

# Tender Document

## OPERATIONS AND MAINTENANCE SERVICES OF AUTOMATED FARE COLLECTION SYSTEM (AFC) FOR METRORAIL TRANSIT SYSTEM ON THE ORANGE LINE IN LAHORE (ALI TOWN TO DERA GUJRAN)



### THE PUNJAB MASSTRANSIT AUTHORITY Government of the Punjab

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## **Important Note**

**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. Maintain the entire AFC solution such that for the Contract period i.e. Five years from the start of operations. The Purchaser has already aligned AFC software support from the AFC manufacturer through EPC Contractor who has provisioned, deployed and will commission all the deployed AFC hardware and software. The said equipment is covered under defect liability and warranty period of five years.**
- 2. Manage ticketing operations at PMA stations and utilize the deployed AFC solution. This includes bank transactions, ticket sales, refunds and add fares, customer facilitation at ticket vending machines (TVM) and Automatic Gate Machines (AGM) etc.**

**For a more elaborate list of roles and responsibilities in each case above, please refer to Clause 9 (“Services Required”) in this document.**

**Purchaser reserves exclusive rights to cancel/annul or reject all bids submitted 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, 2014**

This Bidding Process will be governed under Punjab Procurement Rules, 2014, 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: September 12, 2019 (3pm) – 5<sup>th</sup> floor  
Arfa Software Technology Park, Ferozpur Road, Lahore.**
- 2. Clarification meeting: Monday, September 02, 2019 (3pm) – 5<sup>th</sup> floor  
Arfa Software Technology Park, Ferozpur Road, Lahore.**

## **1. Invitation to Bid**

Punjab Masstransit Authority (PMA), Government of the Punjab (The Purchaser), invites bids for the **“Operations Maintenance Services of Automated Fare Collection System (AFC) for Metrorail Transit System on the Orange Line in Lahore (Ali Town to Dera Gujran)”**.

### **1.1 PPRA Rules to be followed**

Punjab Procurement Rules 2014 will be strictly followed. These may be obtained from PPRA’s website:

<http://ppra.punjab.gov.pk/downloads>

In this document, unless otherwise mentioned to the contrary, "Rule" means a Rule under the Punjab Procurement Rules 2014.

### **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](http://www.ppra.punjab.gov.pk), PMA’s website <http://www.pma.punjab.gov.pk>.

As per Rule 12(2), 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 38(2)(a), Single Stage - Two Envelope Procedure shall be followed such that Technical and Financial Proposals are submitted separately. 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 (with a copy in technical proposal) in favor of “**Punjab Masstransit Authority**” (As per provisions of Tender Security clause 22 of this document).

The bids along with the Tender Security, Tender Forms, Affidavits, etc., must reach PMA’s office located at 5<sup>th</sup> floor, Arfa Software Technology Park, 346-B, Ferozpur Road, Lahore, PAKISTAN, on or before **1500 hours on September 12, 2019**. The Technical bids will be publicly opened in the Committee Room of Punjab Masstransit Authority, 5<sup>th</sup> Floor, Arfa Software Technology Park, 346-B, Main Ferozpur Road, Lahore, at **1530 hours on September 12, 2019**.

Queries of the Bidders (if any) for seeking clarifications regarding the specifications of the services must be received in writing by the PMA by **02<sup>nd</sup> September 2019**. 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@pma.punjab.gov.pk](mailto:afc.bss@pma.punjab.gov.pk)  
Punjab Masstransit Authority (PMA)  
5<sup>th</sup> Floor, Arfa Software Technology Park,  
346-B, Ferozpur 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 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 or reject all bids without assigning any reason thereof.

### 3. Definitions

- 3.1 "PMA" is Punjab Masstransit Authority, Government of Punjab.
- 3.2 "LOLMTP" is Lahore Orange Line Metrotrain Project.
- 3.3 "AFC" Automated Fare Collection System, as asked for in the Tender Document. Initial phase is for AFC implementation for approximately 26 Metrotrain stations in Lahore.
- 3.4 "Client/Procuring Agency/Purchaser" means Punjab Masstransit Authority (PMA), 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.
- 3.5 "AFC Service Provider" or "Successful Bidder": The technically qualified bidder with lowest financial bid, who has the probability of award of contract for AFC Project, subject to necessary approvals and applicable policies.
- 3.6 "Confirmation" means confirmation in writing.
- 3.7 "Bidder/Tenderer" means a registered company or joint venture that has submitted its bid as per the criteria/specifications listed.
- 3.8 "Contractor" or "L2SP2" means successful Bidder/Tenderer.
- 3.9 "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.
- 3.10 "Contract Price" means the price payable to the Contractor under the Contract for the full and proper performance of its contractual obligations.
- 3.11 "Clarification Meeting" means the meeting conducted by the procuring entity on given date and time prior to actual date of bid opening.
- 3.12 "Procurement Methods" means any one of the procurement modes / methods as provided in the Punjab Procurement Rules 2014 published by the Punjab Procurement Regulatory Authority (PPRA), Government of Punjab.
- 3.13 "RFP" means Request for Proposals, including any amendments that may be made by the procuring entity for the selection of bidder.
- 3.14 "Proposal" means the Technical Proposal and the Financial Proposal for the provision of the Services submitted by a bidder in response to RFP.
- 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 "Works" means work to be done by the Contractor under the Contract.
- 3.21 "GoPb" means Government of the Punjab
- 3.22 "EPC Contractor" means CR-NORINCO
- 3.23 "AFC Manufacturer" means CSS Web Technology Co. Ltd.

- 3.24 “L2SP1” means Line 2 (Orange Line) Service Provider 1  
3.25 “L2SP2” means Line 2 (Orange Line) Service Provider 2 i.e. AFC Service Provider for Line 2

#### **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.

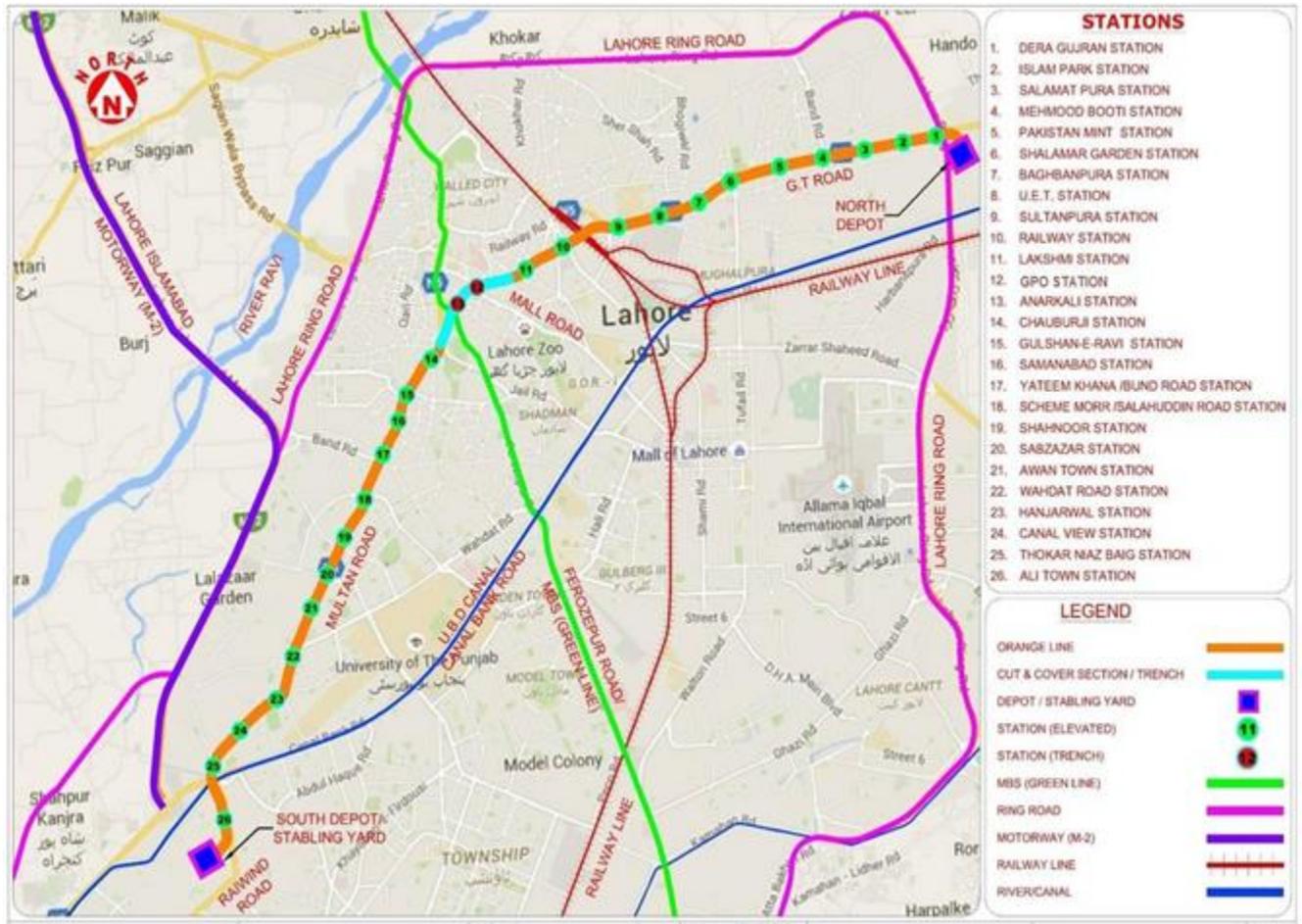
#### **6. Tender Scope**

- 6.1 Punjab Masstransit Authority (PMA), Government of the Punjab (The Purchaser), invites/requests Proposals (hereinafter referred to as “the Tenders”) for the Operations and Maintenance (on turnkey basis) of Automated Fare Collection System (AFC) as defined in this document.
- 6.2 In the first phase, the operations and maintenance services for AFC solution will be provided for 26 stations of Metrotrain having off-board ticketing.
- 6.3 The AFC software comprises of Automated Fare Collection System and its associated equipment and services.
- 6.4 High-level requirements for these systems are outlined in relevant sections in this document.

#### **7. Overview and Objectives**

PMA realizes the importance of providing safe, efficient, comfortable, and affordable Transport to the public and planning to commission the LOLMTP. The Client seeks to induct O&M services for AFC System for Metrorail Transit System on Orange Line in Lahore (Ali Town to Dera Gujran). The Service Provider will provide services for 5 years. LOLMTP initially spans over approximately 27.1 KM running from Ali Town to Dera Gujran via Raiwind Road, Thokar Niaz Baig to Chauburji via Multan Road, Chauburji to GPO Chowk via Lake Road and Ustad Allah Bukhsh Road, GPO Chowk to Lakshami Chowk to Bohar Wala Chowk via Mcleod Road and Nicholson Road, Bohar Wala Chowk to Sultanpura over the Railway Lines, and Sultanpura to Dera Gujran / Ring Road Interchange via GT Road. Section between Chuburji and Lakshmi is underground. Key locations are targeted to

maximize ridership from all surrounding areas. 26 stations are built throughout the entire route of LOLMTP.



Automated Fare Collection System (AFC) serves as an information system coupled with necessary hardware and software to authenticate entry/exit of passengers into metrotrain stations. The system provides variety of fare media including reusable RFID tokens and smart cards. Smart cards may be recharged to a stated, agreed upon max limit, for travel onto metrotrain stations.

The AFC system have the capability to handle flat rate, staged/zone based and distance fare policies, and is scalable/expandable to any number of stations, vehicles, cities, and passenger volumes.

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.
- 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,

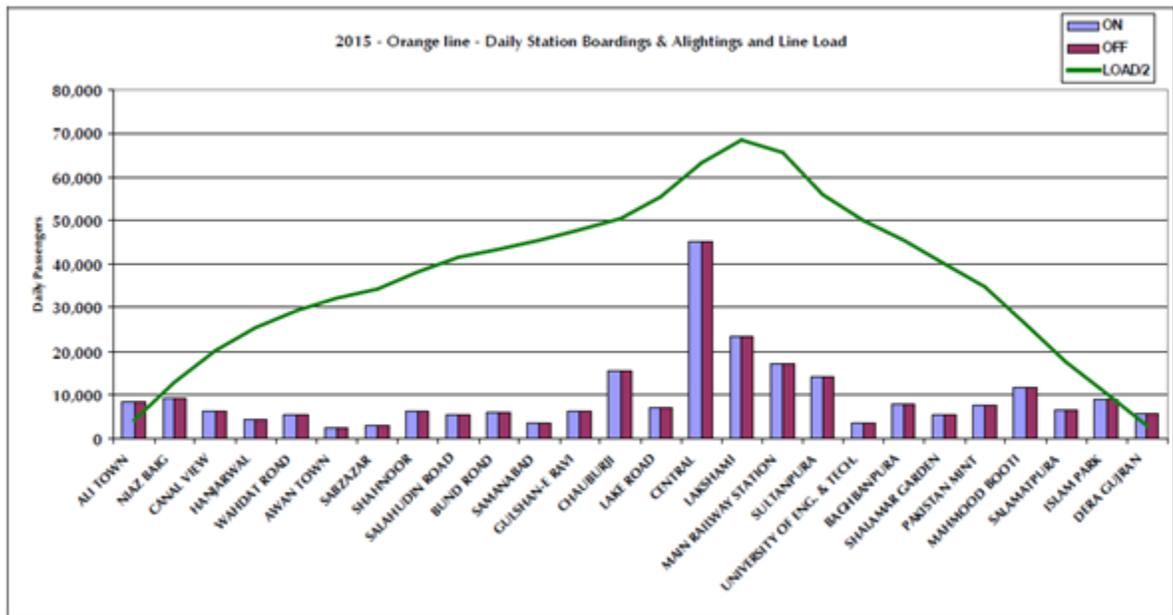
efficiency, and flexibility

To accomplish this, The Client will receive live passenger data and financial data in Metrotrain Command and control center. The whole operation will be monitored and controlled by Punjab Masstransit Authority from Metrotrain Command and Control Centre that is established at Orange Line Depot, Dera Gujran.

### **7.1. Salient Features of the Project**

- Total length of the corridor from Ali Town to Dera Gujran is approximately 27.1 Km.
- Portion from Ali Town to Chowburji and Lakshmi to Dera Gujran is elevated (25.4 Km).
- Portion from Chowburji to Lakshmi is underground (1.7 Km)
- Total 26 Stations having average inter-distance of 1 km. Each station has two platforms for both directions. 24 numbers of stations are elevated while 2 stations (GPO and Anarkli) are underground.
- The access to the elevated stations is grade-separated. Each elevated station has two entrances except Lakshmi, Railway Station and Thokar Niaz Baig having four entrances. The entrances to underground stations i.e. GPO & Anarkali are at-grade with the exception of one entrance for GPO which is through pedestrian underpass.
- Lakshmi, Railway Station, Thokar Niaz Baig, GPO and Anarkali Station have two (02) ticket booths while remaining have only one (01).
- Two types of electronic fare media will be used i.e. token and smart card which are validated through AGMs in passenger lounge area before entering into the platforms.
- Each station has one (01) security control room except Anarkali where there are two (02) security control rooms. Security control room will be used for multiple purposes such as video monitoring through CCTV cameras, emergency handling of train operations etc. There will be a centralized control room called Operation Command and Control Centre (OCC) at depot.
- Power Supply to the overall system shall be provided through two (02) High Voltage Substation located near UET and Shahnoor Station.
- Each station excluding the platform level will be centrally air conditioned.
- Depot is located at Dera Gujran while stabling yard is located at Ali Town.
- There are total 158 escalators and 107 elevators for enabling universal access to stations
- There are total 960 Automatic platform gates installed at elevated stations and 80 Platform Sliding doors at underground stations which work in synchronization with trains for safe boarding and alighting.
- There are 1450 CCTV cameras installed in the system for security and other purposes
- Passenger Information System is installed at all stations which consist of 416 LCD screens and 3000 speakers
- Train Operational hours are from 6:00 AM to 11:00 PM according to the preliminary schedule and is subject to change when desired by the Authority.

- There are 27 train sets each with 05 cars. Each train set is 100m in length with 20 doors. Each train set has a comfortable carrying capacity of 1000 passengers. The minimum headway between two train sets will be 05 minutes.
- There are station amenities such as water coolers, water motors, washrooms, ticket booths, Ticket Vending Machines, Announcement System, Surveillance Cameras, Passenger Information screens, gensets, transformers, AGMs etc.
- Terminal stations i.e. Shahdara and Gajjumatta have bus turnarounds and bus parking space.
- The average daily ridership is expected to be 245,000 passengers. The boarding and alighting details of each station is presented in the figure below:



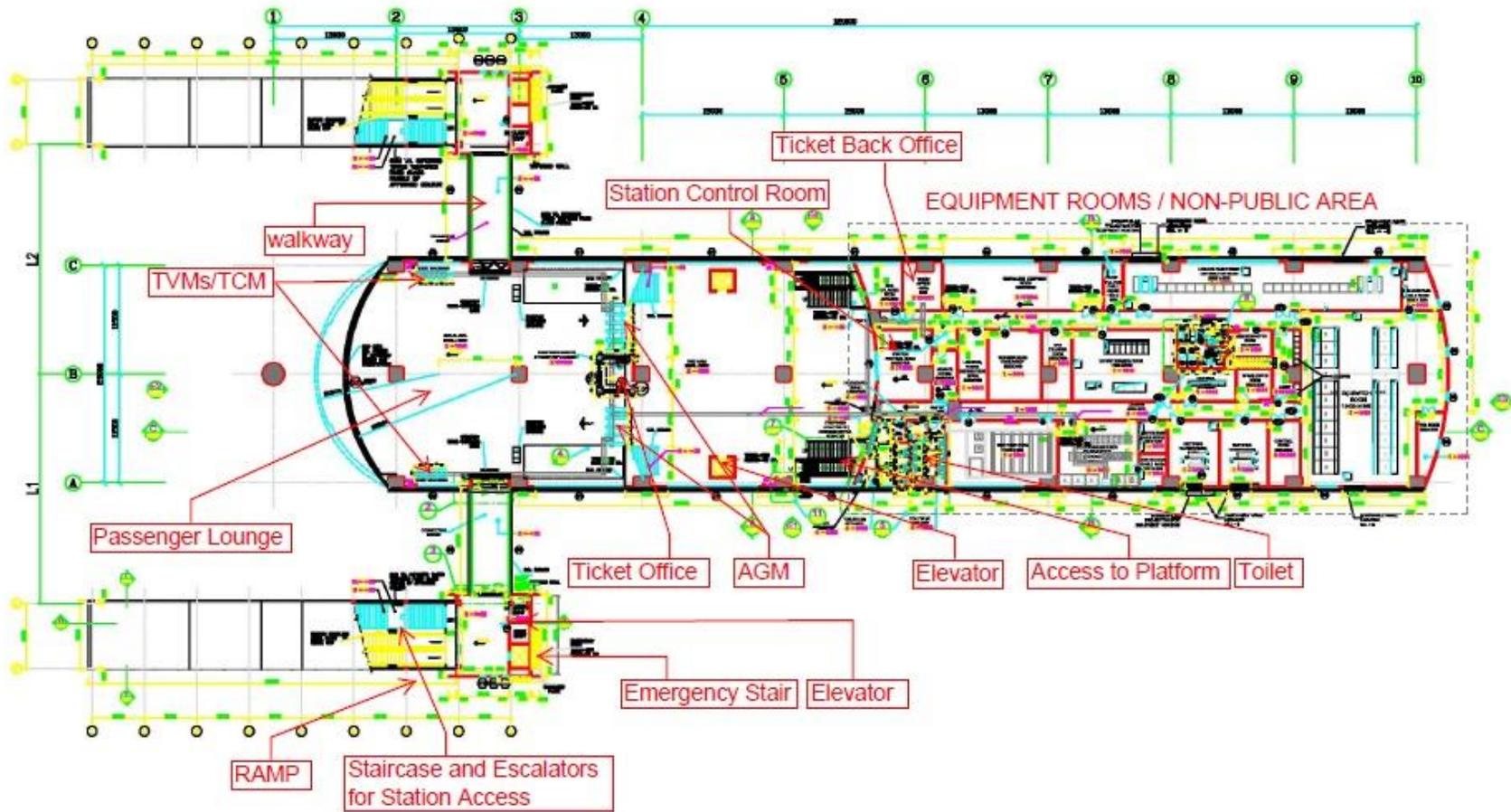
Twenty one (21) stations are elevated and have one (01) ticket office each along with associated Single entry and Exit design.

The remaining five (05) stations have two (02) ticket offices each such that:-

- Three (03) are elevated (Railway Station, Lakshami & Thokar Niaz Baig); and each of the two (02) ticket office at these stations has associated single entry and exit design.
- Two (02) are underground (Central & Anarkali); and each of two (02) ticket office at these stations has associated double entry and exit design.

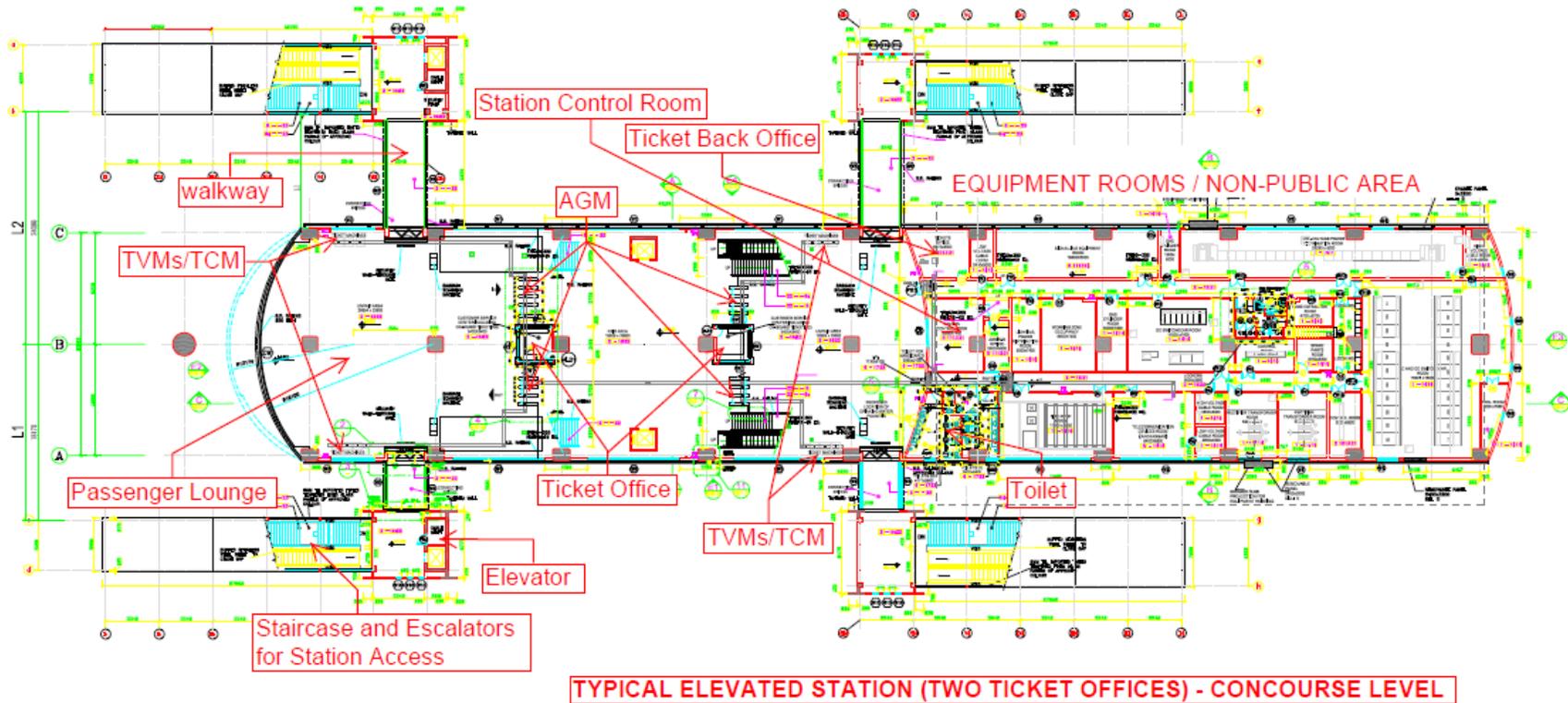
The station design drawings showing positions of AGMs, Ticket office, Station Control Room, Equipment Room etc of a typical elevated single ticket office station, typical elevated double ticket office station, Underground double ticket office Central Station and Underground double ticket office Anarkali Station are attached below (The high resolution drawings in soft form can be obtained from the Punjab Masstransit Authority office located at 5<sup>th</sup> Floor Arfa Software Technology Park, Ferozpur Road, Lahore, in office hours (9:00am to 5:30pm)) :-

Typical Elevated Station with One Ticket Office and Single Entry and Exit Design

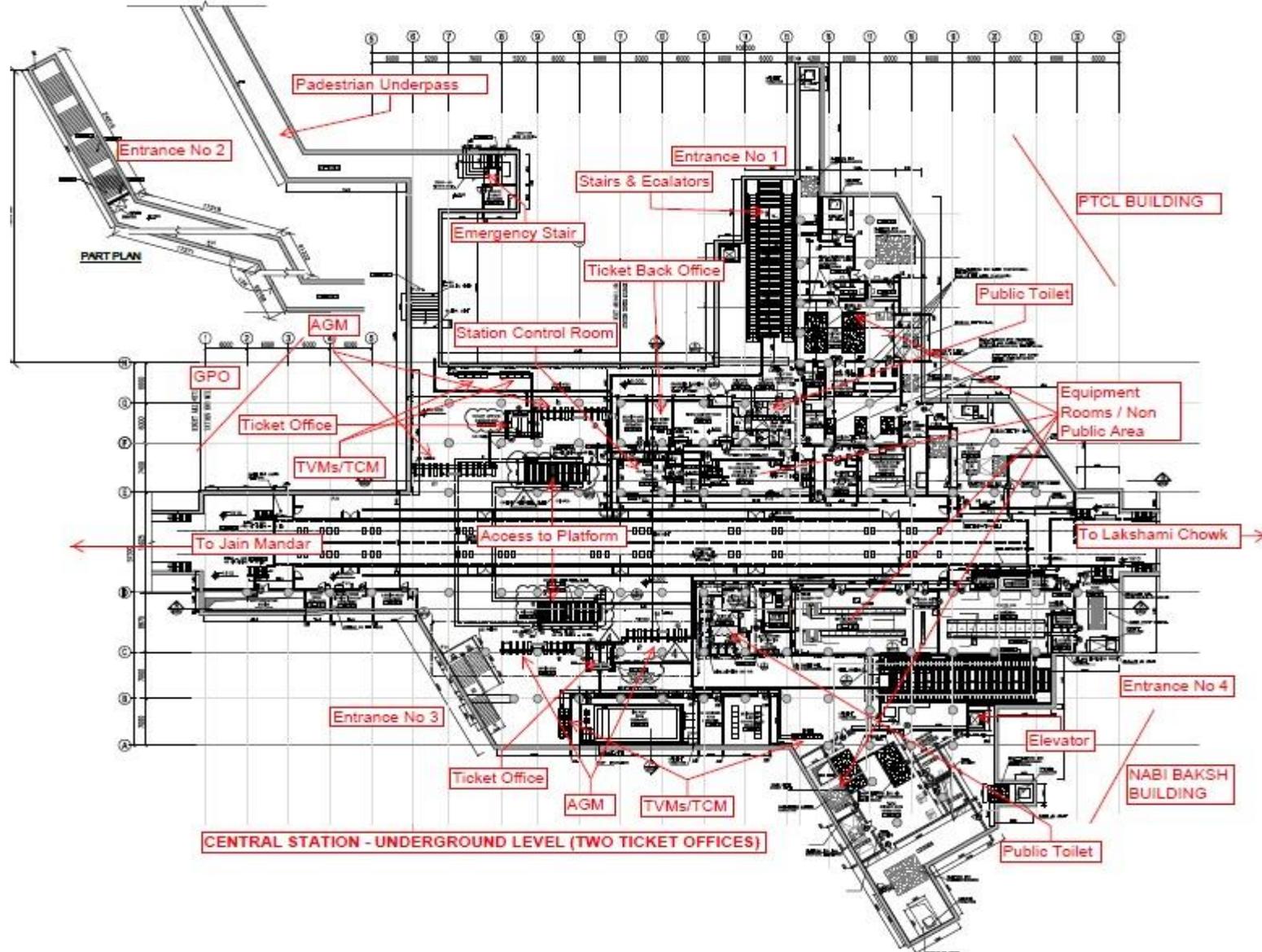


TYPICAL ELEVATED STATION (ONE TICKET OFFICE)- CONCOURSE LEVEL

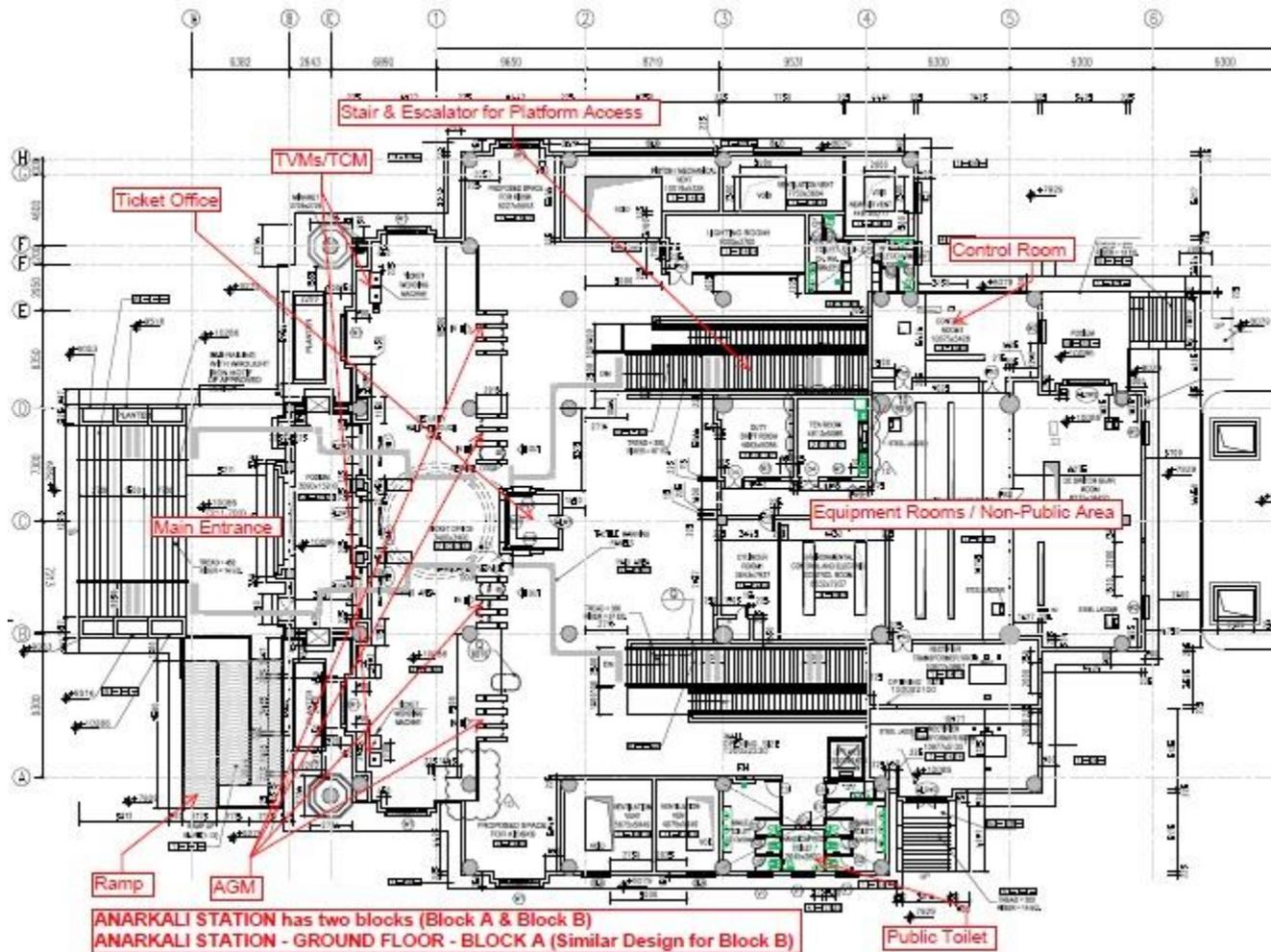
Typical Elevated Station with Two Ticket Offices: Each Ticket Office having Single Entry and Exit Design (Railway Station, Lakshmi & Thokar Niaz Baig)



Underground Central (GPO) Station with Two Ticket Offices: Each Ticket Office having Double Entry and Exit Design



Underground Anarkali Station with Two Blocks: Each Block having One Ticket Office and Double Entry and Exit Design  
 Anarkali station has two blocks each having one ticket office. Typical Diagram of block A is listed below. Block B has similar design.



## **7.2. Future Expansion Plans**

The following are future plans for the city:

- Expansions of Masstransit corridor to complete whole network (Four lines) where green line is already functional with metrobus system;
- Expansion of public transport routes throughout the city to have integrated Public Transportation System.

## **8. Contract type and duration**

Contract period is (05) five 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 Service Provider's roles and Responsibilities):

### **L2SP2 roles, responsibilities and onsite technical support:**

1. Maintain and administer all AFC 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. Facilitate L2SP1 regarding O&M of robust, scalable, secure, and efficient data communications network connecting PMA stations to the datacenter/central hosting site/engine room AFC (located in PMA metrotrain control center at Dera Gujran) as well as the central PMA metrotrain control center.
3. Deploy suitably skilled personnel (dedicated team) for configuration/customization, installation, and prompt and efficient technical support/maintenance of all AFC components.
4. Adequate AFC spare parts (list attached at Annexure-N) are in place with L2SP1 who shall maintain the inventory of spare parts (refer Annexure-O). L2SP1 will immediately issue required spare parts to L2SP2 in order to ensure uptime defined in the Service Level Agreements (refer Annexure-O). The consumable items (like paper, printer cartridges) are not included in the spare parts list which are responsibility of the L2SP2. It is however clarified that items like UPS batteries and Data Cartridges are not considered as consumable items and shall be provided by L2SP1. Moreover, no AFC equipment including spare parts will be procured by L2SP2.
5. Adhere to timelines of the AFC project implementation specified in this RFP.

6. Ensure quality, robustness, security, and functionality of all hardware, software components associated with AFC.
7. Implement a secure and protected access control system to control access to AFC software application systems and databases, limiting access to authorized personnel only. Also maintain AFC hosting site and ensure regular and tested data backup.
8. Implement appropriate security measures for the information and data generated from operations of AFC, and deploy standard disaster management procedures, contingency plans, and back-up plans to cope with any system failure.
9. Undertake a comprehensive training program, from the AFC manufacturer company through EPC Contractor (to be arranged by the Purchaser) regarding AFC software and hardware, and ensure that its staff acquires a good working knowledge of supply of such Services to be supplied under the Contract. Subsequently, Impart meaningful and timely training to all staff associated with AFC as well as selected staff of PMA. It is clarified that software interfaces and training manuals shall be in English language and training shall also be provided in English language.
10. Undertake taking over of all AFC equipment and components from the Purchaser.
11. Prepare and implement detailed preventive and break-down maintenance plan for all AFC equipment and components to be handed over by the Purchaser to L2SP2. Also update the maintenance plan through maintenance review procedures.
12. Guarantee up-time and adequate performance of AFC components at Metrotrain Stations, Control Center, Central Datacenter.
13. Guarantee smooth operations and functioning of all AFC components during the entire contract period.
14. Plan and conduct regular disaster recovery drills, security audits, and performance tuning activities. Timely submit associated plans, schedules, and results for review.
15. Coordinate all equipment and software maintenance activities well in advance with authorized/designated personnel at PMA.
16. Replace faulty equipment, hardware, software, covered under defect liability period for the Contract period, so as to ensure adherence to stated service-level parameters.
17. Regularly check, and watch for timely upgrade and maintain all possible ICT infrastructure including hardware, software, and network infrastructure and ensure adherence to stated service-level parameters.
18. Facilitate and operate integration with other Intelligent Transport Systems (ITS) add-ons, if any.

19. Facilitate and operate integration of AFC system with banking software system of the Bank of Punjab, in an efficient and secure manner.
20. 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).
21. Provide authorized PMA staff (and other authorized Government personnel) secure, 24x7 online access to updated Management Information System reports and features -covering all critical aspects of AFC operations, alerts, faults, and audit logs.
22. 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.
23. Obtain all necessary permits under all applicable Laws required to proceed with AFC Project implementation, and comply with applicable laws, regulations, and permits during the contract period.
24. Cooperate with all other service providers and facilitate their operations in the PMA system. In case of damages to PMA or other Service Provider property on the part of the AFC Service Provider the damages shall be recovered from the AFC Service Provider by the Purchaser.
25. Be responsible for the conduct and functioning of all staff employed on the AFC project towards passengers and PMA staff as well as authorized staff of other relevant government agencies. 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.
26. Participate in all meetings, committees, etc, as directed by PMA from time to time.
27. Operate ticket office terminals at all metro stations under PMA. Lockable cabin will be provided by PMA and handover to service provider and for its maintenance and management throughout the currency of the contractor.
28. In-order to ensure there are no ticketless travelers within the system, the bidder shall also provide manpower at AGMs.
29. In-order to facilitate travelers with the Ticket Vending Machines (TVM) and Ticket Checking Machines (TCM), the bidder shall also provide manpower at TVM/TCM.
30. Deploy suitably skilled personnel at PMA metro stations to efficiently manage ticket sales (using the implemented AFC solution interfaces), and to facilitate passengers at AGMs and TVMs.

31. Ticket offices (metro stations) must operate during operations of the PMA Metrotrains – tentatively decided as 18 hours a day.
32. Ensure prompt and efficient response time related to all service delivery aspects associated with ticket sales/refunds, AGM entry/exit process, etc.
33. Timely raise alerts to the PMA control center staff in case of issues with equipment or system functioning.
34. Facilitate scalability of the AFC Project to cater to the future requirements and needs.
35. Engage and deploy suitably skilled personnel for operation and maintenance of the AFC project, and maintenance/replacement of all related equipment/component in a timely manner.
36. Take prompt and reasonable action for resolution of each complaint – including complaints received from passengers as well as from PMA related to AFC operations e.g ticket sales, AGM facilitation, TVM facilitation etc and generate log of each complaint along with the details of the resolution.
37. Agree to and abide by the “Revenue Collection and Payment Mechanism” stated in this document.
38. Ensure integrity of cash collection and reconcile with sales/transaction reports daily to ensure there is no differences.
39. Adequate resources from the contractor’s side must be available to ensure smooth operations of AFC.
40. Cards/Tokens used in AFC corridor must also work with existing AFC systems in other AFC corridors and feeder route systems and vice versa (Fare Integration).
41. The Contractor is liable to cooperate fully with the assigned Information System Auditor’s and shall extend all necessary access, support & cooperation for the completion of said audits (as and when required).
42. The Contractor is responsible for operating the entire AFC system including all its components and peripherals, reliably and securely at all times during the course of the contract. The Contractor shall not make any changes to the system configuration parameters and security settings without prior written approval of the Client in a timely manner.
43. At no time or under any circumstances what so ever shall the Contractor ever make direct changes to the databases. It shall always be ensured that all changes in the database (if and when required approved by the Client) shall be done through the

application interface(s). The database audit logs shall always remain in enabled mode.

**Clarifications Related to Services Required:**

It is clarified that:-

- I. The role of L2SP2 is confined to operations and maintenance of already developed and deployed solution and no additional integration or development or addition is considered as L2SP2 role.
- II. The part / equipment which needs replacement will be issued to L2SP2 by L2SP1 that is maintaining the backup and spare part inventory. However, it is clarified that the responsibility of replacement of part / equipment lies with L2SP2.
- III. The repair to be performed by L2SP2 represent general correction by means of troubleshooting, replacement of part / equipment supplied by L2SP1, or by following built-in process of application or software being maintained. However, L2SP2 shall not perform any repairs that will void the warranty of part / equipment.
- IV. There will be a dedicated security operator for Orange Line i.e. L2SP3, on 24/7/365 basis, who will be responsible for the security of equipment after operations hours. However, security of equipment locked by the L2SP2 shall be to the extent of protection of breakage of locks and theft thereafter.
- V. L2SP2 will be exempted from delays or slippages on SLA parameters for the duration where the problem lies with L2SP1 or AFC manufacturer through EPC Contractor.

**10. Key Service-level parameters**

***Any breach of defined service levels will entail penalties. Service level parameters are outlined in Annexure-J.***

**11. Revenue collection and payment mechanism**

1. An escrow account shall be opened by the PMA in the Bank of Punjab. **The escrow account will be jointly operated by authorized representatives of PMA, the AFC Service Provider, and Metrotrain Operator.**
2. Sale of tickets (cards/tokens) shall be the responsibility of the contractor.
3. For activation and subsequent recharging of cards (Smart cards) and tokens, the contractor shall use "Bulk Initialization Machines (BIM)" i.e. Encoder/Sorter Machine, placed at PMA metrotrain Command and Control Center.
4. BIMs i.e. Encoder/Sorter Machines, 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 notify e-credit to be made available to the AFC service provider for charging of BIM (Encoder/Sorter Machine)/POS machine.
5. Payments from the Escrow Account will be made to Metrotrain Operator based upon agreed policies, formulas, and reconciliation reports from AFC.

6. Payments from the Escrow Account will also be made to AFC Service Provider.
7. If there is surplus balance in the Escrow Account, the amount will be retained by PMA. If there is deficit in the Escrow Account (that is, the two service providers cannot be paid) then PMA will pay the deficit amount from its own account.
8. Regular third-party audit (financial as well as technical) to be made an integral part of the project

## **12. Other Parties Responsibilities**

### **12.1. PMA Responsibilities**

1. Provide fare structure, user roles, and business rules to AFC service provider
2. Provide AFC service provider necessary project site so that AFC 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

### **12.2. AFC Manufacturer Responsibilities**

The AFC manufacturer company through EPC Contractor is responsible for the contract period to:-

1. Provide Software maintenance support i.e. bugs/errors and provide software updates for the deployed software
2. Attend to all the quality issues of the AFC equipment
3. Provide warranty and defect liability of AFC system
4. Attend to any design issues of the AFC system

### **12.3. L2SP1 Responsibilities**

1. The L2SP1 shall promptly inform the Purchaser to stop ticketing operation in case of closure of platforms due to emergency, etc. Also, upon restoration of operation L2SP1 shall inform and advise the Purchaser to resume ticketing.
2. L2SP1 shall also act under L2SP1 RFP Clause 54.4 (refer Annexure-O); for the replacement of parts under defect liability brought forth by L2SP2; however, L2SP1 shall not be responsible for managing services rendered by L2SP2.
3. L2SP1 shall grant limited login/access to L2SP2 for use of ITMIS (refer Annexure-O) during Contract Period.
4. L2SP1 shall watch and maintain inventory dedicated for AFC System.

## **13. Key components of the solution**

### **13.1 Station Level Equipment (SLE)**

The details of SLE AFC equipment installed at metro station is attached at Annexure-K. The Contractor shall be responsible for operations and maintenance of all SLE including cabling for networks.

#### **13.1.1 Station Passenger Area AFC Equipment**

##### **13.1.1.1 Automatic Gate Machines (AGM)**

All PMA stations have guarded entry and exit enforced via Automatic gate machines (AGM).

AGMs have been deployed on every station, on boundary of paid area and un-paid area, which makes the total of 279 operational AGMs at any given time. Each station have four different types of AGMs that are entry (AGE), exit (AGX), reversible (RAG) and bidirectional-wide (Bi-WAG). The AGE and AGX are dedicated for entry and exit only. RAG and Bi-WAG are both reversible and bidirectional; however, Bi-WAG is a Wide AGM. All the AGMs are equipped with validator(s) i.e. fare media readers / writers.

In-order to ensure there are no ticketless travelers within the system, the bidder shall provide manpower at AGMs at all times during operations.

#### **13.1.1.2 Ticket Offices for Top Ups/Printing Tickets/Allotting Tickets and Refunds**

All PMA metrotrain stations have Ticket Office Machines (TOM) such that each ticket office is equipped with two TOMs, which makes the total of 62 operational TOMs at any given time, for issuing charged tokens and charge cards with the desired amount paid by the passenger. TOM is also called Booking Office Machine (BOM). TOM has ticket selling and supplementing function. TOM is manually operated and can realize ticket selling, supplementing, charging, replacing, refunding, query, ticket analysis and revenue management of tokens and smart card. TOMs will only work if they contain balance amount that can be transferred onto the fare media. TOMs must reliably transmit transactional data to any intermediary 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. Besides TOMs, each ticket office is also equipped with AC power distribution box and network rack with a layer-2 switch.

#### **13.1.1.3 Ticket Vending Machines (TVM)**

TVMs, 153 in number, are deployed in unpaid area of station for passenger to carry out self service. TVM accepts cash (notes and coins) and dispenses fare media accordingly. TVM also has the facility to charge smart cards against the cash submitted. TVM has the function of processing, storage and changing of coin/paper money as well as providing operation management and repair maintenance for operation and maintenance personnel. It is clarified that TVMs has automated mechanism for detection of counterfeit or fake currency.

#### **13.1.1.4 Ticket Checking Machines (TCM)**

TCMs, 31 in number, are installed in unpaid area of stations for passenger to query the ticket. It can read the data in prepaid ticket.

#### **13.1.1.5 Portable Card Analyzer (PCA)**

PCA, 52 in number, will be used as backup medium in case of any failure and to validate entry of passengers in the trains. PCA has deducting, query and charging functions between application system and all tickets.

### **13.1.2 Station Control Area AFC Equipment**

#### **13.1.2.1 Station Computer System (SC)**

Station computer system (SC) is composed of station server, workstations (02) along with printers, layer-3 switch and emergency button control box, and makes station self-contained in terms of carrying out operations without complete dependency on the line central computer

system (LCC). The SC can monitor and control the operating state of AFC station level equipment (SLE), collect and make statistics of all operating data and upload to LCC. It can start the degraded operation mode according to operating demand. Receive the ticket dispatching command from LCC and manage ticket and cash circulation in station. SC receives parameters sent by LCC and sends the received parameter to terminal equipment. Receive clock synchronization signal from LCC and finish clock synchronization of the station. Manage SLE, ensure normal operation of system and generate operation related report.

The main functions of emergency button control box are response to respond to panel emergency button/Fire Alarm System signal and control of all gate opening. The gate will feed back door state to emergency button control box. The emergency button control box is communicated with the server through Ethernet interface.

#### **13.1.2.2 Communication Room**

The station server, layer-3 switch and emergency button control box are placed in station control rack in communication room. Besides, UPS is also installed in AC Power distribution cabinet in communication room, to ensure backup power supply for all AFC SLE deployed at each station.

#### **13.1.2.3 Station Control Room**

The first workstation along with printer is placed in Station Control Room, for managing the station equipment.

#### **13.1.2.4 Ticket Back Office**

The second work station along with printer is placed in Ticket back office for managing tickets and cash circulation. There is one (01) ticket sorting machine in each ticket back office. Moreover, two (02) currency detectors and four (04) coin counters available in each ticket back office that can be utilized by the Contractor in the Ticket office as well. Each ticket back office also has two (02) ticket storage cabinets and two (02) transport carts. Moreover spare ticket containers for TVM, TOM and AGMs (only AGX, RAG and Bi-WAG), coin containers for TVMs and bank note containers for TVMs are also placed in ticket office. The ticket back office room will be handed over to the Contractor and accordingly managed by the Contractor for the period of the Contract.

#### **13.1.2.5 Power Backup**

UPS are installed in AC Power distribution cabinet in Communication Room, to ensure backup power supply for all AFC equipment/components deployed at each station. UPS backup should last for at least 30 minutes at any given time. This does not apply power outages in case of hurricane, flood, earthquake and/or any other extenuating circumstances.

### **13.2 Fare Media / Tickets**

RFID Smart Cards (stored value) for long term planned repeated journeys are available, coupled with passenger registration module. For short/occasional or single journeys on masstransit system only, re-usable RFID tokens are available.

Required number of cards/tokens necessary to efficiently serve passenger volumes must be in stock with the Contractor at all points of time – this is must to ensure that no shortages of fare media occur at any given time. At no point should the tickets/tokens be short at any PMA station.

**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. However the smart

cards will be refundable and issued to the general public against a security deposit (that shall be deposited by the Contractor to the escrow account) which will be fixed by the Government of Punjab.

### **13.3 Automated Fare Collection and Fare Policy**

Passengers will be charged distance based fare. However, AFC is able to handle fare policies based on flat rate, zones/stages, as well as distance travelled. AFC is also able to handle the full fare, concessional fare and free fare policies. AFC also caters to on-board as well as off-board ticketing modes and is able to handle transfers across on-board and off-board ticketing modes.

### **13.4 Reports**

All AFC components must be equipped with standard reports typically expected from an Automated Fare Collection System like Fare Media Utilization Report (including time and location of entry and exit of each passenger), Origin-Destination Matrix Report, Ridership Report (for user selected time duration), TOM/TVM fare media charge report, Card initialization Report, Passenger Transfer Report between routes, etc - with the provision of additional reports that may be required based on data stored in the relevant databases. Reports/summaries of incidents subject to which the penalty clauses may be invoked should also be made available.

### **13.5 System availability and data backup**

AFC 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 is hosted in data center in Metrotrain Command and Control Centre established at Orange Line Depot in Dera Gujran, providing high availability access. Regular data backups must be maintained.

### **13.6 Connectivity**

The medium for connectivity is Fiber optic which is outside the scope of this tender document and is already provisioned by EPC contractor and maintained by L2SP1. The Contractor will facilitate L2SP1 in maintenance of all necessary integration with primary fiber optic network, which is outside the scope of this tender document, to ensure 24/7 backup connectivity at all points of time to all stations and AFC data transmission to central data center.

### **13.7 Servers/Storage**

The Contractor shall be responsible for the O&M of servers, storage devices, network devices and any other hardware/software deployed for the AFC solution to work efficiently.

### **13.8 Manning Ticket Sales Office**

PMA 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.

### **13.9 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.

### **13.10 Call Center**

PMA may setup a call center/helpline for passengers to call into for information on metrotrain 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 solution/Contractor will provide call center personnel access to related information.

### **13.11 PMA Control Center**

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

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

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 support staff at the PMA Control Center.

### **13.12 Development & Training Center (DTC)**

The contractor shall manage a dedicated development and training center (DTC) for AFC solution established at PMA metrotrain Command and Control center. The DTC will be used for the training of contractor's technical and operational staff and also for the testing of AFC solution. The details of AFC equipment installed at DTC is attached at Annexure-L.

### **13.13 Maintenance Center (MC)**

The contractor shall manage a dedicated Maintenance center (MC) for AFC solution established at PMA metrotrain Command and Control center. The MC will be used for the maintenance of the AFC equipment by the maintenance staff. The details of AFC equipment installed at MC is attached at Annexure-L.

### **13.14 Central Computer System**

The Contractor shall operate and maintain the Central Computer System for AFC solution established at PMA metrotrain Command and Control center. The details of AFC equipment installed at PMA metrotrain Command and Control center is attached at Annexure-M. The equipment is installed in Engine Room AFC that is the central hosting site, Network Operations Center (NOC) and Central Ticket Room. There are also some general equipment for the Contractor to perform his obligations.

#### **13.14.1 Engine Room AFC / Central Hosting Site**

The central servers and storages are located in network racks in Engine room AFC that is the central hosting site for the AFC solution.

#### **13.14.2 Network Operations Center (NOC)**

There are four (04) workstations in NOC along with a printer that reflect the status of AFC deployed solution, Network Management System (NMS) and Firewall installed in Engine Room.

#### **13.14.3 Central Ticket Room**

There are two (02) workstations along with a printer installed in the Central Ticket room that reflect the status of ticketing through AFC system. Besides there are two (02) encoder/sorter machines that are used to initialize the tokens. The excess inventory of tickets i.e. smart cards and tokens that are currently not in use at PMA metrotrain stations are also stored in the Central Ticket Room.

#### **14. Other high-level requirements**

##### **14.1 Automated Fare Collection Application have following features:**

- 14.1.1 Provision to specify and compute user-defined distance based, zone based, stage based and flat rate based fare.
- 14.1.2 Provision to handle the full fare, concessional fare and free fare policies.
- 14.1.3 Provision to manage refunds and top up fare media on stations.
- 14.1.4 Availability of user-definable criteria and rules for various functions including but not limited to reimbursement and auto alerts.
- 14.1.5 Inventory report of stock in hand of cards/RFID tokens (fare media) and cards in use/circulation.
- 14.1.6 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 metrotrain and metrotrain operator etc.
- 14.1.7 Online dashboard based on configurable parameters.
- 14.1.8 Report writer for generating quick on the fly reports/analysis.
- 14.1.9 Ability to generate automated alerts – e.g. SMS, email, fax.
- 14.1.10 User security roles definition and availability of interface to reassign roles.
- 14.1.11 Secure, reliable and password protected system.
- 14.1.12 Detailed audit log of critical user activities in the system.
- 14.1.13 Automated data backup facility.
- 14.1.14 Point of sales system to keep track of daily sales at the stations.

##### **14.2 Centralized/Back-office systems and reliable hosting**

- 14.2.1 Operations and maintenance of central computer system of AFC in PMA metrotrain command. The AFC solution must be able to comply with service level agreement.
- 14.2.2 All transactional data will remain property of the purchaser and may not be shared with anyone without written consent of the Purchaser.

14.2.3 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.

### **14.3 Equipment Maintenance and Software Support**

14.3.1 Maintenance and operations of all equipment as listed in relevant sections of this tender document.

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

### **14.4 Human Resources**

14.4.1 The successful bidder must employ adequate, well-trained staff to perform all duties and responsibilities stated in this tender document – including all roles/duties to be performed at the stations, the central datacenter, and to support PMA authorized staff on the AFC solution.

- i. At-least one (01) of each, Operations Supervisor and System Engineer are required per shift per station in ticket back office and station control room respectively along with any other associated staff if required.
- ii. TOM Operators, AGM Controllers and TVM Facilitators are required in below mentioned quantities in each shift. It is clarified that any change in the quantities of defined human resources will be subject to Purchaser instructions only and payments shall be adjusted accordingly.

Station Wise / Shift AFC HR Requirement For TOM, AGM & TVM/TCM							
St. no.	Station Name	TOM		AGM		TVM/TCM	
		Ticket Offices	TOM Operator	AGM Points	AGM Controller	TVM Points	TVM Facilitator
1	Dera Gujran	1	2	2	2	2	2
2	Islam Park	1	2	2	2	2	2
3	Salamat pura	1	2	2	2	2	2
4	Mahmood Booti	1	2	2	2	2	2
5	Pakistan Mint	1	2	2	2	2	2
6	Shalamar Garden	1	2	2	2	2	2
7	Baghbanpura	1	2	2	2	2	2
8	U.E.T	1	2	2	2	2	2
9	Sultanpura	1	2	2	2	2	2
10	Railway	2	4	4	4	4	4
11	Lakshmi	2	4	4	4	4	4
12	Central	2	4	8	8	4	4
13	Anarkali	2	4	8	8	4	4
14	Chauburji	1	2	2	2	2	2
15	Gulshan-e-Ravi	1	2	2	2	2	2
16	Samanabad	1	2	2	2	2	2
17	Bund Road	1	2	2	2	2	2
18	Salahudin Road	1	2	2	2	2	2
19	Shahnoor	1	2	2	2	2	2
20	Sabzazar	1	2	2	2	2	2
21	Awan Town	1	2	2	2	2	2
22	Wahdat Road	1	2	2	2	2	2
23	Hanjarwal	1	2	2	2	2	2
24	Canal View	1	2	2	2	2	2
25	Niazbaig	2	4	4	4	4	4
26	Ali Town	1	2	2	2	2	2
<b>Total</b>			<b>62</b>		<b>70</b>		<b>62</b>

## 15. Tender/Bidder Eligibility

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.

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 and Punjab Revenue Authority(PRA).
- 15.1.9 has not been blacklisted by any of Provincial or Federal Government Department, Agency, Organization or autonomous body anywhere in Pakistan and country of origin (Submission of undertaking), failing which will cause rejection of the bid.

## **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 legally executed to that effect, or a Memorandum of Understanding (MOU), 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.
- f. No partner of the formulated Joint Venture can be replaced or removed without the prior approval of the Purchaser.

## **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 advertise the amendment(s) in the manner as was originally done in line with PPRA Rule 25(4).
- 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 only.
- 20.2** The Tenderer is not allowed to bid for partial services.
- 20.3** 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.
- 20.4** 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.
- 20.5** Further required information as part of the bid is listed below, as in continuation to other requirements listed in the document:
  - 20.5.1 List of firm's major international and national clientele.
  - 20.5.2 Details related to experience in implementing, maintaining and supporting such solutions with all supporting documents and documented proofs.
  - 20.5.3 Complete details of all the projects being carried out by the bidder with all supporting documents and documented proofs.
  - 20.5.4 Details of similar type of projects executed by the Bidder with all supporting documents and documented proof.
  - 20.5.5 Valid Sales Tax, Income Tax and Company Registration certificates for local company (and the same prevalent documents as applicable in the region/origin of operations of enterprise operating outside Pakistan).
  - 20.5.6 SECP Registration Certificate or registration with registrar of firms.
  - 20.5.7 Registered Service Provider with Punjab Revenue Authority(PRA).
  - 20.5.8 Detailed Project Plan highlighting timelines, resource allocations and deliverables for each milestone leading to solution roll out.
- 20.6** The Technical and Financial proposals shall be submitted in 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.
- 20.7** In the event of any discrepancy between the original and the duplicate, the original shall govern.
- 20.8** The **Technical Proposal** shall contain following, without quoting the price:
  - 20.8.1 Technical Proposal Form (Annexure-A)
  - 20.8.2 Affidavit and Undertaking (All terms & conditions and qualifications listed anywhere in the RFP have been satisfactorily vetted) (Annexure-E&F)
  - 20.8.3 Covering letter duly signed and stamped by authorized representative. (Annexure-C)
  - 20.8.4 Authorized Certificate / document from the principle / manufacturer (if applicable).
  - 20.8.5 Evidence of eligibility of the Tenderer and the Services
  - 20.8.6 Evidence of conformity of the Services to the Tender Document
  - 20.8.7 The statement must be signed by the authorized representative of the Bidder
  - 20.8.8 Financial Capacity as per Annexure-I

- 20.8.9 Valid Registration Certificate for Income Tax, Sales Tax and / or other allied agencies / organizations / regulatory authorities (Principal, Local Representative Company).
- 20.8.10 Income Tax & Sales Tax Returns for the last three tax years
- 20.8.11 Power of Attorney, if an authorized representative is appointed (Annexure-D)
- 20.8.12 Copy of Tender Security **(as mentioned vide clause 22 regarding Tender Security of this document)**.
- 20.8.13 Submission of undertaking on legal valid and attested stamp paper that the firm is not blacklisted by any of Provincial or Federal Government Department, Agency, Organization or autonomous body anywhere in Pakistan and in Country of origin.

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

- 20.9.1 Financial Proposal Form (Annexure-B)
- 20.9.2 Tender Security **(as mentioned vide clause 22 regarding Tender Security of this document)**.
- 20.9.3 Price Schedule

**20.10** 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]

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

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

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

Duplicate Technical Proposal for  
Tender Name. [Name of 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]

**20.12** The Tenderer shall follow the same process for the Financial Tender.

**20.13** 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]

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]

**20.14** 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]

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 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.

- 20.16** 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.

## **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 other than as specified in Clause 40;
- 21.1.2 Inclusive of all charges up to the delivery point at the Punjab Government's facility for AFC related components;
- 21.1.3 in Pak Rupees (PKR);
- 21.1.4 is inclusive of all applicable taxes, duties, levies, insurance, freight, etc., as per Laws of the Government of Pakistan, but shall be exclusive of Sales Tax on Services which shall be added by the Purchaser over and above the quoted amount, as applicable/required under the relevant Tax Laws, to arrive at the Contract Price. Accordingly, the Contract Price shall be subject to adjustments for change in rate of Sales Tax on Services.
- 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 part of financial bid envelope** (and a copy with technical proposal), failing which will cause rejection of bid.
- 22.2** Tender security, would be submitted by the Bidder;
- 22.2.1 in the form of Demand Draft / Pay Order / 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[Annexure-G];
- 22.2.2 A sum of PKR One Million, One Hundred Thousand Only (PKR 1,100,000/-);
- 22.2.3 denominated in Pak Rupees;
- 22.2.4 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 earlier.
- 22.3** The proceeds of the Tender Security shall be payable to the Purchaser, on the occurrence of any / all of the following conditions:
- 22.3.1 If the Tenderer withdraws the Tender during the period of the Tender validity specified by the Tenderer on the Tender Form; or
- 22.3.2 If the Tenderer does not accept the corrections of his Total Tender Price; or

- 22.3.3 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.
- 22.3.4 If the tenderer fails to provide the performance security in stipulated timeframe, format, amount and currency.
- 22.3.5 The Tenderer refuses or fails to submit the Performance Security as per agreed timelines, amount and format.
- 22.3.6 If the Tenderer submits any forged/fake/false information or document to qualify for the bid.
- 22.3.7 If the Tenderer or any of its JV partner is blacklisted in the Country of Origin.
- 22.4** 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 Tender validity period will not be extended further pursuant to PPRA Rule 28 and PPRA notification dated 22.3.19.

### **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 copy of required Tender Security as part of technical bid envelope;
  - 27.1.7 is otherwise complete and generally in order;
  - 27.1.8 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.

## **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 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.
  - 28.1.2 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** 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.

## **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; or
- 29.2.6 the Tenderer fails to meet the minimum passing score of 60% i.e. 45 in the Technical Evaluation Criteria (Clause 70); or
- 29.2.7 the Tenderer refuses to accept the corrected Total Tender Price; or
- 29.2.8 the Tenderer has conflict of interest with the Purchaser; or
- 29.2.9 the Tenderer tries to influence the Tender evaluation / Contract award; or
- 29.2.10 the Tenderer engages in corrupt or fraudulent practices in competing for the Contract award.
- 29.2.11 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.
- 29.2.12 the Tenderer submits any financial conditions as part of its bid which are not in conformity with tender document.
- 29.2.13 the Tenderer refuses or fails to submit the Performance Security as per agreed timelines, amount, currency and format.
- 29.2.14 the tenderer including any of its JV/Consortium partner has been blacklisted by any public sector organization in Pakistan or Country of origin.

### **30. Acceptance Letter (LOA)**

The Purchaser shall, send the Acceptance Letter (LOA) 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 (LOA) 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[Annexure-H];
- 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 one (01) year contract value, 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 ten 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**  
**Operations and Maintenance Services of**  
**Automated Fare Collection System (AFC) for**  
**Metrorail Transit System on the Orange Line in Lahore**  
**(Ali Town to Dera Gujran)**

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 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 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. Warranty**

**37.1** The AFC Goods/equipment/software/items are covered under defect liability and warranty period of five (05) years from start of operations.

**37.2** The cases of defect liability and warranty of AFC Goods/equipment/software/items shall only be handled by the L2SP1 that will carry out liaison with EPC Contractor, for immediate resolution of the said fault/defect. Accordingly, the Contractor shall inform the L2SP1, with intimation to the Purchaser, regarding any such cases of defect liability and the warranty.

**37.3** The Contractor will be responsible for free, on site repair / replacement of defective / damaged parts and labor. Engage and deploy suitably skilled personnel for operation and maintenance of the AFC Project, and maintenance/replacement of all related equipment/components in a timely manner during the course of the contract.

### **38. 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.

### **39. Payment**

- 39.1** The Contractor shall submit an Application for Payment (Invoice), in the prescribed form, to the Purchaser. The Application for Payment shall: be accompanied by such invoices, receipts or other documentary evidence as the Purchaser 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.
- 39.2** The Purchaser shall issue a Certificate of Payment, in the prescribed form, with a copy to the Contractor, verifying the amount due, within fifteen days of receipt of an Application for Payment. The Purchaser shall deduct the amount of penalties that may be levied in accordance with the SLA (Annexure-J), against the exclusive of Sales Tax amount mentioned in the Invoice and recalculate Sales Tax amount, while issuing the Certificate of Payment. The Purchaser may withhold a Certificate of Payment on account of defect(s) / short coming(s) in the services provided. The Purchaser may make any correction or modification in a Certificate of Payment that properly be made in respect of any previous certificate.
- 39.3** 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 crossed cheque.
- 39.4** Payments shall be made against successful delivery of services per each Phase of the Program
- 39.5** 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 etc for which AFC has been successfully provisioned. However, it is clarified that if a station is closed by the Purchaser, not because of the fault of Contractor but, due to riots, strikes, natural calamities or by the action of law or government etc. the Purchaser shall make the prorated deductions in the invoice processing. Subsequently, the Contractor shall submit its separate invoice for incurred costs during such instance of closure and the Purchaser shall evaluate the invoice and pay such agreed costs; however, the Purchaser shall not pay any profits in such instances.

### **40. Contract 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 Financial Proposal (Form of Bid/Financial Proposal Submission Form) or not agreed by the Purchaser as per this Contract. The quoted price, in the financial bid, is inclusive of all applicable taxes, as per Laws of the Government of Pakistan, except Sales Tax on Services which shall be added by the Purchaser over and above the quoted amount, as applicable/required under the relevant Tax Laws, to arrive at the Contract Price. **Accordingly, the Contract Price shall be subject to adjustments for change in rate of Sales Tax on Services as and when applicable.**

**The bidder need not include escalation in cost for the contract period because the financial bid price is completely indexed with minimum wage and consumer price index (CPI). All changes in minimum wage and CPI will be passed on the bidder as per the mechanism given below.**

Component prices  $P_3$ ,  $P_4$  and  $P_5$  of the bid price  $P$  shall be adjusted for minimum wage whenever a new minimum wage rate affecting the city of operations is notified.

Component prices  $P_1$  and  $P_2$  of the bid price  $P$  shall be adjusted at the end of each fiscal year for the change in consumer price index (CPI) since the bid submission date.

The monthly gross amount (exclusive of sales tax on services)  $P_n$  shall be as follows:

$$P_n = P + E_n$$

Where

$$E_n = (P_1 + P_2) \times \left( \frac{CPI_n}{CPI_0} - 1 \right) + (MW_n - MW_0) \times SS \times \frac{365}{(365 - 52^* - 14^{**})}$$

Where

$E_n$  is the cumulative escalation in monthly price in PKR since the bid submission date.

$MW_n$  is the notified minimum wage for the invoice period.

$MW_0$  is the notified minimum wage on the date of bid submission.

$SS$  is the total number of **defined** human resources in Component P<sub>3</sub>, P<sub>4</sub> and P<sub>5</sub>.

$CPI_n$  is the value of consumer price index (CPI) on the last date of the previous fiscal year as published by Pakistan Bureau of Statistics, i.e. 30<sup>th</sup> June 2019 for invoices submitted for the period of 1<sup>st</sup> July 2019 and onwards and 30<sup>th</sup> June 2020 for invoices submitted for the period 1<sup>st</sup> July 2020 and so on.

$CPI_0$  is the value of consumer price index on the date of bid submission.

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\*Represents 52 Sundays in a year

\*\*Represents other leaves and relievers, if any.

Accordingly, the Contract Price shall be subject to adjustments for changes in:-

- i. Sales Tax on Services rate as and when applicable
- ii. Minimum wage rate as and when applicable for Sr No 3-5 of Price table
- iii. CPI from every new financial year for Sr No 1-2 of Price Table

#### **41. Contract Amendment**

- 41.1** 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.
- 41.2** 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.
- 41.3** The Contractor shall not execute the Change until and unless the Purchaser has allowed the said Change, by written order served on the Contractor.
- 41.4** 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.
- 41.5** No variation in or modification in the Contract shall be made, except by written amendment signed by both the Purchaser and the Contractor.

#### **42. Assignment / Subcontract**

- 42.1** 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.
- 42.2** 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.

**43. 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, extend the Contractor's time for performance of its obligations under the Contract.

**44. Liquidated Damages**

If and when applicable, liquidated damages (LD) shall be levied for delay in start date of complete services as directed by the Client as below:-

- i. Incomplete number of defined resource (TOM Operators, Turnstile Controllers and TVM Facilitators) deployment at Stations = 0.25 % of the annual contract value per day per station
- ii. Other services as required in this RFP = 0.25 % of the annual contract value per day

However, the amount so deducted shall not exceed, in the aggregate, the value of the performance security. The Liquidated Damages are attributable to such part of the Services as cannot, in consequence of the failure / delay, be put to the intended use, for every day between the scheduled delivery date(s), with any extension of time thereof granted by the Purchaser, and the actual delivery date(s).

**45. Forfeiture of Performance Security**

**45.1** 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 the Purchaser may, without prejudice to any other right of action / remedy it may have, forfeit Performance Security of the Contractor.

**45.2** 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.

**46. Termination for Default**

**46.1** 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.

**46.2** 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.

**47. 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.

**48. Termination for Convenience**

**48.1** The Purchaser may, at any time, by written notice of thirty (30) days served on the Contractor, terminate the Contract, in whole or in part, for its convenience, without any compensation to the Contractor.

**48.2** 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:

**48.2.1** to have any portion thereof completed and delivered; and

**48.2.2** to cancel the remainder and pay the Contractor by Making payments for services already rendered (if any are outstanding).

**49. Force Majeure**

**49.1** 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.

**49.2** 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.

**49.3** 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.

**49.4** Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or Agents or Employees, nor (ii) any event which a diligent Party could reasonably have been expected to both (A) take into account at the time of the conclusion of this Contract and (B) avoid or overcome in the carrying out of its obligations here under.

**49.5** Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.

**50. Dispute Resolution**

**50.1** 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.

**50.2** 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.

**51. Statutes and Regulations**

**51.3** 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.

**51.4** 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.

**52. Taxes and Duties**

The Contractor shall be responsible for the payment, if any is required, of all Pakistani Income Tax, Duties any other taxes on income arising out of the Contract, and the financial bid mentioned in Financial Proposal Submission Form/Form of Bid shall be deemed to cover all such taxes.

**53. Bidder to inform himself**

The Bidder is advised to obtain for himself, at his own cost and responsibility, all information that may be necessary for preparing the Bid and entering into a Contract for execution of the Works/facility. This shall include but not be limited to the relevant laws, rules, and regulations of Pakistan including Income Tax and Sales Tax laws/rules.

**54. 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.

**55. 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.

**56. 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.

**57. Training**

- 57.1** The Contractor shall undertake a comprehensive training program, from the AFC manufacturer company regarding AFC software and hardware, for its staff to ensure that they shall acquire a good working knowledge of supply of such Services to be supplied under the Contract. The AFC manufacturer company is liable for conducting free training of the Contractor staff. It is clarified that software interfaces and training manuals shall be in English language and training shall also be provided in English language.
- 57.2** Subsequent to the initial training by the AFC manufacturer company, the Contractor shall arrange and undertake a comprehensive training program for its own staff as well as 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.
- 57.3** 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.

**58. Standards**

The Goods and the Services supplied under this Contract shall conform to the authoritative latest/leading industry standards and best practices.

**59. Labeling**

The Goods/Equipment/Software/Items maintained under the Contract, shall be clearly labeled such that no Goods/Equipment/Software/Items remain without labeling during the Contract period, so as to correspond with the delivered documentation, with proper labeling scheme. All equipment, cables, connectors, ports, boxes shall be clearly labeled.

**60. Delivery**

The AFC setup delivery time is ninety (90) calendar days for Lahore Orange Line Metrorail transit System Operations from the issuance of Acceptance Letter (LOA) with complete commissioning.

**61. Software Maintenance**

The software release as deployed shall be maintained free of charge throughout the Contract period by the AFC manufacturer company with existing features without any implications on cost. This is to assure that AFC will stay operational within the existing scope. However, the AFC software will be operated by the Contractor.

**62. Software Updates**

The AFC manufacturer company during the contract period shall provide free of charge (FOC) software updates for the AFC software, including but not limited to, any software changes required due to operational needs of the Client related to AFC. The Contractor shall facilitate the AFC manufacturer company for installation of all the recent patches and updates for AFC Software/Firmware provided by the AFC manufacturer company.

**63. Site Preparation**

**63.1** The Contractor shall be responsible to survey the central site. (If required)

**63.2** The Purchaser shall facilitate the Contractor in discharge of the above responsibilities and the purchaser shall indemnify the contractor for any delays in making such arrangements and deployment time mentioned in this contract will be accordingly adjusted. (If required)

**64. Power**

The Goods/Equipment/Software/Items under the Contract, should be maintained for protection from over-voltage, over-heating and out-of-tolerance current surges. Contractor must ensure that all equipment as installed on the stations does not undergo power outage resulting from malfunctioning of UPS (UPS must provide uninterrupted power supply of 30 minutes in all cases to all AFC related equipment deployed on the station and 60 minutes in all cases to all AFC related equipment deployed in the PMA metrotrain control center). Purchaser will be responsible for the provisioning of power at all stations.

**65. Safety**

**65.1** The Contractor shall be responsible for the embedding of safety features in the inherent design of the Goods/Equipment/Software/Items, for elimination of identified hazards, including but not limited to high voltage, electromagnetic radiation, sharp points and edges, etc., and reduction of associated risk to personnel and equipment.

**65.2** The Contractor shall be responsible for the detailed survey and submission of the report in regards to the protection of the power sources, controls, and critical components of the redundant systems and subsystems by shielding or physical separation when possible.

**66. Support and Maintenance**

The contractor will support and maintain Goods/Equipment/Software/Items for the period of contract including all renewals if applicable.

**67. Spare Parts and Support**

**67.1** Adequate backup inventory and AFC spare parts (list attached at Annexure-N) are in place with L2SP1 that shall maintain their inventory. L2SP1 will immediately issue required spare parts to

L2SP2 in order to ensure uptime defined in the Service Level Agreements.

- 67.2 The consumable items are not included in the spare parts list (attached at Annexure-N) which are responsibility of the L2SP2.
- 67.3 AFC equipment including spare parts will not be procured by L2SP2.
- 67.4 The Contractor shall maintain sufficient tools, for the maintenance of the supplied Goods/Equipment/Software/Items, to be replaced/repared for the time of contract including all renewals.

**68. Blacklisting**

- 68.1 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 The Purchaser may, at any time, without prejudice to any other right of action / remedy it may have, blacklist The Contractor in accordance with PPRA Rules 2014, either indefinitely or for a stated period, for future tenders in Public Sector.  
If The Contractor/Bidder is found to have engaged in corrupt or fraudulent practices in competing for the award of contract or during the execution and currency of the Contract, The Purchaser may, at any time, without prejudice to any other right of action / remedy it may have, blacklist The Contractor/Bidder in accordance with PPRA Rules 2014, either indefinitely or for a stated period, for future tenders in public sector.

**69. Special Stipulations**

<b>SCHEDULE-A, SPECIAL STIPULATIONS</b>	
<b>For ease of Reference, certain special stipulations are as under:</b>	
<b>Tender Security</b>	<p>The Contractor shall furnish the Tender Security as under:</p> <p>in the form of Demand Draft / Pay Order / 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 of One Million, One Hundred Thousand Only (1,100,000/-); denominated in Pak Rupees;</p> <p>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</p>
<b>Performance Security</b>	<p>The successful Contractor shall furnish Performance Security as under:</p> <p>within ten (10) working days of the receipt of the Acceptance Letter from the Purchaser;</p> <p>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;</p>

	<p>denominated in Pak Rupees;</p> <p>Have a minimum validity period of one year from the date of Award Notification or until the date of expiry of yearly support period.</p> <p>The technically and financially successful tenderer submit a sum equivalent to 10% of the one (01) year contract value, 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.</p>
<b>Start operation of Services after training</b>	Fully functional AFC setup for Lahore Orange Line Metrorail Transit System 26 stations of PMA <b>within 90 Calendar Days</b> from the issuance of LOA.
<b>Liquidated damages for failure / configuration of Services by the Contractor</b>	<p>If and when applicable, liquidated damages (LD) shall be levied for delay in start date of complete services as directed by the Client as below:-</p> <ul style="list-style-type: none"> <li>i. Incomplete number of defined resource (TOM Operators, Turnstile Controllers and TVM Facilitators) deployment at Stations = 0.25 % of the annual contract value per day per station</li> <li>ii. Other services as required in this RFP = 0.25 % of the annual contract value per day</li> </ul> <p>However, the amount so deducted shall not exceed, in the aggregate, the value of the performance security. The Liquidated Damages are attributable to such part of the Services as cannot, in consequence of the failure / delay, be put to the intended use, for every day between the scheduled delivery date(s), with any extension of time thereof granted by the Purchaser, and the actual delivery date(s).</p>
<b>Legal Status to Work in Pakistan</b>	The Bidder must be allowed and meet all conditions set forth by the Government to work with all concerned parties.

**70. Technical Evaluation Criteria**

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

**PASS MARKS:** A technically eligible bidder, based on conditions listed in Section below, not meeting the 60% pass mark limit will be rejected in Technical evaluation, and its Financial Proposal will be returned to it unopened. All bidders scoring greater than or equal to 60% of the marks will be accepted in technical proposal, and their respective financial bids will be opened as per rules and regulations.

The Purchaser reserves exclusive rights to cancel/annul or reject all bids submitted 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:

**COMPLIANCE SHEET FOR BIDS**

Sr No	Component	Estimated Quantity	Requirements Met (Y/N)
1	Support & Maintenance of the AFC solution including – for 5 years (software support, maintenance of equipment, data network, and overall responsibility of solution)	As per requirements of RFP	
2	Operations at Ticket Sales Offices, AGM Locations and TVM points (Including cash handling)	2 person for ticket sales per ticket office, 1 person for access control per AGM point and 1 person for TVM facilitation per TVM point (per shift at each station) at all times during PMA metrotrain operating hours.	

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

## Technical Evaluation Criteria

The Purchaser reserves exclusive rights to cancel/annul or reject all bids submitted at any time without giving any reason thereof.

Supporting documentation required as evidence for each:

Sr No.	Criteria	Marks	Comment/Description	Documents Required
1	Number of public sector ICT projects greater than Rs. 100 million in value	15	1 = 5 Points 2 = 10 Points 3 or Greater = 15 Points	Copy of Contract Document OR Letter of Award OR any other valid document for evidence.
2	Team members in the equipment maintenance team with more than 3 years of experience in the related field	10	4 to 5 = 4 Points 6 to 10 = 6 Points 11 to 15 = 8 Points 16 or Greater = 10 Points	Updated resumes with date of joining information and designation for each team member.
3	Financial Strength of the bidder: Average Annual Turnover of Business in last three years in Millions	15	<100 = 0 Points >100 to 200 = 5 Points >200 to 300 = 10 Points >300 = 15 Points	Audited financial Statements for last three (03) years.
4	Financial Strength of the bidder: Average Net Worth in last three years in Millions	15	<30 = 0 Points >30 to 60 = 4 Points >60 to 90 = 8 Points >90 to 120 = 12 Points >120 = 15 Points	Same as of criteria for Average Annual Turnover at Sr No. 3 above
5	Number of successful projects with deployment of more than 200 resources onsite in multiple shifts	10	1 = 4 Points 2 = 8 Points 3 or Greater = 10 Points	Copy of Contract Document OR Letter of Award OR any other valid document for evidence.
6	Number of projects with experience of Cash Handling	5	1 = 2 Points 2 = 4 Points 3 or Greater = 5 Points	Copy of Contract Document OR Letter of Award OR any other valid document for evidence.
7	Project Managers with more than 3 years of Project Management's Experience	5	1 = 2 Points 2 = 4 Points 3 or Greater = 5 Points	Updated resumes with date of joining information and designation for each team member.
<b>TOTAL</b>		<b>75</b>	<b>Minimum Passing Marks = 60% i.e. 45 marks</b>	

**71. Price Schedule / Bid Price / Form of Bid**

**MUST BE SUBMITTED IN SEPARATE ENVELOPE HIGHLIGHTED AS FINACIAL PROPOSAL**

**Price Schedule/Bid Price/Form of Bid**

Technically qualified bidders with the lowest value in “P” will be considered successful.

Price Table:

Sr No	Item	Price
1	Monthly Service Charges for provisioning and maintaining all AFC services stated in this RFP, excluding services listed in Sr No 2-5 below, – for 26 PMA Metrotrain stations (including but not limited to maintaining all hardware, software, network, security components, top-up/TOM machines, ticket issuance and validation, AGM functioning, Development & Training Center, Maintenance Center etc.)	P1
2	Monthly service charges for dedicating adequate human resources to manage AFC data-center components (Engine Room AFC and NOC) in Metrotrain Command and Control Centre established at Orange Line Depot in Dera Gujran	P2
3	Monthly Service Charges for placing defined human resources at all 26 PMA stations, for ticket sales, recharging and refunds etc at 31 ticket offices through 62 TOM Operators/Shift 2 person (TOM operators) for ticket sales (per shift, at each ticket office) at all times during PMA operating hours	P3
4	Monthly Service Charges for placing defined human resources at all 26 PMA stations, for automatic gate machine (AGM) access control at 70 AGM points through 70 AGM Controllers/Shift 1 person (AGM Controller) for access control (per shift, at each AGM point) at all times during PMA operating hours	P4
5	Monthly Service Charges for placing defined human resources at all 26 PMA stations, for passenger facilitation regarding ticket vending machines (TVM) and ticket checking machines (TCM) at 62 TVM/TCM points through 62 TVM Facilitators/Shift 1 person (TVM Facilitator) for passenger facilitation (per shift, at each TVM/TCM point) at all times during PMA operating hours	P5
<b>TOTAL Monthly Price (P1+P2+P3+P4+P5)</b>		<b>P</b>

**Important note:**

- i. The financial bid is inclusive of all applicable taxes, as per Laws of the Government of Pakistan, but is exclusive of all Sales Tax on Services which shall be added by the Purchaser over and above the quoted amount, as applicable/required under the relevant Tax Laws, to arrive at the contract price. Accordingly, the Contract Price shall be subject to adjustments for change in rate of Sales Tax on Services as and when applicable.
- ii. 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 for which AFC has been successfully provisioned. However, it is clarified that if a station is closed by the Purchaser, not because of the fault of Contractor but, due to riots, strikes, natural calamities or by the action of law or government etc. the Purchaser shall make the prorated deductions in the invoice processing. Subsequently, the Contractor shall submit its separate invoice for incurred costs during such instance of closure and the Purchaser shall evaluate the invoice and just pay the costs excluding the profits.

iii.

**The bidder need not include escalation in cost for the contract period because the bid price is completely indexed with minimum wage and consumer price index (CPI). All changes in minimum wage and CPI will be passed on the bidder as per the mechanism given below.**

Component prices  $P_3$ ,  $P_4$  and  $P_5$  of the bid price  $P$  shall be adjusted for minimum wage whenever a new minimum wage rate affecting the city of operations is notified.

Component prices  $P_1$  and  $P_2$  of the bid price  $P$  shall be adjusted at the end of each fiscal year for the change in consumer price index (CPI) since the bid submission date.

The monthly gross amount (exclusive of sales tax on services)  $P_n$  shall be as follows:

$$P_n = P + E_n$$

Where

$$E_n = (P_1 + P_2) \times \left( \frac{CPI_n}{CPI_0} - 1 \right) + (MW_n - MW_0) \times SS \times \frac{365}{(365 - 52^* - 14^{**})}$$

Where

$E_n$  is the cumulative escalation in monthly price in PKR since the bid submission date.

$MW_n$  is the notified minimum wage for the invoice period.

$MW_0$  is the notified minimum wage on the date of bid submission.

$SS$  is the total number of **defined** human resources in Component  $P_3$ ,  $P_4$  and  $P_5$ .

$CPI_n$  is the value of consumer price index (CPI) on the last date of the previous fiscal year as published by Pakistan Bureau of Statistics, i.e. 30<sup>th</sup> June 2019 for invoices submitted for the period of 1<sup>st</sup> July 2019 and onwards and 30<sup>th</sup> June 2020 for invoices submitted for the period 1<sup>st</sup> July 2020 and so on.

$CPI_0$  is the value of consumer price index on the date of bid submission.

\*Represents 52 Sundays in a year

\*\*Represents other leaves and relievers, if any.

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.

## 72. Equipment List

Following AFC equipment is installed at Orange Line metrotrain stations and PMA metrotrain command and control center. The soft copy of the technical brochures of the deployed equipment can be obtained from the Punjab Masstransit Authority office located at 5<sup>th</sup> Floor - Arfa Software Technology Park, Ferozpur Road, Lahore, in office hours (9:00am to 5:30pm)

Sr No	Component	Quantity	Manufacturer	Model
<b>Central Computer System</b>				
1	Main Server (*Database and AFC software included)	2	IBM	Power S822
2	Other Servers (Network software included)	6	Lenovo Group Ltd	x3750 M4 with Processor XEON-E5-4607 v2
3	CC Rack	5	Beijing Toten Realink Technology Co. Ltd.	Custom Product
4	Workstation	6	Lenovo Group Ltd	Thinkstation P300
5	Disk Array (Backup software included)	1	IBM	Storwize V5000
6	Tape Library	1	IBM	IBM System Storage TS3100
7	CD Library	1	Pioneer	Data DVR 1810
8	Portable Computer	2	Lenovo Group Ltd	Y430pAT-ISE(H)
9	Mobile Hard disk drive	2	Western Digital Corp	My Passport 1TB
10	Network Equipment	1 lot		
10.1	Storage Switch	2	IBM	IBM Storage Switch 2498-B24
10.2	Core Switch	2	Transcend Communication Beijing Co. Ltd.	Network Switch PT3604
10.3	Firewall	2	H3C Technologies Co. Ltd.	H3C SecPathF1020
10.4	Intrusion Detection System	2	H3C Technologies Co. Ltd.	H3C SecPath T1020 IPS
10.5	Router	2	H3C Technologies Co. Ltd.	Router H3C (MSR-56-60)
11	High Speed Printer	2	Hewlett-Packard	HPM750dn
12	Color Card Printer	1	Fargo	HID C50
13	Scanner	1	Canon	Canon CanoScan LiDE 700F
14	Digital camera	1	Canon	Canon EOS 700D
15	Contactless IC card (SJT)	1,500,000	China Elite Technology (Shenzhen) Co. Ltd.	NXP Ultralight
16	SAM Card	1000	China National Software & Service Co. Ltd.	Custom Product
17	Contactless IC card (SVT)	200,000	China Elite Technology (Shenzhen) Co. Ltd.	FM1208
18	Clearing Server (Clearing Software included)	2	IBM	Power S822
19	Clearing Switch	1	Transcend Communication Beijing	PT3604/PT 33D-G

			Co. Ltd.	
20	Clearing Router	1	H3C Technologies Co. Ltd.	MSR 56-60
21	Network Security Equipment	1 lot		
21.1	Firewall	1	H3C Technologies Co. Ltd.	H3C SecPathF1020
21.2	Intrusion Detection System	1	H3C Technologies Co. Ltd.	H3C SecPath T1020 IPS
22	SAM Card device for Green line compatibility	800	China National Software & Service Co. Ltd.	Custom Product
23	Encoder/Sorter	2	Shenzhen Emperor Technology Co., Ltd.	JC-8200ES
24	20 KVA UPS (Power Distribution Cabinet included)	1	Beijing Hendan Power Equipment Co., Ltd.	S20KVA
25	Ticket Cleaning Equipment	2	Shenzhen GeNeng Cleaning Equipment Co., Ltd.	G-2030GH
26	Ticket Inventory Packaging Equipment	3	Shenzhen Emperor Technology Co., Ltd.	JC-3200C
27	Ticket Storage Cabinet	4	Beijing Brilliant	H11-063 CSS
28	Transport Cart	6	China National Software & Service Co. Ltd.	Custom Product
<b>Station Equipment</b>				
29	Station Server (OS included)	26	Lenovo Group Ltd	x3750 M4 with Processor XEON-E5-4607 v2
30	SC Workstation	52	Lenovo Group Ltd	Thinkstation P300
31	Printer	52	Hewlett-Packard	P1606dn
32	Automatic Gate - Entry (AGE)	107	China National Software & Service Co. Ltd.	CS-AG-TS280-En
33	Automatic Gate - Exit (AGX)	95	China National Software & Service Co. Ltd.	CS-AG-TS280-Ex
34	Automatic Gate - Reversible (RAG)	42	China National Software & Service Co. Ltd.	CS-AG-TS280-R
35	Automatic Gate (Wide) – Bidirectional (Bi-WAG))	35	China National Software & Service Co. Ltd.	CS-AG-TS280-Dx
36	Ticket Vending Machine (TVM)	153	China National Software & Service Co. Ltd.	CS-TVM-TB900
37	Ticket Office Machine (TOM)	62	China National Software & Service Co. Ltd.	CS-BOM-T100
38	Ticket Checking Machine (TCM)	31	China National Software & Service Co. Ltd.	CS-AQM-T100
39	3 layer switch for station	26	Transcend Communication Beijing Co. Ltd.	Pt33-CG
40	2 layer switch for station	31	Transcend Communication Beijing Co. Ltd.	Pt32D-4GX-48TX
41	SC Rack	26	Beijing Toten Realink	Custom Product

			Technology Co. Ltd.	
42	SC Network Rack	31	Beijing Toten Realink Technology Co. Ltd.	Custom Product
43	Ticket Sorting Machine	26	Beijing Huilang Technology Co. Ltd.	HL-6600
44	Currency Detector	52	BAIJIA	BJ141
45	Coin Counter	104	BAIJIA	BJ 18
46	Ticket Container	463	China National Software & Service Co. Ltd.	Custom Product
47	Coin Container	306	China National Software & Service Co. Ltd.	Custom Product
48	Banknote Container	153	MEI Group	Custom Product
49	UPS (30KVA)	24	Beijing Hendan Power Equipment Co., Ltd.	S30KVA
50	UPS (40KVA) @ Anarkali Station	1	Beijing Hendan Power Equipment Co., Ltd.	S40KVA
51	UPS (50KVA) @ Central i.e. GPO station	1	Beijing Hendan Power Equipment Co., Ltd.	S50KVA
52	Emergency Button	26	China National Software & Service Co. Ltd.	Custom Product
53	AC Power Distribution Cabinet	26	Beijing Hendan Power Equipment Co., Ltd.	PD-XX 606025005
54	AC Power Distribution Box	31	Beijing Hendan Power Equipment Co., Ltd.	PD-XX 506021005
55	Portable Card Analyzer (PCA)	52	Dalian Modern Hi-Tech Development Co., Ltd	MAFC.PCA.01A
56	Ticket Storage Cabinet	52	Beijing brilliant	H11-063 CSS
57	Transport Cart	52	China National Software & Service Co. Ltd.	Custom Product
58	Cables & Accessories of AFC System	28 lot	Jiangsu Dihua, Jiangsu Jiangyang, Shanghai Tianchang, Beijing Xinyouzhicheng,	WDZR-FTP5, WDZR-YJY 3*2.5, WZNA-YJY 3*16, WDZR-YJY 3*6, YDZNA-YJY 5*25, WDZR-BY 1*10, WDZR-BY 1*16, WDZR-BY 1*6, WDZR-KYJY(4*.75), GJFJZY-6A1b, 300*50*3
<b>Development and Training Center (DTC)</b>				
59	Station Server (Training management software included)	2	Lenovo Group Ltd	x3750 M4 with Processor XEON-E5-4607 v2
60	Automatic Gate - Entry (AGE)	1	China National Software & Service Co. Ltd.	CS-AG-TS280-En
61	Automatic Gate - Exit (AGX)	1	China National Software & Service Co. Ltd.	CS-AG-TS280-Ex
62	Automatic Gate - Reversible (RAG)	1	China National Software & Service Co. Ltd.	CS-AG-TS280-R

63	Automatic Gate (Wide) – Bidirectional (Bi-WAG))	1	China National Software & Service Co. Ltd.	CS-AG-TS280-Dx
64	Ticket Vending Machine (TVM)	1	China National Software & Service Co. Ltd.	CS-TVM-TB900
65	Ticket Office Machine (TOM)	1	China National Software & Service Co. Ltd.	CS-BOM-T100
66	Ticket Checking Machine (TCM)	1	China National Software & Service Co. Ltd.	CS-AQM-T100
67	Workstation	2	Lenovo Group Ltd	Thinkstation P300
68	DTC Printer	2	Hewlett-Packard	P1606dn
69	DTC 3 layer switch	2	Transcend Communication Beijing Co. Ltd.	Pt33-CG
70	DTC 2 layer switch	2	Transcend Communication Beijing Co. Ltd.	Pt32D-4GX-48TX
71	DTC Rack	1	Beijing Toten Realink Technology Co. Ltd.	Custom Product
72	Ticket Sorting Machine	1	Beijing Huilang Technology Co. Ltd.	HL-6600
73	Banknote Sorting Machine	1	GRC Banking	CM 200V
74	Currency Detector	1	BAIJIA	BJ141
75	Coin Counter	1	BAIJIA	BJ 18
76	UPS (15KVA)	1	Beijing Hendan Power Equipment Co., Ltd.	S15KVA
77	Emergency Button	1	China National Software & Service Co. Ltd.	Custom Product
78	AC Power Distribution Cabinet	1	Beijing Hendan Power Equipment Co., Ltd.	PD-XX 606025005
79	AC Power Distribution Box	1	Beijing Hendan Power Equipment Co., Ltd.	PD-XX 506021005
80	Portable Card Analyzer (PCA)	1	Dalian Modern Hi-Tech Development Co., Ltd	MAFC.PCA.01A
<b>Maintenance Center (MC)</b>				
81	Maintenance Workstation in MC	1	Lenovo Group Ltd	Thinkstation P300
82	MC Printer	1	Hewlett-Packard	P1606dn
83	MC 3 layer switch	1	Transcend Communication Beijing Co. Ltd.	Pt33-CG
84	MC 2 layer switch	1	Transcend Communication Beijing Co. Ltd.	Pt32D-4GX-48TX
85	Maintenance Tools	2 lot	Shanghai Endura Tools Co., Ltd.	19PC ELECTRONIC Tool set (E1127)

\*It is clarified that database and OS of main server (Power S822) is Oracle and Linux respectively.



**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) per month. This amount is inclusive of all applicable taxes, as per Laws of the Government of Pakistan, but is exclusive of all Sales Taxes on Services which shall be added by the Purchaser over and above the quoted amount, as applicable/required under the relevant Tax Laws, to arrive at the monthly contract price. Accordingly, the Contract Price shall be subject to adjustments for change in rate of Sales Tax on Service as and when required.

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").

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 earlier.

Date this \_\_\_\_\_ day of 20\_\_.

**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 one (01) year contract value, 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 20\_\_.

**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**

### **DRAFT SERVICE LEVEL AGREEMENT (SLA)**

This SERVICE LEVEL AGREEMENT (SLA) is made on this \_\_day of \_\_\_\_\_,  
20\_\_ (hereinafter referred to as “SLA”)

**NOTE:** SLA as listed below will be reviewed by PMA periodically and may be updated accordingly with mutual consent. The amendments as made at the time of review will be binding on the contractor.

#### **Scope:**

The SLA describes target performance levels which the contractor must aim to deliver for the Services outlined in tender document/contract. It also lists the procedures for managing unavailability of Services, and associated penalties which will be applied if contractor fails to deliver any service performance targets in accordance with this SLA.

#### **Service Monitoring:**

PMA authorized personnel will check Service Level Compliance of the Contractor through the available mechanisms, data and systems.

An overall uptime of 99.9% is expected from all components and services associated with AFC (Components/Modules/Services as listed in tender document/ contract).

The contractor, through the 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 SLA.

The Contractor will additionally use data gathered from its monitoring of the Components to inform & take approval from competent authority for its decisions in respect of any changes to its infrastructure which in its sole discretion, deems necessary to maintain or improve the availability and performance of the services delivered to PMA.

The contractor must use already available helpdesk / complaint management system / ITMIS provided by L2SP1 with access to PMA authorized personnel.

Periodic reviews will be scheduled by the Government of the Punjab via its concerned departments and organizations. The reports from the contractor’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 contractor must seek approval from PMA 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 contractor will report the outcome to PMA in writing. PMA have access to complaint management system / ITMIS to log calls and to assign categories.

- The contractor will be responsible for taking and maintaining reliable backups on daily basis.
- The contractor will ensure use of licensed software and products, where applicable.
- The contractor must ensure that the support personnel are properly qualified to support all software/hardware related issues.
- The contractor will be responsible for providing timely and comprehensive analysis and reports to PMA or the concerned department based upon the information/data gathered in the system.
- The contractor would be responsible for security of the data being entered into and processed by the applications.
- The contractor will be responsible for timely resolution of reported issues. The contractor will also ensure timely escalation of issues to PMA as and when required.
- The contractor must ensure effective and efficient support via online complaint management system/ITMIS, phone, email and onsite presence as and when needed throughout the period of contract.
- Accurately and thoroughly logging service request into ITMIS.
- The focal person at the client is notified about the creation of all critical service requests through email, SMS, and phone call and intimation on complaint management system.
- Documenting all technical inquiries and developing solutions for the knowledge base.
- Updating service requests in the ITMIS with detail analysis of the issue, documenting each step as it was solved.
- Responding to service request via email, phone or in person.
- Raising issues in the timely manner before they become critical show stoppers.
- Escalating issues at the appropriate level in a timely and efficient manner.
- Resolving issues both on site and remotely.
- The contractor will be responsible for providing support throughout the period of contract. Application support should cover aspects such as performance / load management, system /security hardening, disaster recovery/system configuration, patch management etc.
- Contractor must submit and conform to a detailed, agreed upon quality management plan. The contractor will follow up all closed tickets along with response time and quality services delivered to ensure level of services provided to the client in reaching resolution.
- Ownership of all data entered into the system stays as the property of Purchaser and shall be transferred in fully operational condition on completion of support contract.

**FAULT LEVEL CATEGORIES:**

Fault Level Categories as described below will be assigned by the contractor/purchaser; however purchaser may amend them or disagree based on factors as present on the ground.

<b>Fault levels Category</b>	<b>Definition</b>	<b>Initial Response</b>	<b>Resolution</b>
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

**Issues Reported by Contractor:**

Every issue reported by contractor’s designated operational staff must be logged against the fault level category as mentioned above; in centralized complaint management system available to all stakeholders. Purchaser may disagree to the fault level assigned by the contractor based on the factors as present on the ground. For equipment/scenarios where automated alert system is not available, issues will be reported via phone call to contractor’s helpline. Pertaining to issues reported on helpline by operations staff of contractor, all must be entered into centralized complaint management system.

**Issues Reported by Surveillance Teams:**

Issues as occurred on the ground may also be reported by surveillance teams of PMA. Surveillance teams may report via phone call to contractor’s helpline and/or logging complaint into complaint management system. Surveillance teams will log complaint but may not assign fault level category which will be assigned initially by the contractor. Purchaser may disagree/amend to the fault level assigned by the contractor based on the factors as present on the ground.

**Issues Reported by Citizens:**

Passengers may also report issues to the contact center as maintained by purchaser.

**Initial Response:**

Time taken by the contractor’s qualified representative to arrive at the premises where the failure occurred, after the problem is reported by the automated alert system where applicable.

**Resolution:**

Time it takes to resolve the problem.

Issues as reported must be visible to all stakeholders involved via complaint management system. In addition contractor 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 contractor.

Faults/Issues/Complaints will not be closed until resolution is verified on the ground by PMA.

**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 will be imposed. It is however clarified that L2SP2 is not responsible for the duration of the downtime where the problem lies with L2SP1 or AFC manufacturer through EPC Contractor and all such time shall be excluded accordingly.**

**Minimum service levels associated with various key aspects of the services, components, and operations related to the AFC project, are defined below:**

Sr No	Service	Parameter	Service level	Validation	Penalty
1	Helpdesk	Resolution of issues logged as per fault level categories definitions above	99%	Generated from complaint management system	If 95%-98.99% calls resolved on-time, then 2% penalty on monthly charges 90%-94.99% calls resolved on time, then 5% penalty on monthly charges. <90% of complaints being resolved on time 10% of monthly charge.
2	System Configuration and Report Generation	System Configuration and Required Report Generation Resolution logged as per fault level categories definitions above. This includes changing the fare rate, fare policy etc as well	99%	Report	If 95%-98.99% are resolved on-time, then 2% penalty on monthly charges. 90%-94.99% resolved on time, then 5% penalty on monthly charges. <90% resolved on time 10% of monthly charge.

3	Asset/ Inventory Management System	Conduct annual physical asset verification	100%	Satisfaction report to be signed off by authorities	Stock not being available/ faulty must be fixed/ provided/ settled by contractor. 0.5% of 12 monthly charges, if issues not addressed in given timeframe.
4	Quarterly Evaluation	Evaluation of contractor's performance on quarterly basis	N/A	Management approval of contractor's performance evaluation report	0.5% of quarterly charges
5	Identical Statistics	System Reports must match with the video feed outlining number of passengers passing through AGMs, if applicable	99%	PMA Record	Penalty of 2% will be deducted from the monthly charges for any slippage.
6	Backup/ Restore Management	Contractor must take data backups as per a defined and agreed upon backup schedule.	99%	As reported by the system	If the negligence is found in the periodic audit report, contractor will be fined Rs 25,000/- per negligence.
		PMA would periodically request the service provider to restore the backup data	100%	Report	Rs 25,000/- for every restore failure
7	Problem Management	Contractor 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%	Root cause report stating problems faced by the users Document detailing corrective action	5% penalty on monthly charges if the contractor does not submit a problem report for that month for any of such case. Another 5% penalty if contractor does not perform corrective action for more than one calendar month for any of such case.

8	Delay in AFC Data Recording on Servers	AGM data should accumulate in centralized server without delay	100%	Data Transmission Report	Rs 10,000/- for every thirty minute interval
9	UPS Failure	Any IT equipment being installed at metrotrain stations must not undergo power outage due to UPS/Battery failure. This does not include power outage exceeding 30 minutes.	100%	PMA Record Report	Rs 25,000/- on each incident
		Any IT equipment being installed at PMA metrotrain Control Center must not undergo power outage due to UPS/Battery failure. This does not include power outage exceeding 60 minutes.	100%	PMA Record Report	Rs 500,000/- on each incident
10	AFCS Financial Consolidation	Daily MIS of the Revenue Generation. Monthly MIS of the Revenue Settlement/ Distribution	100%	Report	2% of the monthly charge for slippage of one calendar day for monthly report.
11	Delay in Issuance of Fare Media at Ticket Office	The average time between issuance of two tokens measured over a fifteen minute period in face of queue shall be no more than 30 seconds per counter	N/A	PMA record	Rs 50,000/- on each incident

12	Non Availability of Fare Media	Unavailability of fare media for issuance to passengers over a five minutes period	N/A	PMA record	Rs 20,000/- for every five minutes interval per station on each incident
13	Improper Performance of AGM Controller/TVM Facilitator	Failed to perform the assigned duties	N/A	PMA record	Rs 2,500/- on each incident
14	Non Availability of Validated Access to Station	Unavailability of all entry/exit AGMs for validating passenger entry/exit access to/from station over a five minutes period	N/A	PMA record	Rs 20,000/- for every five minutes interval per station on each incident
15	Unmanned AGM	No human resource at AGM observed over a period of one minute	N/A	PMA record	Rs 5,000/- on each incident + Rs 5,000/- for each subsequent five minute period
16	Unmanned Ticket Office Counter	No human resource at ticket office counter observed over a period of one minute	N/A	PMA record	Rs 5,000/- on each incident + Rs 5,000/- for each subsequent five minute period
17	Unmanned TVM Point	No human resource at TVM point observed over a period of one minute	N/A	PMA record	Rs 5,000/- on each incident + Rs 5,000/- for each subsequent five minute period
18	Misbehavior of Contractor Staff	Misbehavior of contractor staff with passengers, PMA Staff or with staff of other service providers established through concrete evidence	N/A	PMA record	Rs 25,000/- on each incident
19	Improper Implementati	Wrong fare deduction or	100%	PMA record	10% of monthly charge

	on of Fare Policy	wrong fare system or fare system non-compliant to prescribed fare policy		Reports	
20	Inconsistency within Reports	Reports generated from the system are inconsistent with each other	N/A	PMA record	Rs 5,000/- on each incident + Rs 5,000/- for each subsequent hour
21	Fare Media travel time duration	Failed to adjust fare media expiry/ travel time duration as instructed by PMA	N/A	PMA record	Rs 10,000/- after the prescribed implementation time + Rs 10,000/- for each subsequent day
22	Time Synchronization	System reports/live time not conforms with Pakistan Standard Time	N/A	PMA record	Rs 5,000/- on each incident + Rs 5000/- for each subsequent hour
23	PCA Validation	Portable Card Analyzer malfunction when required	N/A	PMA record	Rs 25,000/- on each incident
24	Network Monitoring & Management	Uptime (including AGM, TVM, TCM, TOM, Station workstations, Station servers, switches etc)	99.9%	As reported by the monitoring system	2% of the monthly charges for less than 99.9% and 5% of monthly charges for less than 97%.
25	Server administration / management	Roll out of patches (OS/infra level/ Application) on workstations and servers after patch being approved on test environment	98%	Patch update report	0.5% of the monthly charges
		Uptime of central servers	99.8%	Report	2% of the monthly charges for less than 99.8%. 3% of monthly charges for less than 97%. 5% of monthly charges for less than 95%.
		MIS of servers health checkup (CPU, disk space, Memory utilization, I/O	100%	Report from the system	0.5% of the monthly charges

		utilization, Central storage etc)			
26	Resource Management	Number of shift days for which resource present at the designated location / Total number of shift days	100%	Attendance track call log, Audit call/visits measured on a monthly basis, must be available to PMA via centralized online system	The payments shall be deducted on a pro-rata basis. Moreover, <u>1. For TOM Operators, AGM Controllers and TVM Facilitators:</u> an equivalent amount of penalty shall also be applied. <u>2. For Operations Supervisor and System Engineer:</u> Penalty shall be applied at Rs 4000/- and Rs 5000/- respectively for each absence of resource / shift
27	Delayed Invoice Submission	Failed to submit invoice in first 10 days of the month	N/A	PMA record	Rs 30,000/- on each incident
28	Violation of scope of services	Any act of non-conformance to PMA rules, regulations, instructions, scope of services if not covered in SLA	N/A	PMA record	Rs 5,000/-*A on each incident Where A=[1-100] depending on the sensitivity of non-conformance as per decision by the Purchaser

**Calculation of Uptime:**

$\frac{((\text{Actual Uptime} + \text{Scheduled Downtime}) / \text{total number of operation hours in a month}) * 100}$

**"Total Operation Hours"** means the total hours over the measurement period i.e. one month (24 \* number of days in the month for 24 hours operation and 18 \* number of days in the month for 18 hours operation).

**"Actual Uptime"** means, of the Total Operation Hours, the aggregate number of hours in any month during which each equipment is actually available for use.

**"Scheduled Downtime"** means the aggregate number of hours in any month during which each equipment, is down during Total Operation Hours, due to preventive maintenance, scheduled maintenance, infrastructure problems or any other situation which is not attributable to the Contractor's (or Contractor's) failure to exercise due care in performing Contractor's responsibilities.

For 24/7 hours operation, the PMA would provide a maximum of 04 hours of planned downtime for the preventive maintenance (as part of scheduled downtime) per month per equipment/service. In other case the PMA would not provide any planned downtime for the preventive maintenance (as part of scheduled downtime) per month per equipment/service.

The downtime for scheduled maintenance (patch application, upgrades – OS, Database, etc.) would need to be mutually agreed between PMA and the Contractor for 24/7 hours operation. To reduce this time, various maintenance activities can be clubbed together with proper planning. Like above the

planned downtime would not be the case if we are not having 24/7 operations. The Scheduled Downtime is 0 if we are not having 24/7 hours operation.

**Downtime Calculation:**

The recording of downtime shall commence at the time of registering it with Contractor for any downtime situation for the equipment. The registration could be done through auto alert, Downtime shall end when the problem is rectified and the application/ service is available to the user. Down time will not be considered for Pre-scheduled preventive maintenance and health checks (Scheduled Downtime).

- a) The compliance report shall be submitted monthly, by the Contractor.
- b) These compliance reports shall be verified by PMA officials or the nominated representatives of PMA. Any disputes on the compliance report shall be escalated to a nominee of the senior management of PMA and the decision of that nominee shall be binding on both the parties.
- c) The compliance to the SLA metrics as listed above shall be monitored on the monthly basis.

**Breach of SLA:**

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

- 1. A show cause notice will be issued
- 2. Contractor must respond to the notice within 3 working days
- 3. If PMA 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:-

- a. due to delay in approval or review from PMA's side
- b. for the duration where the problem lies with L2SP1 or AFC manufacturer through EPC Contractor

Any such delays will be notified in writing and will be approved by the Purchaser.

**Monitoring and Auditing:**

PMA will review the performance of Contractor against the SLA parameters each month, or at any periodicity defined in the contract document. The review / audit report will form basis of any action relating to imposing penalty or breach of contract.

Any such review / audit can be scheduled or unscheduled. The results will be shared with the Contractor as soon as possible. PMA reserves the right to appoint a third-party auditor to validate the SLA.

**Reporting Procedures:**

The Contractor will prepare and distribute to PMA the SLA performance reports in an agreed upon format by the 3rd working day of subsequent month of the reporting period. The reports will include "actual versus target" SLA performance, a variance analysis and discussion of appropriate issues or significant events.

As such, this document also defines the following management procedures:

- 1. A process for negotiating changes to the SLA.
- 2. An issue management process for documenting and resolving particularly difficult issues.
- 3. PMA and Contractor management escalation process to be used in the event that an issue is not being resolved in a timely manner.

### **SLA Change Control:**

#### **General:**

It is acknowledged that this SLA may change as PMA's business needs evolve over the course of the contract period. **The PMA reserves the right to review the SLA periodically and update it accordingly with mutual consent. The review amendments will be binding on the Contractor.**

#### **SLA Change Process:**

Both the parties may amend this SLA by mutual consent in accordance. Changes can be proposed by either party. Normally the forum for negotiating SLA changes will be PMA monthly review meetings.

#### **Version Control:**

All negotiated SLA changes will require changing the version control number. As appropriate, minor changes may be accumulated for periodic release (e.g. every quarter) or for release when a critical threshold of change has occurred.

### **Issue Management Procedures:**

#### **General:**

This process provides an appropriate management structure for the orderly consideration and resolution of business and operational issues in the event that quick consensus is not reached between PMA and Contractor. It is expected that this pre-defined process will only be used on an exception basis if issues are not resolved at lower management levels.

#### **Issue Management Process:**

Either PMA or Contractor may raise an issue by documenting the business or technical problem, which presents a reasonably objective summary of both points of view and identifies specific points of this SLA with possible solutions.

PMA and Contractor's representative will determine which committee or executive level should logically be involved in resolution.

A meeting or conference call will be conducted to resolve the issue in a timely manner. The documented issues will be distributed to the participants at least 24 hours prior to the discussion if the issue is not an emergency requiring immediate attention.

Management of PMA and Contractor will develop a temporary, if needed, and the permanent solution for the problem at hand. The Contractor will then communicate the resolution to all interested parties.

#### **Management Escalation Procedures:**

The purpose of this escalation process is to provide a quick and orderly method of notifying both parties that an issue is not being successfully resolved at the lowest possible management level. Implementing this procedure ensures that PMA and Contractor management are communicating at the appropriate levels. Escalation should take place on an exception basis and only if successful issue resolution cannot be achieved in a reasonable time frame.

1. All issues would be raised to the project management team, which is completely responsible for the day to day aspects of the implementation. The project management team shall classify the issues based on their severity level and resolve them within appropriate timelines.
2. If project management team is unable to resolve an issue, the issue would be escalated to the top management with options/risks detailed for decision. Top management will make decisions based on the options/risks presented by the PMA.

**Training Requirements:**

Training is an important activity for the successful implementation of Work. Contractor shall undertake a comprehensive training program, from the AFC manufacturer company regarding AFC software and hardware, for its staff to ensure that they shall acquire a good working knowledge of supply of such Services to be supplied under the Contract. The AFC manufacturer company is liable for conducting free training of the Contractor staff.

Subsequent to the initial training by the AFC manufacturer company:

1. The Contractor shall arrange and undertake a comprehensive training program for its own staff as well as 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. To make the Work a success, training programs shall be arranged by the Contractor from time to time depending on the requirement and understanding of the PMA, operators, participating users, etc. For all these training programs, the Contractor shall provide adequate course material documents.
2. Contractor shall also be responsible for re-training the PMA nominated trainers staff whenever changes are made in the System and it shall be the responsibility of the Contractor to ensure that the operators are familiar with new versions of system and its allied services.

**System Availability:**

The System could be required to be functional round the clock, and the availability of the System should be in excess of 99% of the operations time.

**Performance Reporting:**

The Contractor shall record performance and availability of each of the Components and report this information to the Client. Where periodic account reviews are agreed by both parties to be held between the Client and the Contractor, these reports will form an agenda for such reviews. The Contractor will enable the Client to view the reports via the service system.

**General Maintenance Conditions:**

- The maintenance shall include both Preventive Maintenance and Corrective Maintenance.
- This Service Level Conditions shall cover each and every part/component of the System. The Contractor shall examine, clean, lubricate and adjust various components/parts of the entire System including all parts and components every month and shall take necessary measures to maintain the units in proper working conditions in accordance with the Specifications in the Service Level Conditions.
- The Contractor shall replace, from the L2SP1, any part/components which are discovered to be potentially detrimental to the safety of the user and/or to the efficient and cost effective operation of the units and which require immediate replacement.
- In case of emergencies, the Contractor shall respond immediately to take the necessary actions irrespective of the provisions regarding time limits.
- The Contractor shall be liable for any kind of damage to the user of the units caused by poor maintenance, delay in any repair/maintenance works and shall pay for the damage.
- Repairs may be carried out generally during non-operational hours.

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

## Annexure-K: Station Level AFC Equipment

Station Wise AFC Equipment List																													
Sl. no.	Station Name	Passenger Area												Station Control Area															
		Customer Service / Ticket Office Room						Main Hall						Communication Room						Ticket Back Office *								Station Control Room	
		AC Power Distribution Box	SC Network Rack Details		BOM/TOM	PCA	AGM					TVM	TCM	AC Power Distribution Cabinet	UPS	SC Rack Details				Ticket Storage Cabinet	Ticket Sorting Machine	Currency Detector	Coin Counter	Transport Carts	Printer	SC Workstation	SC Workstation	Printer	
			Network Rack	Switch			AGE	AGX	RAG	BIWAG	Total AGM					SC Rack	Station Server	Switch	Emergency Button Control										
1	Dera Gujran	1	1	1	2	2	3	3	2	1	9	5	1	1	1	1	1	1	1	2	1	2	4	2	1	1	1	1	
2	Islam Park	1	1	1	2	2	3	3	1	1	8	5	1	1	1	1	1	1	1	2	1	2	4	2	1	1	1	1	
3	Salamat pura	1	1	1	2	2	3	3	2	1	9	5	1	1	1	1	1	1	1	2	1	2	4	2	1	1	1	1	
4	Mahmood Boofi	1	1	1	2	2	3	3	1	1	8	5	1	1	1	1	1	1	1	2	1	2	4	2	1	1	1	1	
5	Pakistan Mint	1	1	1	2	2	3	3	2	1	9	5	1	1	1	1	1	1	1	2	1	2	4	2	1	1	1	1	
6	Shalamar Garden	1	1	1	2	2	3	3	1	1	8	5	1	1	1	1	1	1	1	2	1	2	4	2	1	1	1	1	
7	Baghbanpura	1	1	1	2	2	3	3	2	1	9	5	1	1	1	1	1	1	1	2	1	2	4	2	1	1	1	1	
8	U.E.T	1	1	1	2	2	3	3	1	1	8	5	1	1	1	1	1	1	1	2	1	2	4	2	1	1	1	1	
9	Sultanpura	1	1	1	2	2	3	3	2	1	9	5	1	1	1	1	1	1	1	2	1	2	4	2	1	1	1	1	
10	Railway	2	2	2	4	2	6	4	2	2	14	8	2	1	1	1	1	1	1	2	1	2	4	2	1	1	1	1	
11	Lakshmi	2	2	2	4	2	6	4	2	2	14	8	2	1	1	1	1	1	1	2	1	2	4	2	1	1	1	1	
12	Central	2	2	2	4	2	14	12	4	4	34	16	2	1	1	1	1	1	1	2	1	2	4	2	1	1	1	1	
13	Anarkali	2	2	2	4	2	12	8	0	4	24	8	2	1	1	1	1	1	1	2	1	2	4	2	1	1	1	1	
14	Chauburji	1	1	1	2	2	3	3	1	1	8	5	1	1	1	1	1	1	1	2	1	2	4	2	1	1	1	1	
15	Gulshan-e-Ravi	1	1	1	2	2	3	3	2	1	9	5	1	1	1	1	1	1	1	2	1	2	4	2	1	1	1	1	
16	Samanabad	1	1	1	2	2	3	3	1	1	8	5	1	1	1	1	1	1	1	2	1	2	4	2	1	1	1	1	
17	Bund Road	1	1	1	2	2	3	3	2	1	9	5	1	1	1	1	1	1	1	2	1	2	4	2	1	1	1	1	
18	Salahudin Road	1	1	1	2	2	3	3	1	1	8	5	1	1	1	1	1	1	1	2	1	2	4	2	1	1	1	1	
19	Shahnoor	1	1	1	2	2	3	3	2	1	9	5	1	1	1	1	1	1	1	2	1	2	4	2	1	1	1	1	
20	Sabzazar	1	1	1	2	2	3	3	1	1	8	5	1	1	1	1	1	1	1	2	1	2	4	2	1	1	1	1	
21	Awan Town	1	1	1	2	2	3	3	2	1	9	5	1	1	1	1	1	1	1	2	1	2	4	2	1	1	1	1	
22	Wahdat Road	1	1	1	2	2	3	3	1	1	8	5	1	1	1	1	1	1	1	2	1	2	4	2	1	1	1	1	
23	Hanjarwal	1	1	1	2	2	3	3	2	1	9	5	1	1	1	1	1	1	1	2	1	2	4	2	1	1	1	1	
24	Canal View	1	1	1	2	2	3	3	1	1	8	5	1	1	1	1	1	1	1	2	1	2	4	2	1	1	1	1	
25	Niazbaig	2	2	2	4	2	6	4	2	2	14	8	2	1	1	1	1	1	1	2	1	2	4	2	1	1	1	1	
26	Ali Town	1	1	1	2	2	3	3	2	1	9	5	1	1	1	1	1	1	1	2	1	2	4	2	1	1	1	1	
<b>Total</b>		<b>31</b>	<b>31</b>	<b>31</b>	<b>62</b>	<b>52</b>	<b>107</b>	<b>95</b>	<b>42</b>	<b>35</b>	<b>279</b>	<b>153</b>	<b>31</b>	<b>26</b>	<b>26</b>	<b>26</b>	<b>26</b>	<b>26</b>	<b>26</b>	<b>52</b>	<b>26</b>	<b>52</b>	<b>104</b>	<b>52</b>	<b>26</b>	<b>26</b>	<b>26</b>	<b>26</b>	

\*Spare containers are also available at Stations in the Ticket Back Offices in the mentioned quantities:- Ticket Containers (463), Coin Containers (306) and Bank Note Containers (153)

**Annexure-L: Development & Training Center (DTC) and Maintenance Center (MC) AFC Equipment**

<b>Development &amp; Training Center (DTC) AFC Equipment</b>				
<b>Sr No</b>	<b>Item Code</b>	<b>Equipment</b>		<b>Quantity</b>
1	1.2.1	Station Server (Training management software included)		2
2	1.2.2	Automatic Gate Machine (AGM)	Automatic Gate - Entry (AGE)	1
3	1.2.3		Automatic Gate - Exit (AGX)	1
4	1.2.23		Automatic Gate - Reversible (RAG)	1
5	1.2.26		Automatic Gate - Bidirectional-Wide (Bi-WAG)	1
6	1.2.5	Ticket Office Machine (TOM)		1
7	1.2.4	Ticket Vending Machine (TVM)		1
8	1.2.6	Ticket Checking Machine (TCM)		1
9	1.2.14	Portable Card Analyzer (PCA)		1
10	1.2.8.1	DTC Switch layer-3		2
11	1.2.8.2	DTC Switch layer-2		2
12	1.2.20	DTC Workstation		2
13	1.2.7	DTC Printer		2
14	1.2.11	DTC Rack		1
15	1.2.9	UPS (15KVA)		1
16	1.2.10	Emergency Button		1
17	1.2.12	AC Power Distribution Cabinet		1
18	1.2.13	AC Power Distribution Box		1
19	1.2.15	Ticket Sorting Machine		1
20	1.2.17	Currency Detector		1
21	1.2.18	Coin Counter		1
22	1.2.16	Bank Note Sorting Machine		1

<b>Maintenance Center (MC) AFC Equipment</b>				
<b>Sr No</b>	<b>Item Code</b>	<b>Equipment</b>		<b>Quantity</b>
1	1.2.21.1	MC Switch layer-3		1
2	1.2.21.2	MC Switch layer-2		1
3	1.2.24	MC Workstation		1
4	1.2.22	MC Printer		1
5	1.2.25	MC Maintenance Tool		2

**Annexure-M: Central Computer System AFC Equipment**

Central Computer System AFC Equipment							
Sr. No	Item Code	Item of equipment	Quantity				Total
			AFC Engine Room	NOC	Central Ticket Room	General	
1	1.1.1	Main Server (Database and AFC software included)	2				2
2	1.1.2.1	Other Servers (Network software included)	6				6
3	1.1.2.2	CC RACK	5				5
4	1.1.3	Workstation		4	2		6
5	1.1.4	Disk Array (Backup software included)	1				1
6	1.1.5.1	Tape Library	1				1
7	1.1.5.2	CD Library				1	1
8	1.1.6.1	Portable Computer				2	2
9	1.1.6.2	Mobile hard disk drive				2	2
10	1.1.7	Network Equipment	1				1
11	1.1.8	High Speed Printer		1	1		2
12	1.1.9	Encoder/Sorter			2		2
13	1.1.10	20KVA UPS (Power Distribution Cabinet included)	1				1
14	1.1.11	Tickets Cleaning Equipment				2	2
15	1.1.12	Ticket Inventory Packaging Equipment				3	3
16	1.1.13	High Speed Printer				1	1
17	1.1.14.1	Scanner				1	1
18	1.1.14.2	Digital camera				1	1
19	1.1.15	Ticket Storage Cabinet			4		4
20	1.1.16	Transport Carts			6		6
21	1.1.17	Contactless IC card (SJT)			1500000		1500000
22	1.1.18	SAM Card			1000		1000
23	1.1.19	Contactless IC card (SVT)			200000		200000
24	1.1.20	Clearing Server (Clearing Software included)	2				2
25	1.1.21	Clearing Switch	1				1
26	1.1.22	Clearing Router	1				1
27	1.1.23	Network Security Equipment	1				1
28	1.1.24	SAM Card device for Green line compatibility			800		800

### Annexure-N: AFC Equipment - Backup Inventory & Spare Parts

Following AFC equipment backup inventory and spare parts are available with L2SP1 that will maintain their inventory and issue them to L2SP2.

<b>Backup Inventory &amp; Spare Parts: AFC System</b>					
<b>Item</b>	<b>Description</b>	<b>Manufacturer</b>	<b>Model</b>	<b>Unit</b>	<b>Qty</b>
1	<b>Other Servers (hardware only)</b>	Lenovo Group Ltd	x3750 M4 with Processor XEON-E5-4607 v2	No.	1
2	<b>Workstation</b>	Lenovo Group Ltd	Thinkstation P300	No.	1
3	<b>Station Server (hardware only)</b>	Lenovo Group Ltd	x3750 M4 with Processor XEON-E5-4607 v2	No.	1
4	<b>Printer</b>	Hewlett-Packard	P1606dn	No.	1
5	<b>UPS (30KVA)</b>	Beijing Hendan Power Equipment Co., Ltd.	S30KVA	No.	1
6	<b>Emergency Button</b>	China National Software & Service Co. Ltd.	Custom Product	No.	3
7	<b>Portable Card Analyzer (PCA)</b>	Dalian Modern Hi-Tech Development Co., Ltd	MAFC.PCA.01A	No.	4
8	<b>Ticket Sorting Machine</b>	Beijing Huilang Technology Co. Ltd.	HL-6600	No.	2
9	<b>Currency Detector</b>	BAIJIA	BJ141	No.	2
10	<b>Coin Counter</b>	BAIJIA	BJ 18	No.	2
11	<b>3 layer switch</b>	Transcend Communication Beijing Co. Ltd.	Pt33-CG	No.	2
12	<b>2 layer switch</b>	Transcend Communication Beijing Co. Ltd.	Pt32D-4GX-48TX	No.	4
13	<b>Ticket Vending Machine (TVM)</b>				
13.1	Electronic Control Unit	Advantech	ITA17101617E-T	No.	16
13.2	SJT Processing Module	CSI	TIU-0020-C	No.	16
13.3	SVT Processing Module	CSI	CRT-288-(003)N-B1EH-AN	No.	8
13.4	Passenger Touchscreen	Leatin Hongye	Integrated touch screen 22-inch QB215C	No.	16
13.5	Status Display	Shidai Jiban	SCP-4-16032WED	No.	16
13.6	Coin Processing Module	CSI	CRU-0021-A	Lot	16
13.7	Banknote Processing Module	Mei	BNR4-XX	Lot	13
13.8	Power Unit	CSI	9004-1125,3C, TVM	No.	16
13.9	Printer	SNBC	R582	No.	16
13.10	Sensors	CSI	Internal in-place sensor	Lot	8
13.11	Maintenance Panel			No.	8
13.12	Equipment Cabinet	CSI	Stainless steel drawbench and plastic components	Lot	5
13.13	Cables	CSI	Internal module power line and data line	Lot	5
13.14	Assembly Parts	CSI	This point belongs to the sheet metal pieces and it is installed in equipment. For example: Door hinge	Lot	5
13.15	Front Panel	CSI	Bottom plate adopts stainless steel materials	Lot	5

13.16	Card Reader	CSI	M2L SFD•F05A1	No.	16
14	<b>Ticket Office Machine (TOM)</b>				
14.1	Electronic Control Unit	Advantech	ITA1710	No.	8
14.2	Passenger Display	Philips	166V3LSB/93 15.6-inch	No.	8
14.3	Operator Touchscreen	Leatin Hongye	Touch screen	No.	6
14.4	Printer	CSI	CS-PPrt-B00 pin type	No.	6
14.5	Cables	CSI	Internal module power line and data line	Lot	4
14.6	Power Unit	CSI	combined power supply module	No.	6
14.7	Assembly Parts	CSI		Lot	2
14.8	SJT Processing Module	CSI	TOKEN one-way ticket processing module, including ticket box	No.	8
14.9	Card Reader	CSI		No.	6
15	<b>Ticket Checking Machine (TCM)</b>				
15.1	Electronic Control Unit	Advantech	ITA1710	No.	2
15.2	Passenger Touchscreen	Leatin Hongye	Integrated touch screen	No.	2
15.3	Power Unit	CSI	Combined power supply module	No.	2
15.4	Equipment Cabinet	CSI	Stainless steel draw bench and plastic components	Lot	2
15.5	Cables	CSI	Internal module power line and data line	Lot	2
15.6	Assembly Parts	CSI	Other structure components, standard parts and circuit board etc.	Lot	2
15.7	Card Reader	CSI		No.	2
16	<b>Automatic Gate (AG)</b>				
16.1	Electronic Control Unit	Advantech	ITA1710	No.	20
16.2	Passenger Display	AUO	166V3LSB/93 15.6-inch	No.	35
16.3	Direction Indicator	CSI	CIL05100	No.	30
16.4	Gate Flap Mechanism	Aifushi	CTJ1200SD	Lot	17
16.5	SJT Retrieve Module	CSI		No.	12
16.6	Power Unit	CSI	Combined power supply	No.	20
16.7	Alarms	CSI	SFM-27- I A	Lot	10
16.8	Maintenance Panel			No.	10
16.9	Emergency Control Module			No.	10
16.10	Card Reader	CSI		No.	20
16.11	Equipment Cabinet	CSI	Stainless steel draw bench and plastic components	Lot	6
16.12	Cables	CSI	Internal module power line and data line	Lot	6
16.13	Photoelectric Beam Detector	CSI	HL-LA0203	No.	160
16.14	Diffuse Reflection Sensor	Panasonic		No.	40
16.15	Assembly Parts	CSI	AMP-V3.0	Lot	6
17	<b>Special Tools and Instrument</b>				
17.1	Digital storage oscilloscope	Fluke	F190-202AU	No.	1

17.2	Digital multimeter	Fluke	F87V	No.	1
17.3	Optical Fiber Fusion Splicer	SET	Type-81C	No.	1
17.4	Optical Loss Test	ShinewayTech	OPM-50	No.	1
17.5	Battery tester	MIDTRONICS	FBT-50	No.	1
17.6	Network Tester	T3 Innovation	Net Chaser NC950	No.	1
17.7	Logic probe	Bokles	BK8625	No.	1
17.8	Logic analyzer	Hantek	MSO5102D	No.	1
17.9	Frequency indicator	Longwei	TFC-2700L	No.	1
17.10	Voltmeter	Sanvwa	SP21	No.	1
17.11	Galvanometer (GALV)	Sanvwa	TA55	No.	1
17.12	Arbitrary Function Generator	Tektronix	AFG3000C	No.	1
17.13	Electric soldering iron	Pros's Kit	8PK-S120ND-RS-40	No.	1
17.14	Digital/ DC harmonic / power clamp meter	Fluke	F317/319	No.	1
17.15	Infrared ray thermal imager	Fluke	F62MAX	No.	1

## **Annexure-O: Relevant Sections of Clause 54.4 of L2SP1 RFP Regarding Responsibilities w.r.t L2SP2**

54.4 .... As part of the general scope of work, the L2SP1 shall perform the following tasks which are applicable to all systems:-

4) Coordinate with relevant L2SP2 to establish if AFC System faults/defects fall under the category of defect liability.

5) In case L2SP1, concludes that a certain fault/ defect in any system, including AFC System, falls under the defect liability, L2SP1 shall carry out liaison with EPC Contractor, under intimation to the Employer, for immediate resolution of the said fault/defect in line with Clause 12.2 of the EPC Contract reproduced below:-

### 12.2 Making Good Defects

The Contractor (EPC) shall, subject to Sub-Clause 12.9, be responsible for making good any defect in or damage to any part of the Works in his own scope of work which may appear or occur during the Defects Liability Period and which arises from, either:

- a. any defective materials, workmanship or design, or
- b. any act or omission of the Contractor during the Defects Liability Period.
- c. The Contractor (EPC) shall make good the Defects or damage as soon as practicable and at his own cost.

7) For AFC System, the L2SP1 shall upon proper diagnoses of faults/defects issue new parts to L2SP2 for replacement of faulty goods, if required, in a manner such that L2SP2 is not obstructed in making good faults/defects that arise in such installed system during the O&M period. In cases in which defect liability is established, only L2SP1 shall be allowed to liaison with the EPC Contractor for exercising Clause 12.2 of the EPC Contract.

8) The Employer's primary means of management of works of all L2SPs as well as the Services of other Line Service Providers (LSPs) shall be through an Issue/Complaint/Ticket Tracking and Management Information System (ITMIS) which shall be furnished, deployed and commissioned by L2SP1 for this purpose. ITMIS shall be a latest version (not older than January 2017) of a scalable web-based and app based software with active provision to support 15 mass transit lines x 15 LSPs. All other LSPs (up to 225), shall have secondary level access to the ITMIS software while the Employer and L2SP1 shall have primary access to the ITMIS. L2SP1 shall not delete tickets without prior written consent of the Employer. The ticket numbers shall be sequential and designed so that there is no repetition. The software shall be deployed to:

- a. record all system-wise equipment fault/break-down/malfunction issues observed by either Party/LSPs.
- b. lodge and record all maintenance activities carried out by the L2SP1, L2SP2, L2SP3, L2SP4 as well as those of other LSPs.
- c. lodge and record all preventive/scheduled and unscheduled maintenance activities carried out by all LSPs to resolve such faults/break-downs/malfunctions of any/all E&M equipment maintained by L2SP1, L2SP2, L2SP3, L2SP4 as well as those of other LSPs. L2SP1 shall lodge the program (all activities) of scheduled/preventive maintenance activities of its own Services in advance of each upcoming month collectively for the whole month.
- d. disseminate reports by ITMIS in various categories and use such reports to assess and report compliance/penalties of other L2SPs with respect to their respective SLAs. It is clarified that

Employer (and not L2SP1) shall directly manage services rendered by L2SP2, L2SP3, L2SP4 as well as those of other LSPs through ITMIS or otherwise.

- e. L2SP1 shall ensure that ITMIS remains functional at all times during the Contract Period. L2SP1 shall also provide login accounts of ITMIS to all LSPs so intimated by the Employer.

12) In fixing a faulty part, the L2SP1 shall, with intimation to the Employer, be authorized to repair a part or replace it with new part, or issue to L2SP2 a new part, if available in inventory of all spare parts, before determination of whether or not a faulty part is covered under warranty/defect liability period. Follow up action by the L2SP1 shall be in line with and subject to situations as under:-

a. In case certain hardware equipment fails due to an accident/act for which the L2SP1 is fully responsible, the L2SP1 shall repair or replace such part, and remove the fault. Subsequently, L2SP1 shall replenish the inventory at his own cost.

b. In case certain hardware equipment fails due to manufacturing/performance defects and that such a faulty part is covered under warranty/defect liability, and /or if any part is used from the inventory to correct such failure, the L2SP1 shall subsequently liaison with the EPC Contractor to seek replacement and replenish the inventory accordingly.

c. If it is established that such failure of equipment is due to an accident/act for which the L2SP1 is partially responsible, the L2SP1 shall immediately strive to repair/replace such part to restore the system. However, within 7 days from the occurrence of such accident, the L2SP1 shall furnish to the Employer a written report of the accident establishing its own extent of responsibility and cost of parts. Both Parties shall mutually agree to finalize the report and the share of responsibilities. The L2SP1, after receiving a work-order from the Employer, shall replenish such part. The cost share to be paid by the Employer as per work -order, if not covered under the insurance clauses, i.e. Clause 29, shall be subsequently billed with the monthly invoice for payment by the Employer for replenishing the part in the inventory.

d. In case certain hardware equipment fails due to an accident for which one or more of other L2SP(s) is/are fully responsible, the L2SP1 shall arrange repair or issue replacement of such part (from the inventory) to remove the fault. Subsequently, L2SP1 shall intimate the Employer of equivalent adjustment against cost of parts from the invoice(s) of the relevant L2SP(s) against replenishing the inventory. The L2SP1, after receiving a work-order from the Employer, shall replenish such part.

e. If it is established that such failure of equipment is due to an accident/act for which any other L2SP is partially responsible, the L2SP1 shall immediately strive to arrange repair, or issue a replacement of such part from the inventory to L2SP2, to restore the system. However, within 7 days from the occurrence of such accident, the L2SP1 shall furnish to the Employer a written report of the accident establishing the extent of responsibility of the relevant L2SP. L2SP1 shall establish the share of responsibility after discussion with relevant L2SP and the employer before finalizing the report. L2SP1 shall also indicate to the Employer a deduction against share of accident from the invoice of the relevant L2SP against cost of parts. The L2SP1, after receiving a work-order from the Employer, shall replenish such part(s). The cost share to be paid by the Employer as per work-order, if not covered under the insurance clauses, i.e. Clause 29 shall be subsequently billed with the monthly invoice for payment by the Employer for replenishing the part in the inventory.