

## ANNEXURE D – SCOPE OF FUND MANAGEMENT SERVICES

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### **SUMMARY: HIGH LEVEL SCOPE OF WORK**

The Employer requires that passengers can buy fare products in the most flexible way.

Therefore, the payment system must support different payment scenarios resulting from the combination of many sales channels (attended and unattended vending machines, handheld, app and webpage) with several methods of payments, among them electronic payments (including, but not limited to, debit cards, credit cards, certified mobile wallets and relevant branchless banking networks, if any..

The system will also accept cash payments in all vending machines (TVM, TOM and HHM).

The Fund Manager shall, *inter alia*, be responsible for:

- (a) Managing and ensuring the availability of all electronic payment operations, including both online and offline transactions;
- (b) Integrate with attended and unattended point of sales (POS);
- (c) Communications and developing the interface between gateway and AFC system and equipment;
- (d) Uploading all relevant information received from Automated Fare Collection (AFC) sales equipment and online sales channels to the consolidation system;
- (e) Allowing back office operations such as partial/total refunds, cancelations, etc.,;
- (f) Providing reporting and automated reconciliation tools for the reconciliation process.

**Table 1: High level scope of the work to be performed by the Fund Manager**

<b>Requirement</b>	<b>Description</b>
1.	<ul style="list-style-type: none"> <li>The Fund Manager must provide a comprehensive system and solution (Software (SW)).</li> <li>Please describe your comprehensive solution in detail in the Approach &amp; Methodology to be submitted as part of the bid.</li> </ul>
2.	<ul style="list-style-type: none"> <li>Team for training and future refresh training.</li> <li>Please provide a training plan in Approach &amp; Methodology.</li> </ul>
3.	<ul style="list-style-type: none"> <li>Test tool and training area.</li> <li>Please describe test tool in your Approach &amp; Methodology.</li> </ul>
4.	<ul style="list-style-type: none"> <li>Support the project management team. Please specify the team/organization chart as follows:</li> <li>Details of Project Team, personnel and roles, including the team size and team operation mode (on-site/ off-site structure), staffing utilization (e.g. capacity planning) and mobilization plans</li> </ul>
5.	<ul style="list-style-type: none"> <li>System design Specification.</li> <li>Please refer to the time schedule chapter.</li> </ul>
6.	<ul style="list-style-type: none"> <li>System acceptance test (SAT).</li> <li>Please provide a SAT plan in Approach &amp; Methodology.</li> </ul>
7.	<ul style="list-style-type: none"> <li>Disclosure and documentation of all Interfaces</li> </ul>
8.	<ul style="list-style-type: none"> <li>Maintenance for the System and all provided HW and SW.</li> </ul>

**1. BANKING SYSTEM INTEGRATION**

The Fund Manager’s back-office must have complete system implementation and integration capabilities with all payment mechanisms (mobile phone application, internet/web portal, HHM, TOM, TVM) to ensure uninterrupted and efficient ticket sales/top-up capabilities.

The Fund Manager must integrate with the Employer based on straight-through processing providing host to host connectivity; and provide daily paperless reports, on demand reports and reconciliation reports to the Employer and its control partners as per Employer’s instructions.

In order to ensure smooth collections throughout the Bus Stations, as well as through other payments mechanisms, the Integrated Intelligent Transport System (IITS) shall be integrated with the Fund Manager’s back office to digitize the entire process as well as to minimize human error. Fund Manager is required to have the capability to integrate with Employer’s Enterprise Resource Planning (ERP) System (SAP BI Module), as well as IITS, if required.

The Fund Manager and the IITS operator must coordinate on the integration including on integration timelines to ensure completion of integration which must be completed within one hundred and fifty (150) days from the issuance of the Notice to Proceed (NTP). The Employer will entertain piece-meal/phased milestone-based integration.

## 2. COLLECTION OF CASH FROM BUS STATIONS

The Fund Manager will ensure collection of cash from the Stationery Ticket Vending Machines (TVM), and Ticket Office Machine (TOM), including cash from HHM sales, at each Bus Station.

System users are expected to make cash payments on the TVM and TOM to purchase tickets and/ or reload their Contact-less Smart Cards (CSCs). Over the course of daily operations, the TVM and TOM is expected to accumulate considerable quantity of cash which will be collected by the Fund Manager daily.

### 2.1. **Cash Proceeds At TOM**

System users will procure tickets, reload CSCs, in exchange for cash on TOMs installed in kiosks across all Bus Stations along the BRT Corridor. Payments on the TOM will involve considerable human involvement whereby a representative of the Facilities Manager will be operating the TOM. Such representative will collect cash from system users and store cash in the TOM counter(s) on each Bus Station along the BRT Corridor.

*POS Machine:* Within one hundred fifty (150) days from the Notice to Proceed, the Fund Manager is required to integrate with the Point of Sales (POS) Card Machines (“**POS Machine(s)**”). All hardware including POS Machines will be procured by the Employer through their IITS supplier on advice of the Fund Manager regarding model/variant. The Fund Manager would assist in the required planned and unplanned maintenance of the POS Machine.

The Employer shall retain title to all POS Machine and shall be responsible for: (a) all costs associated with the repair, replacement and maintenance thereof; (b) for risk of Loss; and (c) any insurance costs for such POS Machine.

*Operations and Maintenance Manuals for POS Machine:* The Fund Manager would provide O&M manuals to the staff for operations of the POS Machine that it has recommended. Such O&M manuals for the operations and maintenance of the POS Machine will be supplemented and amended from time to time by the Fund Manager.

*Training:* The Employer will allocate staff that require training during Mobilization Period. Thereafter, there will be periodic trainings during the Services Period arranged by the Fund Manager including upon upgrading and/or changing of the POS Machine (if any).

The Employer shall from time to time review the Fund Managers proposed training programme and shall convey its comments/observations (if any) to the Fund Manager. The Fund Manager shall promptly (at its own cost and expense) re-submit the revised training programme, no later than three (3) days from receipt of the aforesaid observations.

Training is to be provided as part of the Services and the Fund Manager’s obligations shall not be considered completed until this training has been completed.

The Fund Manager is not responsible for the collection of any counterfeit currency at the TOMs and the responsibility to ensure genuineness of currency notes received from Users is that of the Facilities Manager.

The Cash received at the TOMs shall be collected in accordance with the procedure laid out in Section 2.3 (*Collection Procedure*) below by the Fund Manager at the end of day throughout the Services Period.

## **2.2. Cash Proceeds At TVM**

Users will also have the option to procure tickets and recharge their CSCs from TVMs, where a representative of the Facilities Manager will assist the Users in depositing cash and using POS machines installed in the TVMs (unattended POS).

The cash received at the TVMs shall be collected by the Fund Manager upon notification by the AFC system. On each notification day end during the Services Period, the Facilities Manager will unlock the TVM and the Fund Manager will collect the cash box in accordance with the procedure laid out in Section 2.3 (*Collection Procedure*) below.

## **2.3. Collection Procedure**

All cash received at the TOMs **daily** from all Bus Stations at day end while cash tray from TVMs will be collected on notification day end throughout the Services Period.

The Fund Manager shall be allowed to sub-contract the cash collection services, provided, however, the Fund Manager shall be responsible for all acts and omissions of such sub-contractor. The Fund Manager would be the point of contact for all Services to be performed by the Fund Manager.

Before the cash is collected from the Bus Station, the Fund Manager will share with the Facilities Manager the name and computerized National Identity Card (CNIC) number/staff code of the security personnel who will collect the cash.

This information will be shared with all Bus Stations (by way of designated communication email) along the BRT Corridor individually, by the Fund Manager. Upon arrival of the security personnel for cash collection, the Facilities Manager would verify personnel identity through comparing the list sent by the Fund Manager with personnel company IDs and CNICs.

Upon such confirmation, the Facilities Manager shall allow the personnel in the Bus Station premises and the Fund Manager will perform its cash collection operations.

### **2.3.1. Procedure for collection from TOM**

Once the cash from the TOM has been received by the Fund Manager personnel, the cash will be put in bags and sealed in front of the Facilities Manager. Once the Facilities Manager is satisfied with the seal, the security personnel will transport the sealed bags for counting and depositing.

### **2.3.2. Procedure for collection of TVM cash box**

On each notification day, the full cash box will be collected from TVM by the Fund Manager personnel. The cash box will be transported to cash counting

center/branch/storage depot where the cash boxes will be opened (with special key) for counting under CCTV cam. The TVM banknotes system will have multiple keys (e.g., separate keys to withdraw the cash box and to open the cash box).

After the count is complete for cash collected from TOM and TVM, the sums to be deposited in the Collection Account should match the revenue statement generated as per the IITS systems. In the event of any discrepancy the responsibility and obligation to reimburse the Employer by depositing such discrepant amounts in the Collection Account shall be as follows:

- **Counterfeit notes collected by TOM (as collected in TOM bag):** Facilities Manager shall be required to reimburse any counterfeit currency accepted/collected at the TOMs.
- If (including counterfeit) **amount does not match** revenue statement generated as per the IITS system, Facilities Manager would be responsible.
- If there is **excess cash** in the bag as compared to the revenue statement generated as per the IITS system, all cash would be deposited.
- For **seal broken or cash lost during transit;** Fund Manager would be responsible.

For each of the above scenarios, the Fund Manager will notify the Employer. Each party responsible for such discrepancy shall deposit the differential (loss) in Collection Account.

#### **2.4. Security of cash proceeds**

The Fund Manager will collect cash from Bus Stations at the end of each operating day. The safety and security of cash proceeds in the armoured vehicles as well as any cash storage depots overnight (prior to being deposited in the Collection Account the following day during bank working hours) lies completely with the Fund Manager.

To ensure the security of the cash collected overnight, the Fund Manager may sub-contract such security services to a reputable security firm(s) with requisite cash collection experience, provided, however, the Fund Manager shall be responsible for all acts and omissions of such sub-contractor.

#### **2.5. Timings of Cash Collection**

The Fund Manager is required to collect cash at stipulated timelines as per mutual agreement between Fund Manager and the Employer (in consultation with Facilities Manager). The details of the timings for cash collection from each Bus Station across the BRT Corridor are set out in Exhibit I (*Minimum Cash Balance and Cash Pick Up Timings*) hereto.

The Fund Manager shall be responsible for any theft, loss, pilferage of Cash and shall be required to reimburse the Employer by depositing in the Collection Account an amount as determined by the Employer including where such theft, loss, pilferage of Cash occurs during the period when the Cash (following Cash Collection from Bus Stations) is in the custody of the Fund Manager.

Repeated delays in collecting cash from the Bus Stations shall constitute an event of default to the Fund Manager entitling the Employer to terminate.

### **3. AVAILABILITY OF MINIMUM CASH BALANCE**

The Fund Manager shall arrange Minimum Cash Balance for change payments at every Bus Station at least one (1) day prior to the respective Commencement Date and thereafter, maintain the Minimum Cash Balance throughout the Services Period in accordance with the procedure and protocols to be followed by the Fund Manager, in each case for making available the Minimum Cash Balance at the Bus Stations during the Services Period as set out in this Section 3 (*Availability of Minimum Cash Balance*).

Such amount of Minimum Cash Balance may be revised on a day's notice either upwards or downwards based on mutual agreement between the Employer and Fund Manager in consultation with the Facilities Manager. The quantity of Minimum Cash Balance for each Bus Station has been provided in Exhibit I (*Minimum Cash Balance and Cash Pick Up Timings*).

In case the Facilities Manager determines that it is running low on Minimum Cash Balance, the Facilities Manager shall have the authority to request (with a copy of such Notice to the Employer) for additional change from the Fund Manager, which shall be promptly made available to Bus Stations. .

On each day end during the Services Period, the Fund Manager will ensure that the denominations of Minimum Cash Balance have been replenished at each Bus Station along the BRT Corridor. The Fund Manager and the authorized representative of Facilities Manager will verify and sign-off on the said replenishment of the Minimum Cash Balance.

The Fund Manager shall ensure that currency notes handed over as Minimum Cash Balance are genuine.

#### **3.1. Reimbursement of The First Minimum Cash Balance**

Cash collection at the end of the first day of operations would be utilized to offset Minimum Cash Balance fronted by the Fund Manager. First day's cash deposit by the Fund Manager into the Collection Account would be net-of the Minimum Cash Balance fronted at the start of the first day of operations. Relevant documentations with respect to funding and deduction shall be provided to the Employer by the Fund Manager.

#### **3.2. Allocation of Minimum Cash Balance**

The Minimum Cash Balance will be apportioned in the following way:

- (i) TOM – 70%
- (ii) TVM – 30%

The following denominations are to be provided by the Fund Manager at every Bus Station:

<b>Cash Amount (PKR)</b>	<b>Currency notes / Coins</b>
500	5%
100	10%

50	15%
20	20%
10	25%
5	25%

#### **4. BANKING OPERATIONS**

##### **4.1. Collection Account**

The Fund Manager shall be responsible to open the Collection Account(s) at the Designated Branch for deposit of sums relating to the operations and maintenance of the Project and maintain it throughout the Services Period. The account title shall be Sindh Infrastructure Development Company Limited Collection Account. The Collection Account must have subaccounts for various bank payments through TVM, TOM, HHM, website and mobile phone applications.

The authorized signatories shall be nominated by Sindh Infrastructure Development Company Limited (SIDCL) Board of Directors or the Chief Executive Officer (CEO) and updated as required as Notified by the Employer to the Fund Manager.

The Collection Account shall be used for all deposits and payments relating to the Project.

The Fund Manager shall not create any Encumbrance on the Collection Account (other than as expressly permitted by the Employer).

##### **4.2. Revenue Deposits**

After the collection of cash from each Bus Station, the cash must be deposited in the Collection Account by the Fund Manager, on the following business day. The Collection Account shall be used for deposits of all cash collected from Bus Stations.

The Fund Manager shall ensure that all funds deposited either physically or electronically must be reflected in Employer's Collection Account immediately. Any discrepancy between the bank balance and revenues as per Automated Fare Collection systems must be reconciled on an urgent basis. Persistent irregularities in the bank reconciliation shall constitute an event of default to the Fund Manager entitling the Employer to terminate.

Apart from Fare Revenue which will be collected from Bus Stations physically as well as electronically/digitally, other payments/sums relating to the Project may also be deposited in the Collection Account. Such deposits may be made by the Employer or any other Project Contractor engaged by the Employer in respect of the Project including property management firm(s) responsible for exploitation of non-fare revenue potential. The Fund Manager must notify the Employer of any such deposits immediately upon receipt.

##### **4.3. Integration with Central Clearing House (CCH) Bank Interface**

The Fund Manager shall ensure that each User's data is completely secure as per regulations and best practices. The Fund Manager shall be liable to indemnify the Employer for any costs, loss or claims arising due to any data hack or data security breach

attributable to the Fund Manager. The Fund Manager is required to remedy the hack/security breach and failure to do so shall constitute an event of default to the Fund Manager entitling the Employer to terminate.

The Fund Manager shall ensure that all transactions issued by the CCH are completed as per best practices including 3D secure transactions. Persistent delays and failure in processing transactions shall constitute an event of default attributable to the Fund Manager.

#### **4.4. Payments to Project Contractors and other service providers**

The Fund Manager shall upon receipt of an Employer's Instruction utilise funds standing credit to the Collection Account for making payment of the PC Payment Amount on the PC Payment Date to the relevant Project Contractor.

Each Employer's Instruction issued in this respect shall specify;

- (a) the sum payable to the relevant Project Contractor;
- (b) date and time for payment of the payment amount to the relevant Project Contractor;
- (c) mode of payment i.e., by way of IBFT/RTGS or pay order; and
- (d) any other information reasonably required by the Fund Manager to affect such payment to the Project Contractor.

Payments must be made by way of IBFT/RTGS or bank cheques in the designated bank accounts of the Project Contractors in such sums and on such date and time as specified in the Employer's Instruction.

In addition, the Employer may also instruct the Fund Manager for utility bill payments with respect to the Projects, which must be processed through their respective Utility Bill Payment System (UBPS).

##### **4.4.1. Pay order**

The Employer will issue instructions to the Fund Manager for payments through pay order to Project Contractors. Upon any change in authorized signatories, the Employer will notify the Fund Manager of such change. The Fund Manager will only be liable to ensure payments if the Employer's Instruction for payment are issued by authorized signatories and inform the Employer where there is any inconsistency in authorized signatories.

##### **4.4.2. Inter Bank Fund Transfer (IBFT) and Real Time Gross Settlement (RTGS)**

Upon issuance of IBFT/RTGS instructions by the Employer by means of integrated, straight-through payments capabilities, the Fund Manager must transfer such payments to the relevant Project Contractors.



The Fund Manager is required to ensure that it provides an interface to the Employer to issue such payment instructions to the Fund Manager, view up to date periodic cash positions and reports as and when required. Such interface must be completely digital and minimize manual interplay.

#### **4.5. Periodic Cash Position**

The Fund Manager must provide to the Employer periodic cash position at the end of each operating day in order to assess funding surplus or shortfall against stipulated payments to the relevant Project Contractors whichever is appropriate.

In the event upon receiving an Employer's Instruction, the account balance in the Collection Account is insufficient for the transfer(s)/ payment to the relevant Project Contractors, the Fund Manager shall notify the same to the Employer within one (1) hour of receiving the Employer's Instruction. The Employer will have the option either to:

- (a) arrange and deposit funds in the Collection Account for payments to the relevant Project Contractors; or
- (b) withdraw the Employer's Instruction for payment.

The Fund Manager shall comply with and make payment of the total amounts as per the Employer's Instructions for payment.

#### **5. ASSISTANCE IN LEGAL / REGULATORY REQUIREMENTS**

The Fund Manager will assist the Employer in conducting periodic audits of all receipts and payments as and when required by the Employer.

The Fund Manager must cooperate with any third party appointed by the Employer or any relevant government agency appointed for conducting such audits and shall promptly provide access to reports and/or any information required for audit. Any malfeasance attributable to the Fund Manager shall constitute an event of default to the Fund Manager entitling the Employer to terminate.

During the currency of the audit, the Fund Manager must continue performing its obligation as per agreed scope of work.

#### **6. REVENUE ALLOCATED TO THE EMPLOYER**

The Fund Manager shall pay to the Employer float income earned on the balance to the credit of the Collection Account at market competitive interest/profit rates payable on their savings accounts. Such interest/profit will be calculated daily and deposit all such income in the Collection Account of the Employer at the end of each month.

#### **7. INVOICING FOR SERVICES**

The Fund Manager will raise an invoice for monthly Service Fee at the end of each operating month during the Services Period. Payments for the invoice will be debited from the Collection Account upon issuance of Employer's Instructions within five (5) working days.

## 8. BANK GATEWAY INTEGRATION

The software team and the Fund Manager will work together, and the data communication interface for research, the IITS software team, and the bank working together. Also, the Fund Manager shall provide the following:

- The Fund Manager shall develop, build, configure onsite at each TVM/TOM the interface with the PoS

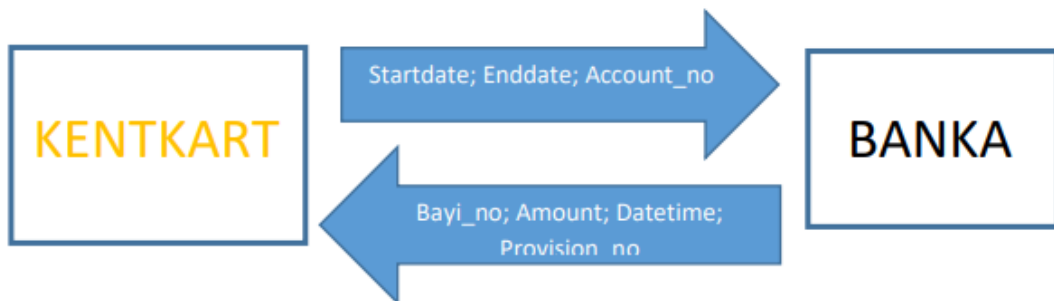
Kentkart calls these intervals with parameters "given by the bank."

### 8.1. REQUEST PARAMETERS

- Account\_no
- Startdate (DD-MM-YYYY)
- Enddate (DD-MM-YY)

### 8.2. OUTCOME PARAMETERS

- TerminalNumber
- Amount
- Datetime (YYYYMMDDHHMMSS)
- Provision\_no



## 9. MOBILE APPLICATION & WEBSITE ONLINE TOP-UP PAYMENT

The Web Page and the Smartphone Application will be another cornerstone of the ticketing system. They will allow customers to buy Public Transport Project fare products online via Internet.

The Smartphone Application will allow passengers to enter the network by means of NFC or Barcode. This will allow passengers to buy and use fare products without the need to go to a sales machine to retrieve them.

Expected payment methods include (but not limited to) credit cards, debit cards and Mobile wallets (Easypaisa and JazzCash, etc.) and branchless banking (UBL Omni and HBL Konnect, etc.).

The web page and the smartphone app will be able to be configured for recurring billing and the auto-reload of products. It will be necessary to pay online for these products.

In general terms, the solution must include the use of authentication (use of tokens) as no accounts/cards data will be stored in the AFC system.

The Bank shall provide the Gateway to enable the Web payment and to interface with AFC CCH for statement and reports.

For the Integration between AFC system and Fund Manager's system, the Fund Manager shall provide the following.

- Payment processor API (Virtual POS)
- Payment processor API (Virtual POS) Integration document
- Merchant Name
- Merchant ID

#### **10. THIRD-PARTY INTEGRATION**

For the Third-Party integration such as Mobile Wallets and Branchless Banking solutions, the Fund Manager shall provide the following.

- Payment processor API
- Merchant Name
- Merchant ID

#### **11. SMS LOGIN INTEGRATION**

- SMS Gateway

#### **12. CENTRAL SERVER BACK-OFFICE OPERATIONS**


##### **12.1. PAYMENTS**

The Backoffice system of the AFC system will be able to trigger (batch processing) payment operations previously configured in the vending equipment. For these operations, a passenger should have previously entered the information required (via field equipment, website or app) and accepted the conditions to allow the system to perform these kinds of operations. It is required that the Fund Manager, through its own platform or by other alternatives, stores the payment data.

There are two kinds of operations that can be triggered from Central Server:

- (a) Recurrent Billing: periodic product (daily/weekly/monthly) is automatically reloaded on predefined dates.
- (b) Non-recurrent: payment is triggered after an event occurs. For example, the transport card embedded in the CSC or the Mobile Application shows remaining trips below a predefined threshold.

### 13. PAYMENT INTEGRATION FOR HHM

 <p><b>i9000S Smart POS Payment Terminal</b></p>	<p>Handheld will include a Bankcard Payment Module (e.g. Smartcard Payment Terminal) with the following elements:</p> <ul style="list-style-type: none"> <li>• Contact Card Reader</li> <li>• Contactless Card Reader</li> <li>• PIN pad</li> </ul>
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#### 13.1. GENERAL INFORMATION

**Table 2:HHM high level roles and responsibilities**

Service	Responsibilities and features
<b>Provider of HHM Hardware</b>	AFC Contractor
<b>Provider of HHM Payment Module Hardware (PinPad)</b>	AFC Contractor
<b>Provider of the HHM Software</b>	AFC Contractor
<b>Provider of HHM Payment Module Firmware</b>	AFC Contractor
<b>Responsible for the maintenance</b>	AFC Contractor
<b>Telecom Communication (Payment Terminal - Bank)</b>	AFC Contractor
<b>Vendor of the Payment Terminal</b>	Certified in Pakistan
<b>Certification of Payment Terminal</b>	Fund Manager
<b>Interface – Payment terminal to Bank (Bank SIM Card Slot)</b>	AFC Contractor
<b>Interface – HHM to AFC System (AFC SIM Card Slot)</b>	AFC Contractor
<b>Accepted Payment Mode of the Payment Terminal</b>	Fund Manager

The provided HHM device has EMV L1/L2 certificate and supports EMV contactless, however, its validity has to be approved by the Fund Manager.

- HHM Brand/Model: Urovo I9000S
- HHM Datasheet: [Urovo I9000S Datasheet](#)

Otherwise, the Fund Manager shall provide and maintain connectivity with Fund Manager back office”.

**The Fund Manager must provide a complete list of their certified POS HHM (attended/unattended) terminals, already deployed and in certification process if any.**


## i9000S Smart POS Payment Terminal

5" HD / 2" Thermal printer  
Safedroid OS/ 4G  
MSR / Chip card / NFC  
EMV certified



**14. PHYSICAL POS FOR TOM**

All vending machines will include a Bankcard Payment Device (e.g. Smart payment terminal or EMV terminal) with the following elements:

	<ul style="list-style-type: none"> <li>• Contact Card Reader</li> <li>• Contactless Card Reader</li> <li>• PIN pad</li> </ul>
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**14.1. GENERAL INFORMATION**

**Table 3: TOM high level roles and responsibilities**

Service	Responsibilities and features
<b>Provider of TOM Computer</b>	AFC Contractor
<b>Provider of TOM Payment Terminal</b>	AFC Contractor
<b>Responsible for the maintenance of the Payment Terminal</b>	Fund Manager/AFC Contractor
<b>Telecom Communication for the Payment Terminal</b>	Fund Manager/AFC Contractor
<b>Vendor of the Payment Terminal</b>	Must be Certified in Pakistan
<b>Certification of Payment Terminal</b>	Fund Manager
<b>Interface – Payment terminal to Bank</b>	Fund Manager
<b>Interface – TOM to Payment terminal</b>	AFC Contractor/Fund Manager
<b>Accepted Payment Mode of the Payment Terminal</b>	Fund Manager (all modes certified in Pakistan)
<b>Upgradeability of payment mode</b>	Fund Manager

**15. UNATTENDED POS (TICKET VENDING MACHINES)**

**15.1. DESCRIPTION**

 <p style="text-align: center;">Unattended Terminal Vending Machine (TVM)</p>	<p>All the vending machines will include a Bankcard Payment Terminal (e.g. Smartcard Payment Terminal) with the following elements:</p> <ul style="list-style-type: none"> <li>• Contact Card Reader</li> <li>• Contactless Card Reader</li> <li>• PIN pad</li> </ul>
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**15.2. GENERAL INFORMATION**

**Table 4: TVM high level roles and responsibilities**



Service	Responsibilities and features
<b>Provider of TVM</b>	AFC Contractor
<b>Provider of Unattended POS</b>	AFC Contractor
<b>Responsible for the maintenance of the TVM</b>	AFC Contractor
<b>Responsible for the maintenance of the POS</b>	AFC Contractor
<b>Telecom Communication for the Payment Terminal</b>	Fund Manager/AFC Contractor
<b>Certification of Payment Terminal</b>	AFC Contractor
<b>Interface – Payment terminal to Bank (Bank SIM Card Slot)</b>	Fund Manager/AFC Contractor
<b>Interface – TVM to AFC System (AFC SIM Card Slot)</b>	AFC Contractor
<b>Accepted Payment Mode of the Payment Terminal</b>	Fund Manager (all modes certified in Pakistan)

Ticket Vending Machine or TVM is a self-service kiosk that allows passengers to buy their transport products without personal assistance

- The physical unattended pos terminal which has required certification.
- The physical unattended pos terminal integration document.
- Please note that the suggested terminal has the certification of EMV L1/L2 but L3 is the scope of Bank

**iSelf Serisi**



-  Security
-  Smartcard
-  Magstripe
-  Contactless
-  Rugged
-  Color backlit

**16. VALIDATOR CONTACTLESS EMV CARD READER**

- Contactless EMV Card Reader which has required certification.
- Contactless EMV Card Reader integration document.
- ISO 8583

**17. MOBILIZATION PERIOD REQUIREMENTS AND TIMELINES**

MOBILIZATION PERIOD REQUIREMENTS	TIMELINES		
	GREEN LINE PROJECT-MOBILIZATION PERIOD REQUIREMENTS PHASE I	GREEN LINE PROJECT - MOBILIZATION PERIOD REQUIREMENTS PHASE II	ORANGE LINE PROJECT - MOBILIZATION PERIOD REQUIREMENTS
Complete integration with the IITS System	NTP + 150 days	One (1) day prior to the Scheduled Commencement Date Phase II	NTP + 150 days
Provide the POS Machines (along with the O&M manuals)	NTP + 150 days	One (1) day prior to the Scheduled Commencement Date Phase II	NTP + 150 days
Arrange Minimum Cash Balance for change payments at every Bus Station	At least one (1) day prior to the Commencement Date Phase I	One (1) day prior to the Scheduled Commencement Date Phase II	At least one (1) day prior to the Commencement Date
Insurances	NTP + 150 days	One (1) day prior to the Scheduled	NTP + 150days



		Commencement Date Phase II	
Establish Collection Accounts	NTP + 30 days	-	NTP + 30 days
Execution of Service Level Agreements	NTP + 60 days	-	NTP + 60 days
Training(s)	NTP + 150 days	Ten (10) days prior to the Scheduled Commencement Date Phase II	NTP + 150 days
Any other works and/or Services as required under this Schedule A (Scope of Work)	NTP + 150 days	One (1) day prior to the Scheduled Commencement Date Phase II	NTP + 150 days

**17. MONITORING**

The Employer shall (through the Operations Control Centre) monitor and inspect the performance of the Services by the Fund Manager.

In the event any of the monitoring devices become non-responsive or non-functional due to any reason, keeping in view the public convenience, the Services shall not be suspended, provided, however, the Fund Manager shall remain liable to maintain Service Records and provide the same to the Employer upon request.

The Fund Manager shall not tamper, and shall ensure that its representatives, agents, employees, Personnel, Sub-Contractors, vendors, suppliers engaged by the Fund Manager for the performance of Services or any part thereof do not tamper monitoring devices installed at the Facilities. In the event the Fund Manager breaches the foregoing covenant, the Fund Manager shall: (a) indemnify and hold the Employer harmless against any Loss and consequences of Employer's inability to monitor the Facilities including any consequent over payment of any sums to the Fund Manager and/or any other Project Contractor; and (b) take all remediable action reasonably acceptable to the Employer to ensure that such tampering does not reoccur, including the development or addition of security systems.

**18. MAINTENANCE OF POS MACHINE**

The Fund Manager must ensure that the POS Machine are in optimal condition throughout the Service Period. Among other functions to ensure smooth operations of the Machines, the Fund Manager must:

- (i) Inspect the POS Machine on a weekly basis and conduct cleaning operations as per best practices (including the use of canned air and cleaning cards, etc.)
- (ii) Identify any defects or deficiencies in the POS Machine and inform SIDCL of any malfunction/defects.

**EXHIBIT I: MINIMUM CASH BALANCE AND CASH PICK UP TIMINGS**

<b>S.No</b>	<b>BUS STATION</b>	<b>MINIMUM CASH BALANCE (PKR)</b>	<b>CASH PICK-UP TIMINGS (PST)</b>
1.	Surjani Town	25,000	2300 hours
2.	- (Unknown)	15,000	2300 hours
3.	Jama Masjid	20,000	2300 hours
4.	4K Chowrangi	25,000	2300 hours
5.	2 Minute Ki Chowrangi	20,000	2300 hours
6.	- (Unknown 2)	15,000	2300 hours
7.	Power House	25,000	2300 hours
8.	Telephone Exchange	20,000	2300 hours
9.	UP More	15,000	2300 hours
10.	Nagan Chowrangi	25,000	2300 hours
11.	Shadman No.2	20,000	2300 hours
12.	2K Bus stop	20,000	2300 hours
13.	Faiz House	15,000	2300 hours
14.	Hyderi Bus stop	25,000	2300 hours
15.	Board Office	15,000	2300 hours
16.	Baqai Hospital Bus stop	20,000	2300 hours
17.	Petrol Pump Bus stop	25,000	2300 hours
18.	Rizvia Bus stop	15,000	2300 hours
19.	Gulbahar	15,000	2300 hours
20.	Lasbela Chowk	25,000	2300 hours
21.	Gurumandir	15,000	2300 hours
22.	Numaish	25,000	2300 hours
23.	Sea Breeze Center	15,000	2300 hours
24.	Gul Plaza	20,000	2300 hours
25.	Municipal Park	20,000	2300 hours
26.	5 no. Chowrangi	15,000	2300 hours
27.	Orangi Town Police Station	25,000	2300 hours
28.	Abdullah College	20,000	2300 hours
29.	Dilpasand Sweets	25,000	2300 hours

**EXHIBIT II: KEY PERFORMANCE INDICATORS**

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**Key Performance Indicators:** The Fund Manager’s performance of Services shall be evaluated by means of required service levels for Key Performance Indicators (KPIs).

**Employer review of KPIs.** Employer may at all reasonable times, directly or through an Employer appointed independent agent, observe, inspect, and satisfy itself with the observance by Fund Manager of the KPIs. Non-compliance with the KPIs shall constitute an event of default entitling the Employer to terminate.

**KPI table.** The systems must be designed and operated to meet these KPIs in the following table 1.

S. NO	EVENT / KPI
<b>1.</b>	<b>Collection of cash from Bus Stations</b>
1.1.	Reach the Bus Station on the specified time frame to collect cash.
<b>2.</b>	<b>Minimum cash balance</b>
2.1.	Provide the Facilities Manager with daily cash balance (change) as specified in Exhibit I.
2.2.	Provide the Facilities Manager with cash balance (change) on <b>two (2)</b> hours’ notice upon shortage during operations.
<b>3.</b>	<b>Banking Operations</b>
3.1.	Deposit the cash collected in Collection Account on the following business day
3.2.	Prevent hacking/data security breach of the Fund Manager’s banking systems
3.3.	Make available date and information required for periodic audits
3.4.	Maintain the PoS Machines and prevent failure/break down due to lack of/improper maintenance

**EXHIBIT III: PAYMENT INTEGRATION REQUIREMENTS**

**1. Compatibility Chart**

<b>Device/Component</b>	<b>payment with EMV contactless Bank Card</b>	<b>Payment with contact Bank Card</b>	<b>Payment with Magnetic Bank Card</b>	<b>Send Bank Top-up/Auto reload</b>	<b>Auto-reload</b>
<i>Ticket Vending Machine</i>	X (with a certified unattended embedded POS)	X (with a certified unattended embedded POS)	X (with a certified unattended embedded POS)		
<i>Ticket Office Machine</i>	X (with a certified attended external POS)	X (with a certified attended external POS)	X (with a certified attended external POS)		
<i>Handheld Machine</i>	X (with a certified attended external POS)	X (with a certified attended external POS)	X (with a certified attended external POS)		
<i>Mobile APP</i>	X (by entering card number in the payment processing screen)	X (by entering card number in the payment processing screen)	X (by entering card number in the payment processing screen)		X (PG should be able to store payment methods)
<i>Website</i>	X (by entering card number in the payment processing screen)	X (by entering card number in the payment processing screen)	X (by entering card number in the payment processing screen)	Batch/ tokenization concept  X	X (PG should be able to store payment methods)