**SECTION 7 Vendor Compliance Matrix**

Please respond with your proposal using the following Compliance Matrix described in the following section.

Applicable answers are:

* E = Exceeds: Vendor complies with the requirements and exceeds the requirements. Please provide information in the Comment section.
* C = Comply: Vendor complies with the requirements with no modification.
* PC = Partially Comply: Vendor complies with some of the requirements. Please provide information in the Comment section, along with the estimated cost of customization if required to meet the specification.
* A = Alternative: Vendor does not fully comply with the requirements but has an alternative functionality that would meet the needs of the agency. Please provide information in the comment section along with the estimated cost of customization if required to meet the specification.
* NC = Non-Compliant: The vendor does not comply with the requirement in its entirety.

| Item | Requirement | Response | Comments |
| --- | --- | --- | --- |
| **1** | **GENERAL** | | |
| **1.1** | **Characteristics of New Automatic Fare Collection System** | | |
| 1 | Furnish an AFC system which uses a tool-less removal and replacement design for all major component parts, for efficient use of maintenance labor time and eliminating the need to take a vehicle out of service when quickly swapping out a malfunctioning part. |  |  |
| 2 | Furnish an AFC system where the farebox monitors the health of the system component parts and the operator has the ability to “reboot” components as an initial “repair” to “fix” the problem. |  |  |
| 3 | Furnish an AFC System where changes to the Fare Policies in the CMRS utilizes an intuitive feature to modify the soft touch buttons on the Operator Control Screen on the Farebox. |  |  |
| 4 | Furnish an AFC System, where optional future expansion to include Mobile Ticketing validation integration is included in the Hardware /Software design. The recording and reporting of Mobile ticket usage on board the Farebox will be reported in the CMRS. |  |  |
| 5 | The AFC system shall support HID Technology, ex: iClass 2000. |  |  |
| 6 | The AFC shall reliably operate in a public transit environment under all weather conditions, cold weather to -40°F, heat to 120°F, sunlight, wind, humidity, etc. without degradation to the system. |  |  |
| 7 | The AFC shall operate on either nominal twelve-volt or twenty-four volt direct current power, and shall be interchangeable without requiring modification. |  |  |
| 8 | The AFC shall include adequate protection against transient power surges to prevent damage to electronic components. |  |  |
| 9 | The AFC shall operate without loss or modification of data caused by voltage or voltage fluctuation between zero (0) to fifty (50) volts DC, or reversal of polarity. |  |  |
| 10 | The AFC shall include provisions to eliminate electronic interference causes by lights, alternators, air conditioners, cameras, cellular data communication equipment, Wi-Fi equipment, radio communications, video systems, etc. |  |  |
| 11 | The AFC shall switch off automatically if the supply voltage exceeds tolerable levels. A loss or reinstatement of electrical power shall not result in loss or any corruption of the data in the memory. |  |  |
| 12 | The AFC shall retain all information in memory under any condition of power supply interruption or degradation. The system, including the farebox, shall be able to complete any transaction that has been started when power is lost or falls below the minimum required for operation. |  |  |
| 13 | The AFC, including the farebox, will retain full security features during any condition of interruption or degradation of input power. |  |  |
| 14 | The farebox system processer logic board shall have sufficient data storage capability to store all required data, files and programs, including all data transactions and associated fare tables and other tables, required to support seven (7) days of peak operation. |  |  |
| 15 | The farebox real-time clock shall calculate the time, date, and day of the week to the level of seconds. The clock shall automatically accommodate for Daylight Savings Time and Leap Years. |  |  |
| 16 | The clock function shall be retained and supported by a battery for a period of not less than 180-days when power is not applied to the main logic board. |  |  |
| **1.2** | **General Functions** |  |  |
| 1 | The farebox shall allow the customer to easily and rapidly insert the required fare and determine that the correct fare has been paid and signal the operator through an audible signal and through the Operator Control Unit. |  |  |
| 2 | Both the farebox and the Operator Control Unit shall display the remaining fare to be paid by the customer. |  |  |
| 3 | The AFC system shall provide visual and audio features to serve the abilities and needs of all DTA riders. The farebox shall be capable of sounding audible alerts of differing tones or automated voice to indicate, but not be limited to, the following: |  |  |
| a | •Acceptance of fare |  |  |
| b | •Rejection of fare |  |  |
| c | •Reduced fare media |  |  |
| d | •Successful log on-log off |  |  |
| e | •Successful probe and data exchange |  |  |
| f | •Instance of fare media “pass back” |  |  |
| g | •Low stock of ticket media |  |  |
| 3 | The customer information display shall conform with all applicable ADA requirements and shall be visible in all ambient light conditions within the vehicle. |  |  |
| **1.3** | **Ridership** | | |
| 1 | The new Automatic Fare Collection system **must** be capable of collecting the following rider and fare information through an approved reporting system: |  |  |
| a | * Number of riders boarding transit vehicles on each run/route and bus stop |  |  |
| b | * Location where the fare was collected. |  |  |
| c | * Payment method used (e.g. cash, pass, single use or multi-use media, smart card, mobile ticketing) |  |  |
| d | * Fare type/category of collected fares (e.g., Adult, Student, Senior, disabled, etc.) |  |  |
| e | * Time, Date and Transaction type. |  |  |
| f | * Able to record ancillary passenger services being provided such as bicycle, stroller, wheelchair, etc. |  |  |
| **1.4** | **Fare Types** | | |
| 1 | The AFC system must support fare payment by the following methods: |  |  |
| a | * Period Passes (daily, multiple day and monthly) |  |  |
| b | * Low Cost - Single use Smart Card tickets, tap cards, contactless media, paper magnetic stripe tickets, proximity cards, mobile tickets, etc. |  |  |
| c | * Smart Card – Multi-Use tickets |  |  |
| d | * Transfers (issued & validated by farebox) |  |  |
| e | * Day Passes (issued & validated by farebox) |  |  |
| f | * Coupons issued by the DTA for institutional users such as jurors, downtown merchant promotions, special organizations, etc., using custom printed card stock without magnetic stripes. |  |  |
| 2 | The AFC system must support the creation by DTA of multiple fare types (i.e. Adult, Senior, etc.) |  |  |
| **2** | **AUTOMATIC FARE COLLECTION SYSTEM** |  |  |
| **2.1** | **CASH ACCEPTANCE** |  |  |
| 1 | AFC cash vaults shall hold a minimum of 750 coins and 500 bills. |  |  |
| **2.2** | **Coin Validator** |  |  |
| 1 | The AFC system shall be able to recognize U.S. and/or Can. coins and differentiate between $0.01, $0.05, $0.10, $0.25 and $1 coins. All foreign currency and/or foreign objects shall be rejected by the farebox. |  |  |
| 2 | The coin acceptor channel shall be capable of accepting coins at a rate of eight (8) coins per second reliably and without jamming. |  |  |
| 3 | The coin validator shall correctly accept or reject 99.5% of all coins inserted into the validator on the first insertion and 99.8% on the second insertion. |  |  |
| 4 | The coin validator shall accurately count 100% of all accepted coins. |  |  |
| 5 | The system shall, at no cost to the DTA, be able to configure the coin mechanism and associated validation logic to accept, validate and count other coins within the allowable system parameters without requiring a replacement or remanufacture of the coin mechanism or make any other hardware changes. |  |  |
| 6 | The AFC system shall maintain a record of total coins processed and total coins rejected in a register transmitted to the CMS. The coin processed counter shall be easily accessible by authorized maintenance personnel, who will be able to reset the register to zero without removal of the coin validator unit from the farebox. The register shall not be reset except by this means or by removal of the coin validator unit from the farebox. |  |  |
| 7 | Coin jams should be able to be cleared and the unit restored to normal operation by corrective action external to the coin acceptance mechanism. |  |  |
| 8 | The process of clearing jammed coins will not permit access to coins that have been accepted, validated, processed and recorded by the system. |  |  |
| 9 | If an “un-jamming” system is not available, a coin by-pass mechanism shall be provided for the passage of coins to the to the secure cash area. The activation of any bypass mechanism must be done by a required deliberate action. Coins processed while the mechanism is in bypass mode will not be counted by the farebox. |  |  |
| 10 | When probed by the data collection system, a farebox with the coin bypass mechanism activated shall indicate upon probe by a unique audible or visual alarm that the bypass is activated. The alarm condition shall continue until the coin bypass is returned to normal state. |  |  |
| 11 | After probing, the farebox shall not be capable of being returned to service until the coin bypass mechanism is returned to normal state. |  |  |
| 12 | The farebox shall record and report the exact time and date when the bypass was activated and deactivated. A record of the operator activating the bypass shall also be recorded and reported. |  |  |
| **2.3** | **Bill Validator** |  |  |
| 1 | The AFC bill validator shall be able to validate and count one-dollar ($1), two-dollar ($2), five-dollar ($5), ten-dollar ($10), twenty dollar ($20) and fifty dollar ($50) U.S. banknotes currently in circulation and throughout the warranty period. All foreign currency and/or foreign objects shall be rejected by the farebox. |  |  |
| 2 | The bill validator shall handle, without jamming, deformed paper currency that is typical “street currency”, including wrinkled, torn, folded or damp currency. Folded currency or currency with tears of more than one-half inch, holes, applied tape or other foreign material, or wet currency (visible moisture) may be rejected. |  |  |
| 3 | Rejected currency must be returned to the customer via a convenient, accessible location at the original insertion or a separate location. Return or rejection of currency shall not reduce or otherwise diminish the bill validator handling rate or capacity. |  |  |
| 4 | The bill validator shall accept, validate, process, count and transport for deposit or reject currency within one (1) second from the time of activation. |  |  |
| 5 | The bill validator shall accept not less than 99.5% of all authentic U.S. currency meeting the physical conditions above after two consecutive insertions of the same bill. |  |  |
| 6 | The bill validator shall reject 100% of all inserted material that is not valid U.S. currency, is counterfeit, is non-U.S. currency, or is not of the designated currency value. |  |  |
| 7 | The bill validator shall correctly count the value of 100% of any inserted, validated and accepted bill. |  |  |
| 8 | The bill validator shall be configured to allow for insertion and transport of physically acceptable media, regardless of validity, upon operator entry of a designated control button entry. This entry shall “override” the validation criteria for the acceptance and transport of one item per entry. Acceptance and validation of a genuine or an override bill shall cause the bill to be advanced to the cash box. |  |  |
| 9 | Each instance of override shall be recorded in the onboard fare collection system transactional data. The record of override shall also include the associated operator. |  |  |
| 10 | The AFC system records shall maintain a record of total bills processed and total bills rejected in a register transmitted to the CMRS at each probe or data exchange. A convenient means shall be provided to reset the register to zero without removal of the bill processing unit. |  |  |
| **2.4** | **Transfers** | | |
| 1 | One of the most immediate needs identified by DTA is that of easy-to-use and consistent reliability of the transfer system. In the case of paper transfers, replacement stock should be straight forward |  |  |
| a | * It is also desirable that the transfer system reduce hand contact between drivers and the public |  |  |
| b | * Transfer status (indication of a valid or invalid transfer) should be provided by simple and unambiguous communications from the AFC system to both driver and rider |  |  |
| c | * It is preferable to implement a transfer system that reads, validates, and returns the transfer to the rider with accurate and visually verifiable transfer status/validity clearly printed in a tamper-proof manner |  |  |
| d | * Transfers utilizing machine-readable code – whether barcode, smart card, or otherwise – must also provide human readable verification of the validity of transfers in order to allow both rider and driver to visually verify transfer status and override any errant or malfunctioning AFC component |  |  |
| **2.5** | **Optical Processor Unit (OPU)** | | |
| 1 | The AFC shall include an Optical Processor Unit to read QR barcodes that may function as a pass (daily, weekly, monthly, rolling period), transfer, stored value, employee passes, or other fare products |  |  |
| 2 | The OPU must fully integrate with fareboxes, ticket vending machines, handheld validators (as applicable) |  |  |
| 3 | The OPU shall support the processing and reporting of revenue and ridership information utilizing QR barcodes as a fare payment and boarding instrument |  |  |
| 4 | The OPU shall process a QR barcode in not more than one (1) second. The following shall be concluded within the specified time frame: |  |  |
| a | •Initialization |  |  |
| b | •Authentication and other security processes |  |  |
| c | •Data Exchange and validation |  |  |
| d | •Display processing output result on display |  |  |
| 5 | Upon correct presentation of the barcode, the OPU shall read and verify the barcode with a 99.95% accuracy. |  |  |
| 6 | The optical smart media validator shall be removeable and replaceable, securely mounted and incorporate security measures to prevent unauthorized access to the validator unit either through keys or other methods |  |  |
| **2.6** | **Smart Cards, Smart Media Processor Unit** |  |  |
| 1 | The AFC system shall support the use of contactless and limited use Smart Card processing capabilities. Smart cards/ tickets may function as a pass (daily, weekly, monthly, rolling period), transfer, permit, stored value card, employee pass or other fare products. |  |  |
| 2 | The Smartmedia Processor Unit (SPU) shall be able to read and write to the account associated with the unique smart card/smart ticket number in the Central Management and Reporting System. |  |  |
| 3 | The SPU must be able to read and process smart cards and be fully integrated with fareboxes, ticket vending machines, point of sale devices, and optical smart card validators. |  |  |
| 4 | The SPU must support processing and reporting revenue and ridership information via a contactless smart card/ticket as a fare payment and boarding instrument. |  |  |
| 5 | The SPU must be able to support multiple protocols , including, but not limited to contactless EVM bank issued credit and debit cards in the future. At a minimum, the SPU shall have the capability to process contactless chip based media conforming to the latest standards under ISO 14443 (types A and B), ISO 15693, and ISO 18092. |  |  |
| 6 | The SPU shall read and validate smart media with an accuracy of not less than 99.95%. |  |  |
| **2.7** | **Operator Control Unit** | | |
| 1 | The Operator Control unit (OCU) must be easy and intuitive to use. The proposed system must have an OCU which utilizes a color capacitive touch screen for operator interaction with the farebox solution. The digital display must be fully programmable and include an easily readable digital display for the operator in all lighting conditions. |  |  |
| 2 | The OCU shall include a self-test sequence that may be initiated by key entry or other means that does not require unit removal or disassembly. The self-test shall adequately indicate failure of OCU key entry input, display functionality, or operating condition. The OCU display and keypad shall facilitate maintenance operations with menus and prompts. |  |  |
| 3 | The OCU shall provide adequate key designation to fully support all operating functionality of the onboard fare collection system, including, but not limited to:  Operator Log On  Route run information  Onboard fare collection system sign-on  Ridership tally and count  Issue, receive and process Smartmedia  Onboard fare collection system status and control  Operator log-off |  |  |
| 4 | The DTA is currently using Trapeze TransitMaster Mobile Data Terminals (MDT) for a single point log on using the operator’s name and badge number. The DTA requires the capability of a single point logon to the onboard fare equipment using the MDT J1708 connector. The proposer shall be responsible for all integration and interface between the MDT and the onboard fare collection system, both for the proposer equipment and operating system and the Trapeze side for TransitMaster CAD/AVL MDT, including all data transfer requirements |  |  |
| **2.8** | **Passenger Display Unit** |  |  |
| 1 | The Passenger Display Unit (PDU) must be well-lit, glare-free, and fare collection interface(s) must be easy to understand and use by the ridership. Messages must be able to support English and up to five additional languages upon request at no additional charge to the DTA. |  |  |
| 2 | The PDU must be ADA compliant and visible in all forms of ambient light conditions within the vehicle |  |  |
| **2.9** | **Farebox Installation** |  |  |
| 1 | The farebox mounting system must provide a secure, maintenance free method of affixing the farebox and associated onboard fare collection system equipment to the vehicle by making use of existing farebox mounts and tapping plates |  |  |
| 2 | The mounting fixture and farebox structure shall provide the necessary lateral stability without secondary tie downs |  |  |
| 3 | Where new installation exposes old bold holes or other damage, the Contractor shall provide necessary repairs to restore all surfaces to an acceptable condition |  |  |
| 4 | The design of the mounting system shall permit one person to unlock, disconnect and remove and reinstall the farebox from the vehicle |  |  |
| 5 | Undercarriage wiring shall be protected from road elements |  |  |
| 6 | The farebox mounting configuration shall employ the use of keyed locks or locking systems to permit quick removal and replacement of equipment. The locking fixture shall be equipped with one or more high security locks to retain the farebox |  |  |
| **2.10** | **Central Management and Reporting System (CMRS)** | | |
| 1 | The CMRS shall meet the following requirements: |  |  |
| a | * Must support data reporting, auditing, and server capacity for storage of six (6) years of history |  |  |
| b | * Shall employ data reporting capabilities that allow DTA to access, filter and create reports from data received from the new AFC equipment. Base system reports shall include: |  |  |
| 2 | Ridership and Sales/Financial Reports |  |  |
| a | * Product name and other pertinent data of Smart Cards, transfers and Passes |  |  |
| b | * Ridership categories processed by each farebox |  |  |
| c | * Partial payments accepted by vehicle operator |  |  |
| d | * Transfer/Day Pass sales performed on the vehicle using the farebox |  |  |
| 3 | Employee Performance and Equipment/System Reliability Reports |  |  |
| a | * Login report by farebox number and date/time |  |  |
| b | * Peripheral usage (i.e. bills accepted/rejected) |  |  |
| c | * Jam information (i.e. bill jams) |  |  |
| 4 | Auditing Information |  |  |
| a | * Detailed usage of override features (i.e. short fare, accept next bill, etc.) |  |  |
| b | * Number and denomination of coins accepted by each Fare box |  |  |
| c | * Number and denomination of bills accepted by each farebox |  |  |
| d | * Vault contents with associated farebox / cashbox data |  |  |
| 5 | Ridership Analysis |  |  |
| a | * Transfer usage across the fleet |  |  |
| b | * Day Pass usage across the fleet |  |  |
| c | * Pass usage across the fleet (i.e. ride-based, date-based) |  |  |
| 6 | The CMRS shall provide a system to manage and track the fare media inventory that is purchased by the DTA and: |  |  |
| a | • All fare media being sold at all locations |  |  |
| b | • Fare media being held for future use |  |  |
| c | • Fare media initialized |  |  |
| d | • Fare media currently stocked in TVMs or customer service sales locations |  |  |
| 7 | The CMRS supports an open-systems technology architecture |  |  |
| a | Access to the system databases and Application Programming Interfaces (APIs) will be provided at no additional charge, along with documentation that describes tables and data structures needed to develop any third party applications |  |  |
| 8 | The CMRS shall have authenticated and granted rights to access the CMRS through graphical user interfaces from any workstation installed on the network and authorized by the Project Manager |  |  |
| 9 | The CMRS shall permit online queries, reporting and system configuration for authorized users |  |  |
| 10 | The system shall provide system functionality and operating capability to generate and print reports, including reports separated by state for purchase and use of fare media. |  |  |
| 11 | The Proposer shall certify that the system is PCI compliant for any equipment and interfaces that connect between the CMRS, payment hub (as applicable), and the clearing house of the financial institution. Certification of compliance is a condition of final payment. |  |  |
| 12 | The system provides all software and hardware for encrypting and transmitting credit/debit card data, and is able to verify credit/debit card legitimacy and customer fund availability upon activation of electronic tickets at the discretion of the DTA |  |  |
| 13 | The system is able to provide velocity controls to protect DTA and customer from fraudulent activities |  |  |
| 14 | The CMRS shall be able to communicate with redundant servers in the event the CMRS server is offline. Redundant servers will continuously sync with primary CMRS server(s) to ensure all accounts and data between the primary and redundant servers are up to date |  |  |
| 15 | The CMRS must have the ability to “bad list” lost or stolen passes. Bad list reports must be searchable by name or pass number, date and time of listing, replacement pass number, as applicable. |  |  |
| 16 | The CMRS must have the ability to create and track invoices for institutional partners purchasing bulk passes, along with usage summaries and detailed transaction data. |  |  |
| 17 | The CMRS subsystems must be automated for on-demand back up and archiving |  |  |
| 18 | All CMRS components must be compatible with current DTA network/equipment, including the console, keyboard and accessories. |  |  |
| 19 | All data must be protected from loss, unauthorized modification, and or/disclosure |  |  |
| 20 | Provides automatic monitoring and control of all devices connected to the CMRS network |  |  |
| 21 | Upon implementation of electronic ticketing, the CMRS must provide a seamless interface with the DTA website and/or electronic ticketing application, as applicable to track and report web ticket purchases, reloading smart cards, barcode media and account registration |  |  |
| 22 | Upon implementation of electronic ticketing, the CMRS shall provide a portal for Vendor’s customer self-service functionality to perform transactions related to their account and look of historical transactions, or an interface for third party providers. |  |  |
| **2.11** | **Fare Tables** |  |  |
| 1 | The CMRS system must have a fare processor on which the fare tables will reside. The tables are defined by DTA fare policies, prices, transfer rules and policies of DTA |  |  |
| 2 | The fare processor shall be configurable for future changes |  |  |
| 3 | All hardware /software must be included with the AFC to edit and publish fare tables from the CMRS to all fare collection system devices |  |  |
| **2.12** | **Cash Handling Security and Auditing** | | |
| 1 | Cash vault receivers securely empty cash vaults removed from buses and deposit the cash in the DTA vault without requiring the cash box to be inverted |  |  |
| 2 | The receiver device shall record cash vault identification as well as date/time cash vault was emptied. Each receiver shall be able to process one cash vault every two minutes |  |  |
| **2.13** | **Statistical Reporting and Analysis** | | |
| 1 | Fare transaction records shall include the following minimum information: |  |  |
| a | * Day/date/time/location of payment |  |  |
| b | * Number and denomination of coins accepted |  |  |
| c | * Number and denomination of bills accepted |  |  |
| d | * Product type and other pertinent data of Smart Cards and passes |  |  |
| e | * Ridership categories |  |  |
| f | * Partial payments accepted by vehicle operator |  |  |
| g | * Vehicle identification |  |  |
| h | * Route/run/driver information |  |  |
| 2 | The farebox will securely and accurately record all transactional information, including sales data, operational errors, and exception conditions, ridership information and operator commands. |  |  |
| **2.14** | **Data Collection and Transfer System** | | |
| 1 | The Data Collection and Transfer system shall control, manage and facilitate bi-directional exchange of data between the onboard bus fare collection systems, TVMs, optical validators and the CMRS. |  |  |
| 2 | The Data transfer to the CMRS must support wireless probing, and must communicate with at least three fareboxes at the same time when they are within range |  |  |
| 3 | At the end of each service run, the data transfer process shall run in a batch mode process. The probing facility shall have the capability of uploading farebox configuration data supporting farebox functionality. |  |  |
| 4 | The download/upload should begin automatically when the farebox is within range of the wireless access point. No human intervention should be required to start the process. |  |  |
| 5 | A portable method shall be available, and capable of storing all information from every farebox with full transactional database records. Data shall be held in a solid state, RAM memory. |  |  |
| 6 | Average time to probe for download and upload shall not exceed 60 seconds for any given vehicle. |  |  |
| **2.15** | **Ticket Vending Machine (TVM)** |  |  |
| 1 | The selected vendor must be able to provide both full service vending machines that accepts cash and electronic payment and electronic payment only machines |  |  |
| 2 | The TVM must be able to issue smart cards and smart tickets |  |  |
| 3 | Full Service and Cashless TVMs must be able to communicate via Ethernet line |  |  |
| 4 | Full Service TVMs must be able to communicate wirelessly |  |  |
| 5 | All TVMs must be ADA compliant, and provide audio of messages and instructions as well as Braille as required |  |  |
| 6 | Must be able to vend multiple tickets within a single transaction |  |  |
| 7 | Upon implementation of account-based sales, the TVM must be able to add value to all smart media associated with a customer account, including mobile accounts |  |  |
| 8 | Upon implementation of account-based sales, the TVMs must be able to read and add trips, passes and stored value to the associated account on the Central Management System |  |  |
| 9 | Must be able to create new accounts in the Central Management System |  |  |
| 10 | Must include a surveillance camera, and a security and alarm system, as well as locking mechanisms to prevent access to fare media or cash |  |  |
| 11 | TVM must include a cyber lock and key and require encrypted codes to identify the TVM |  |  |
| 12 | Must be able to support multi language capabilities |  |  |
| 13 | TVMs must be able to process all transactions in real-time |  |  |
| 14 | Must be able to send a signal to a designated recipient for malfunctions |  |  |
| 15 | Must be able to remotely monitor and report TVM status, automatic polling for sales information, and a complete audit and accounting system |  |  |
| 16 | TVMs must be able to be remotely commanded to reset and self-diagnose, remotely modify operating parameters, and process all credit/debit card authorizations |  |  |
| 17 | TVMs must be vandal resistant, including soft keys that are not removable from the outside of the TVM |  |  |
| 18 | The TVM shall include an industrial grand, back-lit LCD display protected by a shatter resistant cover. |  |  |
| 19 | The TVM must have a reliable source of auxiliary power in the event of a power outage to ensure continuous data transmission and completion of transactions in progress |  |  |
| 20 | The TVM must be able to accept all standard U.S. bills up to twenty dollars and all coins |  |  |
| 21 | The TVM must be able to return all money deposited during a transaction that is cancelled before the sale is complete |  |  |
| 22 | The TVM bill handler must accept any new bills issued by the U.S. Treasure for a term of not less than 12 years from the date of purchase at no charge to the DTA |  |  |
| 23 | Currency must be accepted face up or face down with either end first |  |  |
| 24 | Prevent fraud by refusing to accept two bills or other schemes |  |  |
| 25 | Bill and coin slots shall be closed when not in use to prevent the introduction of liquids |  |  |
| 26 | Bill and coin validators shall reject counterfeit currency with 99.9% accuracy |  |  |
| 27 | A bill and/or a coin recirculation system is permitted to minimize maintenance and replenishing currency |  |  |
| 28 | The TVM shall be PCI, DSS and EMV compliant. Vendor is solely responsible for designing, testing and certifying PCIE compliance, including encryption and transmission hardware |  |  |
| 29 | The TVM must be able to read all credit and debit cards encoded with current applicable International Organization of Standards and EMV standards |  |  |
| 30 | The TVM must be able to read smart chip and magnetic strip debit and credit cards |  |  |
| 31 | The TVM must be able to print a receipt for all transactions |  |  |
| 32 | The TVM shall have a programmable sensor to detect levels of remaining fare media stock via the CMRS. A warning will be sent to the CMRS when the supply reaches the programmed level |  |  |
| 33 | The Respondent shall provide a list of report journals, including revenue, sales, status, diagnostics, etc. |  |  |
| **2.16** | **Point of Sale Device (POS)** |  |  |
| 1 | The POS device must be able to read and write to the account associated with the unique smart card number in the CMRS |  |  |
| 2 | The device must be able to read a QR barcode |  |  |
| 3 | The device must be able to provide the following:  Sale fare products (trip, passes, stored value, etc.)  Record personal data onto customer account  Replace smart media  Show remaining value and pass status  List up to ten past transactions and print up to three months history  Enroll customers in an automatic revalue program  Validate vouchers |  |  |
| 4 | Vendor shall provide information on the ability of the device to take a customer photograph and print on a smart card |  |  |
| 5 | Provide the ability for an “express transaction” for the most common fare product transaction |  |  |
| 6 | The device must be able to be programmed to limit the amount of value that can be added to a smart media fare card or account |  |  |
| 7 | The device must be able to provide a full audit trail for all transactions, and must be able to print a receipt |  |  |
| 8 | The device must be able to reverse transactions, and provide an audit trail of who reversed it, including time, date, and terminal ID |  |  |
| 9 | The device must be able to support discount and pro-rated transactions, and allow the authorized operator to override standard pass rates, and track and report each override |  |  |
| 10 | The device shall automatically track the media inventory and report it to the CMRS |  |  |
| 11 | The device shall be capable of responding to remote queries and commands from authorized users |  |  |
| 12 | The device shall be PCI, DSS and EMV compliant. The respondent shall be responsible for designing, testing and certifying compliance of any interfaces that connect to the device, including all encrypting hardware and software |  |  |
| 13 | The device shall have an Uninterrupted Power Source (UPS) for auxiliary power during outages |  |  |
| 14 | The device must be able to communicate through an Ethernet line automatically. A back up feature must be included to protect data in the event of component failure. |  |  |
| **3.** | **System Training** | | |
| **3.1** | **Training Program Plan** | | |
| 1 | The Onsite Training Program for DTA support staff shall consist of separate courses as described below. The training program shall not be limited to the courses listed if additional courses are required to achieve the program objectives. The training program will include a minimum of the following separate courses for: |  |  |
| a | * Farebox installation |  |  |
| b | * Farebox maintenance |  |  |
| c | * Ticket Vending Machine maintenance |  |  |
| d | * Point of Sale Maintenance |  |  |
| e | * Driver usage |  |  |
| f | * CMRS usage (System Administrator) |  |  |
| g | * CMRS usage (Reporting) |  |  |
| h | * CMRS usage (Planning) |  |  |
| i | * CMRS usage (Finance) |  |  |
| j | * The Contractor shall provide a program to train all personnel that interact with the system in all details of the fare collection system. |  |  |
| k | * This program shall include adequate documentation and training aides as needed. |  |  |
| **3.2** | **Training Deliverables** | | |
| 1 | Training deliverables shall consist of the following: |  |  |
| a | * Training Program Plan |  |  |
| b | * Training Schedule |  |  |
| c | * Training Material |  |  |
| **3.3** | **Training Material** | | |
| 1 | The Contractor shall furnish DTA with Operation and Maintenance Manuals in accordance with this section. Manuals shall cover all aspects of the furnished equipment. |  |  |
| a | * Maintenance manual for the farebox, ticket vending machine and point of sale must contain a complete description of the equipment (if applicable) and software including theory of operation, service and maintenance documentation, such that DTA skilled maintenance staff may conduct field and shop repairs with minimal reliance upon factory maintenance technicians. |  |  |
| b | * Operator/Driver manual must include a quick guide for use in the bus |  |  |
| c | * CMRS manuals must include screenshots and step by step instructions for usage. |  |  |
| **4** | **Self-Diagnostics Systems, Test Bench** | | |
| 4.1 | **Self-Diagnostics** | | |
| 1 | The AFC system shall employ self-diagnostics to the maximum extent possible to assure the highest possible availability. |  |  |
| 2 | The self-diagnostics includes an automatic alert to the user without immediately interrupting or preventing operations. |  |  |
| 3 | The AFC permits visibility into farebox in-service operations, in order to accurately determine whether a given farebox is operating correctly, and in order to better understand root causes for various maintenance problems. |  |  |
| 4 | The AFC system can defer service or repair of a malfunctioning farebox to at least the end of the scheduled route. |  |  |
| 5 | Maintenance trends and patterns of usage are reportable in the CMRS to assist with maintenance planning. |  |  |
| 6 | All fareboxes shall operate off of the DC current available on vehicles. |  |  |
| **4.2** | **Test Bench** | | |
| 1 | Appropriate test bench equipment shall be itemized and priced separately in the Proposal. In order to maximize effectiveness and efficiency of the maintenance program, the test bench equipment shall be sufficient to conduct comprehensive in-house testing, service validation, and repair over the entire service life of the AFC equipment. |  |  |
| 2 | Contractor shall provide test bench containing all provisions necessary to communicate with the CMRS computer and simulate the AFC installed in the field and shall be used to troubleshoot integral machine faults in a controlled environment and to test AFC modifications prior to full implementation of such modifications. |  |  |
| **5** | **Spare Parts, Service Life** | | |
| **5.1** | **Spare Parts** | | |
| 1 | Proposer shall provide an itemized list of proposed spare parts and costs.  Additionally, the Contractor shall disclose component-level service life expectancies for spare-parts planning and budgeting requirements. |  |  |
| 2 | Replacement parts are modular so that DTA staff can may conduct low-level field repairs or various component swap-outs. |  |  |
| **6** | **IMPLEMENTATION** | | |
| **6.1** | **Installation Plan** | | |
|  | The Contractor shall supply a complete Installation Plan that tests and confirms:  Ease of passenger movement/access  Operator ergonomics  ADA compliance |  |  |
| **7** | **Acceptance Plan** |  |  |
| 7.1 | Acceptance Plan details system testing requirements, including required National Transit Database reporting requirements. |  |  |
| **8** | **Service Technical Support** |  |  |
| **8.1** | **Service Support** | | |
| 1 | The Contractor shall have qualified technical support staff available to assist DTA by telephone and email during standard business hours 8:00 a.m. through 5:00 p.m. CST or CDT as applicable, Monday through Friday. |  |  |
| 2 | Service support shall be supplied by the Contractor for the life of the system. No third party service support will be accepted without the advance written permission of the DTA General Manager. |  |  |
| 3 | DTA support staff shall be trained to troubleshoot basic areas of repair and technical concerns. The Contractor shall have a support staff adequately trained to diagnose and resolve all areas of repair and technical concerns. |  |  |