

We also confirm that the Government of Pakistan / Punjab has not declared us, or any, ineligible on charges of engaging in corrupt, fraudulent, collusive or coercive practices. We furthermore, pledge not to indulge in such practices in competing for or in executing the Contract, and we are aware of the relevant provisions of the Proposal Document.

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature

(In full and initials)

Name and Designation of Signatory

Name of Firm

Address

Annexure-B: Financial Proposal Submission Form (Part of Financial Bid Envelope)

Financial Proposal Submission Form (Part of Financial Bid Envelope)

[Location, Date]

To _(Name and address of Procurer/Evaluator)_

Dear Sir,

We, the undersigned, offer to provide the _(Insert title of assignment)_ in accordance with your Request for Proposal dated _(insert date)_ and our Technical Proposal. Our attached Financial Proposal is for the sum of _(insert amount in words and figures)_. This amount is inclusive of all taxes.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e. before the date indicated in _____ of the Proposal Data Sheet.

We also declare that the Government of Pakistan / Punjab has not declared us or any Sub-Contractors for any part of the Contract, ineligible on charges of engaging in corrupt, fraudulent, collusive, or coercive practices. We furthermore, pledge not to indulge in such practices in competing for or in executing the Contract, and are aware of the relevant provisions of the Proposal Document.

We understand you are not bound to accept any Proposal you receive.

Signed

In the capacity of:

Duly authorized to sign the proposal on behalf of the Applicant.

Date:

Annexure-C: Format for Covering Letter

To

(Name and address of Procurer/Evaluator)

Sub: _____.

Dear Sir,

- a) Having examined the tender document and Appendixes we, the undersigned, in conformity with the said document, offer to provide the said items on terms of reference to be signed upon the award of contract for the sum indicated as per financial bid.
- b) We undertake, if our proposal is accepted, to provide the items/services comprise in the contract within time frame specified, starting from the date of receipt of notification of award from the client Department / Office.
- c) We agree to abide by this proposal for the period of ____ days (as per requirement of the project) from the date of bid opening and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
- d) We agree to execute a contract in the form to be communicated by the _(insert name of the Purchaser)_, incorporating all agreements with such alterations or additions thereto as may be necessary to adapt such agreement to the circumstances of the standard.
- e) Unless and until a formal agreement is prepared and executed this proposal together with your written acceptance thereof shall constitute a binding contract agreement.
- f) We understand that you are not bound to accept a lowest or any bid you may receive, not to give any reason for rejection of any bid and that you will not defray any expenses incurred by us in bidding.
- g) We would like to clearly state that we qualify for this work as our company meets all the pre-F criteria indicated on your tender document. The details are as under:

Authorized Signatures with Official Seal

Annexure-D: Instructions for preparation of power of attorney

- a)** To be executed by an authorized representative of the bidder.
- b)** The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executants and when it is so required the same should be under common seal affixed in accordance with the required procedure.
- c)** Also, wherever required, the Bidder should submit for verification the extract of the charter documents and documents such as a resolution/power of attorney in favor of the Person executing this Power of Attorney for the delegation of power hereunder on behalf of the Bidder.
- d)** In case the Application is signed by an authorized Director / Partner or Proprietor of the Applicant, a certified copy of the appropriate resolution / document conveying such authority may be enclosed in lieu of the Power of Attorney.

Format of Power-of-Attorney

POWER OF ATTORNEY

(On a Legal / Revenue Stamp Paper of PAKISTAN / of the bidder's country in the relevant value
OR on the bidder's letter head officially signed and stamped)

We (name of the company and address of the registered office) do hereby appoint and authorize Mr. / Ms. (full name and residential address) bearing Pakistan's Computerized National Identity Card (CNIC) no. (complete CNIC no.) who is presently engaged with us and holding the position of as our attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to our proposal for (name of the project) in response to the tenders invited by the (name of the Purchaser) including signing and submission of all documents and providing information/responses to (name of the Purchaser) in all matters in connection with our Bid.

We hereby agree to ratify all acts, deeds and things lawfully done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by us.

Dated this _____ day of _____ 20__

For _____

(Signature)

(Name, Designation and Address)

Accepted

(Signature)

(Name, Title and Address of the Attorney)

Date:

Annexure-E: Undertaking

UNDERTAKING

It is certified that the information furnished here in and as per the document submitted is true and correct and nothing has been concealed or tampered with. We have gone through all the conditions of tender and is liable to any punitive action for furnishing false information / documents.

Dated this _____ day of _____ 20__

Signature

(Company Seal)

In the capacity of

Duly authorized to sign bids for and on behalf of:

Annexure-F: Affidavit

AFFIDAVIT

Integrity Pact

We _(Name of the bidder / supplier)_ being the first duly sworn on oath submit, that Mr. / Ms. _____ (if participating through agent / representative) is the agent / representative duly authorized by _(Name of the bidder company)_ hereinafter called the Contractor to submit the attached bid to the _(Name of the Procurer/Evaluator)_. Affiant further states that the said M/s (Bidding Firm/Company Name) has not paid, given or donate or agreed to pay, given or donate to any line officer or employee of the _(Name of the Procurer/Evaluator)_ any money or thing of value, either directly or indirectly, for special consideration in the letting of the contract, or for giving undue advantage to any of the bidder in the bidding and in the evaluation and selection of the bidder for contract or for refraining from properly and thoroughly maintaining projects implementations, reporting violation of the contract specification or other forms of non-compliance.

Signature & Stamp

Subscribed and sworn to me this _____ day of _____ 20__

Notary Public

Annexure-G: Tender Security Form

TENDER SECURITY FORM

WHEREAS [Name and Address of the Contractor] (hereinafter called "the Contractor") has submitted Tender against Tender Name (hereinafter called "the Tender") to the [Name and Address of the Procurer] (hereinafter called "the Procurer") for the Total Tender Price of PKR (in figures _____) (in words _____).

AND WHEREAS [Name of the Bank] having registered office at [Address of the Bank] (hereinafter called "the Guarantor") has agreed to give the Contractor a Guarantee;

THEREFORE the Guarantor hereby affirms to bind himself, his successors and his assigns to the Procurer, for the sum of PKR (in figures _____) (in words _____) and undertakes to pay to the Procurer / Purchaser, upon receipt of his written demand(s), any sum(s) as specified by him, not exceeding the above limit in aggregate, without cavil / argument and without the Procurer having to substantiate / prove or to show grounds / reasons for such claim(s), on the occurrence of any / all of the following conditions:

1. If the Contractor withdraws the Tender during the period of the Tender validity specified by the Contractor on the Tender Form; or
2. If the Contractor does not accept the corrections of his Total Tender Price; or
3. If the Contractor, having been notified of the acceptance of the Tender by the Purchaser during the period of the Tender validity, fails or refuses to furnish the Performance Security, in accordance with the Tender Document.

Provided that the Procurer / Purchaser shall specify the occurred condition(s) owing to which the said sum is due to him.

Provided further that any demand(s) / claim(s) from the Purchaser shall reach the Guarantor within thirty working days after the expiry of the Guarantee.

This guarantee shall remain valid up to _____ or until furnishing of the Performance Security, whichever is later.

Date this _____ day of 2012.

GUARANTOR

Signature _____

CNIC # _____

Name _____

Designation _____

Address _____

Annexure-H: Performance Security

PERFORMANCE SECURITY

Issuing Authority:

Date of Issuance:

Date of Expiry:

Claim Lodgment Date:

WHEREAS [Name and Address of the Contractor] (hereinafter called "the Contractor") has agreed to supply the Services and render the Services against Tender Name (hereinafter called "the Contract") for the Contract Value of PKR (in figures _____) (in words _____).

AND WHEREAS it has been stipulated in the Tender Document that the successful Contractor shall furnish Performance Security, within ten (10) working days of the receipt of the Acceptance Letter from the Purchaser, in the form of a Bank Guarantee, issued by a scheduled bank operating in Pakistan, as per the format provided in the Tender Document to the Purchaser, for a sum equivalent to Rs. _____ (to 10% of the total contract value for a period of three (03) years, on a yearly basis, with an undertaking to renew the Bank Guarantee before the end of each year, one month before the expiry period of the submitted bank guarantee) valid from the date of issue until all obligations have been fulfilled in accordance with the Contract; AND WHEREAS [Name of the Bank] having registered office at [Address of the Bank] (hereinafter called "the Guarantor") has agreed to give the Contractor a Guarantee;

THEREFORE the Guarantor hereby affirms to bind himself, his successors and his assigns to the Purchaser, for the sum of PKR (in figures _____) (in words _____) and undertakes to pay to the Purchaser, upon receipt of his written demand(s), any sum(s) as specified by him, not exceeding the above limit in aggregate, without cavil / argument and without the Purchaser having to substantiate / prove or to show grounds / reasons for such claim(s), on the occurrence of any / all of the following conditions:

1. If the Contractor commits a default under the Contract;
2. If the Contractor fails to fulfill any of the obligations under the Contract;
3. If the Contractor violates any of the provisions of the Contract.

Provided that the Purchaser shall specify the occurred condition(s) owing to which the said sum is due to him.

Provided further that any demand(s) / claim(s) from the Purchaser shall reach the Guarantor within thirty working days after the expiry of the Guarantee.

This guarantee shall remain valid up to _____ or all obligations have been fulfilled in accordance with the Contract, whichever is later.

Date this _____ day of 2012.

GUARANTOR

Signature _____

CNIC # _____

Name _____

Designation _____

Address _____

Annexure-I: Financial Capacity of the Bidder

Additionally, the following financial data form shall be filled out for the Bidder. The Purchaser reserves the right to request additional information about the financial capacity of the Bidder. A Bidder that fails to demonstrate through its financial records that it has the financial capacity to perform the required Supply/Services may be disqualified.

Financial Information	Historical information for the previous three years (most recent to oldest in (PAK Rupees))		
	Year 1 (Year)	Year 2 (Year)	Year 3 (Year)
Information from Balance Sheet:			
(1) Total Assets (TA)			
(2) Current Assets (CA)			
(3) Total Liabilities (TL)			
(4) Current Liabilities (CL)			
Information from Income Statement:			
(5) Total Revenue (TR)			
(6) Profits before Taxes (PBT)			
Net Worth (1) – (3)			
Current Ratio (2) / (4)			

Provide information on current or past litigation or arbitration over the last three (3) years as shown in the form below.

Litigation or arbitration in the last three (3) years: No: _____ Yes: _____ (See below)

Litigation and Arbitration During Last three (3) Years

Year	Matter in Dispute	Value of Award Against Contractor in PAK Rupees
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Authorized Signatures with Official Seal

Annexure J: Service Level Agreement Format

DRAFT SERVICE LEVEL AGREEMENT (SLA)

Scope:

The SLA describes target performance levels which the bidder shall aim to deliver for the Services outlined in this RFP. It also lists the procedures for managing unavailability of Services, and associated penalties which will be applied if bidder fails to deliver any service performance targets in accordance with this Agreement.

Service Monitoring:

The concerned Department/Authority of the Government of Punjab will set-up a service monitoring cell, dedicated to monitoring service level compliance.

Successful bidder/AFC-BSS Service Provider must provide the mechanisms, data, online system, and access rights through which personnel authorized by Government of Punjab will check Service Level Compliance.

Service levels associated with various key aspects of the services, components, and operations related to the AFC-BSS project, are defined below. In addition, an overall uptime of 99.9% is expected from all components and services associated with AFC-BSS.

The Successful bidder will put in place a monitoring mechanism to monitor all components of the Services (including but not limited to all e-Ticketing, Automated Fare Collection, and Automated Vehicle Location System, Bus station network components and modules). Successful bidder will give concerned Government Department /Authority, the access rights to view online status and reports associated with the monitoring system.

The successful bidder, through its monitoring system must provide the data that is sufficient to allow analysis and reporting of performance and availability of components, equipment, modules – to the detail and frequency described in this Agreement.

The successful bidder must also make available a helpdesk and complaint management system with access to authorized personnel of concerned department/Authority of the Government of Punjab.

Periodic reviews will be scheduled by the Government of the Punjab via its concerned departments and organizations. The reports from the successful bidder's service monitoring system shall form an agenda for such reviews.

Scheduled Maintenance:

Scheduled maintenance should fall outside normal working hours, and not exceed a total of 4 hours per month.

The successful bidder must seek approval from the concerned government department and authorities for all pre-planned/scheduled maintenance work by submitting a detailed maintenance work plan along with reasons for scheduled maintenance, and impact on services (if any), and on service levels - at least one week prior to planned execution of the scheduled maintenance work.

After completion of the planned work, the successful bidder, will report the outcome to the concerned department/authority in writing and by updating the bidder's call management system and associated website. PMA will have access to the bidder's call management system to log calls and to assign categories.

Fault levels

Category	Definition	Initial Response	Resolution
Critical	The system is unable to be used for normal business activity. There is no viable workaround. Downtime will lead to financial loss.	Within 15 minutes	Within 90 minutes
Urgent	There is a problem with a part of the system which impacts decision-making and there is a likelihood of financial loss.	Within 1 hour	Within 3 hours
High	The efficiency of the system users is being impacted, but a viable workaround exists.	Within 2 hours	Within 6 hours
Normal	A fault with low impact and no possibility of revenue loss. A viable workaround exists.	Within 6 hours	Within 12 hours

Initial Response: Time taken by the successful bidder's qualified representative to arrive at the premises where the failure occurred, after the problem is reported by the automated alert system.

Resolution: Time it takes to resolve the problem

Successful bidder must notify the fault to the Authority, via email, fax, and/or telephone, as soon as it becomes aware of the fault, and must also keep the monitoring cell informed of progress towards resolution in a timely manner.

Any fault that is not fixed within the stated resolution time will be escalated to the executive management of the successful bidder, by the monitoring cell.

Faults will remain open until the call close time is reported to the monitoring cell.

In case of breach of SLA parameters, penalties will apply. Depending upon the nature, severity, and duration of the breach, penalties in the form of stated percentage of monthly service charges or compensation of loss of review due to outages (based on historical/transactional data) – whichever is higher, will be imposed.

Minimum service levels to be maintained:

	Service	Parameter	Service level	Validation	Penalty
1	Helpdesk (Successful Bidder of Lot# 1 and/or Lot# 2 and/or Lot# 3)	Resolution of issues logged as per severity categories and definitions above	99%	Generated from complaint management system	If 95%-99% calls resolved on-time, then 2% penalty on monthly charges 90%-94.99% calls resolved on time, then 5% penalty on monthly charges.
2	Bus Station network (Successful Bidder of Lot# 1 and/or Lot# 2)	Uptime (Including turnstiles, validators, station PC, switches, communication devices etc)	99.9%	As reported by the monitoring system	2% of monthly charges for less than 99.9% and 5% of monthly charges for less than 97%. Or

					revenue loss, based on historic data, whichever is higher.
3	Data center operations (Successful Bidder of Lot# 1 and/or Lot# 2)	Uptime of application and DMZ servers	99.9%	As reported by the monitoring system	2% of monthly charges for less than 99.9%. 5% of monthly charges for less than 98%. Or revenue loss, based on historic data, whichever is higher.
3	Backup/Restore Management (Successful Bidder of Lot# 1 and/or Lot# 2)	Successful bidder must take data backups as per a defined and agreed upon backup schedule.	99%	As reported by the monitoring system	If the negligence is found in the periodic audit report, bidder will be fined Rs 10,000 per negligence.
4	Problem Management (Successful Bidder of Lot# 1 and/or Lot# 2 and/or Lot# 3)	Successful bidder shall provide a root-cause report every month if there are more than 10 incidents of the same type. Successful bidder must take appropriate and timely corrective action to prevent further issues from same cause.	100% timely submission covering all incidents logged in that month.	Root cause report stating incidents, problems faced by the user, and detailed documentation of corrective actions taken.	5% penalty on monthly charges if the successful bidder does not submit a problem report for that month. 5% penalty if successful bidder does

					not perform corrective action for more than one calendar month
5	Resource Management (Successful Bidder of Lot# 1 and/or Lot# 3)	Number of shift days for which resources are present at designated locations/ total number of shift days	99% Averaged over all resources designated for services, calculated on a monthly basis	Attendance track. Call logs, Audit logs/visits measured on a monthly basis.	If resource availability is less than 95% payment shall be deducted on pro-rata basis. (Total cost per day/no of persons deployed). Further deduction of Rs. 3000 per day per resource will be made on account of loss of services.
		Provided resource is not as per specified certification/experience	100% of the resources given	Experience certificate of personnel submitted by the successful bidder	Per day deduction of 0.5 * Monthly value of that manpower as per market norms)/30
6	Automated Fare Collection field equipment (Successful Bidder of Lot# 1 and/or Lot# 2)	Daily MIS report of the equipment uptime/outage	99.9%	Report	2% of the average sale per day of the location

7	Vehicle tracking field equipment (Successful Bidder of Lot# 1 and/or Lot# 2)	Daily MIS report of the equipment uptime/outage	99.9%	Report	2% of the average sale per day
---	---	---	-------	--------	--------------------------------

Calculation of uptime:

$[(\text{Actual uptime} + \text{Scheduled downtime}) / \text{total number of hours in a month}] * 100$

Breach of SLA

In case the successful bidder does not meet the service levels mentioned in document, for three (3) continuous time periods, it will be treated as a breach of the Service Level Agreement. The following steps will be taken in such a case:

1. A show cause notice will be issued.
2. Successful bidder must respond to the notice within 3 working days
3. If concerned Government Department/Authority is not satisfied with the reply, it may initiate contract termination process.

Exclusions:

The service provider will be exempted from delays or slippages on SLA parameters arising out of delays in execution due to delay in approval or review from Government of Punjab's side. Any such delays will be notified in writing.

Annexure K: High-level Equipment Specifications

Notes:

1. All hardware equipment supplied as part of AFC-BSS must carry industry standard certifications like U/L, CE etc to ascertain that the equipment have been manufactured and certified based on international standards.
2. The Equipment supplied shall withstand the harsh working conditions of vibration, heat, dust, moisture, rough usage, Radio interference. The Service Provider shall implement application software [Asset Tracking] to track the devices that are installed in the network using suitable identification methods. This could be possibly done by attaching a RFID Tag to all assets in operation in AFC-BSS.

Turnstile		
Sr. #	ITEM	DESCRIPTION
1	Passage Prevention	Tripod Arms/Flap Barriers/ADA Turnstiles , must be suitable for outdoor usage
2	Passage Way	In/Out
3	Operational Temperature	-10C to + 70C
4	Passage Warning	Visible warning sign
5	Speakers	Equipped with Speakers for alarms
6	Accessories	Standard
7	Token Module/Throwaway Tickets	Must be supported
8	RFID Token / Collector Mechanism	Must be supported
NOTE: • All materials should meet the ASTM standards as set forth by the materials industry. • Operating mechanism should consist of precision machined, interchangeable parts made out of high quality steel materials. No parts incapable of sustaining wear and tear should be used. All relevant components hardened and surface treated to ensure long life and reliable service. Self centering		

mechanism should be used in order to automatically return arms to the basic position regardless of force used to pass through the turnstile. Rotation mechanism is cushioned through shock dampening.

- The modular mechanism design to be mounted on a thick steel plate so as to allow rapid maintenance.
- Environmentally friendlier and biologically safer through e-coated surfaces.
- The outer cabinet should be constructed from thick steel with stainless steel finish.
- The hub should have openings for three arms 120 degrees apart. The hub should be manufactured so as to be protected against oxidation and discolouring.
- Arms fabricated from stainless steel tubing with about 1" external diameter or more.
- The operating mechanism should consist of a hardened locking assembly and interchangeable precision fabricated parts using high quality steel materials.
- All important sub-assemblies made of machined high quality wear and tear resistant material.
- Self-centering, sealed, maintenance free main bearing supports shaft and ratchet assembly.
- The operating mechanism should contain of all electrical components (including power supply, transformers, reset system and access control interface).
- Stainless steel cabinet has rounded edges and corners with no sharp exposed edges in order to prevent injuries.
- Equipped with a locking mechanism to prevent tampering.
- Magnetic / Solenoid locking mechanism (Magnetic shall be preferred).
- Ultra low noise levels during turnstile operation.

Smart Cards/RFID Tokens/Throwaway Cards

- The smart card to be used with the AFCS shall be ISO 14443 compliant. The Smart Card to be supplied by the operations team shall be Mifare 1K / Mifare Ultra lite/ Mifare Desfire 4K and shall be fully compliant with ISO/IEC 14443 and other relevant ISO/IEC standards.
- The SC shall have an operating frequency of 13.56 MHz
- The dimensions of the smart card shall comply with ISO 7810.
- The resistance of the smart card to mechanical stress and chemicals shall comply with ISO 10373.
- All SC used shall be suitable for personalization of one surface with photo and personal details as required by PMA/MBS-PMU .
- Each smart card /token/throwaway shall have a unique external identification number that is linked to the card's manufacturer supplied internal identification number which shall not be erasable or changeable. The external number shall be engraved or printed in a non-erasable, long lasting ink. The supplier of the cards shall provide an electronic correspondence list between the internal and the external card number where the two are not identical. The external number shall have a check digit to minimize the possibility of errors on data entry.
- Fixed data shall be encoded onto Contact less Smart Cards by the Operator prior to issuing. Each Smart Card shall be encoded with a unique identification number, date of entering the AFCS, type, encoding device reference number and other pertinent data that shall not change throughout the life of the Smart Card.
- Encoding on variable data fields shall be carried out by the Validator's and field AFCS devices used by

AFC-TMS.

- The Contact-less Smart Cards / Coins shall be authenticated by all AFCS devices before the actual financial transactions are initiated in order to check originality.
- AFCS equipment shall be able to check the integrity of the data on the Smart Card / Coins during processing. Smart Card / Coins which are no longer capable of being accurately encoded shall be detected, rejected and blocked.

Validators for Turnstiles (Off Board)

- The validators shall be capable of performing a transaction with ISO14443 "Type A" cards / Single Trip Coins as a minimum.
- The validator should read cards at a distance 0mm to 30 mm, but shall not operate at a distance that introduces a risk of unintentional operation (tolerance limit + 10%).
- The validator shall read, write and verify all required data for the transactions associated with fare media to permit the application of all the business rules and the collection of all records required for the PMA's accounting and reporting purposes.
- Transaction time shall not exceed 300ms for agreed and used types of Contactless cards.
- Validator shall be connected to the access gates, they shall control the access gates based on the validation process.
- Validator should provide suitable interface proposed turnstile barriers for operations as defined by PMA.
- Validators should have RTC in-built for clock management and should have onboard memory to manage business rules.

Validators for Ticket Inspectors

- The bidder shall provide handheld terminals capable of reading contact less smartcard/token/throwaway card for spot checking purposes. The handheld shall read media and display card information including last transaction details in-order to ascertain travel details from compliance perspective.
- The handheld shall be programmable to include audit functions as desired by PMA audit process. The handheld should be able to store violation data and the same should have capability to communicate to the centralized system (AFC).
- The device must be able to sell ticket/token to any evader while spot checking, any such data transmission to AFC to occur in real time.
- Validator should have capabilities to link to the central system.
- The validation & read/write cycle time for smart cards should be less than 300ms.

- The reader should read cards at a distance between 0mm to 30mm and shall not operate at a distance that introduces a risk of unintentional operation (tolerance limit + 10%).
- The Validator shall read, write and verify all required data for the transactions associated with SC to permit the application of all the PMA's business rules and the collection of all records required for the PMA's accounting and reporting purposes.
- Validator shall use serial ports, hi-speed LAN, WLAN, GPRS or USB communication protocols appropriately to achieve optimum performance.
- It should have suitable Wi-fi and GPRS hardware built in to it so that the communication can be established.

Vehicle Location System – Driver Console, including GPS Tracker

- Operating temperature -10 to +70 °C
- Handling and storing MP3-files for announcements, as well as manual override for Passenger Information related announcements.
- Control destination and line number signs.
- Control interior information display & announcement.
- Keep track of the vehicle's position via GPS and distance counting etc.
- Single push-button and audio Interface for two-way communication with PMA control center, by providing speaker and microphone interface
- Communication and interface with other onboard units, e.g. Passenger Information System, Smart card readers, Passenger counter etc.
- GPS time synchronization
- Clock and Date Function
- Map applications, navigation and driver guidance
- Interface for Traffic light priority via data radio and loops.

Passenger Information System and Scheduler

Passenger Information System hardware shall consist of LED based display system for bus Stations and Buses. Following are the technical specifications for the display units.

The passenger information system shall comprise of following components:

- Display Screen on Bus Stations
- Display Screen on Bus
- Voice announcement system on Bus

Passenger Information System on Bus

- 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 Bus

- The Voice Passenger Information System must play clearly audible pre-recorded voice announcements informing passengers of the next bus station on route. The voice PIS shall interface with the on-bus GPS module to gather location information and making appropriate next station announcement.

Passenger Information System at Stations

- They shall display route and estimated arrival time (ETA). They may also be used to display public service information.
- PIS display system shall display the next arriving bus with its color code, transit line and time.
- 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 shall be made of Aluminum 6063 so as to maintain 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 twelve (12) hours operation in a temperature of 140 degrees F. prior to final inspection.
- 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 center of the mean plane of the display. The intensity of the illumination of the display pixels shall appear, to the naked eye, to be approximately uniform throughout the full viewing cone.
- Amber LED's
 - Super Luminosity LED made of AlInGaP II material
 - Diffused lens
 - 3.9mm x 3.4mm oval lens
 - Wide viewing angle 130 degrees side to side/65 degrees from center
 - Typical intensity of 770 mcd at nominal drive of 20 ma.
 - Typical wavelength of 590 nm
- Sterling LED's
 - High Luminous Output Sterling LED made of InGaN material
 - White Diffused lens
 - 3.9mm x 4.0mm oval lens
 - Wide viewing angle 130 degrees side to side/65 degrees from center
 - Minimum luminous intensity of 1500 mcd
- The entire display area of all signs 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.

- All sign displays shall consist of pixels utilizing High Intensity Light Emitting Diodes (“LED”), for superior outdoor environmental performance, of superior UV resistant Epoxy lens and superior resistance to the effects of moisture.
- The sign system shall have multi-level intensity changes, which adjust automatically as a function of ambient lighting conditions.
- There shall be no requirement for any fan or any specialized cooling or air circulation.
- This LED shall be mounted such as to be visible directly to the observer positioned in the viewing cone, allowing for full readability 65 degrees either side of the destination sign centerline.
- The LEDs shall be the only means of illumination of the sign system.
- The LED illumination source shall have an operating life MTBF of not less than 100,000 hours.
- Each LED shall not consume more than 0.02 Watts.
- The characters formed by the System shall meet the requirements of the Americans with Disabilities Act (ADA) of 1990 Reference 49 CFR Section 38.39, or similar international standard pertaining to readability by the visually impaired community.

Ticket Vending Machine		
Sr. #	ITEM	DESCRIPTION
1	Connectivity	Integrated Ethernet port (TCP/IP) with separate EDGE/GPRS/UMTS router
2	Coin System	Currency capability for different denominations
3	Bank Note Reader	Accepts up to 15 banknotes per sale.
4	Ticketing Material	RFID card based and/or RFID token (Bidder must ensure that proposed TVMS conforms to the industry standards)
5	Housing/Locking	Stainless steel housing with very high break-in resistance
6	Utility	RFID Card Reader, Token Recharge

Annexure L: Connectivity Specifications for MBS

Provision of fiber optics media is required at MBS route to fulfill the connectivity requirements of AFC-BSS and to cater for the future needs of intelligent transportation system of Buss Rapid Transit System at Ferozpur Road Lahore. The media will be initially used for AFC-BSS initially and must have the provision of following items

Dedicated Fiber Optics cable deployment in 1 + 1 self-healing configuration mode is required on Thirty two (32) Bus Stations and Eleven (11) Junctions at MBS track.

The network media should be capable to cater for the initially data requirements of AFC-BSS and in future for ITS:

- All backbone connectivity (end to end) is required on state of the art GPON (Gigabit passive optical Network)
- Provision of duct (4" Inches PVC) pipe is already available on MBS track
- Segment protection through development of ladder topology backbone is required
- Layer 3 connectivity is required on each node for AFC-BSS System
- Provision of independent for multiple VPNs and VLANs
- Provision of IP Pool on each nodes and aggregation site is required as per actual basis
- Aggregation on Core site "Arfa Software Technology Park, Lahore" NOC handoff is required on Gigabit interface
- Operations and Maintenance of the fiber network will be the sole responsibility of solution provider
- Guaranteed Network uptime 99.5% is required
- Laying, installation and deployment of following items

Sr.	Item	Type
1	Single mode Fiber Cable	48 Fiber (Steel Armoured)
2	Single mode Fiber Cable (Backup)	12 Fiber (Steel Armoured)
3	ODF / Attachments / Misc	As per industry Standard

Note: The above feature list covers the bare minimum requirements, however any services provider can proposed any value added features