UTA IT HARDWARE, SOFTWARE AND ASSOCIATED SERVICES SUPPLY AGREEMENT
UTA CONTRACT 22-03566 NextGen Electronic Fare Collection System

THIS IT HARDWARE, SOFTWARE AND ASSOCIATED SERVICES SUPPLY AGREEMENT ("Contract") is entered into and made effective as of the date of last signature below. ("Effective Date") by and between UTAH TRANSIT AUTHORITY, a public transit district organized under the laws of the State of Utah ("UTA"), and SCHEIDT & BACHMANN USA INC. (the "Contractor"), together the "Parties."

<u>RECITALS</u>

WHEREAS, on JULY 12, 2022, UTA received competitive proposals to provide a NEXT GENERATION ELECTRONIC FARE COLLECTION FARE SYSTEM and associated hardware, software, tools, installation services, commissioning and testing services, training and documentation, interim managed services, and ongoing managed services (the "Hardware, Software, and Services") in response to the terms, conditions and specifications prepared by UTA in RFP 22-03566RW (the "RFP"); and

WHEREAS, UTA wishes to procure the Hardware, Software and Services according to the terms, conditions and specifications listed in the RFP (as subsequently amended through negotiation by the Parties); and

WHEREAS, the UTA EFC RFP 22-03566RW SB 071122 FINAL proposal submitted by the Contractor in response to the RFP ("Contractor's Proposal) was deemed to be the most advantageous to UTA; and

WHEREAS, Contractor is willing to furnish the Hardware, Software and Services according to the terms, conditions and specifications of the Contract.

<u>AGREEMENT</u>

NOW, THEREFORE, in accordance with the foregoing Recitals, which are incorporated herein by reference, and for and in consideration of the mutual covenants and agreements hereafter set forth, the mutual benefits to the Parties to be derived here from, and for other valuable consideration, the receipt and sufficiency of which the parties acknowledge, it is hereby agreed as follows:

1. **HARDWARE, SOFTWARE, AND SERVICES TO BE PROVIDED BY CONTRACTOR**

Contractor hereby agrees to furnish and deliver the Hardware, Software, and Services in accordance with the Contract as described in the Contract Exhibits.

2. **TERM** This Contract shall commence as of the Effective Date of the Contract which will be the date of UTA recording final board approval and execution of the Contract. The Contract shall remain in full force and effect for purchases of Hardware, Software, and Services (made via purchase order or other agreed order method, which terms of such method of purchases will in no way or manner conflict or supersede the terms of the Contract unless the Parties mutually agree to such modifications and superseding terms by written agreement.

The Term of the Contract will consist of multiple phases beginning with the initial 3-year supply and deployment period followed by the 5-year post-deployment services period. The overall

period of performance for supply and sustainment shall not extend beyond Eight (8) years from the Effective Date of the Contract without a bilateral amendment. The Contract may be further extended if the Contractor and UTA mutually agree to an extension evidenced in writing. The rights and obligations of UTA and Contractor under the Contract shall at all times be subject to and conditioned upon the provisions of the Contract. Notice to Proceed with the work in accordance with the Exhibit C, High Level Phased Plan Approach will begin on the date defined in the Notice to Proceed letter.

3. **COMPENSATION AND FEES**

UTA shall pay Contractor in accordance with the payment milestones or other terms described in Exhibit B. If Exhibit B does not specify any milestones or other payment provisions, then payment shall be invoiced after the Hardware, and/or Software have been delivered and the Services have been performed. In no event shall advance payments be made.

4. **ORDER OF PRECEDENCE**

The Order of Precedence for this Contract is as follows:

a. Change Orders and / or Amendments to the Contract and its Appendices and Exhibits but only to the extent of the particular modified language;
b. The Contract inclusive of the FTA Terms;
c. The Contract Exhibit D- Contractor's Software License
d. The Contract Exhibit A- Statement of Work for Integrated System for Collecting Fares. The Parties acknowledge and agree that part or all of Exhibit A may be modified by the Parties during the term therefore, the most recent document or version will take precedence over any conflicting provisions contained in prior documents or versions (where applicable);
e. The Contract Exhibit B- Pricing;
f. The Contract Exhibit C- High Level Phased Plan Approach
g. The Contract Exhibit E- Service Level Agreement (the, "SLA")

The Contract (including the documents listed above) constitutes the complete contract between the Parties.

Exhibit E will be delivered as part of Exhibit A, Phase 1 (the, "SLA"). The fully definitized Service Level Agreement shall be added to the contract by change order and included as Exhibit E and shall have an Order of Precedence designation that comes directly after the Contract at the expiration of Exhibit A and above Exhibits A, B, and C.

5. **LAWS AND REGULATIONS**

Contractor and any and all Hardware and/or Software and/or Services furnished under the Contract will comply fully with all applicable Federal and State laws and regulations, including those related to safety and environmental protection that prevail as of the Effective Date of the Contract. Contractor shall also comply with all applicable licensure and certification requirements as of the Effective Date of the Contract.

6. **INVOICING PROCEDURES**

a.   Contractor shall submit invoices to UTA's Project Manager for processing and payment in accordance with the payment milestones of Exhibit B, Pricing. Invoices shall be provided in the form specified by UTA in Clause 6(b), herein. Reasonable supporting documentation including cost and pricing data demonstrating Contractor's entitlement to the requested payment must be submitted with each invoice.

b.   Contractor shall submit invoices to ap@rideuta.com for processing and payment. In order to timely process invoices, Contractor shall include the following information on each invoice:

  i.   Contractor Name
  ii.   Unique Invoice Number
  iii.   PO Number
  iv.   Invoice Date
  v.   Detailed Description of Charges
  vi.   Total Dollar Amount Due

c.   UTA shall have the right to disapprove (and withhold from payment) specific line items of each invoice to address the Contractor's failure to deliver the Hardware, Software, or Services in accordance with the terms of the Contract so long as they are specifically related to the Payment Milestone that is the subject of the particular invoice. . Approval by UTA shall not be unreasonably withheld. UTA shall also have the right to offset (against payments) amounts reasonably reflecting the value of any claim which UTA has against Contractor under the Contract, only in an instance where the UTA has followed any applicable notice, claim, or dispute resolution procedures defined in the Contract and the UTA is not partially or solely responsible for the underlying circumstance(s) giving rise to the claim. Payment for all invoice amounts not specifically disapproved or offset by UTA shall be provided to Contractor within thirty (30) calendar days of invoice submittal.

d.   Invoices must include a unique invoice number, UTA's Purchase Order number, a description of the Good or Service provided, line-item pricing, total amount due, and must be submitted electronically to ap@rideuta.com.

7. **WARRANTY OF HARDWARE, SOFTWARE, AND SERVICES**

a. Subject to the Contractor's Software License and the Exhibits to the Contract, Contract the Contractor warrants -that all software (including firmware, and/or software products that it licenses), hardware, and affiliated services shall conform to the specifications, drawings, standards, samples, and other descriptions made a part of (or incorporated by reference into) the Contract. Contractor further warrants that all Software and Services shall be of the quality specified, or of the best grade if no quality is specified, and, unless otherwise provided in the Contract, will be new, and free from defects in design, materials and workmanship.

b. Contractor warrants that all Hardware, Software, and Services shall be in compliance with applicable federal, state, and local laws and regulations that are in effect as of the Effective Date of this Contract including, without limitation, those related to safety and environmental protection.

c. The terms for warranty are as set-out and defined in Exhibit A.

d. Subject to the Contractor's duty to cure or remediate in accordance with the terms as otherwise provided for in the Contract, if the Contractor fails to promptly cure or make any repair, replacement or re-performance as required herein, UTA may conduct the necessary remedial work at Contractor's expense and the Contractor cannot void the terms of the warranty defined in Exhibit A for repair or re-performance performed under these circumstances. Provided that such cure, repair, replacement or re-performance is conducted in a reasonable manner and with workmanship and care consistent with industry standards, Contractor shall reimburse UTA for the reasonable cost of any Exhibit A described repair, replacement or re-performance self-performed by UTA. Notwithstanding the foregoing, if the UTA is partially or solely responsible for the underlying cause requiring the cure, repair, replacement, or re-performance, then it is not entitled to the remedies under this subsection and the Parties agree to engage in the resolution and claim procedures defined in this Contract.

e. Contractor (seller) acknowledges that all warranties granted to the buyer by the Uniform Commercial Code of the State of Utah apply to the Contract. Nothing in this Section 7 will be construed to limit any rights or remedies UTA may otherwise have under the Contract.

8. **OWNERSHIP OF DESIGNS, DRAWINGS, AND WORK PRODUCT**

Subject to the terms of the Contractor's Software License, confidential information, or intellectual property rights contained in this Contract, the applicable deliverables prepared or developed pursuant to the Contract including without limitation drawings, specifications, manuals, calculations, maps, sketches, designs, tracings, notes, reports, data, software, computer programs, models and samples, shall become the property of or licensed for use to the UTA, and, together with any documents or information furnished to Contractor and its employees or agents by UTA hereunder, shall be delivered to UTA as defined in this Contract and its Exhibits. Subject to the terms of the Contractor's Software License or Patents and any

intellectual property, trade secret, or confidentiality provisions contained in this Contract, in the event of termination or Final System Acceptance of the Hardware, Software, and Services, the Contractor will deposit applicable deliverables into escrow and UTA shall have the rights to use and reproduce said items.

To the extent that any deliverables include or incorporate preexisting intellectual property of Contractor, Contractor hereby grants UTA a fully paid, perpetual license to use such intellectual property for UTA's operation and maintenance of the Hardware, Software, and Services under the terms of the Contractor's Software License. s The scope of the Contractor's Software License shall be to the fullest extent necessary to accomplish those purposes, including the right to share same with UTA's contractors, agent, officers, directors, employees, joint owners, affiliates and contractors, subject to the UTA entering into an NDA with the entity it wishes to share the licensed materials with if such entity is not directly employed or falls under the corporate charter of the UTA. The NDA must specifically identify that the shared materials are the intellectual property and / or confidential information of the Contractor or its third parties, and the UTA's third party may only use the materials for a limited, identified purpose that does not violate the terms of the Contractor's Software License.

9. **GENERAL INDEMNIFICATION**

Contractor shall indemnify, hold harmless and defend UTA, its officers, trustees, agents, and employees (hereinafter collectively referred to as "Indemnitees") from and against all liabilities, claims, actions, damages, losses, and expenses including without limitation reasonable attorneys' fees and costs (hereinafter referred to collectively as "claims") related to bodily injury, including death, or loss or damage to tangible or intangible property caused, or alleged to be caused, in whole or in part, by the acts or omissions of Contractor or any of its owners, officers, directors, agents, employees or subcontractors. This indemnity includes any claim or amount arising out of the failure of such Contractor to conform to federal, state, and local laws and regulations in place as of the Effective Date of the Contract or as otherwise mutually agreed to by the Parties by amendment or change order to the Contract terms. If an employee of Contractor, a subcontractor, anyone employed directly or indirectly by any of them or anyone for whose acts any of them may be liable brings a claim against UTA or another Indemnitee, Contractor's indemnity obligation set forth above will not be limited by any limitation on the amount of damages, compensation or benefits payable under any employee benefit acts, including workers' compensation or disability acts. The indemnity obligations of Contractor shall not apply to the extent that claims arise out of the negligence of UTA and its third parties or the Indemnitees to the extent such negligence is determined to be the underlying cause of the claims.

Notwithstanding the foregoing, the Parties acknowledge and agree that the Contractor's liability arising out of its indemnification obligations and / or damages stemming from its actions or omissions under this Contract, will be limited as follows, individually: 1) one hundred percent (100%) of the Total Pricing for Phases 1-4 ("Initial Costs"); and one hundred percent (100%) of

the Total Pricing for the post-deployment services period, inclusive of payments of any Service Level Credits as part of the post-deployment services period ("Fixed Ongoing Costs") and 2) Consequential damages and loss of revenue will be excluded from liability. The Parties further agree that this limitation of liability will not extend to instances where the Contractor's actions or omissions have caused injury or death (including third parties) or if the Contractor has been proven (by a court of competent jurisdiction) to have acted willfully fraudulent or with wanton recklessness.

10. **INSURANCE REQUIREMENTS**

The insurance requirements herein are minimum requirements for this Contract and in no way limit the indemnity covenants contained in this Contract. The Utah Transit Authority in no way warrants that the minimum limits contained herein are sufficient to protect the Contractor from liabilities that might arise out of the performance of the work under this contract by the Contractor, his agents, representatives, employees or subcontractors and Contractor is free to purchase additional insurance as may be determined necessary.

A. MINIMUM SCOPE AND LIMITS OF INSURANCE: Contractor shall provide coverage with limits of liability not less than those Stated below. An excess liability policy or umbrella liability policy may be used to meet the minimum liability requirements provided that the coverage is written on a "following form" basis.

1. Commercial General Liability – Occurrence Form

   Policy shall include bodily injury, property damage and broad form contractual liability coverage.

   - General Aggregate $4,000,000

   - Products – Completed Operations Aggregate $1,000,000

   - Personal and Advertising Injury $1,000,000

   - Each Occurrence $2,000,000

   a. The policy shall be endorsed to include the following additional insured language: "The Utah Transit Authority shall be named as an additional insured with respect to liability arising out of the activities performed by, or on behalf of the Contractor".

2. Automobile Liability

   Bodily Injury and Property Damage for any owned, hired, and non-owned vehicles used in the performance of this Contract.

   Combined Single Limit (CSL) $2,000,000

   a. The policy shall be endorsed to include the following additional insured language: "The Utah Transit Authority shall be named as an additional insured with respect to liability arising out of the activities performed by, or on behalf of the Contractor, including automobiles owned, leased, hired or borrowed by the Contractor".

3. Worker's Compensation and Employers' Liability

Workers' Compensation	Statutory

   Employers' Liability

Each Accident	$100,000
Disease – Each Employee	$100,000
Disease – Policy Limit	$500,000

   b. This requirement shall not apply when a contractor or subcontractor is exempt under UCA 34A-2-103, AND when such contractor or subcontractor executes the appropriate waiver form.

4. Professional Liability (Errors and Omissions Liability)

   The policy shall cover professional misconduct or lack of ordinary skill for those positions defined in the Exhibit A of this contract.

Each Claim	$1,000,000
Annual Aggregate	$2,000,000

   a. In the event that the professional liability insurance required by this Contract is written on a claims-made basis, Contractor warrants that any retroactive date under the policy shall precede the effective date of this Contract; and that either continuous coverage will be maintained or an extended discovery period will be

exercised for a period of three (3) years beginning at the time work under this Contract is completed.

5. Railroad Protective Liability Insurance (RRPLI) – Remove this section if not applicable

During construction and maintenance within fifty (50) feet of an active railroad track, including but not limited to installation, repair or removal of facilities, equipment, services or materials, the Licensee and/or Licensee's Contractor must maintain "Railroad Protective Liability" insurance on behalf of UTA only as named insured, with a limit of not less than $2,000,000 per occurrence and an aggregate of $6,000,000.

If the Licensee and/or Licensee's Contractor is not enrolling for this coverage under UTA's blanket RRPLI program, the policy provided must have the definition of "JOB LOCATION" AND "WORK" on the declaration page of the policy shall refer to this Agreement and shall describe all WORK or OPERATIONS performed under this Agreement.

Notwithstanding the foregoing, the UTA will add the Contractor to the UTA's RRPLI coverage for a sum not to exceed six hundred dollars ($600.00 USD).

B. ADDITIONAL INSURANCE REQUIREMENTS: The policies shall include, or be endorsed to include, the following provisions:

1. On insurance policies where the Utah Transit Authority is named as an additional insured, the Utah Transit Authority shall be an additional insured to the full limits of liability purchased by the Contractor. Insurance limits indicated in this agreement are minimum limits. Larger limits may be indicated after the contractor's assessment of the exposure for this contract; for their own protection and the protection of UTA.

2. The Contractor's insurance coverage shall be primary insurance and non-contributory with respect to all other available sources.

3. Policy shall contain a waiver of subrogation against the Utah Transit Authority.

C. NOTICE OF CANCELLATION: Each insurance policy required by the insurance provisions of this Contract shall provide the required coverage and shall not be suspended, voided or canceled except after thirty (30) days prior written notice has been given to the Utah Transit Authority, except when cancellation is for non-payment of premium, then ten (10) days prior notice may be given. Such notice shall be sent directly to (Utah Transit Authority

agency Representative's Name & Address).

D. ACCEPTABILITY OF INSURERS: Insurance is to be placed with insurers duly licensed or authorized to do business in the State and with an "A.M. Best" rating of not less than A-VII. The Utah Transit Authority in no way warrants that the above-required minimum insurer rating is sufficient to protect the Contractor from potential insurer insolvency.

E. VERIFICATION OF COVERAGE: Contractor shall furnish the Utah Transit Authority with certificates of insurance (on standard ACORD form) as required by this Contract. The certificates for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf.

All certificates and any required endorsements are to be sent to insurancecerts@rideuta.com and received and approved by the Utah Transit Authority before work commences. Each insurance policy required by this Contract must be in effect at or prior to commencement of work under this Contract and remain in effect for the duration of the project. Failure to maintain the insurance policies as required by this Contract or to provide evidence of renewal is a material breach of contract.

All certificates required by this Contract shall be emailed directly to Utah Transit Authority's insurance email address at insurancecerts@rideuta.com. The Utah Transit Authority project/contract number and project description shall be noted on the certificate of insurance. The Utah Transit Authority reserves the right to require complete, certified copies of all insurance policies required by this Contract at any time. DO NOT SEND CERTIFICATES OF INSURANCE TO THE UTAH TRANSIT AUTHORITY'S CLAIMS AND INSURANCE DEPARTMENT.

F. SUBCONTRACTORS: Contractors' certificate(s) shall include all subcontractors as additional insureds under its policies or subcontractors shall maintain separate insurance as determined by the Contractor, however, subcontractor's limits of liability shall not be less than $1,000,000 per occurrence / $2,000,000 aggregate. Sub-contractors maintaining separate insurance shall name Utah Transit Authority as an additional insured on their policy. Blanket additional insured endorsements are not acceptable from sub-contractors. Utah Transit Authority must be scheduled as an additional insured on any sub-contractor policies.

G. APPROVAL: Any modification or variation from the insurance requirements in this Contract

shall be made by Claims and Insurance Department or the UTA Legal Services, whose decision shall be final. Such action will not require a formal Contract amendment, but may be made by administrative action.

11. **OTHER INDEMNITIES**

    a. Contractor shall: (i) protect, release, defend, indemnify and hold harmless UTA and the other Indemnitees against and from any and all liens or claims made or filed against UTA on account of any Hardware, Software, or Services furnished by subcontractors of any tier; and (ii) keep UTA property free and clear of all liens or claims arising in conjunction with any Hardware, Software, or Services furnished under the Contract by Contractor or its subcontractors of any tier. If any lien arising out of the Contract is filed in conjunction with any Hardware, Software, or Services furnished under the Contract, Contractor, within ten (10) calendar days (or some other period of time mutually agreed to in writing by and between the lienholder and the UTA and / or the Contractor) after receiving from UTA written notice of such lien, shall obtain a release of or otherwise satisfy such lien. If Contractor fails to do so, UTA may take such steps and make such reasonable expenditures it deems advisable to obtain a release of or otherwise satisfy any such lien or liens, and Contractor shall upon demand reimburse UTA for all costs incurred and expenditures made by UTA in obtaining such release or satisfaction. If any non-payment claim is made directly against UTA arising out of non-payment to any subcontractor, Contractor shall assume the defense of such claim within ten (10) calendar days after receiving from UTA written notice of such claim. If Contractor fails to do so, Contractor shall upon demand reimburse UTA for all reasonable costs incurred and expenditures made by UTA to satisfy such claim.

12. **INDEPENDENT CONTRACTOR**

    The parties agree that Contractor, in the carrying out of its duties hereunder, is an independent contractor and that neither Contractor nor any of its employees is or are agents, servants or employees of UTA. Neither Contractor nor any of Contractor's employees shall be eligible for any workers compensation insurance, pension, health coverage, or fringe benefits which apply to UTA's employees. Neither federal, state, nor local income tax nor payroll tax of any kind shall be withheld or paid by UTA on behalf of Contractor or the employees of Contractor. Contractor acknowledges that it shall be solely responsible for payment of all payrolls, income and other taxes generally applicable to independent contractors.

13. **STANDARD OF CARE.**

    Contractor shall perform any Services to be provided under the Contract in a good and workmanlike manner, using at least that standard of care, skill and judgment which can

reasonably be expected from similarly situated independent contractors (including, as applicable, professional standards of care).

14. **USE OF SUBCONTRACTORS**

    a. Contractor shall give advance written notification to UTA of any proposed subcontract (not indicated in Contractor's Proposal) negotiated with respect to the work. UTA shall have the right to approve all subcontractors, such approval not to be withheld unreasonably.

    b. No subsequent change, removal or substitution shall be made with respect to any such subcontractor without the prior written approval of UTA.

    c. Contractor shall be solely responsible for making payments to subcontractors, and such payments shall be made within thirty (30) days after Contractor receives corresponding payments from UTA.

    d. Contractor shall be responsible for and direct all work performed by subcontractors.

    e. Contractor agrees that no subcontracts shall provide for payment on a cost-plus-percentage-of-cost basis. Contractor further agrees that all subcontracts shall comply with all applicable laws

15. **CONTRACTOR SAFETY COMPLIANCE**

    UTA follows ISO 14001 for Environmental Management Systems, ISO 9001 Quality and Performance Management, and OSHAS 18001 safety Systems. Contractor, including its employees, subcontractors, authorized agents, and representatives, shall comply with all UTA and industry safety standards, NATE, OSHA, EPA and all other State and Federal regulations, rules and guidelines pertaining to safety, environmental Management and will be solely responsible for any fines, citations or penalties it may receive or cause UTA to receive pursuant to this Contract. Each employee, contractor and subcontractor must be trained in UTA EMS and Safety Management principles. Contractor acknowledges that its Hardware, Software, and Services might affect UTA's Environmental Management Systems obligations as of the Effective Date of the Contract. A partial list of activities, products or Services deemed as have a potential EMS effect is available at the UTA website www.rideuta.com. Upon request by UTA, Contractor shall complete and return a *Contractor Activity Checklist*. If UTA determines that the Hardware and/or Software and/or Services under the Contract has the potential to impact the environment, UTA may require Contractor to submit additional environmental documents. Contractor shall provide one set of the appropriate safety data sheet(s) (SDS) and container label(s) upon delivery of a hazardous material to UTA

16. **ASSIGNMENT OF CONTRACT**

    Contractor shall not assign any of its rights or responsibilities, nor delegate its obligations, under this Contract or any part hereof without the prior written consent of UTA, and any

attempted transfer in violation of this restriction shall be void.

17. **ENVIRONMENTAL RESPONSIBILITY**

UTA follows ISO 14001 Environmental Management System (EMS). . Contractor acknowledges that its Hardware, Software and/or Services might affect UTA's ability to maintain the obligation of the EMS. A partial list of activities, products or Services deemed as have a potential EMS effect is available at the UTA website www.rideuta.com. Upon request by UTA, Contractor shall complete and return a *Contractor Activity Checklist*. If UTA determines that the Hardware, Software and/or Services under the Contract has the potential to impact the environment, UTA may require Contractor to submit additional environmental documents. Contractor shall provide one set of the appropriate safety data sheet(s) (SDS) and container label(s) upon delivery of a hazardous material to UTA.

18. **SUSPENSION OF WORK**

a.   UTA may, at any time, by written order to Contractor, require Contractor to suspend, delay, or interrupt all or any part of the work called for by this Contract. Any such order shall be specifically identified as a "Suspension of Work Order" issued pursuant to this Article and provide the effective date of the Suspension of Work Order, the expected length of time for the Suspension of Work, and the specific work that is suspended under the order. Upon receipt of such an order, Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of further costs allocable to the work covered by the order during the period of work stoppage.

b.   If a Suspension of Work Order issued under this Article is canceled, Contractor shall resume work as mutually agreed to in writing by the Parties hereto. The Contractor's reasonable costs and schedule impacts of this Contract will be submitted as a Change Order to this Contract.

c.   If a Suspension of Work Order is not canceled or the Suspension of Work Order exceeds one-hundred and twenty-days (120) from the effective date of the order, then the work covered by such order is terminated for the convenience of UTA, with the Contractor's reasonable costs determined in accordance with the Termination for Convenience provisions of this Contract.

d.   If the Suspension of Work Order causes an increase in Contractor's cost or time to perform the work, UTA's Project Manager or designee shall make an equitable adjustment to compensate Contractor for the additional costs or time, and modify this Contract by Change Order.

19. <u>TERMINATION</u>

a. <u>**FOR CONVENIENCE**</u>: UTA shall have the right to terminate the Contract at any time by providing written notice to Contractor. If the Contract is terminated for convenience, UTA shall pay Contractor: (i) in full for Hardware, Software, and / or Services that have been performed, delivered, or accepted by the UTA prior to the effective date of termination; and (ii) an equitable amount to reflect costs incurred (including Contract close-out and subcontractor termination costs that cannot be reasonably mitigated) and profit on work-in-progress, delivered, or accepted as of to the effective date of the termination notice. UTA shall not be responsible for anticipated profits based on the terminated portion of the Contract. Contractor shall promptly submit a termination claim to UTA. If Contractor has any property in its possession belonging to UTA, Contractor will account for the same, and dispose of it in the manner UTA directs.

b. <u>**FOR DEFAULT:**</u> If Contractor (a) becomes insolvent; (b) files a petition under any chapter of the bankruptcy laws or is the subject of an involuntary petition; (c) makes a general assignment for the benefit of its creditors; (d) has a receiver appointed; (e) should fail to make prompt payment to any subcontractors or suppliers; or (f) fails to comply with any of its material obligations under the Contract, UTA may, in its discretion, after first giving Contractor thirty (30) days (or any additional time that the Parties may mutually agree to) written notice to cure or provide a plan to cure such default:

1. Terminate the Contract (in whole or in part) for default and obtain the Hardware, Software, and Services using other contractors or UTA's own forces, in which event Contractor shall be liable for all incremental, reasonable costs so incurred by UTA;

2. Pursue other remedies available under the Contract (regardless of whether the termination remedy is invoked); and/or

3. Except to the extent limited by the Contract, pursue other remedies available at law.

c. <u>**CONTRACTOR'S POST TERMINATION OBLIGATIONS:**</u> Upon receipt of a termination notice as provided above, Contractor shall (i) immediately discontinue all work affected (unless the notice directs otherwise); and (ii) subject to the terms of this Contract and its Exhibits, deliver to UTA all data, drawings and other deliverables after the UTA has paid the Contractor, in full, for such materials or deliverables as may be identified in invoices submitted by the Contractor to the UTA.. Contractor shall also remit a final invoice for all services performed and expenses incurred in full accordance with the terms and conditions of the Contract up to the effective date of termination. UTA shall calculate the reasonable termination damages payable under the Contract. Solely in the event of a Termination of Default, UTA shall offset such reasonably calculated damages against Contractor's final invoice, and shall invoice Contractor for any additional reasonable amounts payable by Contractor (to the extent the reasonable termination damages exceed the invoice). The Parties acknowledge and agree that if the Parties cannot mutually agree on the termination damages and / or offsets applied by UTA, then the Parties will

utilize the dispute provisions of this Contract to resolve the disagreement. All rights and remedies provided in this Article are cumulative and not exclusive. If UTA terminates the Contract for any reason, Contractor shall remain available, for a period not exceeding ninety (90) days, to UTA to respond to any questions or concerns that UTA may have regarding the Hardware, Software, and Services furnished by Contractor prior to termination However, the Contractor is not required to perform services that had been envisaged under this Contract including, but not limited to, the provision of root cause analysis, patches, fixes, debugging, repair service, defect remediation, or ongoing maintenance services unless the Parties mutually agreed to such services in writing.

20. **CHANGES**

    a. UTA's Project Manager or designee may, at any time, by written order designated or indicated to be a Change Order, direct changes in the work including, but not limited to, changes:

        1. In the Exhibit A;

        2. In the method or manner of performance of the work; or

        3. In the schedule or completion dates, including but not limited to those defined in Exhibit C].

    To the extent that any change in work directed by UTA causes an actual and demonstrable impact to: (i) Contractor's cost of performing the work; or (ii) the time required for the work, then (in either case) the Change Order shall include an equitable adjustment to this Contract to make Contractor whole with respect to the impacts of such change.

    b. A change in the work may only be directed by UTA through a written Change Order or (alternatively) UTA's expressed, written authorization directing Contractor to proceed pending negotiation of a Change Order. Any changes to this Contract undertaken by Contractor without such written authority shall be at Contractor's sole risk. Contractor shall not be entitled to rely on any other manner or method of direction.

    c. Contractor shall also be entitled to an equitable adjustment to address the actual and demonstrable impacts of "constructive" changes in the Work if: (i) subsequent to the Effective Date of this Contract, there is a material change with respect to any requirement set forth in this Contract; or (ii) other conditions exist or actions are taken by UTA which materially modify the magnitude, character or complexity of the work from what should have been reasonably assumed by Contractor based on the information included in (or referenced by) this Contract. In order to be eligible for equitable relief for "constructive" changes in work, Contractor must give UTA's Project Manager or designee written notice stating:

        1. The date, circumstances, and source of the change; and

2.   That Contractor regards the identified item as a change in work giving rise to an adjustment in this Contract.

Contractor must provide notice of a "constructive" change and assert its right to an equitable adjustment under this Section within ten (10) days after Contractor becomes aware (or reasonably should have become aware) of the facts and circumstances giving rise to the "constructive" change. Contractor's failure to provide timely written notice as provided above shall constitute a waiver of Contractor's rights with respect to such claim.

d.   As soon as practicable, but in no event longer than 30 days after providing notice, Contractor must provide UTA with information and documentation reasonably demonstrating the actual cost and schedule impacts associated with any change in work. Equitable adjustments will be made via Change Order. Any dispute regarding the Contractor's entitlement to an equitable adjustment (or the extent of any such equitable adjustment) shall be resolved in accordance with Article 28 of this Contract.

21. **INFORMATION, RECORDS and REPORTS; AUDIT RIGHTS**

Contractor shall retain all books, papers, documents, accounting records and other evidence to support any cost-based billings allowable under Exhibit B (or any other provision of the Contract). Such records shall include, without limitation, time sheets and other cost documentation related to the performance of labor services, as well as subcontracts, purchase orders, other contract documents, invoices, receipts or other documentation supporting non-labor costs. Contractor shall also retain other books and records related to the performance, quality or management of the Contract and/or Contractor's compliance with the Contract. Records shall be retained by Contractor for a period of at least six (6) years of Final System Acceptance, or until any audit initiated within that six-year period has been completed (whichever is later). During this six-year period, such records shall be made available at all reasonable times for audit and inspection by UTA and other authorized auditing parties including, but not limited to, the Federal Transit Administration. Copies of requested records shall be furnished to UTA or designated audit parties upon request. Contractor agrees that it shall flow-down (as a matter of written contract) these records requirements to all subcontractors utilized in the performance of the Contract at any tier.

22. **FINDINGS CONFIDENTIAL**

Any documents, reports, information, or other data and materials delivered or made available to or prepared or assembled by Contractor or subcontractor under this Contract are considered confidential and shall not be made available to any person, organization, or entity by Contractor without consent in writing from UTA. (the, "Confidential Information"). If Confidential Information is released to any third party without UTA's written consent as described above, contractor shall notify UTA of the data breach within 10 days and provide its plan for immediate mitigation of the breach for review and approval by UTA.

a. It is hereby agreed that the following information is not considered to be Confidential Information:

1. Documents, reports, information, or other data and material already in the public domain;

2. Documents, reports, information, or other data and material disclosed to Contractor by a third party and / or their third parties who are not under a confidentiality obligation or such information is considered the confidential material, intellectual property, or trade secret of the third party or their third parties;

3. Documents, reports, information, or other data and material developed by or in the custody of Contractor before entering into this Contract;

4. Documents, reports, information, or other data and material developed by Contractor through its work with other clients; and

5. Documents, reports, information, or other data and material that are considered the confidential materials, intellectual property, or trade secrets of the Contractor; and

6. Information required to be disclosed by law or regulation including, but not limited to, subpoena, court order or administrative order.

23. **PUBLIC INFORMATION.**

Contractor acknowledges that the Contract and related materials (invoices, orders, etc.) will be public documents under the Utah Government Records Access and Management Act (GRAMA). Contractor's response to the solicitation for the Contract will also be a public document subject to GRAMA, except for legitimate trade secrets, so long as such trade secrets were properly designated in accordance with terms of the solicitation. Notwithstanding the foregoing, the Contractor, as part of its obligations under this Contract, may share, deliver, or disclose Contractor confidential information, intellectual property, or trade secrets with the UTA and its third parties and any such information will be considered trade secrets under this Section 23 irrespective if they are identified as such or a reasonable person would consider it to be a trade secret even though they were not shared, delivered, or disclosed during the solicitation period. The UTA will promptly notify the Contractor of any GRAMA request with respect to either Party's performance under this Contract or the UTA's solicitation, and allow the Contractor adequate time to respond to the request.

24. **PROJECT MANAGER**

UTA's Project Manager for the Contract is JERRY VAN WIE, or designee. All questions and correspondence relating to the technical aspects of the Contract should be directed to UTA's Project Manager at UTA offices located at 669 West 200 South, Salt Lake City, Utah 84101, office phone (801)287-2436 or gvanwie@rideuta.com

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25. <u>CONTRACT ADMINISTRATOR</u>

UTA's Contract Administrator for the Contract is CHAD GONZALES, or designee. All questions and correspondence relating to the contractual aspects of the Contract should be directed to UTA's Grants & Contracts Administrator at UTA offices located at 669 West 200 South, Salt Lake City, Utah 84101, office phone (801)287-3013.

26. <u>CONFLICT OF INTEREST</u>

Contractor represents that it has not offered or given any gift or compensation prohibited by the laws of the State of Utah to any officer or employee of UTA to secure favorable treatment with respect to being awarded the Contract. No member, officer, or employee of UTA during their tenure or one year thereafter shall have any interest, direct or indirect, in the Contract or the proceeds thereof.

27. <u>NOTICES OR DEMANDS</u>

a. Any and all notices, demands or other communications required hereunder to be given by one party to the other shall be given in writing and may be electronically delivered , personally delivered, mailed by US Mail, postage prepaid, or sent by overnight courier service and addressed to such party as follows:

<u>If to UTA</u>:	<u>If to Contractor</u>:
Utah Transit Authority	Scheidt & Bachmann USA, Inc.
ATTN: Chad Gonzales	ATTN: Daniel Terryn
669 West 200 South	1001 Pawtucket Blvd., Suite 992
Salt Lake City, UT 84101	Lowell, MA 01854
cgonzales@rideuta.com	dterryn@scheidt-bachmann-usa.com

a.   Either party may change the address at which such party desires to receive written notice of such change to any other party. Any such notice shall be deemed to have been given, and shall be effective, on delivery to the notice address then applicable for the party to which the notice is directed; provided, however, that refusal to accept delivery of a notice or the inability to deliver a notice because of an address change which was not properly communicated shall not defeat or delay the giving of a notice.

28. <u>CLAIMS/DISPUTE RESOLUTION</u>

a. "Claim" means any disputes between UTA and the Contractor arising out of or relating to the Contract Documents including any disputed claims for Contract adjustments that cannot be resolved in accordance with the Change Order negotiation process set forth in Article 20. Claims must be made by written notice. The responsibility to substantiate claims rests with the party making the claim.

b. Unless otherwise directed by UTA in writing, Contractor shall proceed diligently with performance of the work pending final resolution of a Claim, including litigation. UTA shall continue to pay any undisputed payments related to such Claim.

c.   The parties shall attempt to informally resolve all claims, counterclaims and other disputes through the escalation process described below. No party may bring a legal action to enforce any term of this Contract without first having exhausted such process.

d. The time schedule for escalation of disputes, including disputed requests for change order, shall be   as follows:

Level of Authority	Time Limit
Special Projects Manager Contractor Program Manager	Five calendar days
UTA's Fares Director Contractor's Chief Operating Officer	Five calendar days
UTA's Executive Director Contractor's Chief Executive Officer	Five calendar days

Unless otherwise directed by UTA's Project Manager, Contractor shall diligently continue performance under this Contract while matters in dispute are being resolved.

If the dispute cannot be resolved informally in accordance with the escalation procedures set forth above, than either party may commence formal mediation under the Juris Arbitration and Mediation (JAMS) process using a mutually agreed upon JAMS mediator. If resolution does not occur through Mediation, then legal action may be commenced in accordance the venue and governing law provisions of this contract.

29. **GOVERNING LAW**

The validity, interpretation and performance of the Contract shall be governed by the laws of the State of Utah, without regard to its law on the conflict of laws. Any dispute arising out of the Contract that cannot be solved to the mutual agreement of the parties shall be brought in a court of competent jurisdiction in Salt Lake County, State of Utah. Contractor consents to the jurisdiction of such courts.

30. **COSTS AND ATTORNEY FEES**.

   If any party to this Agreement brings an action to enforce or defend its rights or obligations hereunder, the prevailing party shall be entitled to recover its reasonable costs and expenses, including mediation, arbitration, litigation, court costs and attorneys' fees, if any, incurred in connection with such suit, including on appeal

31. **UTAH ANTI-BOYCOTT OF ISRAEL ACT**

   Contractor agrees that will be not engage in any type of boycott against the State of Israel for the duration of this contract.

32. **SEVERABILITY**

   Any provision of the Contract prohibited or rendered unenforceable by operation of law shall be ineffective only to the extent of such prohibition or unenforceability without invalidating the remaining provisions of the Contract.

33. **AMENDMENTS**

   Any amendment to the Contract must be in writing and executed by the authorized representatives of each party.

34. **FORCE MAJEURE**

   A "Force Majeure Event" is one whose occurrence was not reasonably foreseeable at the time of entering into this Contract, and which is beyond a Party's reasonable control and without the fault or negligence of such Party.

A Party affected by a Force Majeure Event is excused from performance of its obligations under this Contract only to the extent that it is actually prevented from fulfilling the obligations due to the Force Majeure Event and provided that the Party:

   a.   informs the other party in a timely manner both of the occurrence of the Force Majeure Event and its likely consequence;
   b.   takes such steps as may reasonably be possible to minimize the consequences of the Force Majeure Event;

c.   keeps the other Party informed about the situation while the Force Majeure Event continues, notifies the other Party as soon as the Force Majeure Event comes to an end; and

d.   immediately resumes performance under this Contract to the greatest extent possible when the Force Majeure Event ends.

Any changes to the schedule or any other terms and conditions of this Contract reasonably required as a result of a Force Majeure Event shall be implemented by mutual, written agreement of the Parties. UTA may terminate the Contract after determining such delay or default will reasonably prevent successful performance of the Contract and such termination will be by convenience under the terms of this Contract.

35. **NO THIRD PARTY BENEFICIARIES**

The parties enter in to the Contract for the sole benefit of the parties, in exclusion of any third party, and no third party beneficiary is intended or created by the execution of the Contract.

36. **ENTIRE AGREEMENT**

This Contract shall constitute the entire agreement and understanding of the parties with respect to the subject matter hereof, and shall supersede all offers, negotiations and other agreements with respect thereto.

37. **COUNTERPARTS**

This Contract may be executed in any number of counterparts and by each of the parties hereto on separate counterparts, each of which when so executed and delivered shall be an original, but all such counterparts shall together constitute but one and the same instrument. Any signature page of the Contract may be detached from any counterpart and reattached to any other counterpart hereof. The electronic transmission of a signed original of the Contract or any counterpart hereof and the electronic retransmission of any signed copy hereof shall be the same as delivery of an original.

38. **NONWAIVER**

No failure or waiver or successive failures or waivers on the part of either party in the enforcement of any condition, covenant, or article of this Contract shall operate as a discharge of any such condition, covenant, or article nor render the same invalid, nor impair the right of either party to enforce the same in the event of any subsequent breaches by the other party.

39. **INFORMATION, RECORDS and REPORTS; AUDIT RIGHTS**

Contractor shall retain all books, papers, documents, accounting records and other evidence to support any cost-based billings allowable under Exhibit B (or any other provision of this Contract). Such records shall include, without limitation, time sheets and other cost documentation related to the performance of labor services, as well as subcontracts, purchase orders, other contract documents, invoices, receipts or other documentation supporting non-labor costs. Contractor shall also retain other books and records related to the performance, quality or management of this Contract and/or Contractor's compliance with this Contract. Records shall be retained by Contractor for a period of at least six (6) years after completion of the work, or until any audit initiated within that six-year period has been completed (whichever is later). During this six-year period, such records shall be made available at all reasonable times for audit and inspection by UTA and other authorized auditing parties including, but not limited to, the Federal Transit Administration. Copies of requested records shall be furnished to UTA or designated audit parties upon request. Contractor agrees that it shall flow-down (as a matter of written contract) these records requirements to all subcontractors utilized in the performance of the work at any tier.

40. **SALES TAX EXEMPT**

Purchases of certain materials are exempt from Utah sales tax. UTA will provide a sales tax exemption certificate to Contractor upon request. UTA will not pay Contractor for sales taxes for exempt purchases, and such taxes should not be included in Contractor's Application for Payment.

41. **SURVIVAL**

Provisions of this Contract intended by their nature and content to survive termination of this Contract shall so survive are the Articles 8, 22, 23, 29, 39, and the Contractor's Software License (as defined therein).

42. **Risk of Loss; Transfer of Title**

Subject to the Contractor's service obligations under Exhibit A, the Risk of Loss for the Hardware, Software, or Services will pass from the Contractor to the Supplier upon the installation or acceptance of the Hardware, Software, or Services, whichever occurs first. Transfer of Title for the Hardware, Software, or Services will occur upon the UTA's full payment against a Contractor submitted invoice for the particular Hardware, Software, or Services under this Contract.

UTA IT HARDWARE, SOFTWARE AND ASSOCIATED SERVICES SUPPLY AGREEMENT
UTA CONTRACT 22-03566 NextGen Electronic Fare Collection System

IN WITNESS WHEREOF, the parties hereto have caused the Contract to be executed by officers duly authorized to execute the same as of the date of last signature below, the Effective Date of the Contract.

UTAH TRANSIT AUTHORITY: **SCHEIDT&BACHMANN, INC.**

By_____   By_____

Bill Greene   Daniel Terryn

Chief Financial Officer   CEO, North America

Date   Date

By_____

Jay Fox

Executive Director

Date

By_____

Mike Bell

UTA Legal Counsel

Date

1-Contract 22-03566RW_SB_NextGen_Fares_Feb 23, 2023_Final

UTA IT HARDWARE, SOFTWARE AND ASSOCIATED SERVICES SUPPLY AGREEMENT
UTA CONTRACT 22-03566 NextGen Electronic Fare Collection System

APPENDIX 1:

FTA REQUIRED CLAUSES

FEDERAL TRANSIT ADMINISTRATION REQUIRED CLAUSES

It is the responsibility of the Offeror or Bidder to ensure that all clauses applicable to the Work of the Agreement resultant from this purchase order or contract are adhered to by the Contractor and its Subcontractors when applicable.   The Parties agree the following clauses will not apply to this Contract:3; 4; 10; 11; 18; 19; 28; 29; 32; 33; and 35

Sec.	Contract Clause	Applicability to Type of Contract
1	Fly America Requirements	When Transportation Paid by FTA Funds
2	Buy America Requirements	Value > 150K for Construction, Goods, Rolling Stock
3	Charter Bus Requirements	Operational Service
4	School Bus Requirements	Operational Service
5	Cargo Preference Requirements	Equipment/Material/Commodities Transported by Ocean
6	Seismic Safety Requirements	New Construction/Additions
7	Special Department of Labor (DOL) Equal Employment Clause	Value > 10K for Construction
8	Energy Conservation Requirements	All
9	Clean Water Requirements	Value > 100K
10	Bus Testing	Rolling Stock Acquisition
11	Pre-Award and Post Delivery Audit Requirements	Rolling Stock Acquisition
12	Lobbying	All (Certification required if > $100K)
13	Access to Records and Reports	All
14	Federal Changes	All
15	Bonding Requirements	Construction > 100K
16	Clean Air	Value > 100K
17	Recycled Products	Value > 10K In Fiscal Year
18	Davis-Bacon and Copeland Anti-Kickback Acts	Construction > $2000
19	Contract Work Hours and Safety Standards Act	Construction > $2000, Rolling Stock, Operational > $2,500
20	No Government Obligation to Third Parties	All
21	Program Fraud and False or Fraudulent Statements and Related Acts	All
22	Termination	Value > 10K
23	Government-Wide Debarment and Suspension (Non-procurement)	Value > 25K
24	Privacy Act	All
25	Civil Rights Requirements	All
26	ADA Access Requirements	All
27	Breaches and Dispute Resolution	Value > 100K
28	Patent and Rights in Data	Research Projects Only
29	Transit Employee Protective Agreements	Transit Operations
30	Disadvantaged Business Enterprise (DBE)	All

31	Incorporation of FTA Terms	All
32	Drug and Alcohol Testing	Operational Service/Safety Sensitive
33	Transit Vehicle Manufacturer (TVM) Certifications	Rolling Stock, All Vehicle Procurements
34	Metric Requirements	Sealed Bid Procurements, Rolling Stock, Construction
35	Conformance with National ITS Architecture	Contracts and Solicitations for ITS projects only
36	Corridor Preservation	Right of Way Development
37	Veterans Employment	Capital Projects
38	Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment	ALL

1. FLY AMERICA REQUIREMENTS

49 U.S.C. §40118
41 CFR Part 301-10.131 - 301-10.143

Applicability to Contracts: The Fly America requirements apply to the transportation of persons or property, by air, between a place in the U.S. and a place outside the U.S., or between places outside the U.S., when the FTA will participate in the costs of such air transportation. Transportation on a foreign air carrier is permissible when provided by a foreign air carrier under a code share agreement when the ticket identifies the U.S. air carrier's designator code and flight number. Transportation by a foreign air carrier is also permissible if there is a bilateral or multilateral air transportation agreement to which the U.S. Government and a foreign government are parties and which the Federal DOT has determined meets the requirements of the Fly America Act.

Flow down Requirements: The Fly America requirements flow down to first tier contractors, who are responsible for ensuring that lower tier contractors and sub-contractors are in compliance.

Fly America - The Contractor agrees to comply with 49 U.S.C. 40118 (the "Fly America" Act) in accordance with the General Services Administration's regulations at 41 CFR Part 301-10.131 - 301-10.143, which provide that recipients and sub-recipients of Federal funds and their contractors are required to use U.S. Flag air carriers for U.S Government-financed international air travel and transportation of their personal effects or property, to the extent such service is available, unless travel by foreign air carrier is a matter of necessity, as defined by the Fly America Act. The Contractor shall submit, if a foreign air carrier was used, an appropriate certification or memorandum adequately explaining why service by a U.S. flag air carrier was not available or why it was necessary to use a foreign air carrier and shall, in any event, provide a certificate of compliance with the Fly America requirements. The Contractor agrees to include the requirements of this section in all subcontracts that may involve international air transportation.

2. BUY AMERICA REQUIREMENTS

49 U.S.C. 5323(j)
49 U.S.C. 5323(h)
49 CFR Part 661

Applicability to Contracts: The Buy America requirements apply to the following types of contracts: Construction Contracts and Acquisition of Goods or Rolling Stock (valued at more than $150,000).

Flow down Requirements: The Buy America requirements flow down to first tier Consultant, who are responsible for ensuring that lower tier contractors and sub-contractors are in compliance. **Buy America** - The Contractor agrees to comply with 49 U.S.C. 5323(j) as amended by MAP-21, 49 U.S.C. 5323(h), 49 CFR Part 661, and FAST Act (Pub. L. 114-94) which provide that Federal fund may not be obligated unless steel, iron, and manufactured products used in FTA-funded projects are produced in the United States, unless a waiver has been granted by FTA or the product is subject to a general waiver. General waivers are listed in 49 CFR 661.7 and was amended by Section 3011 of the FAST Act (Pub. L. 114-94). Separate requirements for rolling stock are set out at 5323(j)(2)(C) and 49 CFR 661.11. Rolling stock not subject to a general waiver must be manufactured in the United States and have a sixty percent (60%) domestic content for FY16 & FY17; sixty-five percent (65%) domestic content for FY18 & FY19; and seventy percent (70%) domestic content for FY20 & beyond.

General waivers for small purchases do not apply to Contractor's equipment purchases when Consultant's contract value exceeds $150,000 in value. Contractor must submit to UTA the appropriate Buy America certification with all bids on FTA-funded contracts, except those subject to a general waiver. Bids or offers that are not accompanied by a completed Buy America certification must be rejected as non-responsive. This requirement does not apply to lower tier sub-contractors.

EXCEPTION SPECIFIC TO THIS PROCUREMENT: UTA is seeking Buy America compliant [bids/proposals] with this [RFP/IFB/RFQ]. However, UTA holds an FTA Non-Availability Waiver that is applicable to this procurement. Accordingly, the inability to certify Buy America compliance on this procurement shall not result in the [bid/proposal] being deemed non-responsive. The requirement for the proposal to include a completed Buy America Certificate, however, is not waived by this exception.

3. CHARTER BUS REQUIREMENTS
49 U.S.C. 5323(d)
49 CFR Part 604

Applicability to Contracts: The Charter Bus requirements apply to the following type of contract: Operational Service Contracts.

Flow down Requirements: The Charter Bus requirements flow down from UTA to first tier service Contractors.

Charter Service Operations - The contractor agrees to comply with 49 U.S.C. 5323(d) and 49 CFR Part 604, which provides that recipients and sub-recipients of FTA assistance are prohibited from providing charter service using federally funded equipment or facilities if there is at least one private charter operator willing and able to provide the service, except under one of the exceptions at 49 CFR 604.9. Any charter service provided under one of the exceptions must be "incidental," i.e., it must not interfere with or detract from the provision of mass transportation.

4. SCHOOL BUS REQUIREMENTS
49 U.S.C. 5323(F)
49 CFR Part 605

Applicability to Contracts: The School Bus requirements apply to the following type of contract: Operational Service Contracts.

Flow down Requirements: The School Bus requirements flow down from UTA to first tier service contractors.

School Bus Operations - Pursuant to 49 U.S.C. 5323(f) and 49 CFR Part 605, recipients and subrecipients of FTA assistance may not engage in school bus operations exclusively for the transportation of students and school personnel in competition with private school bus operators unless qualified under specified exemptions. When operating exclusive school bus service under an allowable exemption, recipients and sub-recipients may not use federally funded equipment, vehicles, or facilities.

5. CARGO PREFERENCE REQUIREMENTS

46 U.S.C. 55305

Applicability to Contracts: The Cargo Preference requirements apply to all contracts involving equipment, materials, or commodities which may be transported by ocean vessels.

Flow down Requirements: The Cargo Preference requirements apply to all subcontracts when the subcontract may be involved with the transport of equipment, material, or commodities by ocean vessel.

Cargo Preference - Use of United States-Flag Vessels - The contractor agrees: a. to use privately owned United States-Flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to the underlying contract to the extent such vessels are available at fair and reasonable rates for United States-Flag commercial vessels; b. to furnish within 20 working days following the date of loading for shipments originating within the United States or within 30 working days following the date of leading for shipments originating outside the United States, a legible copy of a rated, "on-board" commercial ocean bill-of -lading in English for each shipment of cargo described in the preceding paragraph to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590 and to the FTA recipient (through the contractor in the case of a subcontractor's bill-of-lading.) c. to include these requirements in all subcontracts issued pursuant to this contract when the subcontract may involve the transport of equipment, material, or commodities by ocean vessel.

Cargoes Procured, Furnished, or Financed by the United States Government - (a) Definition. - In this section, the term "privately-owned commercial vessel of the United States" does not include a vessel that, after September 21, 1961, was built or rebuilt outside the United States or documented under the laws of a foreign country, until the vessel has been documented under the laws of the United States for at least three (3) years.

(b) Minimum Tonnage.-When the United States Government procures, contracts for, or otherwise obtains for its own account, or furnishes to or for the account of a foreign country, organization, or persons without provision for reimbursement, any equipment, materials, or commodities, or provides financing in any way with Federal funds for the account of any persons unless otherwise exempted, within or without the United States, or advances funds or credits, or guarantees the convertibility of foreign currencies in connection with the furnishing or obtaining of the equipment, materials, or commodities, the appropriate agencies shall take steps necessary and practicable to ensure that at least fifty percent (50%) of the gross tonnage of the equipment, materials, or commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) which may be transported on ocean vessels is transported on privately-owned commercial vessels of the United States, to the extent those vessels are available at fair and reasonable rates for commercial vessels of the United States, in a manner that will ensure a fair and reasonable participation of commercial vessels of the United States in those cargoes by geographic areas.

(c) Waivers. -The President, the Secretary of Defense, or Congress (by concurrent resolution or otherwise) may waive this section temporarily by-

(1) Declaring the existence of an emergency justifying a waiver; and

(2) Notifying the appropriate agencies of the waiver.

(d) Programs of Other Agencies. -

(1) Each department or agency that has responsibility for a program under this section shall administer that program with respect to this section under regulations and guidance issued by the Secretary of Transportation. The Secretary, after consulting with the department or agency or organization or person involved, shall have the sole responsibility for determining if a program is subject to the requirements of this section.

(2) The Secretary-

(A) shall conduct an annual review of the administration of programs determined pursuant to paragraph (1) as subject to the requirements of this section;

(B) may direct agencies to require the transportation on United States-flagged vessels of cargo shipments not otherwise subject to this section in equivalent amounts to cargo determined to have been shipped on foreign carriers in violation of this section;

(C) may impose on any person that violates this section, or a regulation prescribed under this section, a civil penalty of not more than $25,000 for each violation willfully and knowingly committed, with each day of a continuing violation following the date of shipment to be a separate violation; and

(D) may take other measures as appropriate under the Federal Acquisition Regulations issued pursuant to section 25(c)(1) 1 of the Office of Federal Procurement Policy Act (41 U.S.C. 421(c)(1) 2 or contract with respect to each violation.

(e) Security of Government-Impelled Cargo. -

(1) In order to ensure the safety of vessels and crewmembers transporting equipment, materials, or commodities under this section, the Secretary of Transportation shall direct each department or agency (except the Department of Defense), when responsible for the carriage of such equipment, materials, or commodities, to provide armed personnel aboard vessels of the United States carrying such equipment, materials, or commodities if the vessels are transiting high-risk waters.

(2) The Secretary of Transportation shall direct each department or agency responsible to provide armed personnel under paragraph (1) to reimburse, subject to the availability of appropriations, the owners or operators of applicable vessels for the cost of providing armed personnel.

(3) In this subsection, the term "high-risk waters" means waters so designated by the Commandant of the Coast Guard in the Port Security Advisory in effect on the date on which an applicable voyage begins. (Pub. L. 109–304, §8(c), Oct. 6, 2006, 120 Stat. 1642; Pub. L. 110–417, div. C, title XXXV, §3511(a), (b), Oct. 14, 2008, 122 Stat. 4769; Pub. L. 112–213, title V, §503, Dec. 20, 2012, 126 Stat. 1575.)

6. SEISMIC SAFETY REQUIREMENTS
42 U.S.C. 7701 et seq.
49 CFR Part 41

Applicability to Contracts: The Seismic Safety requirements apply only to contracts for the construction of new buildings or additions to existing buildings.

Flow down Requirements: The Seismic Safety requirements flow down from UTA to first tier contractors to assure compliance, with the applicable building standards for Seismic Safety, including the work performed by all sub-contractors.

Seismic Safety - The contractor agrees that any new building or addition to an existing building will be designed and constructed in accordance with the standards for Seismic Safety required in Department of Transportation Seismic Safety Regulations 49 CFR Part 41 and will certify to compliance to the extent required by the regulation. The contractor also agrees to ensure that all work performed under this contract including work performed by a sub-contractor is in compliance with the standards required by the Seismic Safety Regulations and the certification of compliance issued on the project. The contractor will facilitate and follow Executive Order No. 12699, "Seismic Safety of Federal and Federally-Assisted or Regulated New Building Construction," 42 U.S.C. 7704 note, except as the Federal Government determines otherwise in writing.

7. SPECIAL DOL EQUAL EMPLOYMENT CLAUSE
41 CFR Part 60

See Section 25 – Contract Clause Civil Rights Requirements

8. ENERGY CONSERVATION REQUIREMENTS
42 U.S.C. 6321 et seq.
49 CFR Part 622

Applicability to Contracts: The Energy Conservation requirements are applicable to all contracts.

Flow down Requirements: The Energy Conservation requirements extend to all third-party contractors and their contracts at every tier and, sub-recipients and their sub-agreements at every tier.

Energy Conservation - The Contractor agrees to comply with mandatory standards and policies relating to energy efficiency which are contained in the State energy conservation plan issued in compliance with the Energy Policy and Conservation Act. The contractor agrees to perform an energy assessment for any building constructed, reconstructed, or modified with FTA funds required under FTA regulations, "Requirements for Energy Assessments," 49 CFR part 622, subpart C.

9. CLEAN WATER REQUIREMENTS
33 U.S.C. 1251 - 1377
Applicability to Contracts: The Clean Water requirements apply to each contract and subcontract which exceeds $150,000.

Flow down Requirements: The Clean Water Act requirements flow down to UTA third party contractors and their contracts at every tier, and sub-recipients and their sub-agreements at every tier.

Clean Water - (a) The contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Water Act, as amended, 33 U.S.C. 1251 – 1377 et seq.

(b) The contractor agrees to report each violation to UTA and understands and agrees that UTA will, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office in compliance with the notice of violating facility provisions in section 508 of the Clean Water Act, as amended, 33 U.S.C. 1368

(c) The contractor agrees to protect underground sources of drinking water in compliance with the Safe Drinking Water Act of 1974, as amended, 42 U.S.C. 300f – 300j-6.

(d) The contractor also agrees to include these requirements in each subcontract exceeding $150,000 financed in whole or in part with Federal assistance provided by FTA.

10. BUS TESTING
49 U.S.C. 5318(e)
49 U.S.C. 5323(c)
49 CFR Part 665

Applicability to Contracts: The Bus Testing requirements pertain only to the acquisition of Rolling Stock/Turnkey.

Flow down Requirements: The Bus Testing requirements should not flow down, except to the turnkey contractor as stated in the most current FTA Master Agreement.

Bus Testing - The Contractor [Manufacturer] agrees to comply with 49 U.S.C. 5323(c) and FTA's implementing regulation at 49 CFR Part 665 and shall perform the following:

a) A manufacturer of a new bus model or a bus produced with a major change in components or configuration shall provide a copy of the final test report to the recipient at a point in the procurement process specified by the recipient which will be prior to the recipient's final acceptance of the first vehicle.
b) A manufacturer who releases a report under paragraph 1 above shall provide notice to the operator of the testing facility that the report is available to the public.
c) If the manufacturer represents that the vehicle was previously tested, the vehicle being sold should have the identical configuration and major components as the vehicle in the test report, which must be provided to the recipient prior to recipient's final acceptance of the first vehicle. If the configuration or components are not identical, the manufacturer shall provide a description of the change and the manufacturer's basis for concluding that it is not a major change requiring additional testing.
d) If the manufacturer represents that the vehicle is "grandfathered" (has been used in mass transit service in the United States before October 1, 1988 and is currently being produced without a major

change in configuration or components), the manufacturer shall provide the name and address of the recipient of such a vehicle and the details of that vehicle's configuration and major components.

11. PRE-AWARD AND POST-DELIVERY AUDITS REQUIREMENTS
49 U.S.C. 5323
49 C.F.R. 661.12
49 CFR Part 663

Applicability to Contracts: These requirements apply only to the acquisition of Rolling Stock/Turnkey.

Flow down Requirements: These requirements should not flow down, except to the turnkey contractor as stated in Master Agreement

- Buy America certification is mandated under FTA regulation, "Pre-Award and Post-Delivery Audits of Rolling Stock Purchases," 49 C.F.R. 663.13.

A Buy America certification under this part shall be issued in addition to any certification which may be required by part 661 of this title. Nothing in this part precludes FTA from conducting a Buy America investigation under part 661 of this title "**Pre-Award and Post-Delivery Audit Requirements**" - The Contractor agrees to comply with "Buy America Requirements--Surface Transportation Assistance Act of 1982, as amended," 49 C.F.R. 661.12, but has been modified to include FTA's Buy America requirements codified at 49 U.S.C. A 5323(j).

Pre-Award and Post-Delivery Audit Requirements - The Contractor agrees to comply with 49 U.S.C. § 5323(l) and FTA's implementing regulation at 49 C.F.R. Part 663 and to submit the following certifications:

(1) Buy America Requirements: The Contractor shall complete and submit a declaration certifying either compliance or noncompliance with Buy America. If the Firm certifies compliance with Buy America, it shall submit documentation which lists 1) component and subcomponent parts of the rolling stock to be purchased identified by manufacturer of the parts, their country of origin and costs; 2) The location of the final assembly point for the rolling stock, including a description of the activities that will take place at the final assembly point and the cost of final assembly.

(2) Solicitation Specification Requirements: The Contractor shall submit evidence that it will be capable of meeting the bid specifications.

(3) Federal Motor Vehicle Safety Standards (FMVSS): The Contractor shall submit a) manufacturer's FMVSS self-certification sticker information that the vehicle complies with relevant FMVSS or b) manufacturer's certified statement that the contracted buses will not be subject to FMVSS regulations.

12. LOBBYING
31 U.S.C. 1352
49 CFR Part 19
49 CFR Part 20

Applicability to Contracts: The Lobbying requirements apply to Construction/Architectural and Engineering/Acquisition of Rolling Stock/Professional Service Contract/Operational Service Contract/Turnkey contracts.

Flow Down Requirements the Lobbying requirements mandate the maximum flow down, pursuant to Byrd Anti-Lobbying Amendment, 31 U.S.C. § 1352(b)(5) and 49 C.F.R. Part 19, Appendix A, Section 7.

Byrd Anti-Lobbying Amendment, 31 U.S.C. 1352, as amended by the Lobbying Disclosure Act of 1995, P.L. 104-65 [to be codified at 2 U.S.C. § 1601, et seq.] - Contractors who apply or bid for an award of $100,000 or more shall file the certification required by 49 CFR part 20, "New Restrictions on Lobbying." Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of a federal agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in

connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. 1352. Each tier certifies to the tier above that it will not and has not taken any action involving the Project or the Underlying Agreement for the Project, including any award, extension, or modification. Each tier shall also disclose the name of any registrant under the Lobbying Disclosure Act of 1995 who has made lobbying contacts on its behalf with non-Federal funds with respect to that Federal contract, grant or award covered by 31 U.S.C. 1352. Such disclosures are forwarded from tier to tear up to UTA.

13. ACCESS TO RECORDS AND REPORTS

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49 U.S.C. 5325
18 CFR 18.36(i)
49 CFR 633.17

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Applicability to Contracts: Reference Chart "Requirements for Access to Records and Reports by Type of Contracts", Item 6 of this Section.

Flow down Requirements FTA does not require the inclusion of these requirements in subcontracts.

Access to Records - The following access to records requirements apply to this Contract:

(1) The Contractor agrees to provide UTA, the FTA Administrator, the Comptroller General of the United States or any of their authorized representatives access to any books, documents, papers and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts and transcriptions. Contractor also agrees, pursuant to 49 C.F.R. 633.17 to provide the FTA Administrator or his authorized representatives including any PMO Contractor access to Consultant's

Contract Characteristics	Operational Service Contract	Turnkey	Construction	Architectural Engineering	Acquisition of Rolling Stock	Professional Services
Non-State Grantees a. Contracts below SAT ($250,000) b. Contracts above $250,000/ Capital Projects	Yes[1] Yes[1]	Those imposed on nonstate Grantee pass thru to Contractor	Yes Yes	Yes Yes	Yes Yes	Yes Yes

records and construction sites pertaining to a major capital project, defined at 49 U.S.C. 5302(a)1, which is receiving federal financial assistance through the programs described at 49 U.S.C. 5307, 5309 or 5311.

(2) Where UTA or a sub-grantee of UTA in accordance with 49 U.S.C. 5325(a) enters into a contract for a capital project or improvement (defined at 49 U.S.C. 5302(a) 1) through other than competitive bidding, the Contractor shall make available records related to the contract to UTA, the Secretary of

Transportation and the Comptroller General or any authorized officer or employee of any of them for the purposes of conducting an audit and inspection.

(3) The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.

(4) The Contractor agrees to maintain all books, records, accounts and reports required under this contract for a period of not less than three (3) years after the date of termination or expiration of this contract, except in the event of litigation or settlement of claims arising from the performance of this contract, in which case Contractor agrees to maintain same until UTA, the FTA Administrator, the Comptroller General, or any of their duly authorized representatives, have disposed of all such litigation, appeals, claims or exceptions related thereto. Reference 49 CFR 18.39(i) (11).

(5) FTA does not require the inclusion of these requirements in subcontracts.

(6) Requirements for Access to Records and Reports by Types of Contract Sources of Authority: [1] 18 CFR 18.36 (i)

14. FEDERAL CHANGES

49 CFR Part 18

Applicability to Contracts: The Federal Changes requirement applies to all contracts.

Flow down Requirements: The Federal Changes requirement flows down appropriately to each applicable changed requirement.

Federal Changes - Contractor shall at all times comply with all applicable FTA regulations, policies, procedures and directives, including without limitation those listed directly or by reference in the Master Agreement between UTA and FTA, as they may be amended or promulgated from time to time during the term of this contract. Consultant's failure to so comply shall constitute a material breach of this contract.

15. BONDING REQUIREMENTS

This section applies only to construction or facility improvement contracts exceeding $100,000.

16. CLEAN AIR

42 U.S.C. 7401 – 7601(q)
40 CFR 15.61
49 CFR Part 18

Applicability to Contracts: The Clean Air requirements apply to all contracts exceeding $150,000, including indefinite quantities where the amount is expected to exceed $150,000 in any year.

Flow down Requirements: The Clean Air requirements flow down to all subcontracts which exceed $150,000.

Clean Air - (1) The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. §§ 7401 – 7601(q) et seq. The Contractor agrees to report each violation to UTA and understands and agrees that UTA, in turn, report each violation as required to assure notification to FTA and the appropriate EPA Regional Office.

(2) The Contractor also agrees to include these requirements in each subcontract exceeding $150,000 financed in whole or in part with Federal assistance provided by FTA.

17. RECYCLED PRODUCTS

42 U.S.C. 6962
40 CFR Part 247
Executive Order 12873

Applicability to Contracts: The Recycled Products requirements apply to all contracts for items designated by the EPA, when the Contractor procures $10,000 or more of one (1) of these items during the fiscal year or has procured $10,000 or more of such items in the previous fiscal year, using Federal funds.

Flow down Requirements: These requirements flow down to all contractor and sub-contractor tiers.

Recovered Materials - The contractor agrees to comply with all the requirements of Section 6002 of the Resource Conservation and Recovery Act (RCRA), as amended (42 U.S.C. 6962), including but not limited to the regulatory provisions of 40 CFR Part 247, and Executive Order 12873, as they apply to the procurement of the items designated in Subpart B of 40 CFR Part 247. The contractor agrees to comply with the U.S. Environmental Protection Agency (US EPA), "Comprehensive Procurement Guideline for Products Containing Recovered Materials," 40 CFR part 247.

18. DAVIS-BACON AND COPELAND ANTI-KICKBACK ACTS
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49 U.S.C. 5333
40 U.S.C. 3141 – 3144
40 U.S.C. 3146 – 3147
18 U.S.C. 874
40 U.S.C. 3145

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Applicability to Contracts: The Davis-Bacon and Copeland Acts are codified at 40 USC 3141, *et seq.* and 18 USC 874. The Acts apply to grantee construction contracts and subcontracts that "at least partly are financed by a loan or grant from the Federal Government." 40 USC 3145(a), 29 CFR 5.2(h), 49 CFR 18.36(i)(5). The Acts apply to any construction contract over $2,000. 40 USC 3142(a), 29 CFR 5.5(a). 'Construction,' for purposes of the Acts, includes "actual construction, alteration and/or repair, including painting and decorating." 29 CFR 5.5(a). The requirements of both Acts are incorporated into a single clause (*see* 29 FR 3.11) enumerated at 29 CFR 5.5(a) and reproduced below.

Flow down Requirements: Applies to third party contractors and sub-contractors

(1) **Minimum wages** - (i) All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than Monthly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5(a)(4). Laborers or mechanics performing work in more than one (1) classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph (1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its sub-contractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(ii)(A) The Contracting Officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination, and which is to be employed under the contract shall be classified

in conformance with the wage determination. The Contracting Officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) Except with respect to helpers as defined as 29 CFR 5.2(n) (4), the work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and

(4) With respect to helpers as defined in 29 CFR 5.2(n) (4), such a classification prevails in the area in which the work is performed.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the Contracting Officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the Contracting Officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within thirty (30) days of receipt and shall advise the Contracting Officer or will notify the Contracting Officer within the thirty (30) day period that additional time is necessary.

(C) In the event the consultant, the laborers or mechanics to be employed in the classification or their representatives, and the Contracting Officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the Contracting Officer shall refer the questions, including the views of all interested parties and the recommendation of the Contracting Officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within thirty (30) days of receipt and shall advise the Contracting Officer or will notify the Contracting Officer within the thirty (30) day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii) (B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the consultant, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account asset for the meeting of obligations under the plan or program.

(v)(A) The Contracting Officer shall require that any class of laborers or mechanics which is not listed in the wage determination, and which is to be employed under the contract shall be classified in conformance with the wage determination. The Contracting Officer shall approve an additional classification and wage rate and fringe benefits therefor only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the Contracting Officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the Contracting Officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within thirty (30) days of receipt and so advise the Contracting Officer or will notify the Contracting Officer within the thirty (30) day period that additional time is necessary.

(C) In the event the consultant, the laborers or mechanics to be employed in the classification or their representatives, and the Contracting Officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the Contracting Officer shall refer the questions, including the views of all interested parties and the recommendation of the Contracting Officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination with thirty (30) days of receipt and shall advise the Contracting Officer or will notify the Contracting Officer within the thirty (30) day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(v) (B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(2) **Withholding** - UTA shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime consultant, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime consultant, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any sub-contractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, UTA may, after written notice to the consultant, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) **Payrolls and basic records** - (i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three (3) years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b) (2) (B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to UTA for transmission to the Federal Transit Administration. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under section 5.5(a) (3) (i) of Regulations, 29 CFR part 5. This information may be submitted in any form desired. Optional Form WH347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal Stock

Number 029-005-00014-1), U.S. Government Printing Office, Washington, DC 20402. The prime contractor is responsible for the submission of copies of payrolls by all sub-contractors.

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or sub-contractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be maintained under section 5.5(a) (3) (i) of Regulations, 29 CFR part 5 and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or sub-contractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or sub-contractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the Federal Transit Administration or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or sub-contractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the consultant, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) **Apprentices and trainees** - (i) Apprentices - Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first ninety (90) days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Consultant's or Sub-consultant's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator of the Wage and Hour Division of the U.S. Department of Labor

determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees - Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity - The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended and 29 CFR part 30.

(5) Compliance with Copeland Act requirements - The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract. Contractor is prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled.

(6) Subcontracts - The contractor or sub-contractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the Federal Transit Administration may by appropriate instructions require, and also a clause requiring the sub-contractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier sub-contractor with all the contract clauses in 29 CFR 5.5. (7) **Contract termination: debarment** - A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a sub-contractor as provided in 29 CFR 5.12.

(8) **Compliance with Davis-Bacon and Related Act requirements** - All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) **Disputes concerning labor standards** - Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

(10)**Certification of eligibility** - (i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or Contractor who has an interest in the consultant's Contractor is a person or

Contractor ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or Contractor ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

(b) Contract Work Hours and Safety Standards Act. The Agency Head shall cause or require the contracting officer to insert the following clauses set forth in paragraphs (b)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by §5.5(a) or §4.6 of part 4 of this title. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(1) Overtime requirements. No contractor or sub-contractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half (1.5) times the basic rate of pay for all hours worked in excess of forty (40) hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any sub-contractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and sub-contractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The (write in the name of the Federal agency or the loan or grant recipient) shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or sub-contractor under any such contract or any other Federal contract with the same prime consultant, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime consultant, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or sub-contractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

(4) Subcontracts. The contractor or sub-contractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the sub-contractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any sub-contractor or lower tier sub-contractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

(c) In addition to the clauses contained in paragraph (b), in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in §5.1, the Agency Head shall cause or require the contracting officer to insert a clause requiring that the contractor or sub-contractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Agency Head shall cause or require the contracting officer to insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or sub-contractor for inspection, copying, or transcription by authorized representatives of the (write the name of agency) and the

Department of Labor, and the contractor or sub-contractor will permit such representatives to interview employees during working hours on the job.

(The information collection, recordkeeping, and reporting requirements contained in the following paragraphs of this section were approved by the Office of Management and Budget:

OMB Control Number
(a)(1)(ii)(B) 1215-0140
(a)(1)(ii)(C) 1215-0140
(a)(1)(iv) 1215-0140
(a)(3)(i) 1215-0140,
1215-0017
(a)(3)(ii)(A) 1215-0149
(c) 1215-0140,
1215-0017

[48 FR 19540, Apr. 29, 1983, as amended at 51 FR 12265, Apr. 9, 1986; 55 FR 50150, Dec. 4, 1990; 57 FR 28776, June 26, 1992; 58 FR 58955, Nov. 5, 1993; 61 FR 40716, Aug. 5, 1996; 65 FR 69693, Nov. 20, 2000; 73 FR 77511, Dec. 19, 2008]

Effective Date Note: At 58 FR 58955, Nov. 5, 1993, §5.5 was amended by suspending paragraph (a)(1)(ii) indefinitely.

19. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT
29 CFR Part 5 40
U.S.C. 3701 et seq.
40 U.S.C. 3702

Applicability to Contracts: The Contract Work Hours and Safety Standards Act is codified at 40 USC 3701, *et seq.* The Act applies to grantee contracts and subcontracts "financed at least in part by loans or grants from … the [Federal] Government." 40 USC 3701(b) (1) (B) (iii) and (b) (2), 29 CFR 5.2(h), 49 CFR 18.36(i) (6).

The Act applies to construction contracts and, in very limited circumstances, non-construction projects that employ "laborers or mechanics on a public work" with a value greater than $100,000. These no construction applications do not generally apply to transit procurements because transit procurements (to include rail cars and buses) are deemed "commercial items." 40 USC 3707, 41 USC 403 (12) **Flow down Requirements**: Applies to third party contractors and sub-contractors.

(1) **Overtime requirements** - No contractor or sub-contractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty (40) hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half (1.5) times the basic rate of pay for all hours worked in excess of forty (40) hours in such workweek.

(2) **Violation; liability for unpaid wages; liquidated damages** - In the event of any violation of the clause set forth in paragraph (1) of this section the contractor and any sub-contractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and sub-contractor shall be liable to the United States for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty (40) hours without payment of the overtime wages required by the clause set forth in paragraph (1) of this section.

(3) **Withholding for unpaid wages and liquidated damages** - UTA shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or sub-contractor under any such

contract or any other Federal contract with the same prime consultant, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime consultant, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or sub-contractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2) of this section.

(4) **Subcontracts** - The Contractor or sub-contractor shall insert in any subcontracts the clauses set forth in paragraphs (1) through (4) of this section and also a clause requiring the sub-contractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any sub-contractor or lower tier sub-contractor with the clauses set forth in paragraphs (1) through (4) of this section.

20. NO GOVERNMENT OBLIGATION TO THIRD PARTIES

Applicability to Contracts: Applicable to all contracts.

Flow down Requirements: This concept should flow down to all levels to clarify, to all parties to the contract, that the Federal Government does not have contractual liability to third parties, absent specific written consent.

No Obligation by the Federal Government.

(1) UTA and the Contractor acknowledge and agree that, notwithstanding any concurrence by the Federal Government in or approval of the solicitation or award of the underlying contract, absent the express written consent by the Federal Government, the Federal Government is not a party to this contract and shall not be subject to any obligations or liabilities to UTA, Consultant, or any other party (whether or not a party to that contract) pertaining to any matter resulting from the underlying contract.

(2) The Contractor agrees to include the above clause in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clause shall not be modified, except to identify the sub-contractor who will be subject to its provisions.

21. PROGRAM FRAUD AND FALSE OR FRAUDULENT STATEMENTS AND RELATED ACTS
<div align="center">

31 U.S.C. 3801 et seq.
49 CFR Part 31
18 U.S.C. 1001
49 U.S.C. 5307
</div>

Applicability to Contracts: These requirements are applicable to all contracts.

Flow down Requirements: These requirements flow down to contractors and sub-contractors who make, present, or submit covered claims and statements.

Program Fraud and False or Fraudulent Statements or Related Acts

(1) The Contractor acknowledges that the provisions of the Program Fraud Civil Remedies Act of 1986, as amended, 31 U.S.C. §§ 3801 et seq. and U.S. DOT regulations, "Program Fraud Civil Remedies," 49 C.F.R. Part 31, apply to its actions pertaining to this Project. Upon execution of the underlying contract, the Contractor certifies the truthfulness and accuracy of any statement it has made, it makes, it may make, or causes to be made, pertaining to the underlying contract or the FTA assisted project for which this contract work is being performed. In addition to other penalties that may be applicable, the Contractor further acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification, the Federal Government reserves the right to impose the penalties of the Program Fraud Civil Remedies Act of 1986 on the Contractor to the extent the Federal Government deems appropriate.

(2) The Contractor also acknowledges that if it makes, or causes to be made, a false, fictitious, or fraudulent claim, statement, submission, or certification to the Federal Government under a contract connected with a project that is financed in whole or in part with Federal assistance originally awarded by FTA under the authority of 49 U.S.C. § 5307, the Government reserves the right to impose the penalties of 18 U.S.C. §

1001 and 49 U.S.C. § 5307(n)(1) on the Consultant, to the extent the Federal Government deems appropriate.

(3) The Contractor agrees to include the above two (2) clauses in each subcontract financed in whole or in part with Federal assistance provided by FTA. It is further agreed that the clauses shall not be modified, except to identify the sub-contractor who will be subject to the provisions.

22. TERMINATION   Termination provisions are found in the Contract, which supersede these terms.
49 CFR Part 18
FTA Circular 4220.1F

Applicability to Contracts: These requirements are applicable to all contracts over $100,000.

Flow down Requirements: These requirements flow down to contractors and sub-contractors over $100,000.

Termination for Convenience (General Provision) The (Recipient) may terminate this contract, in whole or in part, at any time by written notice to the Contractor when it is in the Government's best interest. The Contractor shall be paid its costs, including contract close-out costs, and profit on work performed up to the time of termination. The Contractor shall promptly submit its termination claim to (Recipient) to be paid the Contractor. If the Contractor has any property in its possession belonging to the (Recipient), the Contractor will account for the same, and dispose of it in the manner the (Recipient) directs.

b.   Termination for Default [Breach or Cause] (General Provision) If the Contractor does not deliver supplies in accordance with the contract delivery schedule, or, if the contract is for services, the Contractor fails to perform in the manner called for in the contract, or if the Contractor fails to comply with any other provisions of the contract, the (Recipient) may terminate this contract for default. Termination shall be affected by serving a notice of termination on the contractor setting forth the manner in which the Contractor is in default. The contractor will only be paid the contract price for supplies delivered and accepted, or services performed in accordance with the manner of performance set forth in the contract.

If it is later determined by the (Recipient) that the Contractor had an excusable reason for not performing, such as a strike, fire, or flood, events which are not the fault of or are beyond the control of the Contractor, the (Recipient), after setting up a new delivery of performance schedule, may allow the Contractor to continue work, or treat the termination as a termination for convenience.

c.   Opportunity to Cure (General Provision) The (Recipient) in its sole discretion may, in the case of a termination for breach or default, allow the Contractor [an appropriately short period of time] in which to cure the defect. In such case, the notice of termination will state the time period in which cure is permitted and other appropriate conditions

If Contractor fails to remedy to (Recipient)'s satisfaction the breach or default of any of the terms, covenants, or conditions of this Contract within [ten (10) days] after receipt by Contractor of written notice from (Recipient) setting forth the nature of said breach or default, (Recipient) shall have the right to terminate the Contract without any further obligation to Contractor. Any such termination for default shall not in any way operate to preclude (Recipient) from also pursuing all available remedies against Contractor and its sureties for said breach or default.

d.   **Waiver of Remedies for any Breach** In the event that (Recipient) elects to waive its remedies for any breach by Contractor of any covenant, term or condition of this Contract, such waiver by (Recipient) shall not limit (Recipient)'s remedies for any succeeding breach of that or of any other term, covenant, or condition of this Contract.

e.   **Termination for Default (Construction)** If the Contractor refuses or fails to prosecute the work or any separable part, with the diligence that will ensure its completion within the time specified in this contract or any extension or fails to complete the work within this time, or if the Contractor fails to comply with any other provisions of this contract, the (Recipient) may terminate this contract for default. The (Recipient) shall terminate by delivering to the Contractor a Notice of Termination specifying the nature of the default. In this event, the Recipient may take over the work and compete it by contract or otherwise, and may take possession of and use any materials, appliances, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the Recipient resulting from the Contractor's refusal or failure to complete the work within specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by the Recipient in completing the work.

The Contractor's right to proceed shall not be terminated nor the Contractor charged with damages under this clause if-

1.   the delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include acts of God, acts of the Recipient, acts of another Contractor in the performance of a contract with the Recipient, epidemics, quarantine restrictions, strikes, freight embargoes; and

2.   the contractor, within [10] days from the beginning of any delay, notifies the (Recipient) in writing of the causes of delay. If in the judgment of the (Recipient), the delay is excusable, the time for completing the work shall be extended. The judgment of the (Recipient) shall be final and conclusive on the parties, but subject to appeal under the Disputes clauses.

If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination had been issued for the convenience of the Recipient.

23. GOVERNMENT-WIDE DEBARMENT AND SUSPENSION (NON-PROCUREMENT)
49 CFR 18
2 CFR 1200
2 CFR 180
Executive Orders 12549 and 12689

Background and Applicability: In addition to the contracts covered under 2 CFR 180.220(b) of the OMB guidance, this part applies to any contract, regardless of tier, that is awarded by a consultant, subconsultant, supplier, Consultant, or its agent or representative in any transaction, if the contract is to be funded or provided by the Department of Transportation under a covered non-procurement transaction and the amount of the contract is expected to equal or exceed $25,000. This extends the coverage of the Department of Transportation non-procurement suspension and debarment requirements to all lower tiers of subcontracts under covered non-procurement transactions, as permitted under the OMB guidance at 2

CFR 180.220(c) (see optional lower-tier coverage in the figure in the appendix to 2 CFR part 180).This government-wide regulation implements Executive Order 12549, *Debarment and Suspension*, Executive Order 12689, *Debarment and Suspension*, and 31 U.S.C. 6101 note (Section 2455, Public Law 103-355, 108 Stat. 3327).

These provisions apply to all UTA contracts and subcontracts at any level expected to equal or exceed $25,000 as well as any contract or subcontract (at any level) for federally required auditing services. These are contracts and subcontracts referred to in the regulation as "covered transactions."

Grantees, contractors, and sub-contractors (at any level) that enter into covered transactions are required to verify that the entity (as well as its principals and affiliates) they propose to contract or subcontract with is not excluded or disqualified. They do this by (a) Checking the Excluded Parties List System (EPLS), (b) Collecting a certification from that person, or (c) Adding a clause or condition to the contract or subcontract. Grantees, contractors, and sub-contractors who enter into covered transactions also must require the entities they contract with to comply 2 CFR 180 and include this requirement in their own subsequent covered transactions (i.e., the requirement flows down to subcontracts at all levels).

Flow down Requirements: These requirements flow down to contractors and sub-contractors at all levels.

Suspension and Debarment: This contract is a covered transaction for purposes of 49 CFR Part 18. As such, the contractor is required to verify that none of the consultant, its principals, are excluded or disqualified as defined under Executive Orders Nos. 12549 and 12689.

The contractor is required to comply with 2 CFR 1200 and must include the requirement to comply with 2 CFR 1200, Subpart C in any lower tier covered transaction it enters into.

By signing and submitting its bid or proposal, the Firm certifies as follows:

The certification in this clause is a material representation of fact relied upon by UTA. If it is later determined that the Firm knowingly rendered an erroneous certification, in addition to remedies available to UTA, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment. The Firm agrees to comply with the requirements 2 CFR 180 while this offer is valid and throughout the period of any contract that may arise from this offer. The Firm further agrees to include a provision requiring such compliance in its lower tier covered transactions.

24. PRIVACY ACT

5 U.S.C. 552

Applicability to Contracts: When UTA maintains files on drug and alcohol enforcement activities for FTA, and those files are organized so that information could be retrieved by personal identifier, the Privacy Act requirements apply to all contracts.

Flow down Requirements: The Federal Privacy Act requirements flow down to each third-party contractor and their contracts at every tier.

Contracts Involving Federal Privacy Act Requirements: The following requirements apply to the Contractor and its employees that administer any system of records on behalf of the Federal Government under any contract:

(1) The Contractor agrees to comply with, and assures the compliance of its employees with, the information restrictions and other applicable requirements of the Privacy Act of 1974, 5 U.S.C. § 552a. Among other things, the Contractor agrees to obtain the express consent of the Federal Government before the Contractor, or its employees operate a system of records on behalf of the Federal Government. The Contractor understands that the requirements of the Privacy Act, including the civil and criminal penalties for violation of that Act, apply to those individuals involved, and that failure to comply with the terms of the Privacy Act may result in termination of the underlying contract.

25. CIVIL RIGHTS REQUIREMENTS

29 U.S.C. § 623, 42 U.S.C. § 2000
42 U.S.C. § 6102, 42 U.S.C. § 12112

42 U.S.C. § 12132, 49 U.S.C. § 5332
29 CFR Part 1630, 41 CFR Parts 60 et seq.

1. The Contractor will be required to comply with these applicable civil rights, nondiscrimination, and equal employment opportunity laws and regulations:
   i. 49 CFR Part 21, 49 CFR Part 25, 49 CFR Part 26, 49 CFR Part 27, 49 CFR Part 37, 49 CFR Part 38, 49 CFR Part 39, 20 U.S.C. §§ 1681 – 1683 and 1685 – 1687, 21 U.S.C. § 1101, 29 U.S.C. § 794, et seq., 42 U.S.C. § 290dd – 290dd-2, 42 U.S.C. § 2000d, 42 U.S.C. § 3601, 42 U.S.C. § 4541, 42 U.S.C. § 6101 – 6107, 42 U.S.C. § 12101, et seq., 42 U.S.C § 12132, 49 U.S.C § 5307 (c)(1)(D)(ii), 49 U.S.C § 5332, California Civil Code § 51, California Government Code § 11135   ii. 29 CFR Part 1630, 41 CFR Part 60, 29 U.S.C. § 623, 42 U.S.C. § 2000e, 42 U.S.C. § 12112, California Government Code § 12900 - 12996 iii.
   49 U.S.C. § 5325 (k).
   iv. Fixing America's Surface Transportation (FAST) Act, Public Law No: 114-94, as may be amended.

2. The Civil Rights requirements flow down to all third-party sub-contractors and their subcontracts at every tier.

3. The following requirements apply to a contract awarded as a result of this solicitation:

   i. <u>Nondiscrimination</u> - In accordance with U.S. Department of Transportation (DOT), Federal, and State of California regulations 49 CFR Part 21, 49 CFR Part 25, 49 CFR Part 27, 49 CFR Part 37, 49 CFR Part 38, 49 CFR Part 39, the Rehabilitation Act of 1973, as amended, 20 U.S.C. §§ 1681 – 1683 and 1685 – 1687, 21 U.S.C. § 1101, 29 U.S.C. § 794, Title VI of the Civil Rights Act, as amended, 42 U.S.C. § 290dd – 290dd-2, 42 U.S.C. § 2000d, section 303 of the Age Discrimination Act of 1975, as amended, 42 U.S.C. § 3601, 42 U.S.C. § 4541, 42 U.S.C. § 6102, 42 U.S.C. § 6101 – 6107, section 202 of the Americans with Disabilities Act of 1990, 42 U.S.C. § 12101, 42 U.S.C. § 12132, Federal transit law 49 U.S.C § 5307 (c)(1)(D)(ii), Federal transit law 49 U.S.C. § 5332, FTA Circular 4702.1, "Title VI Requirements and Guidelines for Federal Transit Administration Recipients.", DOT Order to Address Environmental Justice in Minority Populations and Low-Income Populations, Executive Order No. 13166 and DOT Policy Guidance Concerning Recipients' Responsibilities to Limited English Proficiency (70 FR 74087, Dec. 14, 2005), the Unruh Civil Rights Act, California Civil Code § 51, and California Government Code § 11135, the Contractor agrees that it will comply with the identified Federal and State of California laws and regulations, pertaining to UTA programs and activities, to ensure that no person will be denied the benefits of, or otherwise be subjected to, discrimination (particularly in the level and quality of transportation services and transportation-related benefits) on the bases of race, color, religion, national origin, ancestry, sex, sexual orientation, gender identity, gender expression, age, marital status, genetic information, medical condition, or disability. In addition, the Contractor agrees to comply with applicable Federal implementing regulations, other implementing requirements that DOT or FTA may issue, and any other applicable Federal and State of California statutes and/or regulations that may be signed into law or promulgated.

   ii. <u>Equal Employment Opportunity</u> - The following equal employment opportunity requirements apply to a contract awarded as a result of this solicitation:
   a) Race, Color, Ancestry, Marital Status, Medical Condition, Genetic Information, Religion, National Origin, Sex, Sexual Orientation, Gender Identity, Gender Expression - In accordance with Title VII of the Civil Rights Act, as amended, 42 U.S.C. § 2000e, 49 U.S.C. § 5332, FTA Circular 4704.1, "Equal Employment Program Guidelines for Grant Recipients", and , the Contractor agrees to comply with all applicable equal employment opportunity requirements of U.S. Department of Labor (U.S. DOL) regulations, including "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor," 41 C.F.R. Parts 60, et seq., (which implement Executive Order No. 11246, "Equal Employment Opportunity," as amended by Executive Order No. 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," 42 U.S.C. § 2000e note), Fair Employment and Housing Act,

California Government Code Sections 12900 - 12996 and with any applicable Federal statutes, executive orders, regulations, and Federal policies that may in the future affect Bidder agrees to take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, ancestry, religion, marital status, medical condition, genetic information, national origin, sex, sexual orientation, gender identity, gender expression, or age. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. In addition, the Contractor agrees to comply with any implementing requirements that DOT, or FTA may issue, and any other applicable Federal statutes that may be signed into law or Federal regulations that may be promulgated.

b) Sex – The Contractor agrees to comply with all applicable requirements of Title IX of the Education Amendments of 1975, as amended, 20 U.S.C. § 1681, and 49 CFR part 25. In addition, the Contractor agrees to comply with any implementing requirements that DOT, or FTA may issue.

c) Age - The Contractor agrees to comply with all applicable requirements of the Age Discrimination Act of 1975, as amended, 42 U.S.C. § 6101, 45 CFR part 90, the Age Discrimination in Employment Act, 29 U.S.C. §§ 621-634, and Equal Employment Opportunity Commission (EEOC) implementing regulations 29 CFR part 1625. In addition, the Contractor agrees to comply with any implementing requirements that DOT, or FTA may issue.

d) Disabilities - The Contractor agrees to comply with Section 504 of the Rehabilitation Act of 1973, as amended, 29 U.S.C. § 794, Section 508 of the Rehabilitation Act of 1973, as amended, 29 U.S.C. § 794(d), 36 CFR part 1194, the Americans with Disabilities Act of 1990, as amended, 42 U.S.C. § 12101, 49 CFR parts 27, 37, 38, and 39, and FTA Circular 4710.1, "Americans with Disabilities Act: Guidance". In addition, the Contractor agrees to comply with any implementing requirements that DOT, or FTA may issue.

4. The Contractor agrees to include these requirements in each subcontract financed in whole or in part with Federal assistance provided by FTA, modified only if necessary to identify the affected parties.

26. ADA ACCESS REQUIREMENTS
49 U.S.C. § 5301, 29 U.S.C. § 794, 42 U.S.C. § 12101

Applicability to Contracts: The Contractor shall comply with 49 USC 5301(d), stating Federal policy that the elderly and persons with disabilities have the same rights as other persons to use mass transportation services and facilities and that special efforts shall be made in planning and designing those services and facilities to implement that policy. Contractor shall also comply with all applicable requirements of Sec. 504 of the Rehabilitation Act (1973), as amended, 29 USC 794, which prohibits discrimination on the basis of handicaps, and the Americans with Disabilities Act of 1990 (ADA), as amended, 42 USC 12101 et seq., which requires that accessible facilities and services be made available to persons with disabilities, including any subsequent amendments thereto.

27. BREACHES AND DISPUTE RESOLUTION
Breaches and Dispute Resolution provisions are found in the Contract, which supersede these terms.
49 CFR Part 18
FTA Circular 4220.1F

Applicability to Contracts: All contracts in excess of $100,000 shall contain provisions or conditions which will allow for administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms and provide for such sanctions and penalties as may be appropriate. This may include provisions for bonding, penalties for late or inadequate performance, retained earnings, liquidated damages or other appropriate measures.

Flow Down Requirements: The Breaches and Dispute Resolutions requirements flow down to all tiers.

Disputes - Disputes arising in the performance of this Contract which are not resolved by agreement of the parties shall be decided in writing by the authorized representative of UTA. This decision shall be final and conclusive unless within ten (10) days from the date of receipt of its copy, the Contractor mails or otherwise furnishes a written appeal to the UTA. In connection with any such appeal, the Contractor shall be afforded an opportunity to be heard and to offer evidence in support of its position. The decision of UTA shall be binding upon the Contractor and the Contractor shall abide be the decision.

Performance During Dispute - Unless otherwise directed by UTA, Contractor shall continue performance under this Contract while matters in dispute are being resolved.

Claims for Damages - Should either party to the Contract suffer injury or damage to person or property because of any act or omission of the party or of any of his employees, agents or others for whose acts he is legally liable, a claim for damages therefore shall be made in writing to such other party within a reasonable time after the first observance of such injury of damage.

Remedies - Unless this contract provides otherwise, all claims, counterclaims, disputes and other matters in question between the AUTHORITY and the CONTRACTOR arising out of or relating to this agreement or its breach will be decided by mediation under the auspices of a JAMS mediator. (https://www.jamsadr.com). If JAMS mediation is unsuccessful in resolving the dispute, either party may bring the matter to a court of competent jurisdiction within the State of Utah.

Rights and Remedies - The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law. No action or failure to act by the AUTHORITY or CONTRACTOR shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

Rights and Remedies - The duties and obligations imposed by the Contract Documents and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law. No action or failure to act by UTA or Contractor shall constitute a waiver of any right or duty afforded any of them under the Contract, nor shall any such action or failure to act constitute an approval of or acquiescence in any breach thereunder, except as may be specifically agreed in writing.

28. PATENT AND RIGHTS IN DATA

37 CFR Part 401
49 CFR Parts 18 and 19

Applicability to Contracts: Patent and rights in data requirements for federally assisted projects ONLY apply to research projects in which FTA finances the purpose of the grant is to finance the development of a product or information. These patent and data rights requirements do not apply to capital projects or operating projects, even though a small portion of the sales price may cover the cost of product development or writing the user's manual.

Flow down Requirements: The Patent and Rights in Data requirements apply to all contractors and their contracts at every tier.

CONTRACTS INVOLVING EXPERIMENTAL, DEVELOPMENTAL, OR RESEARCH WORK.

A. **Rights in Data** - The following requirements apply to each contract involving experimental, developmental or research work:

(1) The term "subject data" used in this clause means recorded information, whether or not copyrighted, that is delivered or specified to be delivered under the contract. The term includes graphic or pictorial delineation in media such as drawings or photographs; text in specifications or related performance or design-type documents; machine forms such as punched cards, magnetic tape, or computer memory printouts; and information retained in computer memory. Examples include, but are not limited to computer software, engineering drawings and associated lists, specifications, standards, process sheets, manuals,

technical reports, catalog item identifications, and related information. The term "subject data" does not include financial reports, cost analyses, and similar information incidental to contract administration.

(2) The following restrictions apply to all subject data first produced in the performance of the contract to which this Attachment has been added:

(a) Except for its own internal use, UTA or Contractor may not publish or reproduce subject data in whole or in part, or in any manner or form, nor may UTA or Contractor authorize others to do so, without the written consent of the Federal Government, until such time as the Federal Government may have either released or approved the release of such data to the public; this restriction on publication, however, does not apply to any contract with an academic institution.

(b) In accordance with 49 C.F.R. § 18.34 and 49 C.F.R. § 19.36, the Federal Government reserves a royalty free, non-exclusive and irrevocable license to reproduce, publish, or otherwise use, and to authorize others to use, for "Federal Government purposes," any subject data or copyright described in subsections (2)(b)1 and (2)(b)2 of this clause below. As used in the previous sentence, "for Federal Government purposes," means use only for the direct purposes of the Federal Government. Without the copyright owner's consent, the Federal Government may not extend its federal license to any other party.

1. Any subject data developed under that contract, whether or not a copyright has been obtained; and

2. Any rights of copyright purchased by UTA or Contractor using Federal assistance in whole or in part provided by FTA.

(c) When FTA awards Federal assistance for experimental, developmental, or research work, it is FTA's general intention to increase transportation knowledge available to the public, rather than to restrict the benefits resulting from the work to participants in that work. Therefore, unless FTA determines otherwise, UTA and the Contractor performing experimental, developmental, or research work required by the underlying contract to which this Attachment is added agrees to permit FTA to make available to the public, either FTA's license in the copyright to any subject data developed in the course of that contract, or a copy of the subject data first produced under the contract for which a copyright has not been obtained. If the experimental, developmental, or research work, which is the subject of the underlying contract, is not completed for any reason whatsoever, all data developed under that contract shall become subject data as defined in subsection (a) of this clause and shall be delivered as the Federal Government may direct. This subsection (c), however, does not apply to adaptations of automatic data processing equipment or programs for UTA or Consultant's use whose costs are financed in whole or in part with Federal assistance provided by FTA for transportation capital projects.

(d) Unless prohibited by state law, upon request by the Federal Government, UTA and the Contractor agree to indemnify, save, and hold harmless the Federal Government, its officers, agents, and employees acting within the scope of their official duties against any liability, including costs and expenses, resulting from any willful or intentional violation by UTA or Contractor of proprietary rights, copyrights, or right of privacy, arising out of the publication, translation, reproduction, delivery, use, or disposition of any data furnished under that contract. Neither UTA nor the Contractor shall be required to indemnify the Federal Government for any such liability arising out of the wrongful act of any employee, official, or agents of the Federal Government.

(e) Nothing contained in this clause on rights in data shall imply a license to the Federal Government under any patent or be construed as affecting the scope of any license or other right otherwise granted to the Federal Government under any patent.

(f) Data developed by UTA or Contractor and financed entirely without using Federal assistance provided by the Federal Government that has been incorporated into work required by the underlying contract to which this Attachment has been added is exempt from the requirements of subsections (b), (c), and (d) of this clause, provided that UTA or Contractor identifies that data in writing at the time of delivery of the contract work.

(g) Unless FTA determines otherwise, the Contractor agrees to include these requirements in each subcontract for experimental, developmental, or research work financed in whole or in part with Federal assistance provided by FTA.

(3) Unless the Federal Government later makes a contrary determination in writing, irrespective of the Consultant's status (i.e., a large business, small business, state government or state instrumentality, local government, nonprofit organization, institution of higher education, individual, etc.), UTA and the Contractor agree to take the necessary actions to provide, through FTA, those rights in that invention due the Federal Government as described in

U.S. Department of Commerce regulations, "Rights to Inventions Made by Nonprofit Organizations and Small Business Contractors under Government Grants, Contracts and Cooperative Agreements," 37 C.F.R. Part 401.

(4) The Contractor also agrees to include these requirements in each subcontract for experimental, developmental, or research work financed in whole or in part with Federal assistance provided by FTA.

B. **Patent Rights** - The following requirements apply to each contract involving experimental, developmental, or research work:

(1) General - If any invention, improvement, or discovery is conceived or first actually reduced to practice in the course of or under the contract to which this Attachment has been added, and that invention, improvement, or discovery is patentable under the laws of the United States of America or any foreign country, UTA and Contractor agree to take actions necessary to provide immediate notice and a detailed report to the party at a higher tier until FTA is ultimately notified.

(2) Unless the Federal Government later makes a contrary determination in writing, irrespective of the Consultant's status (a large business, small business, state government or state instrumentality, local government, nonprofit organization, institution of higher education, individual), UTA and the Contractor agree to take the necessary actions to provide, through FTA, those rights in that invention due the Federal Government as described in U.S. Department of Commerce regulations, "Rights to Inventions Made by Nonprofit Organizations and Small Business Contractors Under Government Grants, Contracts and Cooperative Agreements," 37 C.F.R. Part 401.

(3) The Contractor also agrees to include the requirements of this clause in each subcontract for experimental, developmental, or research work financed in whole or in part with Federal assistance provided by FTA.

29. TRANSIT EMPLOYEE PROTECTIVE AGREEMENTS
49 U.S.C. § 5310, § 5311, and § 5333
29 CFR Part 215

Applicability to Contracts: The Transit Employee Protective Provisions apply to each contract for transit operations performed by employees of a Contractor recognized by FTA to be a transit operator. (Because transit operations involve many activities apart from directly driving or operating transit vehicles, FTA determines which activities constitute transit "operations" for purposes of this clause.)

Flow down Requirements: These provisions are applicable to all contracts and subcontracts at every tier.

(a) General Transit Employee Protective Requirements - To the extent that FTA determines that transit operations are involved, the Contractor agrees to carry out the transit operations work on the underlying contract in compliance with terms and conditions determined by the U.S. Secretary of Labor to be fair and equitable to protect the interests of employees employed under this contract and to meet the employee protective requirements of 49 U.S.C. A 5333(b), and U.S. DOL guidelines at 29 C.F.R. Part 215, and any amendments thereto. These terms and conditions are identified in the letter of certification from the U.S. DOL to FTA applicable to UTA's project from which Federal assistance is provided to support work on the underlying contract. The Contractor agrees to carry out that work in compliance with the conditions stated in that U.S. DOL letter. The requirements of this subsection (1), however, do not apply to any contract financed with Federal assistance provided by FTA either for projects for elderly individuals and individuals with disabilities authorized by 49 U.S.C. § 5310(a)(2), or for projects for non-urbanized areas authorized by 49 U.S.C. § 5311. Alternate provisions for those projects are set forth in subsections (b) and (c) of this clause.

(b) <u>Transit Employee Protective Requirements for Projects Authorized by 49 U.S.C.§ 5310(a)(2) for Elderly Individuals and Individuals with Disabilities</u> - If the contract involves transit operations financed in whole or in part with Federal assistance authorized by 49 U.S.C. § 5310(a)(2), and if the U.S. Secretary of Transportation has determined or determines in the future that the employee protective requirements of 49 U.S.C. § 5333(b) are necessary or appropriate for the state and the public body sub-recipient for which work is performed on the underlying contract, the Contractor agrees to carry out the Project in compliance with the terms and conditions determined by the U.S. Secretary of Labor to meet the requirements of 49 U.S.C. § 5333(b), U.S. DOL guidelines at 29 C.F.R. Part 215, and any amendments thereto. These terms and conditions are identified in the U.S. DOL's letter of certification to FTA, the date of which is set forth Grant Agreement or Cooperative Agreement with the state. The Contractor agrees to perform transit operations in connection with the underlying contract in compliance with the conditions stated in that U.S. DOL letter.

(c) <u>Transit Employee Protective Requirements for Projects Authorized by 49 U.S.C. § 5311 in Nonurbanized Areas</u> - If the contract involves transit operations financed in whole or in part with Federal assistance authorized by 49 U.S.C. § 5311, the Contractor agrees to comply with the terms and conditions of the Special Warranty for the Non-urbanized Area Program agreed to by the U.S. Secretaries of Transportation and Labor, dated May 31, 1979, and the procedures implemented by U.S. DOL or any revision thereto.

(2) The Contractor also agrees to include the any applicable requirements in each subcontract involving transit operations financed in whole or in part with Federal assistance provided by FTA.

30. DISADVANTAGED BUSINESS ENTERPRISE (DBE)
49 CFR Part 26

Section 1101(b) of MAP-21 (23 U.S.C. § 101 note)

1. UTA encourages DBE participation in this solicitation. In order to qualify as a DBE, a Contractor, or a Contractor's sub-contractor, must be certified as a DBE under 49 CFR Part 26. As a recipient of Federal funds, UTA must comply, and ensure that it's Contractor(s) comply with 49 CFR Part 26 and Section 1101(b) of the Fixing America's Surface Transportation Act (FAST Act).

2. DBE Requirements/DBE Obligation:

    i. The Contract to be awarded may be funded in part by the U.S. Department of Transportation (DOT) FTA. As a condition of financial assistance agreements between UTA and the U.S. DOT, UTA has established a DBE Program and overall triennial DBE goal in accordance with Title 49 CFR, Part 26.

    ii. The Contract to be awarded may be funded in part by the U.S. DOT FTA. As a condition of financial assistance agreements between UTA and the U.S. DOT, UTA has established a DBE Program and overall triennial DBE goal in accordance with Title 49 CFR, Part 26.

    iii. Pursuant to Race-Neutral DBE policy directive issued by the U.S. DOT, UTA will strictly utilize race-neutral measures to meet its overall DBE goals and objectives. Contractors are encouraged to afford small businesses, including DBEs, an equitable opportunity to compete for and perform on a contract resulting from this solicitation.

    iv. The Contractor, and any of its sub-contractors, are to ensure that DBE as defined in 49 CFR Part 26 have equal opportunities to participate in the performance of UTA contracts. In this regard, the Contractor shall take all necessary and reasonable steps in accordance with 49 CFR Part 26 to ensure that DBEs have the equal opportunities to compete for and are awarded contracts. The Contractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of this U.S. DOT-assisted contract. Each subcontract the Contractor signs with a sub-contractor must include the assurance in this paragraph (see 49 CFR 26.13(b)).

    v. 1101(b) of the FAST Act extends the Federal statutory requirement that FTA make available at least 10 percent (10%) of its funding under that Act for contracts with small business concerns owned and controlled by socially and economically disadvantaged people. UTA and subrecipients

(Contractor and its sub-contractors) of FTA-funding assists FTA in meeting this national goal. To receive FTA assistance, UTA and sub-recipients (Contractor and its sub-contractors) of FTA funding must comply with applicable requirements of DOT regulations 49 CFR Part 26, "Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs".

3. DBE Financial Institutions

   i. The Contractor is to investigate the full extent of services offered by financial institutions owned and controlled by socially and economically disadvantaged individuals in the community, to make reasonable efforts to use these institutions, and to encourage sub-contractors to make use of these institutions also.
   ii. A list of Minority Owned Banks is on the Federal Reserve website at http://federalreserve.gov/releases/mob/current/default.htm.   The Federal Reserve website is updated periodically.
   iii. The Contractor is encouraged to use the services offered by banks in the community which are owned and controlled by minorities or women when feasible and beneficial.

4. DBE Reporting and Certification

   i. Monthly reporting requires the submittal of a "Monthly Sub-contractor Payment Report", which is used by UTA to verify payments to DBE and non-DBE sub-contractors. When completing this form, the Contractor must designate DBE sub-contractors by placing an asterisk in front of their name. As Federal law requires that UTA have proof of payment to a DBE sub-contractor, the subcontractor must initial the form and verify payment received. Failure to submit a properly executed form will result in delayed payment. Failure to submit these reports in a timely manner may result in a penalty of $10 per day, per report.
   ii. In order for the Contractor to submit a properly executed "Monthly Sub-contractor Payment Report," the Contractor must verify that Sub-contractors DBE certification is current at time of payment.

   iii. Certified Contractors can be found at the UTAH UNIFIED CERTIFICATION PROGRAM (UUCP) DISADVANTAGED BUSINESS ENTERPRISE (dbe) DIRECTORY:
   https://drive.google.com/file/d/1r6n4o9F14jFEqtlNlCrFxrfiAs9948ho/view

5. DBE Contract Assurance (49 CFR 26.13)

   i. UTA does not discriminate on the basis of race, color, national origin, or sex in the award and performance of any U.S. DOT assisted contract or in the administration of its DBE Program or the requirements of 49 CFR Part 26. UTA takes all necessary and reasonable steps under 49 CFR Part 26 to ensure nondiscrimination in the award and administration of U.S. DOT assisted contracts. UTA's DBE Program as required by 49 CFR Part 26 and as approved by U.S. DOT will be is incorporated by reference into the contract resulting from this solicitation.
   ii. The Contractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this Agreement, which may result in the termination of this Agreement or such other remedy as the recipient deems appropriate, which may include, but is no limited to:
      a. Withholding monthly progress payments;
      b. Assessing sanctions;
      c. Liquidated damages; and/or
      d. Disqualifying the Contractor from future bidding as non-responsible.

6. DBE Prompt Payment (49 CFR 26.29)

    i. Not later than ten (10) days after receipt of each progress payment from UTA, the successful Offeror shall pay to any sub-Contractor performing any work, the respective amounts allowed to

       the successful Offeror for work performed by the sub-Contractor, to the extent of each subcontractor's interest therein, unless otherwise agreed to in writing. In addition, for projects that invoice only at the completion of the project, within seven (7) days of the successful Offerors receipt of released retention from UTA upon completion of the project the successful Offeror shall pay each of its sub-Contractors from whom retention has been withheld, each sub-Contractors share of the retention received., For projects that issue progress payment invoices, upon incremental acceptance of any portion of the work by UTA, the successful Offeror shall pay each of its sub-Contractors from whom retention has been withheld, each subcontractor shares of the retention received.

    ii. Failure to comply with these provisions or delay in payment without prior written approval from UTA will constitute noncompliance, which will result in appropriate administrative sanctions, including, but not limited to a penalty of 2% of the amount due per month for every month that payment is not made.

31. INCORPORATION OF FEDERAL TRANSIT ADMINISTRATION (FTA) TERMS FTA
Circular 4220.1F

Applicability to Contracts: The incorporation of FTA terms applies to all contracts and subcontracts at every tier.

Flow Down Requirements The incorporation of FTA terms has unlimited flow down.

Incorporation of Federal Transit Administration (FTA) Terms - The preceding provisions include, in part, certain Standard Terms and Conditions required by DOT, whether or not expressly set forth in the preceding contract provisions. All contractual provisions required by DOT, as set forth in the most current FTA Circular 4220, are hereby incorporated by reference. Anything to the contrary herein notwithstanding, all FTA mandated terms shall be deemed to control in the event of a conflict with other provisions contained in this Agreement. The Contractor shall not perform any act, fail to perform any act, or refuse to comply with any UTA requests which would cause UTA to be in violation of the FTA terms and conditions.

32. DRUG AND ALCOHOL TESTING
49 U.S.C. §5331
49 CFR Part 655
49 CFR Part 382

Applicability to Contracts: The Drug and Alcohol testing provisions apply to Operational Service Contracts.

Flow down Requirements: Anyone who performs a safety-sensitive function for the recipient or subrecipient is required to comply with 49 CFR 655 as amended by MAP-21, with certain exceptions for contracts involving maintenance services. Maintenance Contractors for non-urbanized area formula program grantees are not subject to the rules. Also, the rules do not apply to maintenance sub-contractors.

Drug and Alcohol Testing: The Contractor agrees to establish and implement a drug and alcohol testing program that complies with 49 CFR Part 655, produce any documentation necessary to establish its compliance with Part 655, and permit any authorized representative of the United States Department of Transportation or its operating administrations, the State Oversight Agency of California, or UTA, to inspect the facilities and records associated with the implementation of the drug and alcohol testing program as required under 49 CFR Part 655 and review the testing process. The contractor agrees further to certify annually its compliance with Part 655 before June 30 and to submit the Management Information System (MIS) reports before January 15 to UTA. To certify compliance the Contractor shall use the "Substance

Abuse Certifications" in the "Annual List of Certifications and Assurances for Federal Transit Administration Grants and Cooperative Agreements," which is published annually in the Federal Register.

33. TRANSIT VEHICLE MANUFACTURER (TVM) CERTIFICATIONS
49 CFR Part 26

49 CFR §26.49 Contractor must submit to UTA a certification from each transit vehicle manufactures those desires to bid or propose upon a DOT-assisted transit vehicle procurement that it has complied with the requirements of 49 CFR §26.49. UTA may, however, with FTA approval, establish project-specific goals for DBE participation in the procurement of transit vehicles in lieu of complying through the overall goalsetting procedures.

34. METRIC REQUIREMENTS
15 U.S.C. §§205
2007-Pub. L. 110–69

As required by U.S. DOT or FTA, UTA agrees to use the metric system of measurement in its Project activities, pursuant to the Metric Conversion Act, as amended by the Omnibus Trade and Competitiveness Act, 15 U.S.C. §§ 205a *et seq.*; Executive Order No. 12770, "Metric Usage in Federal Government Programs," 15 U.S.C. § 205a note; and other U.S. DOT or FTA regulations, guidelines, and policies. To the extent practicable and feasible, the UTA agrees to accept products and services with dimensions expressed in the metric system of measurement.

35. NATIONAL INTELLIGENT TRANSPORTATION SYSTEMS (ITS) ARCHITECTURE AND STANDARDS
23 U.S.C. Section 517(d)
23 U.S.C. §502

Intelligent transportation system (ITS) property and services must comply with the National ITS Architecture and Standards to the extent required by 23 U.S.C. Section 517(d) and FTA Notice, "FTA National ITS Architecture Policy on Transit Projects," 66 FR 1455 et seq., January 8, 2001, and later published policies or implementing directives FTA may issue. Consequently, third party contracts involving ITS are likely to require provisions to ensure compliance with Federal requirements.

36. CORRIDOR PRESERVATION
49 U.S.C. 5323(q)

The Recipient agrees not to develop right-of way acquired under 49 U.S.C. § 5323(q), as amended by MAP-21, in anticipation of its Project until all required environmental reviews for that Project have been completed.

37. VETERANS EMPLOYMENT
49 U.S.C. 5325 (k)

Veterans Employment. As provided by 49 U.S.C. § 5325(k):

a. To the extent practicable, Contractor agrees that it:
   1. Will give a hiring preference to veterans (as defined in 5 U.S.C. § 2108), who have the skills and abilities required to perform construction work required under a third-party contract in connection with a capital project supported with funds made available or appropriated for 49 U.S.C. chapter 53, and
   2. Will not require an employer to give a preference to any veteran over any equally qualified applicant who is a member of any racial or ethnic minority, female, an individual with a disability, or a former employee, and

b. Contractor also assures that its sub-contractor will:

1. Will give a hiring preference to veterans (as defined in 5 U.S.C. § 2108), who have the skills and abilities required to perform construction work required under a third-party contract in connection with a capital project supported with funds made available or appropriated for 49 U.S.C. chapter 53, to the extent practicable, and

2. Will not require an employer to give a preference to any veteran over any equally qualified applicant who is a member of any racial or ethnic minority, female, an individual with a disability, or a former employee.

38. **PROHIBITION ON CERTAIN TELECOMMUNICATIONS AND VIDEO SURVEILLANCE SERVICES OR EQUIPMENT**

In accordance with 2 CFR 200.216, contractor and its subcontractors are prohibited from expending funds under this contract for the procurement of equipment, services, or systems that use covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system.

"Covered telecommunications equipment or services" is telecommunications or video surveillance equipment or services produced by:

a. Huawei Technologies Company
b. ZTE Corporation
c. Hytera Communications Corporation
d. Hangzhou Hikvision Digital Technology Company
e. Dahua Technology Company
f. Any subsidiary of the above listed entities.

UTA IT HARDWARE, SOFTWARE AND ASSOCIATED SERVICES SUPPLY AGREEMENT
UTA CONTRACT 22-03566 NextGen Electronic Fare Collection System

EXHIBIT A:

STATEMENT of WORK for INTEGRATED SYSTEM FOR COLLECTING FARES

EXHIBIT A:

Statement of Work

for

Integrated System for Collecting Fares

Contents

Scope of Work

This section provides a high-level overview of the scope of work. Low level or technical details will generally be provided in appendices. It is recommended that readers review *Appendix A – Glossary* before reading the rest of this section.

UTA requests proposals from qualified firms to provide a new integrated, vendor-hosted, account-based, electronic fare collection system. UTA invites interested parties to submit proposals.

ABOUT UTA

Established in 1970, UTA is currently governed by a three-member full-time board of trustees nominated by local officials and appointed by the governor of Utah. UTA employs more than 2,500 employees. The Authority maintains ISO 9001 certification for quality management, ISO 14001 certification for environmental management, and OSHAS 18001 certification for safety.

UTA is partially funded by sales tax revenue. UTA is also funded, in part, by more than 100 partner contracts with businesses and schools for transit passes.

UTA's 1,400 sq-mile service area serves more than 80% of the Utah state population, and includes seven counties: Box Elder, Davis, Salt Lake, Tooele, Utah, Weber, and limited service in Summit County.

UTA's annual systemwide ridership is more than 44 million trips (pre COVID-19) across a variety of service modes including bus (47%), light rail (37%), commuter rail (11%), vanpool (3%), paratransit (1%), and route deviation (1%).

UTA operates more than 700 buses, all accessible to riders with disabilities; bus service includes nearly 20 miles of bus rapid transit (BRT). UTA operates more than 100 light rail vehicles (TRAX) that service 50 stations spread over more than 45 miles of track. UTA operates 18 commuter rail locomotives (FrontRunner) that service 15 stations spread over more than 80 miles of heavy-rail track (north-to-south).

All bus and rail vehicles have cellular gateway routers and onboard mobile data computing hardware. The bus and rail yards have Wi-Fi connections for data uploads, o/s updates, and other high bandwidth transmissions.

INTRODUCTION

UTA intends to procure a new integrated, vendor-hosted, account-based, **electronic fare collection (EFC) system**. This system must support UTA's fare structure, including flat fares, discounted fares, station-based fares, transfer credits, and fare caps. This system must also support three account types: 1) closed-loop, 2) open-loop, and 3) sponsored accounts. Additionally, this system must integrate with existing trip planning, operations management, and reporting systems. Finally, this system must support core functions such as fare validation, trip construction, fare calculation, and payment processing.

Included in this procurement, UTA intends to procure **fare validation hardware** for all buses and rail platforms. These devices must be able to scan QR codes as well as contactless smartcards. These devices must constantly communicate with the EFC back-end system(s) to send usage data and receive account data.

As part of this procurement, UTA also intends to procure new **ticket vending machines** (TVMs) that will vend tokens for the closed-loop accounts. Further, patrons must be able to use these TVMs to reload value to their closed-loop accounts.

UTA also intends to procure a **mobile app** that will enable smartphones to function as tokens to prepaid closed-loop accounts. Patrons must also be able to utilize this mobile app to manage closed-loop accounts (e.g., reload value). Patrons must also be able to utilize this mobile app to purchase fare tickets.

UTA intends to procure **mobile inspection devices** to be used by authorized employees to perform electronic fare validation functions.

UTA expects the implementation of this new, integrated, vendor-hosted, account-based, electronic fare collection system to be a multi-phased effort that will span multiple years. UTA expects the selected firm to **fully plan and coordinate all implementation, integration, and migration activities** that will be required to smoothly transition from UTA's existing fare subsystems to the new fare system described above.

To be clear, UTA is collecting fare revenue today. Again, the scope of this RFP is to replace several of UTA's existing fare collection systems with a new, integrated, vendor-hosted, account-based, electronic fare collection (EFC) system. UTA is most interested in strategies that **transition to this new system as efficiently and painlessly as possible,** with the **least amount of disruption to revenue collection operations,** and **without negatively impacting the rider experience for our customers.**

BACKGROUND

Near the end of 2017, UTA conducted a build/buy analysis for the EFC Back Office (BO) and determined that it would be more cost effective to bring EFC in-house. UTA chartered a project proposal to replace the vendor-hosted back office. The development team was able to implement the solution in less than a year. This cloud-based system was fully integrated with InComm's closed-loop card management system and UTA's existing fleet of card validators by the end of 2018.

In addition to achieving functional parity with the old system, the project team delivered a new system that offered many new benefits: a high-quality user web interface, enhanced administration capabilities, enhanced fare calculation services to improve the customer experience, far more efficient bulk import processing (5700% improved throughput), and real-time access to customer trip data. While achieving a 76% reduction in annual support costs, the above-listed benefits were achieved with minimal pain or disruption to the customer. In fact, shortly after the new system launched, Customer Service reported that this new system resulted in a 12% reduction in customer complaint calls. Stakeholders attribute the project success, in part, to the heavy emphasis the project team placed on Agile development methodologies, automated continuous integration/deployment (CI/CD), quality assurance, unit-testing, pre-launch parallel processing, and a staged rollout strategy.

In 2021, UTA conducted a fare systems study to review the organization's fare objectives, assess the current state of its fare collection subsystems, identify the needs that aren't being met by these subsystems, and recommend actions and strategies. This study produced the following recommendations:

- **EFC** - Procure a new EFC system from a third-party supplier.
- **TVMs** – Procure new EFC-integrated TVMs that conform to current PCI standards and vend FAREPAY cards.
- **Mobile App** – Procure a new mobile app that provides electronic validation via virtual barcodes that riders scan at UTA validators. This app should integrate with the EFC system and act as a virtual FAREPAY card allowing customers to pay fares using stored value.

OVERVIEW OF UTA′s CURRENT ELECTRONIC FARE COLLECTION SYSTEM

UTA's EFC system employs an account-based architecture. At a very high level, UTA patrons tap *supported contactless smartcards* at *card validators* when boarding and alighting UTA buses and trains. These cards serve as tokens by virtue of unique chip IDs (UIDs), which are linked to card accounts in the BO. With this architecture, the great majority of the business logic occurs in the BO.

Cards are validated at the card validator through a process called *card validation*. Card validation is dependent upon *service type*, *card type*, and *card data* (CD*)*. CD comprises all the data required by the card validator to perform card validation. CD originates in the BO. The BO must support the creation and management of CD constructs like *institution accounts*, *card accounts* and *products*. Institution accounts, products, and card accounts are described in more detail later in this scope of work document. Card validators first attempt to perform real-time validation against an online instance of CD known as the real-time validation service (RTVS). If RTVS fails for any reason, then the card validator alternatively performs *offline validation* using its own local copy of CD.

Supported card types include third-party-issued contactless cards (TPICC) and prepaid-issued contactless cards (PICC). Card validation rules vary by card type. CD creation processes also vary by card type. These variations will be elaborated in more detail later in this scope of work document.

Card-tap events generate tap records (usage data or UD) at the card validators that are transmitted to the BO. Ideally, transmission of usage data is immediate (within minutes). However, if there are temporary interruptions to network communications, the usage data is queued for later data transmission after communications are restored. Usage data includes attributes such as tap time, tap location, service type, vehicle, and route.

Once the usage data records are received by the BO, these records then undergo *trip construction*, *fare calculation*, and *payment processing*. Each of these back-end processes is described in more detail later in this scope of work document.

One of the primary reasons UTA invested in the development and implementation of an electronic fare collection system is to gain visibility to the ridership patterns of patrons. A repository of all tap and trip records enables UTA not only to know how many patrons are riding services, but also to know where they are getting on and off. This system enabled UTA to be able to perform ridership analysis with accuracy and precision. This data store enables answers to questions such as: Where are patrons boarding and alighting services? How far do patrons travel? How often do patrons transfer from service to service? The BO maintains regular updates to UTA's *EFC Data Store*.

Back Office

User Interface to Manage Products and Card Accounts

Product Management

Products are created and managed in the BO by EFC operations analysts and/or administrators using a BO *user interface*. Products dictate card validation behavior as well as fare calculation rules for supported contactless smartcards. Products are created and made available for card accounts for a definable period. They contain a list of priceable items or valid transit modes that a card account can use as valid fare. Products also contain rate schedules and business rules which serve as the basis for the fares that will be assessed to *unlinked trips*.

Card Management

Card accounts are subscribed to product offerings in the BO. Card validation and fare calculation for a card account is dependent on the *product subscription*. Card accounts may have their product subscription renewed, changed, or cancelled without reissuing a new smartcard to the patron. Cards are essentially activated or deactivated by respectively creating or ending a product subscription.

Institution Management

Institutions often want to partner with UTA by agreeing to fully or partially subsidize transit for their employees, students, or patrons. These *third-party partners* typically enter into one of the following three types of agreements with UTA: 1) *fixed rate annual contracts 2) PPT contracts, or 3) consignment contracts.*

EFC operation analysts or administrators will use the user interface of the BO to create an institution account for each third-party partner (e.g. Brigham Young University). Institution account records include contact and billing information.

Card accounts are often grouped by institution. As defined in negotiated agreements (e.g., EdPass, EcoPass), UTA often limits the number of card accounts that an institution can have active in the system at any given time. Card accounts can be moved by EFC operations analysts or administrators from one institution account to another without reissuing a new card.

EFC operations analysts or administrators can view and analyze ridership information at the institution level. This information may also be used to create periodic invoices for institution billing.

Third party agreements also dictate what the card validation behavior will be on the card validators for all contactless cards associated with a particular institution account. In other words, these agreements specify what service types are valid for all cards belonging to a particular institution.

Bulk Import

EFC operations analysts, administrators, and third-party partners often need to activate or deactivate card accounts in bulk using a process called *bulk import*. Bulk import files may also be used by UTA personnel to move cards from one institution to another. Bulk import files may be submitted via a web interface or by email. See *Appendix C – Bulk Import Processing* for details about the bulk import file specification.

User Administration

EFC administrators use the BO user interface to create and manage user roles and user accounts. Users are granted BO capabilities or permissions through role assignments. Some existing role types include:

- EFC Operations (Super User)
- Customer Service
- Customer Service Admin
- Institution Admin
- Institution Representative
- Marketing Representative
- Accounting
- Read Only

Customer Service

EFC operations analysts, administrators, and customer service agents use the user interface of the BO to lookup card accounts, check card status, and in some cases to activate/deactivate cards. For example, if a patron called to report that their *FAREPAY* card was lost, customer service could deactivate their card (if it was previously registered), activate a new card, and even transfer the unused balance from the lost card to the new card. Analysts and agents can also view ridership history to help patrons understand fare charges.

Third Party Interface

UTA has designed and implemented a web interface for third party partners. The UTA Partner Web Site provides secure access to perform various administrative functions including:

- Card account administration functionality:
    - card account lookup
    - card account deactivation/reactivation
    - card replacements
    - card account subscription and action history
- Upload of bulk import files:
    - upload files to UTA for bulk import processing
    - review the status of all uploaded files
- Viewing contract information
- Ridership reporting

Trip Construction

A *tap* can be either a *tap-on* or a *tap-off*. Tap-on records are paired by the BO with tap-off records to form unlinked trips in a process called trip construction.

Trip construction can be challenging at times when taps are missing due either to patrons failing to tap on/off, or due to taps that are received excessively late from card validators. Route deviations pose other challenges with respect to determining accurate locations. The BO must handle these exception scenarios in order to construct accurate trips, which is a dependency for consistently charging accurate fares.

In near real time, the unlinked trip records are exported by the BO to the EFC Data Store. The BO must ensure that constructed trips represent accurate tap-on and tap-off data including tap date/time and tap location.

UTA's current business rule regarding transfers is that patrons will only be charged for the most expensive unlinked trip segment within a 2-hour period, regardless of the number of trips. *Transfer credits* will apply

for trips where the tap on is within 2 hours of the tap on of the first leg of the *linked trip*. To administer transfer credits, the BO must be able to join unlinked trips to form linked trips or journeys. These journey constructs are also exported near real time to the EFC Data Store so UTA can better understand true patron end-to-end travel patterns.

Fare Calculation

Once trips are formed, the fare is calculated in a process called fare calculation. The BO must be able to implement UTA's fare structure in a way that enables electronic fare collection from patrons that pay their fares with supported contactless smartcards. The BO must be able to administer UTA fare rules. For example, fares vary by service type and by product subscription. In some cases, fares may depend on stations or distance travelled. UTA also currently offers transfer credits to patrons that are required to transfer to one or more services to complete their journey from origin to destination.

UTA relies on accurate fare calculation for PICC payment requests, and PPT billing for third party partners.

It is important to understand that UTA's fare structure is a hybrid of *flat fares*, *period passes*, and *distance-based fares*. The BO must be able to support this blended fare structure. The BO must also be able to support promotional pricing and discounts (e.g., *mandated discounts*).

System Interfaces

The BO is only part of UTA's EFC system. The BO interfaces with other subsystems such as card validators, *inspection devices*, and payment processors.

Card Validators

The BO must interface with card validators. There are four critical card validator integration points: 1) RTVS, 2) UD, 3) CD, and 4) MDD.

Data transport on the buses occurs by way of ethernet connections to a mobile data gateway. All rail platforms are equipped with fiber connections.

The Real-time Validation Service (RTVS) is the primary and preferred option for card validation because the real-time online nature of this type of validation strategy allows for the most accurate validation response.

When RTVS is not possible due to interruptions to communications between the card validators and the back office, the secondary or fallback validation strategy called offline validation is employed. Offline validation is not the preferred validation strategy as local copies of the card data (CD, a.k.a. account data) may be out of date, resulting in false validation responses. Local copies of the CD database are mirrored to all card validators using a CD web service.

Validators generate usage data (UD, a.k.a. validation event data) when patrons tap the card readers or front-end validation devices. The card validators transmit this UD to a web service which in turn submits the UD record to the back-office for processing.

The onboard mobile data device (MDD) and the front-end validator communicate with each other on the bus. The validator sends validation event information to MDD to be displayed to the bus operator. The MDD supplies the front-end validation device with location data and other information that is needed to send complete validation event data to the EFC back-office.

Inspection Devices

UTA has equipped its transit police officers with handheld inspection devices that enable them to inspect supported contactless smartcards on rail (TRAX and FrontRunner) to determine if they were tapped prior to boarding. The inspection device checks the *tap cache* to see if the card was recently tapped at a card validator. If the card was tapped, the device returns the response the patron received at the card validator.

EFC Data Store

The EFC Data Store is a local representation of all institution and card accounts, as well as all the EFC ridership data. This data repository is updated real time with *data extracts* from the BO. The intent is that this data repository is used by UTA for ridership analysis, troubleshooting, and payment reconciliations.

Trapeze Data Feed

The *Trapeze Data Feed* is periodically transmitted to the BO to enable *tap enrichment* and distance-based fare calculation. Bidders are invited to utilize the existing feed of Trapeze data that is currently being used to enrich our tap-on and tap-off event records with service type and location data. This feed was created by UTA DBA's. Any requests to alter this feed will be handled by UTA's IT department.

There are actually two relevant data flows. First, the front-end validation devices on buses receive Trapeze data from the onboard Mobile Data Device (MDD). Every 30 seconds (and at stop arrival), the MDD sends a UDP broadcast message on the onboard LAN with service type and location information (Bus #, Service type, Block ID, Route ID, Stop ID, etc.). The front-end validation devices package this information with every validation event record (tap) prior to transmission to the EFC back-office. The second Trapeze data flow results in the replication of much of the same bus stop times data in the EFC back-office. This data is made available to the EFC back-office in the rare event that any tap records are received with missing service-type or location data. In this scenario, the back-office uses logic to attempt to recover the missing data based on the date/time and GPS data associated with the deficient tap record. We care about every tap.

Prepaid Card Manager

Trip construction and fare calculation for a FAREPAY card works generally the same way as other cards. However, unlike TPICC cards, PICC cards are activated by the prepaid card manager. The BO receives activation and deactivation messages from the prepaid card manager.

Payment Processing

When appropriate, a payment request is prepared and submitted to a *payment processor* in order to collect the proper fare. The BO is responsible for creating and submitting payment requests, including payment authorization requests and payment settlement requests.

All PICC payment requests get routed by the BO to a prepaid card manager for processing.

<u>Front-end Hardware</u>

UTA has 1,300 e-fare validation devices installed on buses and on rail platforms today. Approximately 90% of our 1,300 front-end validation devices are installed on our bus fleet (at each door; the majority of the buses in our fleet have at least 2 doors). The remaining 10% of the validation devices are installed on our rail platforms. It would be appropriate for bidders to use these quantities when quoting prices.

UTA's fleet is equipped with an on-board mobile gateway that provides a two-way data transfer path from the bus to the 'back office', via the in yard WiFi when in the bus yard, and via cellular (AT&T) when out of the bus yard. These are Sierra Wireless MG90 units, that are connected to antennas mounted on the roof of the bus, they have five available ethernet ports with a minimum of two designated ports to the function of card readers (majority of the buses will have two card readers, one at the front entrance door and one by

the rear entrance door). The MG90 has been configured to provide a GPS UDP message to all devices on the in-bus local network.

UTA is currently operating 175 TVMs. All our current TVMs are Scheidt & Bachmann. We received all operating units between 2008 and 2012.

UTA currently has 90 e-fare inspection devices in operation.

OVERVIEW OF CURRENT FARE STRUCTURE

Flat Fares

The fare pricing structure is the framework of pricing that considers the needs and circumstances of various individuals and groups in compliance with federal regulations. It determines how much money is to be paid by the passengers.

Base Rate

The pricing structure is organized around a base fare rate for a single trip. This rate is set by UTA's Board of Trustees. The current base rate is $2.50 for a single trip.

Other Rates

All other rates are a ratio of the base fare rate. Below are the multipliers.

Fare Product	Rate	Multiplier
Day	2 times	Base Rate
Regular Monthly	34 times	Base Rate
Premium Rate	2 times	Base Rate
Premium Monthly	34 times	Premium Rate

Type of Service

Service is comprised of different modes:

- Local Bus, TRAX, and Streetcar (Base Rate)
- Express Bus and Ski (Premium rate)
- FrontRunner (Base Rate plus Additional Stops)
- Microtransit (Base Rate)
- Paratransit

Discounted Fares

Discounts are set to comply with FTA Regulations, provide equity among rider groups with a limited ability to pay, incentivize riders through promotional fares, and to create parameters for bulk purchases and pass programs.

Discounts at UTA can be grouped as mandatory or voluntary. The FTA requires that seniors, people with disabilities and Medicare card holders only pay half fare on fixed route service during off-peak hours. UTA extends the discount beyond this requirement by also discounting peak hours. In addition to the one-way fare the discount applies to the round trip and monthly pass fare products. Processes for verification and proof of eligibility are in place to manage these discounts.

UTA offers a 50% discount on select fare products for the following rider groups:

- Seniors: 65 years or older
- Disabled: pre-qualified by UTA
- Medicare: valid Medicare card
- Youth: between the ages of 6 and 18 years old
- Qualified low-income individuals

UTA has been maintaining a 20% FAREPAY discount in an effort to encourage customer adoption of

electronic fare payments.

UTA offers a 75% discount on fares purchased by human service agencies.

Free Fares

UTA extends free fare to special groups under these parameters:

- Free Fare Zone – Customers boarding/alighting in the free fare zone (downtown Salt Lake City)
- Children – 5 years and younger
- Employees – Agency employees, retirees, and eligibile dependents (with validated transit pass)
- Personal Care Attendant – Must accompany a pre-qualified rider with a disability
- Paratransit Eligibile – Individuals certified as ADA paratransit eligible
- Elementary Students – Must have a training safety course and travel with a school group
- Trainer/Trainees – Trainer with accompanying trainees learning to use the system
- Sworn Peace Officers – Either in or out of uniform

Customers may ride for free when entering and exiting a fixed-route bus, paratransit vehicle or TRAX train within the boundaries of the Free Fare Zone. Riders boarding a vehicle before entering the zone and/or exiting after leaving the zone will be asked to provide proof of payment. A rider must simply tell the bus operator if he or she intends to stay in the zone in order to ride without charge.

Free Fare Zone

Ride free if you Enter and Exit the Bus or TRAX within the boundaries of the Free Fare zone

Station-based Fares

The following table summarizes the base fare and FrontRunner pricing structure:

Local Bus, TRAX, Streetcar, Micro-transit

	Adult	Reduced Fare
One-way	$2.50	$1.25
Day	$5.00	None
Monthly	$85.00	$42.50

Express Bus, Ski

	Adult	Reduced Fare
One-way	$5.00	$2.50
Monthly	$170.00	$85.00

FrontRunner

	Adult	Reduced Fare
One-way	$2.50	$1.25
Additional Stops	$0.60	$0.30
Roundtrip	$5.00	$2.50
Additional Stops	$1.20	$.60

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Transfer Credits

UTA provides riders purchasing a single trip a time frame for which they can travel on more than one mode of transit without incurring an additional fare cost. A transfer is allowed for customers on the bus if they need to travel further on UTA's system than just a single ride, they need to ask the operator for a paper transfer ticket. They present this when they ride on additional vehicles. Transfer tickets expire to prevent the riders from using it as a day pass. If a customer is going to transfer to another service, they will receive a credit of $2.50 toward the fare with their transfer ticket.

Fare Transfer Rules
One-way fare = per-ride value

Local Bus, TRAX, Streetcar	Microtransit	FrontRunner	Express Bus	Park City Bus	Ski Bus
$2.50	$2.50	$2.50 – $9.70	$5.00	$5.00	$5.00

Final Fare with Transfer Applied (if allowed)

		To this service					
		Local Bus, TRAX, Streetcar	Microtransit	FrontRunner	Express Bus	Park City Bus	Ski Bus
From this service	Local Bus, TRAX, Streetcar	Free	Free	Up to $7.20	$3.00	$2.00	$2.00
	Microtransit	Free	$2.50*	Up to $7.20	$3.00	Not Allowed	Not Allowed
	FrontRunner	Free	Free	Up to $7.20	Up to $3.00	Not allowed	Up to $2.00
	Express Bus	Free	Free	Up to $4.20	Free	Not allowed	Free
	Park City Bus	Free	Not allowed	Not allowed	Not allowed	Not allowed	Not allowed
	Ski Bus	Free	Free	Up to $5.20	$1.00	Not allowed	Not allowed

*Transfers are not allowed between two consecutive micro-transit trips.

Transfer timing
- Bus – End of route time plus 2 hours
- TVM – Ticket purchase time plus 2 hours and 30 minutes
- EFC – Tap on time plus 2 hours
- Mobile Ticket – Activation time plus 2 hours and 30 minutes
- Micro-transit (Via) – Pick up time plus 2 hours and 30 minutes
- Electronic fare inspection timing
- TRAX, Streetcar – Tap on time plus 2 hours
- FrontRunner – Tap on time plus 2 hours

Fare Caps

Using our closed loop pre-paid card (FAREPAY) UTA created a pilot program to cap fares both daily and weekly. The daily cap is $5.00 (half for reduced fare) and is for regular service. The weekly caps are at $20 for regular service and $40 for premium. Some services are excluded from the pilot and do not count towards the cap amount, nor do they earn a credit. Entry for the pilot program and fare capping is controlled by the product that is registered to the individual card account.

The fare cap is applied at the time of trip payment settlement. A new routine was added that calculates the total eligible fares paid in the period (day or week) and once any of those levels have been reached a trigger

is recorded. When there has been a triggering event the back office then calculates if a fare cap credit is needed based on:

- Any transfer credits applicable
- Type of service taken
- Total fare paid in the period before the current trip
- Total fare to be paid after the current trip

A fare cap can be for a part of the current fare, or for the entire fare depending on the circumstances.

Special Pricing

Unlike discounts, where a percentage is deducted from basic fare products, special pricing is done in circumstances where usage is unknown and is required to be estimated, straight forward discount calculations can't be used, or transit trips are purchased in bulk. This includes bulk purchase contracts and partnership pass programs.

Special pricing is also used for special pilots or promotions, paratransit fares, and route deviation.

- **Pilots** – In order to test new fare media, programs, concepts or ideas, UTA will administer pilot programs with special pricing outside of normal fares.
- **Fare Promotions** – Fare promotions often incentivize riders and increase awareness in order to incentivize individuals to take their first trip on transit, encourage more frequent trips by existing riders, or attract new riders to new or underutilized service.
- **Paratransit Fares** – The Paratransit One-way Fare is valid for one-way, curb-to-curb travel on Paratransit service. Passengers must be pre-qualified by UTA to use Paratransit service. Qualified patrons may purchase a Paratransit Punch Card which is valid for 10 rides on Paratransit services. The punch card has no expiration date. The value of each punch is $4.00. This pass is available at select UTA Pass Sales Outlets, Customer Service locations, and the UTA website. UTA gives all qualified paratransit patrons a Freedom Access Pass that is valid on all regular and premium fixed route services.
- **Route Deviation** – The $1.25 Route Deviation fare is paid in addition to the local one-way fare on flex routes1 when the stop used is a deviation from the scheduled route. All deviations, whether or not they are scheduled, require this additional fare.

Payment

Fare payment is how a fare is paid by the customer for transit services.

Fare Products

- One-Way
- Day Pass
- Monthly Pass
- Round Trip
- Group Pass

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1 Flex route numbers all begin with "F". Flex routes may deviate up to ¾ of a mile depending on pre-scheduled deviation requests. Deviation requests may be made from 2 hours up to 7 days before the needed trip by calling 801-287-7433.

Purchase Locations

All customers must purchase a fare. Fares can be purchased in advance of a trip or during the trip. Advance purchases can be made through the following locations:

- FAREPAY Retailer or Online (https://farepay.rideuta.com/ - facilitated through InComm contract)
- UTA Online Website (https://rideuta.com/Fares-And-Passes)
- Customer Service Outlets
- UTA Retailers
- Mobile Ticketing Application (GoRide – administered through contract with Passport)

Fares purchased during a trip can be done by the following:

- Boarding the bus through a farebox
- On the rail platform through a ticket vending machine

Form of Payment

Customers generally pay with a check, credit/debit card, or cash. It varies by purchase location. For example, online purchases can only be made with a credit/debit card.

Fare Media

Customers receive fare media when they pay for their fare. This is proof of their payment. Fare media currently in use includes the following:

- Transfer Slip
- FAREPAY Card
- Mobile Ticket
- Paper Pass
- Sticker
- TVM Paper Ticket
- Via mobile app receipt

Fare media should be easy to validate, expedite boarding, create minimal administrative burden, leverage technology, allow for inventory tracking, minimize fraud, and be cost-effective. UTA's preferred fare media is contactless smart cards (including contactless bank cards) and mobile devices.

Fare media can also include media issued for high volume events to indicate fare payment or the ability to ride free. Event tickets provided by the event sponsor to indicate the ability to ride free during the event.

Validation

Operators are required to validate fare payment prior to letting patrons ride. This can be done either by visually inspecting a paper pass or mobile phone, receiving cash into the fare box, or having the customer tap a card on the electronic front-end validation device. Operators should refer customers with payment issues to customer service. There are many times when customers don't have a fare or get a red light. Customer service can help educate our riders on the various types of fare payment available.

UTA operates TRAX and FrontRunner barrier free, meaning customers don't pass through a gate or turnstile. They are required to have proof of payment before they board. We have transit police officers and fare enforcement agents perform regular validation inspections. Officers carry an iPhone connected to a Grabba device that enables them to perform a contactless card inspection to see if the patron tapped the

card to a validator prior to boarding the train.

In addition to the regular validation inspections, transit police officers and fare enforcement agents enforce UTA ordinances and regulations governing proof of fare payment.

Please see more information about fares on UTA's website at: https://www.rideuta.com/Fares-And-Passes.

The Parties acknowledge and agree that any requirement of the Parties to approve or mutually agree to a requirement of the Contract requires the written approval of the UTA, which will not be unreasonably withheld. This applies to the entirety of Exhibit A.

A – COMMON DESIGN

1. Software and hardware provided under this Contract will be designed to provide a minimum useful life of 10 years.
2. The UTA prefers a service-proven system design. As service-proven, or derived from a service-proven design, all proposed fare subsystems must have been deployed and met system acceptance requirements at a minimum of one transit agency. This system design must meet the following requirements:
   a. Proposed front-end validation devices and associated onboard equipment will be nearly identical in design and construction to a model deployed and in revenue service (i.e., in use and passed system acceptance) at a minimum of one transit agency.
   b. Proposed Ticket Vending Machines (TVMs) will be nearly identical in design and construction to a model deployed and in revenue service (e.g., in use and passed system acceptance) at a minimum of one transit agency.
   c. Proposed mobile e-fare inspection devices will be nearly identical in design and construction to a model deployed and in revenue service (e.g., in use and passed system acceptance) at a minimum of one transit agency.
   d. To establish a design as service-proven, the Contractor shall submit specific details of the design's application history, certified by current users of the equipment.
   e. The SI may offer, for approval, a design that is largely unchanged from a service-proven design, but which varies slightly in design or manufacture to meet the requirements of these specifications, including newer generations of service-proven equipment. The SI shall show, in detail, what has been changed and why such changes will not adversely affect operation or maintenance in the planned environment.
3. At the time of delivery, equipment, and all associated components and software will contain no non-standard, prototype, obsolete, or discontinued products. Any hardware or software components that have an end-of-life within this project timeline must include replacement plans to be executed at the Contractor's cost.
4. Software applications and devices will be built using commercial-off-the-shelf (COTS) components where possible, and custom software and hardware modules only if necessary.
5. The system will be designed using open interface standards for software design, communications protocols, fare media, and other relevant design components.
6. The Contractor shall provide the specifications and associated documentation necessary to support the future procurement of smartcard media from third parties that allow for competition.
7. The system will have a modular design for all relevant components. These modules will support field replacement to return a device to service in minimal time in the event of a failure. The system will also permit upgrades and configuration changes without requiring component replacement or redesign.
8. All devices, components, parts, modules, assemblies, and subassemblies provided will be fully interchangeable among those of the same type without the need to make adjustments for proper compatibility.
9. The system will be designed so that incorporating technology upgrades may be done with no or minimal redesign of components, modules, and software, or other work.
10. The Contractor shall furnish equipment and materials from the manufacturers identified in the submittals, unless otherwise approved.
11. If it is found that approved sources do not furnish a uniform product, or if the product from such source proves unacceptable per the requirements in these specifications, the Contractor shall, at no additional expense to the UTA, take any and all steps necessary to furnish acceptable materials.
12. The Contractor shall select and supply devices, components, parts, modules, assemblies, and subassemblies, as well as software and other essential elements of the system, based on projected

availability and long-term original equipment manufacturer (OEM) support commensurate with the required useful life of the system.

13. The Parties deleted this requirement by reference. This requirement is defined in Section S.

14. If any vital device, component, part, module, assembly, or subassembly, or support for OEM software, is being discontinued or obsoleted by the Contractor or OEM, the SI shall notify the UTA a minimum of 90 calendar days prior to last available date of purchase or support.

15. The Contractor shall work with the UTA to find or develop a suitable replacement for any device, component, part, module, assembly, subassembly, or software that is obsoleted by the Contractor or OEM. If the SI chooses to obsolete any Contractor provided equipment or software within the time frame identified in the SLA, all hardware and software development costs necessary to support a replacement will be borne by the Contractor. Notwithstanding the foregoing, the Contractor's obligation to bear all costs will not arise if a third-party supplied product or service delivered by the Contractor has been declared obsolete by the third-party. This will be further detailed in the SLA.

16. All components of the system will be constructed of the highest quality materials suitable for production-level use in the intended environment over the required useful life of the system. The Contractor shall use only new components conforming to the requirements of these specifications and approved by the UTA. This does not preclude the use of recycled materials in the manufacture of new components.

17. The Contractor shall be responsible for all materials and workmanship. It is the Contractor's responsibility to design, select, and apply all materials necessary to meet the requirements of these specifications. If alternate materials are offered following selection, it is the responsibility of the SI to demonstrate that the alternate materials are equivalent to the proposed materials, and to obtain agency approval for the substitution prior to any implementation.

18. All system provided equipment will be free from safety hazards. All interior and exterior surfaces shall be free from sharp edges, protrusions, exposed wires, or other hazards.

19. The Contractor shall supply all necessary software applications and shall design and configure all device and back-office software applications for optimal system performance. The SI shall install all software that is necessary for system operation and to successfully meet the operational and performance requirements in these specifications.

20. System software will incorporate the following design elements at a minimum:
    a. Be developed using a non-proprietary, hardware architecture-independent programming language
    b. Compiled with a commercially available compiler and commented in English
    c. Include provisions for setting and verifying date and time, with automatic adjustments for leap year
    d. Be fully integrated with the operating system to support all required functions of the applications in both a networked and a stand-alone environment
    e. Not utilize or employ hard coding of configuration parameter values, except where expressly permitted
    f. Be fully debugged, documented, and include all approved revisions introduced up to the time of the applicable Phase Final Acceptance
    g. Be portable to other software platforms or languages where possible
    h. Utilize object-oriented programming or equivalent programming methodology that encourages software reuse and minimizes development time

21. System software will incorporate the following controls at a minimum:
    a. Allow for the distribution of software modifications to all system devices from the back-office without field intervention or component replacement
    b. Be fully version-controlled, with the ability to revert to a previous software version
    c. Support audit of activity to show when and what changes were made from version to version

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  d. Be designed using best practices that allow for OS and database patches and upgrades to be applied with minimal testing

22. System software will incorporate the following diagnostic capabilities at a minimum:
  a. Sample all input conditions at rates sufficient to detect and remedy all unsafe or damaging conditions in the shortest possible time
  b. Perform self-diagnostic routines and respond promptly and predictably to detected faults
  c. Respond predictably when powering up or recovering from power interruptions
  d. Permit thorough interrogation of all input, output, and internal conditions by external diagnostic equipment
  e. Provide error codes that contain easily understood explanatory text and include the manner in which the error can be corrected

23. Software upgrades will be centrally managed and fully tested prior to installation. The system shall be able to roll-back to previous software versions without adversely impacting operations.

24. System equipment will provide reliable operation over its design life and will be designed to require minimal scheduled and unscheduled maintenance.

25. The interior of the system equipment will be designed to allow easy and safe access. Adequate space will be available to insert keys; grasp, lift, and turn internal components; and remove and replace components, connections, and consumables. As appropriate, guides, rails, tracks, handles, and captive fasteners will be provided to facilitate module installation and removal.

26. Any component or module that must be lifted (except for cash containers when full) will not weigh more than 20 pounds. Any exceptions to this weight limitation will be subject to agency approval.

27. For ease of service and replacement, all electrical connections between components and subassemblies will be established by means of connectors that allow rapid removal of a component or subassembly. Plug-in connectors will be equipped with strain relief to prevent damage to cables and connectors.

28. Components requiring frequent adjustment or maintenance will be conveniently located and designed to facilitate access and adjustment utilizing tool-free techniques wherever possible. The replacement of field devices or components will be quick and secure.

29. Automatic diagnostic test routines (and equipment if necessary) will be included to aid in troubleshooting malfunctions. These test routines will provide the ability to isolate defects down to the lower line-replaceable unit (LLRU).

30. All devices will have clear labels and symbols that at a minimum indicate safety warnings, servicing steps, and wiring connections.

31. No more than one person will be required to perform corrective maintenance on an individual piece of equipment.

32. The Contractor shall provide documentation that defines:
  a. Preventative Maintenance (PM) frequency for all system devices based upon time and transactions
  b. A list of all PM tasks to be performed, including a brief description of the work, and any parts, materials or other components required
  c. Time required to complete each defined PM task
  d. Which PM tasks require tools to complete, and which can be performed as "fingertip maintenance"

33. The time for entry into a device, removal and replacement of the device or a device module, and restoration of the device to an operating condition will take no longer than the following:
  a. Bus Validator – Seven (7) minutes
  b. TVM – 20 minutes
  c. Mobile e-fare Inspection Devices – Five (5) minutes
  d. Contractor shall provide documentation that clearly defines remedial maintenance tasks that can and cannot be completed onsite within these time parameters.

34. Onboard equipment, including bus validators, will be designed, built, and installed for the harsh, high shock and vibration operating environment in which the system components will be installed. Operation of the fare collection equipment in this environment will not in any way impair equipment performance throughout the required useful life of the system.
35. All system components will be designed to withstand structure-borne stresses and vibrations caused by the motion of buses and trains, daily customer use, passing of trains or other vehicles, and emergency braking of fully loaded trains.
36. All system components, including all interior-mounted components and assemblies, will resist horizontal shocks of up to 6 g (where "g" is the earth's gravitational constant, or 9.81 meters per second squared) and up to 1.2 g in the vertical axis for a duration of up to 12 milliseconds (ms) without permanent deformation or failure.
37. There will be no failure of mounts or decrease in operational performance of any system components under conditions simulated by a sinusoidal sweep vibration test at a sweep rate of one-half octave per minute, from 5 Hz to 200 Hz to 5 Hz, at a peak vibratory acceleration of 0.25 g for a minimum of 50 cycles when applied to each of the three axes and repeated continuously for five (5) complete cycles. If any assembly or component is a source of vibration, measures will be taken to dampen the vibration. Efforts will be taken to critically dampen any resonant frequencies that may exist in the mounted structures.
38. All system components and mounts will be sufficiently constructed to comply with local codes in place as of the Effective Date of the Contract regarding stability of structures and contents in earthquakes, high velocity wind (up to 60 miles per hour), and other natural phenomenon.
39. Onboard equipment, including bus validators and mobile fare inspection devices, will pass the following shock and vibration tests:
    a. IEC 60068-2-27
    b. IEC 60068-2-64
40. The Parties have mutually agreed to delete this requirement.
41. Onboard equipment, including bus validators and mobile e-fare inspection devices, will be protected to prevent degradation in performance from exposure to moisture or dust raised by inclement weather or interior cleaning. Operation of the fare collection equipment in this environment will not in any way impair equipment performance throughout the required useful life of the system.
42. The onboard equipment provided by the Contractor will be able to operate and not suffer any degradation in performance under the following environmental conditions:
    a. Storage temperature: -22° to +150°F
    b. Operating temperature: -15°F to 122°F ambient.
    c. Thermal shock: Up to 50 degrees F in 1-hour, non-condensing
    d. Relative humidity: 5-100%, non-condensing
    e. Airborne dust: up to 180 micrograms per cubic meter, with iron and salt particles
    f. Sunlight: direct sunlight, radiation loading of up to 789J/sec/m2
    g. Inclination: 0° to 20° off vertical
    h. Rainfall: 10 inches over 12 hours
    i. Water/solvents: IEC529 to level IP54 or equivalent
    j. Other operational conditions: water spray, industrial cleaning solvents, and mud on system components from cleaning vehicle floors and walls
43. The onboard equipment will be designed to be resistant to liquid ingress caused by rain, snow, or by splashed water or cleaning chemicals, such as would occur during routine equipment and vehicle cleaning.
44. The onboard equipment will be tested and certified to operate under the environmental conditions specified in Society of Automotive Engineers (SAE) J1455 and all standards contained therein.
45. The onboard equipment will meet the following flammability requirements:
    a. UL 94 V-O

   b.   UL HB
46. Means will be provided to detect failure of any cooling device and provide for a controlled shutdown of the system components and generation of a maintenance event.
47. The onboard equipment will be either immune to or protected from the damaging effects of visible spectrum and ultraviolet radiation. Internal components that may be either damaged or affected operationally when exposed to direct sunlight will be protected from exposure during maintenance activities without requiring specific action by maintenance personnel.
48. Rail equipment will be designed to be installed in an open-air station environment with steel dust and heat conditions described in this section. Operation of the fare collection equipment in this environment will not in any way impair equipment performance throughout the required useful life of the system.
49. The rail equipment provided by the Contractor will tolerate the environment in which it is installed and stored. The equipment will be able to operate and not suffer any degradation in performance under the following environmental conditions:
   a.   Storage temperature: 0° to +140°F
   b.   Operating temperature: -22°F to 122°F ambient
   c.   Thermal shock: Up to 30°F in 1-hour, non-condensing
   d.   Relative humidity: 5-100%, non-condensing
   e.   Airborne dust: up to 180 micrograms per cubic meter, with iron and salt particles
   f.   Sunlight: direct sunlight, radiation loading of up to 3MJ/hr/m2
   g.   Platform Inclination: 0° to 10° off vertical
   h.   Rainfall: 10 inches over 12 hours
   i.   Water/solvents: IEC529 to level IP54 or equivalent
   j.   Other operational conditions: water spray, industrial cleaning solvents, and mud on system components from cleaning station floors and walls
50. The rail equipment will be designed to be resistant to liquid ingress caused by cleaning, rain, snow, or by splashed water or cleaning chemicals, such as would occur during routine equipment and platform cleaning.
51. TVMs will be subject to incidental moisture from customers and cleaning through coin, bill, and ticket slots, and other openings and enclosure joints, and will be designed for proper operation under such conditions. All exposed surfaces, including push buttons, the display screen, and coin and bill components shall be unaffected by detergents and cleaning solvents. Means will be provided to expel moisture from the devices to ensure continued, reliable operation.
52. Means will be provided to detect failure of any cooling device and provide for a controlled shutdown of the system components and generation of a maintenance event.
53. The rail equipment will be either immune to or protected from the damaging effects of visible spectrum and ultraviolet radiation. Internal components that may be either damaged or affected operationally when exposed to direct sunlight will be protected from exposure during maintenance activities without requiring specific action by maintenance personnel.
54. The Contractor shall design, supply, install, test, and commission all internal system components necessary to provide the required electrical power to the Contractor supplied equipment.
55. Electrical power will be obtained from existing power sources and will be filtered, transformed, converted, battery-stored, and distributed by the SI as required, including all necessary connections and terminations.
56. Primary power will be provided by the agency at equipment installation locations and may not be clean or isolated at the voltage levels required by the Contractor-supplied equipment. Any necessary conditioning of the primary power, or addition of line interface filters or power supplies, will be the responsibility of the Contractor, and to the greatest extent possible, will be performed within the equipment enclosures.
57. All system components operating off of line voltage will be designed to operate with a plus or minus 10% fluctuation in voltage without any damage or interruption.

58. Rail equipment will be capable of normal operating under the following conditions:
    a. Source power of 120 VAC (+/-10%), single Phase, 3- wire, 60 Hz (+/-1%)
    b. Micro cuts in the power supply of up to 15 ms, with a recurrence of 100 ms
    c. The following voltage excursions:
        i. Sag: -15%
        ii. Surge: 15%
        iii. Transient Impulse: 75 volts
    d. Common Mode Noise: 5 volts
59. In the event of a loss of electrical power, the rail equipment will complete any transaction in process, retain all data, and shutdown in an orderly manner. The equipment will return to full operational status after a power failure without manual intervention or adversely affecting the integrity of stored data.
60. Onboard equipment, including bus validators, will be designed to operate reliably from a vehicle's direct current power source, which will be either 12 volts or 24 volts of direct current (VDC).
61. The onboard equipment will be protected against damage or data loss under the following conditions:
    a. Voltage fluctuations
    b. Reverse polarity of the input voltage
    c. Temporary voltage variations (0 to 50 V)
    d. Over-current draw
    e. Stray currents
62. The onboard equipment power supply will include adequate filters and components to regulate the bus-supplied voltage and render it devoid of power spikes and noise. Provisions will include elimination of power fluctuations caused by fluorescent lights, coach alternators, air conditioning units, radio communication units, and other systems characteristic of a bus environment.
63. Adequate protection against transient power surges on the bus will be incorporated to the extent necessary to prevent damage to the electronic components of the onboard equipment.
64. Power sensing will be incorporated into onboard equipment power supplies to cause the devices to switch off automatically if the supply voltage increases or decreases to levels beyond the voltage tolerance.
65. All system components will retain any information stored in non-volatile memory under any conditions of the supplied power.
66. The SI shall ensure system equipment will operate without being affected by or causing electromagnetic interference (EMI).
67. All system components will include protection against external EMI and Radio Frequency Interference (RFI) emissions, as well as internal conductive or inductive emissions.
68. All system components will conform to the following requirements:
    a. FCC Part 15, Subpart B Class A (Conducted emissions), pertaining to conducted susceptibility
    b. FCC Part 15, Subpart B Class A (Radiated emissions), pertaining to radiated susceptibility
69. Equipment will not emit measurable EMI or RFI that produces harmful interference with any other onboard or station devices or systems, including GPS and magnetic compass readings, and will comply with the following standards:
    a. IEC 1000-4-6 (EN61000-4-6) pertaining to conducted susceptibility
    b. IEC 6100-4-3 (EN61000-4-3) pertaining to radiated susceptibility
    c. IEC 6100-4-2 (EN 6100-4-2) pertaining to electrostatic discharge.
70. Operation of the equipment will not be affected by the electromagnetic fields generated by traction power (overhead catenary or third rail) at distances as close as 20 feet, or by local high voltage power distribution lines at distances as close as 50 feet.

71. Operation of the rail equipment, including platform validators and TVMs, will not be adversely affected by the operation of other station equipment, such as lighting and communications equipment, within close proximity.
72. Onboard equipment, including bus validators, will be unaffected by interference from fluorescent lights, coach alternators, air conditioning units, radio communication units, and other systems characteristic of a bus environment.
73. Equipment communications will not interfere or be impacted by the use of established frequencies, including but not limited to:
    a. Audio frequencies for overlay track circuits, highway crossing approach and island circuits, and electrical lock circuits
    b. Audio frequency code overlay for Air Traffic Control (ATC) systems
    c. Signal power
    d. Cab signals
74. The Contractor shall certify the electromagnetic compatibility of system components to be furnished. The SI shall provide the results of interaction analysis and testing of each system component with regard to frequency distribution, amplitude, and harmonic content for review and approval during design review.
75. All equipment enclosures, chassis, assemblies, panels, switch boxes, and terminal boxes will be grounded. Protective grounding will be provided to ensure that exposed metal on all system components is connected to a common ground point.
76. The Contractor shall meet safety requirements in place at the Effective Date of the Contract for the grounding that conforms to the National Electric Code (NEC) and UL, SAE, and local codes where applicable.
77. The Contractor shall provide certification that all system components furnished have been tested to meet applicable UL criteria in place at the Effective Date of the Contract. Documentation citing UL certification or acceptable test results will be provided for review and approval during design review.
78. System equipment will be equipped with Ground Fault Circuit Interrupter (GFCI) circuit breakers, which include a "push to test" button, visible indication of a tripped condition, and ability to detect an earth leakage current of approximately 5 milliamperes in accordance with UL 1053 and California Energy Commission (CEC) standards.
79. The UTA will own all data generated by the equipment, systems, and software delivered under this Contract. The UTA will be able to freely access and distribute all data at no additional charge. The UTA will retain ownership of all data generated by the equipment, systems, and software delivered under this Contract in perpetuity with no restrictions or additional cost.
80. Subject to the Contractor's Software License, all documentation described in these specifications will become the property of the UTA or provided under a perpetual license to enable internal use and distribution to third parties at no additional cost.
81. Subject to the Contractor's Software license, all system and software interfaces will be defined and documented and will be provided to the UTA under a perpetual license to enable internal use and distribution to third parties at no additional cost.
82. All open architecture APIs, open-source code, libraries, and Intellectual Property (IP), including data exchange formats and algorithms, will be provided to the UTA under a perpetual license to enable internal use and distribution to third-parties at no additional cost.
83. All equipment, software, and customer interfaces will be in compliance with Americans with Disabilities Act (ADA) standards to maximize ease of use in place at the Effective Date of the Contract. The system equipment will comply with the most recent version of the ADA Accessibility Guidelines (ADAAG) in place at the Effective Date of the Contract..
84. The Contractor shall submit for review and approval documentation with descriptions and drawings of how each customer-facing device and system will achieve ADA compliance.
85. All customer-facing equipment will be designed to adhere to the aesthetic standards of the UTA,

with consistent cross-platform branding. The Contractor shall submit designs for review and approval during design review. Final equipment design, including interface display, lettering, lights, colors, color contrast to aid visually impaired, tactile feedback, brightness, graphics, animation, screen savers, surface texture, component size and height, and hardware will be subject to UTA approval.

86. All customer-facing equipment shall provide a coherent customer experience, with a similar look and feel across bus and station validators, and TVMs. UTA and designated representatives will participate in an industrial design review with the Contractor to define the customer experience for both hardware and software.

87. System equipment displays (including the entire surface of the display for the TVM), graphics, signage, and all other instructions, labels, and information contained on the equipment will be visually readable within all common positions from a customer point of view.

88. System equipment will provide customers with displays, graphics, signage, controls, and mechanisms that are simple to use, easy to understand, and conveniently located. By following instructions given on and by the equipment, an inexperienced user shall be able to understand all transaction processes and results. All such user interfaces will be user-friendly; that is, safe, predictable, simple to use, and in accordance with other applicable human engineering principles.

89. System equipment will accommodate the broad range of customers that use public transportation. The range of customers paying fares will include commuters, infrequent riders (including tourists), children, the elderly, customers with impaired vision, customers in wheelchairs, customers with limited communications skills, including the illiterate, and customers who are hearing impaired.

90. All equipment will employ a current or recent version of a commercial-off-the-shelf operating system. The operating system will be capable of performing all tasks necessary to support the equipment and its applications, including the ability to multitask, manage memory, maintain performance without degradation, and communicate with the back-office in real-time.

91. All equipment will maintain local transaction records in non-volatile memory in the event that communications to the back-office are unavailable. Local records will not be deleted until they have been confirmed as received and recorded by the back-office. The design of the system will provide a mechanism to recover transactions or other data stored on faulty equipment that has not been transmitted to the back-office.

92. All customer-facing system equipment will incorporate a test mode. In this mode, the equipment will have full functionality and process only test media. Test transactions shall be segregated in reporting from revenue service transactions.

The Parties acknowledge and agree that the removal of TVMs, including any associated hardware and cabling is the responsibility of the UTA. If the UTA wishes the Contractor to perform the removals, then it will be subject to the Change Order process. With respect to the validators, the Contractor will remove the validators however, the UTA is responsible for disposal of the devices after removal.

B – SYSTEM ARCHITECTURE

1. The Contractor shall design, develop, and implement an account-based electronic fare collection system.

2. An account-based back-office supporting the system will manage closed-loop transit accounts that store fare value loaded by customers and enable use of that value for the payment of transit fares and transit-related services.

3. The account-based back-office will process all transactions generated by the system devices, including loading transit accounts upon request from fare distribution devices, and performing fare calculation and account balance updates at the time of fare payment. All fare processing and

updating of accounts will be performed in real-time.

4. Transit accounts will be accessed by the customer when loading value or paying fares through the use of account tokens (e.g., contactless smartcards, NFC-enabled smartphones, etc.).
5. No data will be written to fare media when loading or using fare value.
6. The system will be sized such that the total number of possible accounts, and total concurrent use of accounts, will at a minimum support 200% of the current and anticipated ridership figures presented in Appendix G of this SOW.
7. All fare distribution and payment devices deployed as part of the system will be equipped with real-time communications to the back-office.
8. The communication interfaces will support a) the real-time loading of fare value through all distribution channels, b) processing of closed-loop fare payments onboard vehicles and at rail stations, and c) fare inspection by UTA staff.
9. The lowest-latency network connections possible will be employed, using hardwired, cellular and Wi-Fi connections, as appropriate for each device.
10. All hardwired network connections, with the exception of those connecting equipment onboard vehicles, will be provided by the UTA, and supported by a fiber backbone. The Contractor shall identify all communication requirements at bus and rail sites, including a description of all networking equipment necessary to connect the SI devices to the agency-provided fiber backbone.
11. Any devices using cellular communications will operate on a 4G/LTE data network (or faster) where available. The UTA will contract directly with the cellular carriers for cellular data service.
12. The system will support the offline operation of field devices to perform essential functions where appropriate. In offline operation, devices shall operate according to defined business rules, and transmit stored transaction information as soon as communications are reestablished.
13. The Contractor shall develop Hypertext Transfer Protocol Secure (HTTPS) based functional (e.g., not device- or system-specific) APIs that support core system functions and enable access to those functions for any device or system that requires use of them. Devices and systems may make use of more than one API to support required functionality.
14. Each API will be developed using modern architecture and formats (e.g., REST/JSON). The specific architecture and format to be used will be identified and agreed upon during design review.
15. The Contractor shall implement strong security features to prevent fraudulent use of the APIs and authenticate all users based on industry-accepted best practices.
16. The Contractor shall publish full API specifications that document all API calls and the process for making those calls, including:
    a. Detailed call descriptions
    b. Use cases
    c. Call structure
    d. Data elements and format
    e. Error handling
    f. Timing requirements
    g. Use of required security protocols
    h. Sample code
17. The Contractor shall be responsible for providing the following APIs at a minimum:
    a. Fare Payment API
    b. Fare Inspection API
    c. Transit Account Management API
    d. Customer Account Management API
    e. Device Management API
18. The Contractor shall demonstrate use of the APIs as part of system implementation and testing. The Contractor shall perform API-specific testing, which will be witnessed and validated by

agency representatives as defined in the testing plan. Any changes to the APIs as a result of testing will result in the API specifications being updated by the SI.

19. The Contractor shall take the lead role in working collaboratively with third parties to use and adapt the APIs in order to integrate legacy systems as necessary to support the requirements in these specifications.

20. The full range of APIs provided by the Contractor will support all interfaces within the fare collection system and is not limited to the specific APIs described in this section. Any additional APIs that are required will be identified during design review. The SI shall provide Interface Control Documentation (ICD) for each system interface that describes the interface and APIs used to support it. Subject to the Contractor's Software License, the APIs and ICDs will be fully owned by or licensed to the UTA with the right to use and distribute the specifications without further approval, license, or payment.

21. The fare distribution API will support the sale of all available fare media and fare products, and will be utilized by all fare distribution devices and systems, including but not limited to:
    a. Ticket Vending Machines
    b. Customer and Institutional Websites

22. The fare distribution API will support the following functionality at a minimum:
    a. Retrieval of available fare media and fare products, and associated pricing
    b. Sale of all fare media types, and creation or activation of an associated transit account
    c. Sale of all available fare products (e.g., stored value and passes), and update of an associated transit account.

23. The fare media and products available for sale, and the associated pricing, will be configured and maintained in the back-office. The fare media API will return this information upon request from a fare distribution device/system. The results provided will be configurable to be specific to the sales channel, device/system location, or individual device/system making the API call.

24. The fare distribution API will include API calls for the passing of data between the fare distribution devices/systems and the back-office to initiate a sale transaction, which will result in the creation, activation, or updating of a closed-loop transit account.

25. Unique fare media and/or transit account identifiers will be securely captured by the distribution devices/systems and passed to the back-office to create or activate a new transit account (e.g., in support of new media issuance), or initiate the loading of value to an existing transit account. All fare media and product sales will be processed by the back-office in real-time to enable immediate use by the customer.

26. The Parties have agreed to delete this requirement.

27. The fare distribution API will return a confirmation of the actions taken by the back-office to complete a sale. If the sale was unsuccessful, a denial and associated reason code will be provided. All response types and error handling will be described in detail in the fare distribution API specification.

28. The fare payment API will support the processing of closed-loop fare payments across all agency and modes using all supported fare media and fare products, and will be utilized by all fare payment devices, including but not limited to:
    a. Bus Validators
    b. Platform Validators

29. The fare payment API will include API calls for the passing of data between the fare payment devices and back-office to initiate a fare payment transaction, which will result in a fare calculation being performed and processing of a payment against a closed-loop transit account.

30. Unique fare media and/or transit account identifiers will be securely captured by the fare payment devices and passed to the back-office to perform a fare payment. All fare payment processing will be performed by the back-office in real-time.

31. The fare inspection API will query closed-loop transit accounts to support the inspection of fares paid across all agency and modes using all supported fare media and fare products will be utilized

by the mobile fare inspection devices.

32. The fare inspection API will include API calls for passing data between the mobile fare inspection application and back-office to initiate a fare inspection transaction, which will result in confirmation or denial of payment made using a closed-loop transit account.

33. Unique fare media and/or transit account identifiers will be securely captured by the mobile fare inspection devices and passed to the back-office to perform a fare inspection. The back-office will query transit account ride history and use agency-defined business rules to determine fare payment status in real-time.

34. The transit account management API will support the querying and management of data maintained within back-office transit accounts, and will be utilized by all devices and systems that require access to those functions, including but not limited to:
    a. Ticket Vending Machines
    b. Customer and Institutional Websites

35. The transit account management API will include API calls for the passing of data between the devices/systems and the back-office to perform all functions.

36. The transit account management API will allow devices/systems to query a transit account status and return the sales, fare payment, and adjustment transactions that were conducted over a specified timeframe, or a specified number of past transactions.

37. The transit account management API will allow devices/systems to setup autoload for an existing fare product. Enabling autoload will require a valid funding source to be stored in an associated customer account, and may be performed using the customer account management API instead.

38. The transit account management API will allow authorized personnel to perform adjustment, reversal, transfer, and refund transactions to modify transit account balances.

39. The transit account management API will allow authorized personnel to generate blocking (and unblocking) and replacement transactions to close or prevent use of transit accounts, fare media, and fare products.

40. Unique fare media and/or transit account identifiers will be securely captured by the devices/systems and passed to the back-office to perform all functions. The back-office will perform all functions in real-time.

41. The transit account management API will return a confirmation of the actions taken by the back-office. If any action was unsuccessful, a denial and associated reason code will be provided. All response types and error handling will be described in detail in the transit account management API specification.

42. The customer account management API will support the querying and management of data maintained within the customer database, and will be utilized by all devices and systems that require access to those functions.

43. The customer account management API will support the following functionality at a minimum:
    a. Create new individual customer account
    b. Create new institutional customer account
    c. Query customer account status and data
    d. Modify customer account data
    e. Register (e.g., link) a transit account to an individual or institutional customer account
    f. Unregister (e.g., unlink) a transit account from an individual or institutional customer account
    g. Add a funding source to an individual or institutional customer account
    h. Close an individual or institutional customer account

44. The customer account management API will include API calls for the passing of data between the devices/systems and the back-office to perform all functions.

45. The API will allow devices/systems to create individual and institutional customer accounts within the customer database, and associate or disassociate existing transit accounts with those customer accounts.

46. The customer account management API will allow devices/systems to query and modify all individual and institutional customer account data, including but not limited to name, address, date of birth, phone number, e-mail address, institution and administrator contact information, username, password, security questions/answers, account access PIN, and funding sources.
47. The API will support the individual and bulk import of data for institutional customers and customers applying for a reduced fare classification, including scans of applications and supporting documentation, eligibility parameters, and card personalization information, such as a customer photograph, to be stored in the customer database.
48. The customer account management API will allow authorized personnel to close customer accounts. Closing of a customer account will not affect the associated transit accounts.
49. The customer account management API will return a confirmation of the actions taken by the back-office. If any action was unsuccessful, a denial and associated reason code will be provided. All response types and error handling will be described in detail in the customer account management API specification.
50. The device management API will support the reporting of device events and alarms, and the distribution of new software, configuration parameters, and positive and negative list updates as required, and will be utilized by all devices deployed within the system, including but not limited to:
    a. Bus Validators
    b. Platform Validators
    c. Ticket Vending Machines
    d. Mobile Fare Inspection Devices
51. The device management API will support the passing of data between the devices and the System Monitoring and Management Application to enable the monitoring of system performance in real-time. The device events and alarms reported via device management the API will provide enough detail to support proactive device maintenance at the module-level, and support accurate reporting on all system performance requirements.
52. The device management API will support the passing of data between the System Monitoring and Management Application and devices to enable remote control and issuance of all commands supported for each device type. All commands will be able to be issued and executed in real-time.
53. The device management API will support the real-time distribution of device software and configuration parameter updates. Device configuration will include real-time updates to any positive and negative lists maintained locally at the devices. Updates will be distributed on an increment-basis so that only updates since that last timestamp/version received by an individual device are transmitted.
54. A universal device management API will be created and used wherever possible; however, the Contractor may create device-specific device management APIs or calls, as necessary.
55. The Contractor shall publish specifications for all transactions generated and used within the system that are not already covered by the required APIs.
56. Transaction specifications will include detailed descriptions of the transaction structure, data elements, and data formats, and identify all devices and systems that generate and consume the described transactions.
57. Transaction formats will be based on published standards wherever possible, including those used to interface with commercial software packages.
58. Subject to the Contractor's Software License, the transaction formats shall be licensed in perpetuity to the UTA, including the right to distribute the specifications to third parties without further approval, license, or payment.
59. The system will be designed to accept contactless open payments (i.e., contactless EMV bank cards and equivalents in mobile wallets) for the payment of fares at all points where fare payment is accepted, including at validators installed on-board vehicles and on station platforms.
60. The Contractor shall be responsible for end-to-end processing of open payments transactions,

including:
   a. Card handling – Capture of card data, generation of an encrypted EMV payload, and Offline Data Authentication (ODA), as applicable to the card being accepted
   b. Risk management – Card validity checks and check against a system-maintained hotlist, which may be augmented using information from third-party service providers
   c. Payment validation – Card tokenization, transit account maintenance, fare calculation and issuance of a validation (i.e., acceptance or denial) response
   d. Transaction authorization – Bank authorization using a real-time communications interface to UTA's bank card processor
   e. Settlement reconciliation – Automated transaction-level reconciliation of settled bank card transactions, including automated clearing of settled transactions and write-off of non-settled transactions, per UTA-defined rules

61. The provided solution will be fully compliant with the latest version of the Visa Mass Transit Transaction (MTT) model for the acceptance of open payments published at the time of the Effective Date of the Contract, including all rules related to transaction processing, aggregation, and debt recovery. The provided solution will also be fully compliant with the latest version of any similar specifications issued by other card brands at the time of the Effective Date of the Contract

62. The provided solution will be fully compliant will all Payment Card Industry (PCI) standards published at the time of the Effective Date of the Contract.

63. Open payments will be accepted using Europay Mastercard, Visa (EMV) contactless bank card standards and protocols.

64. The system will support payment using any EMV-compliant bank card, including those associated will all major U.S. (e.g., Visa, Mastercard, American Express, and Discover) card brands.

65. The system will support all contactless open payment methods that comply with EVM standards in place at the Effective Date of the Contract, including NFC (ISO 18092)-enabled phones with a mobile wallet application, including but not limited to Apple Pay, Google Pay, Samsung Pay, and LG Pay.

66. The Contractor shall be responsible for ensuring compliance with all requirements associated with EMV payment acceptance in the United States in place at the Effective Date of the Contract, including support for Dynamic Data Authentication (DDA) and Combined Data Authentication (CDA) forms of ODA.

67. The Parties have agreed to delete this requirement.

68. The Contractor shall be responsible for ensuring that the provided system, as a whole, is certified as compliant with the latest version of the Payment Card Industry Data Security Standard (PCI DSS) published at the time of the Effective Date of the Contract.

69. The Contractor shall make use of a Point-to-Point Encryption (P2PE) or End-to-End (E2E) encryption solution for the transmittal of payment data, which prevents any agency access to data decryption keys, is PCI-compliant, and effectively removes any agency networks used to transit the encrypted data from PCI scope.

70. The Contractor shall employ a third-party PCI Qualified Security Assessor (QSA) to annually certify the provided system and its components are fully PCI-compliant as deployed in the production environment. The agency may additionally choose to have its own PCI QSA evaluate and certify the system as well.

71. Validators will be equipped with a real-time communications interface to the Electronic Fare Collection (EFC) back-office, which will serve as the system of record for determining acceptance or denial of an open payment. The EFC back-office will also make a determination whether to submit an open payment transaction, once accepted, to the payment processor for authorization.

72. Following initiation of an open payment transaction, validators will send a validation request to

the Electronic Fare Collection (EFC) back-office. The validation request will include the encrypted EMV payload, along with any data required by the back-office to securely identify the account being used within the system.

73. The Electronic Fare Collection (EFC) back-office will make the determination to accept or deny an open payment based on the status of the account recorded within the system. The status of a account, and a record of its use within the system, will be maintained within a transit account, equivalent to those associated with closed-loop media.

74. If the Electronic Fare Collection (EFC) back-office cannot find a transit account associated with the open-loop payment fare media being used for payment (e.g., first-time used), a new transit account will be created, and the payment will be accepted.

75. The Electronic Fare Collection (EFC) back-office will be designed to provide a validation response (i.e., acceptance or denial) to validators within a configurable timeout, initially set to 500 milliseconds.

76. In parallel or immediately upon sending a validation request to the Electronic Fare Collection (EFC) back-office, payment validators will perform a series of local validation checks on the open payment card being presented for payment. These checks will include at a minimum:
    a. EMV card validity checks
    b. Card expiry status
    c. Offline Data Authentication (as supported by the card)
    d. Check against a locally maintained hotlist

77. Any failure of the local validation checks related to card validity, including card expiration, will result in immediate denial of the payment by the validator, without waiting for validation response.

78. If the open payment card being presented passes the local validation checks related to card validity, validators will wait for a validation response until the response timeout is reached.

79. Any failure of the local validation checks related to the status of the account within the system, including the presence of the card on the validator hotlist, will result in the pending offline validation status being set to deny. If all local validation checks pass, the pending offline validation status will be set to accept.

80. If a validation response is not received within the response timeout, the pending offline validation status will be used.

81. When an offline validation result is used, regardless of payment acceptance or denial, validators will send a validation event record to the Electronic Fare Collection (EFC) back-office. Validators will continue to send this record until it is acknowledged by the back-office.

82. Per card association and internal risk management rules, to be defined during design review, the Electronic Fare Collection (EFC) back-office will, when required, request payment authorization from the payment processor in parallel with the internal fare validation processing.

83. All payment data captured and used by the system will be tokenized in a secure manner, which removes the tokenized data, and the systems and networks that handle only the tokenized data outside of PCI scope.

84. Separate payment tokens may be used for internal fare validation processing and for authorization with the payment processor.

85. Tokenization of payment data may be performed internally within the system by the Contractor, or by the payment processor, as defined in technical approach proposed by the SI.

86. Regardless of whether tokenization is performed internally or by the payment processor, the Contractor shall ensure that all tokens used for payment authorization will be generated using either a unique Payment Account Reference (PAR), or the funding Payment Account Number (fPAN) associated with card being used for payment, such that a one-to-one ratio between the PA and token is maintained, regardless of how many PA-associated cards are presented.

87. The system will support the aggregation of fare payments made using the same PA over a defined period of time in order to reduce payment processing fees.

88. Payment aggregation and debt recovery processes will be compliant with, and support full range of functionality described in, the latest version of the Visa Mass Transit Transaction (MTT) and any similar specifications published by other card brands at the time of the Effective Date of the Contract.

89. The system will accommodate scenarios where the aggregation and debt recovery rules vary by card brand or issuer, using Issuer Identification Number (IIN) to determine the card type.

90. All key values used to define the payment aggregation and debt recovery processes with be designed as configurable parameters within the system that can be set by the agency. Universally and individually for each recognized IIN, these configurable parameters will include, at a minimum:
    a. Payment aggregation on/off
    b. Payment aggregation value limit
    c. Payment aggregation time limit
    d. Payment pre-authorization on/off
    e. Payment pre-authorization amount
    f. Automated debt recovery on/off
    g. Automated debt recovery period
    h. Automated debt recovery frequency
    i. Tap-driven debt recovery on/off

91. Each transit account will only be linked to one (1) active piece of fare media at a time. The system will support fare media replacement in the event that a card is lost, stolen, or damaged, which will link a new piece of fare media to an existing account and block use of the old fare media.

92. The Contractor shall provide cryptographic key management services and tools. Key management in this context includes but is not limited to:
    a. Key generation: Derived key generation for each manufactured card, including card manager key sets, as well as multiple application-related key sets (may include both encryption and authentication keys)
    b. Key storage: Secure storage and retention of card and application key sets.
    c. Key updates: Ability to update, or roll, all cryptographic keys used within system
    d. Key sharing: Secure sharing of application key sets with third parties for use in multi-application environments

93. The Contractor shall use the highest possible security in generating, storing deploying, and transmitting cryptographic keys. The SI shall submit a cryptographic key management plan for agency review and approval during design review.

94. If the fare system design requires the card manufacturer to encode the cryptographic keys to the fare media, the cryptographic key management plan shall identify at least three (3) trusted card manufacturers with appropriate security mechanisms in place to ensure that the cryptographic keys remain safe and secure.

95. The Contractor shall provide detailed specifications for the generation and management of all cryptographic keys used within the system. The key generation algorithms will be fully owned by or licensed to the UTA, including the right to distribute specifications to third parties for media production and to support multi-application smartcard implementations without further approval, license, or payment.

96. The fare system will support the acceptance of third-party issued media that uses the Contractor-provided transit payment application in a multi-application environment. Compatible third-party media may include but is not limited to:
    a. State and local government employee IDs
    b. Transit employee and contractor IDs
    c. Corporate employee IDs
    d. School and college IDs

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e. Social service program cards

f. PIV and CAC cards issued as identification to military and federal employees

97. If the UTA chooses to utilize the transit payment application for third-party media, the media will be supported without any additional development to the Contractor-supplied devices and systems.

98. For launch, the Contractor shall be responsible for the integration of the UTA's employee IDs using the provided transit payment application in a multi-application MIFARE environment. The UTA's Information Technology Department will work with the SI to support the integration.

99. All third-party media accepted within the system will be associated with a closed-loop transit account registered with the same personalization information on the ID. The rules associated with registration and use of third-party media will be defined during design review.

100. The Parties have deleted this requirement by mutual agreement.

101. The system will support the distribution of positive and negative lists to be maintained locally at the devices and used for fare validation and inspection. Positive and negative lists will be managed within the back-office and distributed to the devices via the device management API.

102. If used, positive and negative list updates will be distributed devices to no less than every five (5) minutes and include version control to ensure timely and accurate synchronization.

103. Any and all processes governing the use of risk mitigation techniques will be fully documented in the software specifications for the devices and may be shared to enable the same functionality on third-party devices.

104. The Contractor shall be responsible for the processing of payments for sales through all fare distribution channels.

105. All devices and systems that process electronic payments, including credit cards and debit cards will interface with the UTA's processor for the processing of those payments. Devices and systems requiring an interface to the payment processor include, but are not limited to:

a. Ticket Vending Machines

b. Customer and Institutional Websites

c. Mobile application

106. The system must support open payments.

107. If a central payment application is used, the SI shall provide a payment processing API, including all required security protocols, to process payments through the payment application and to allow third-party devices to process payments.

108. The system will use tokenization for all funding sources stored within the system. The SI shall make of use a third-party tokenization service so that no payment data, encrypted or otherwise, is stored within the system.

109. All devices and systems accepting bank cards for payment will be certified as compliant with the Europay MasterCard Visa (EMV) standards in effect at the time of the Effective Date of the Contract, and capable of being certified to newer versions via software upgrades, however the Contractor's obligations under this requirement excludes any updates or upgrades of hardware. All devices and systems will default to EMV processing, including the use of offline data authentication, and fall back to non-EMV processing only when it is not supported by the card being used for payment or method of acceptance.

110. All devices and systems accepting payments will support split payments, or the use of up to three (3) funding sources to complete payment for a single sale, including use of multiple credit/debit cards, transit benefit cards, vouchers, and cash.

111. All devices and systems accepting payments will support configurable minimum and maximum payment amounts. The minimum and maximum amounts will be able to be independently set by distribution channel, payment type including by credit/debit card type (e.g., Visa, MasterCard, American Express, and Discover), and device status (i.e. online vs. offline).

112. All devices and systems accepting debit cards for payment will be able to identify pre-tax benefit cards issued by the government and pre-tax benefit providers based on the Issuer Identification Number (IIN). Stored value and passes loaded using these cards will be identified

as such and segregated within the transit account to ensure compliance with all applicable IRS regulations in place at the Effective Date of the Contract.

113.   The system will maintain payment records to support the auditing of all payments processed and to support payment dispute and chargeback resolution.

114.   The Contractor shall be fully responsible for acquiring all required bank certifications, including PCI and EMV certifications, for the interfaces to the payment processor and the system as a whole.

115.   The Contractor shall be responsible for ensuring that the system as delivered is compliant with all applicable PCI standards at the time of the Effective Date of the Contract, and with all UTA, state, and local policies for the handling of Personally Identifiable Information (PII).

116.   All equipment provided or purchased by the Contractor that will capture, store, transmit, or process bank card data will be certified, by the OEM or SI, as compliant with all applicable PCI standards at the time of the Effective Date of the Contract.

117.   The approach to system security will include avoiding the storage of bank card data and PII on field devices and only storing and transmitting such data in a tokenized or encrypted form.

118.   The connection between the frontend devices and back-office will be over an IP network. Where required, the connections will be secured using Transport Layer Security (TLS 1.2) and strong encryption, such as TDEA or AES. All data sent via the internet will be TLS-encrypted using the HTTPS protocol.

119.   All payment data will be secured from the point when it is captured to when it is received by the processor. When communications are over public networks, Virtual Private Networks (VPNs) will be used to increase security.

120.   Firewalls will be established around all virtualized servers, in addition to the use of other traffic filtering security measures where required.

121.   Physical and logical access to system components that contain PII and/or financial data will be restricted. Physical and logical security will be sufficient for compliance with the PCI standards in effect at the time of the Effective Date of the Contract.

122.   Logical access to all supplied systems will require two-factor authentication and be centrally managed using a Contractor-provided managed user authentication and access control platform based on a vendor-neutral, industry standard protocol.

123.   The Contractor shall be responsible for providing a PCI compliance plan during design review, and for obtaining certification for the entire system. The Contractor shall employ a Qualified Security Assessor (QSA) who has been certified by the PCI Security Standards Council as being qualified to assess compliance to the PCI DSS Standard and shall be responsible for conducting all testing required to achieve certification prior to Final System Acceptance.

124.   System security features will be maintained and security issues will be addressed as they arise. Operating system updates, software patches, bug fixes, and system enhancements to address identified security issues will be provided.

125.   Security-sensitive information will be submitted separately, in accordance with procedures to be jointly developed between the Contractor and the UTA. Security-sensitive information will include:

     a.   Information that would allow an individual to create, duplicate, skim or counterfeit fare media

     b.   Information that would allow an individual to overcome security features or interlocks intended to prevent access to sensitive information

     c.   Information that would allow an individual to divert revenue, whether electronic or cash revenue, from the system

126.   Hosting of the back-office may use both a public cloud and private hosting service that provides an Infrastructure as a Service (IaaS) virtual private cloud environment that is provisioned, configured, and managed by the SI over the life of the contract.

127.   The cloud hosting service will deliver a high availability architecture with built-in

redundancy at the physical, logical, and network layers, and guarantee availability (i.e., up time) of at least 99.99% for the virtual private cloud environment.

128.   The cloud hosting service will support both static and dynamic resource allocation with the ability to assign a base allocation of compute, memory, and storage resources, and scale dynamically as processing load increases.

129.   The cloud hosting service will enable the selection multiple geographic zones within the continental United States for the hosting locations for the physical hardware supporting the virtual private cloud environment.

130.   The cloud hosting service will have all physical hardware supporting the virtual private cloud environment at sites meeting the standards of a Tier 3 (or better) data center, as defined by the Uptime Institute.

131.   The Contractor shall be responsible for all back-office operations, monitoring, and maintenance.

132.   In addition to the redundancy built-into the virtual private cloud environment, the Contractor shall design the virtualized system to have full redundancy of the provisioned servers, applications, and databases.

133.   The Contractor shall provision two separate, identical, and fully functional instances of the production back-office within the virtual private cloud environment.

134.   Both production back-office instances will be configured to take advantage of dynamic resource allocation, with each having a base allocation of compute, memory and storage resources capable of handling 200% of the anticipated peak processing load when bus, rail, and metro services are in full operation and capable of dynamically scaling to support up to 400% of the anticipated peak processing load without reconfiguration.

135.   Each production back-office instance will include all servers, applications, and databases necessary to independently support the functionality of each back-office component.

136.   The SI shall configure each production back-office instance to be supported within the virtual private cloud environment by physical hardware located in different geographic zones within the continental United States.

137.   The two production back-office instances will process transactions in parallel in an active-active, load-balanced configuration to optimize system performance and ensure that if one instance fails, or goes into a degraded mode, the second instance will automatically take over processing of all transactions with no downtime.

138.   All transaction data will be 100% protected against loss and this requirement is met if either data center of the Contractor is operational in the event one of the data centers suffers a failure. Each identical and independent production back-office instance will be equipped with the means necessary to mirror data across redundant database instances in real-time (i.e., simultaneous writes). Database redundancy may be handled differently from server and application redundancy, with both production back-office instances accessing the same database with failover to an active (i.e., hot) backup in the event of a failure.

139.   This production back-office architecture will support the performance of rolling software upgrades across the two instances with no downtime.

140.   The Contractor shall provide redundant data (i.e., internet) connections to the cloud infrastructure as appropriate for the physical devices and systems being provided.

141.   The Contractor shall propose a logical architecture that meets all production back-office architecture requirements for agency review and approval at design review.

142.   The automated failover between production back-office instances will be exercised in multiple failover scenarios during system integration testing to demonstrate no data loss or significant degradation in system performance prior to Final System Acceptance.

143.   In addition to the production back-office instances, the Contractor shall provide two additional back-office instances (test and staging) for use solely by the UTA and their partners. Any non-production back-office instances required by the SI for their development and support of

the system will be separate from those provided for use by the UTA. These environments must meet the following requirements:

    a. The non-production back-office instances will have all components (servers, applications, and databases) and configuration necessary to mirror the production back-office instances without the required redundancy of the production back-office.

    b. The non-production back-office instances will leverage dynamic resource allocation with the ability to scale to the full resource allocation of the production back-office instances. The base resource allocation for each non-production back-office instance will be agreed to during design review.

    c. The SI shall be responsible for supporting and managing the configuration of all non-production back-office instances.

    d. The SI shall ensure that the staging back-office instance always mirrors the current configuration and software of the production environment. The development and test back-office instances will be updated to the configuration and software in development, under test, or currently in the production environment at the direction of the MTA.

    e. Any of the frontend equipment and systems provided by the SI, including those in the UTA test facility, as well as those in the field (i.e., production environment) will be capable of being configured to point to one of the non-production back-office instances at the direction of the UTA.

144. The Contractor shall provide a high availability system that offers maximum protection against data loss and system failure. Means will be provided in the system design to ensure a complete recovery from the loss of any system components at any point during operation.

145. The Contractor shall develop and submit a disaster recovery plan that describes data backup & recovery, and ensures minimal data loss in the event of a catastrophic event or system failure that impacts the cloud-hosted environment. This plan must meet the following requirements:

    a. The disaster recovery plan will contain detailed procedures to be followed to restore the system to full operation following a disaster or failover event, including the complete resynchronization of data across production system instances.

    b. The Contractor shall provide an evaluation of the types of disasters that may impact system operations and detail the steps to be taken to recover from such disasters.

    c. Contractor shall identify the resources (e.g., people, systems, communications, etc.) that must be committed to implement the disaster recovery plan.

    d. The Contractor shall train UTA staff in all procedures to restore system operations.

146. All equipment will receive date/time, fare table, configuration, and list updates from the back-office at startup and as necessary. Additionally, equipment will automatically synchronize with the back-office throughout the day using Network Time Protocol and other means to update configuration and list data.

147. All equipment will be able to receive multiple account lists from the back-office including, but not limited to, positive and negative lists. These lists will help improve passenger dwell time and mitigate risks from offline operation. All local lists will be updated based on changes since the last update at a configurable interval of no less than every five (5) minutes.

148. The equipment software and applications will accommodate UTA's existing fare structure and potential fare policies described in this SOW.

149. All equipment will include the flexibility to ensure that future UTA fare policy will be satisfied without software modifications. All fare policy modifications will be through fare table and other configuration changes, downloadable from the back-office.

150. UTA operates in Mountain Time (UTC-7) and practices daylight savings time during the warmer months (UTC-6). All system interfaces and reports must present information in Mountain Time.
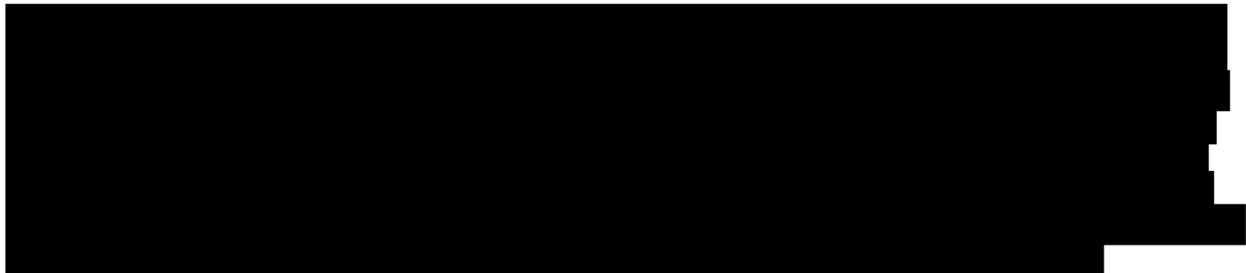
C - REQUIRED ACCOUNT TYPES

Closed-loop

Currently, InComm[2] manages UTA's prepaid card infrastructure. InComm provides, manages, and supports a secure point of sale system for a network of retail merchants for the purpose of selling, loading, and reloading these prepaid cards that can be used by UTA patrons to pay transit fares. InComm supplies UTA and these retail merchants with card inventory. InComm provides a secure web application that enables UTA employees to perform a variety of Customer Service functions (e.g., card lookup, balance adjustments, card replacements, review payment history, etc.). Further, InComm provides, hosts, and supports a web application that allows patrons to purchase, load, and reload these cards online. This web application allows patrons to perform various card management functions (e.g., setup auto-reload notifications, low balance alerts, card-to-card transfers, card replacements, etc.). Finally, InComm processes all payment requests and manages the prepaid card balances.

Here are requirements relating to closed-loop accounts:

1. Provide, manage, and support a secure point of sale system for a network of retail merchants for the purpose of selling, loading, and reloading these prepaid cards that can be used by UTA patrons to pay transit fares.
2. Supply UTA and retail merchants with card inventory.
3. Closed-loop prepaid stored value accounts, where the account tokens can be contactless smartcards or mobile smartphones.
4. Patrons must be able to reload their prepaid closed-loop accounts online, within the mobile app, at select retail merchant locations, at UTA Customer Service locations, and at UTA ticket vending machines.
5. The Contractor shall be able to deploy stored value accounts (SVA).
6. The SVA shall be used for the following use case:
   a. Stored value as a funding source (to buy mobile tickets)
   b. Stored value associated to an account-based token like a barcode or smartcard for use in account-based fare processing
7. The rider shall be able to add stored value to their account through the mobile app or web portal.
8. UTA shall have the ability to accept cash at the TVM, retail merchant locations, or customer service and add that value to a rider's back-office account.
9. All added/topped up value shall be available for immediate use.
10. The account-based fare processor will automatically deduct the appropriate fare from the passenger's SVA and apply fare capping logic.
11. Enable UTA employees to perform a variety of Customer Service functions (e.g., card lookup, balance adjustments, card replacements, review payment history, etc.).

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2 It is not required that vendors integrate with InComm. The first paragraph of Section C in the SOW describes what InComm is doing for UTA today. An enumerated list of requirements relating to closed-loop accounts follows. Bidders are invited to explain how their proposed solution will meet these requirements.

12. Provide, host, and support a web application that allows patrons to purchase, load, and reload these cards online. This web application will allow patrons to perform various prepaid card management functions (e.g., setup auto-reload notifications, low balance alerts, card-to-card transfers, card replacements, etc.).
13. Process all payment requests associated with closed-loop accounts
14. Manage the prepaid card balances.
15. Maintain a list of card balances associated with these closed-loop accounts and distribute that list to all card validator devices so that we ensure that patrons have sufficient funds for fare payment. Ensure that all validators stay synched on all changes to this list.

Open-loop

UTA may decide to allow patrons to pay their fare using their bank-issued contactless smartcards (e.g., Visa, MasterCard, American Express, Discover). These bank-issued smartcards will serve as account tokens to open-loop card accounts in the EFC back-office. Note that mobile smartphones may also serve as tokens to these open-loop accounts. The back-office must be able to handle all payment processing responsibilities associated with these open-loop cards.

Here are requirements relating to open-loop accounts:

16. The EFC back-office must support open-loop accounts (e.g., Visa, MasterCard, American Express, Discover).
17. Process all payment requests associated with open-loop accounts.
18. Support the use of bank-issued contactless smartcards as tokens to open-loop accounts in the EFC back-office.
19. Support the use of mobile smartphones as tokens to open-loop accounts in the EFC back-office.
20. Maintain a list of known 'bad' open-loop accounts and distribute that list to all card validator devices so that we don't allow patrons to use the associated tokens for fare payment. Ensure that all validators stay synched on all changes to this list.
21. Customer Service must be able to lookup accounts in the back-office that are associated with open-loop cards using the last four digits of the PAN.

Sponsored

Period-based accounts sponsored by third-party institutions, where the account tokens can be contactless smartcards or mobile smartphones.

Here are requirements relating to sponsored accounts:

22. The EFC back-office must support sponsored accounts (employer, school).
23. Support the use of third-party-issued contactless smartcards as tokens to sponsored accounts in the EFC back-office.
24. Support the use of mobile smartphones as tokens to sponsored accounts in the EFC back-office.
25. Maintain a list of known 'active' sponsored accounts and distribute that list to all card validator devices so that we know which tokens to allow for fare payment. Ensure that all validators stay synched on all changes to this list.

D - SYSTEMS INTEGRATION REQUIREMENTS

As stated in the Introduction section of this document, UTA intends to procure a new, **integrated**, vendor-hosted, account-based, electronic fare collection system. This system must support UTA's fare structure, including flat fares, discounted fares, station-based fares, transfer credits, and fare caps. This system must integrate with existing trip planning, operations management (including sponsored programs), and

reporting systems. Finally, this system must support core functions such as fare validation, trip construction, fare calculation, and payment processing.

The **fare validation hardware** for all buses and rail platforms must constantly communicate with the EFC back-end system(s) to send usage data and receive account data. Regarding **TVMs**, patrons must be able to use these TVMs to reload value to their closed-loop accounts. The **mobile app** that will enable smartphones to function as tokens to prepaid closed-loop accounts. Patrons must also be able to utilize this mobile app to manage closed-loop accounts. Transit police will use **mobile inspection devices** to perform electronic fare validation functions.

All these sub-systems will be integrated as described by the requirements listed in this section.

Trip Planning

The EFC back-office receives a nightly download from Trapeze containing details about stops and timepoints to enable tap enrichment, trip construction, and fare calculation activities.

Here are integration requirements relating to sponsored-program interfaces:

1. The back-office shall receive nightly download from Trapeze containing details about stops and timepoints to enable tap enrichment, trip construction, and fare calculation activities.

Sponsored Programs

UTA's transit sponsor partners utilize a bulk import process to activate and deactivate sponsored accounts in the EFC back-office.

UTA expects an integration that allows these transit sponsors to renew their contracts online. These sponsor contracts serve as the basis for product offerings that get configured in the EFC back-office. UTA also expects a transit sponsor web interface to allow sponsors to manage sponsored accounts. Finally, UTA expects an interface to facilitate reduced fare management.

Here are integration requirements relating to sponsored-program interfaces:

2. Provide a web application that enables sponsors to manage sponsored accounts (e.g., card lookup, card replacement, activations/deactivations, update account property fields, view aggregate ridership reports, etc.) (See Appendix B for more details about the existing transit sponsor web interface).
3. The back-office shall process bulk import files (See Appendix C for details about existing bulk import processing).
4. Provide a web application that enables sponsors to perform contract renewal activity (see Appendix D for more details about the existing contract renewal web interface).
5. Provide a web application that facilitates reduced fare management (see Appendix E for more details about the existing reduced fare management web interface).

Mobile Data Device (MDD)

All bus and rail vehicles are equipped with a mobile data device (MDD). The MDD facilitates communication between dispatch and operators. Also, the MDD solution tracks real-time and historical vehicle location information. The MDD communicates with the front-end validation devices.

The Mobile Data Device (MDD) is integrated with a custom CAD/AVL system that UTA developed and maintains. The MDD is a 10" Panasonic Toughbook Tablet running Android ver. 9.0. It is connected through ethernet to a UTA developed I/O box that included a Raspberry Pi computer to process messages

and signals as well as to function as a network hub. Ethernet, USB A, Micro USB, HDMI, etc. connections are available.

Here are integration requirements relating to the MDD interface:

6. The front-end fare validation devices shall notify the MDD when a validation event occurs at an EFC validation device. Include details such as the validation response, account type, and sponsor name (if applicable).
7. For every electronic fare validation event, the front-end validation device shall receive various data from the MDD, including location, route, block-id, service type, etc. This data is needed for tap enrichment, trip construction, and fare calculation activities in the back-office.

Front-end Fare Validation Device

Front-end fare validation devices are installed on every bus and at every rail platform. These devices perform fare validation tasks when a patron provides a token (card or smartphone) that is associated with a back-end account (see Section A for more details about supported card types).

Here are integration requirements relating to the front-end fare validation device:

8. The front-end fare validation device must receive near-real-time account data from the EFC back office. This account data informs the validator so that the patron receives the appropriate validation response at the front-end device.
9. For every electronic fare validation event, the front-end validation device shall send a validation event record to the EFC back-office. This record is needed for tap enrichment, trip construction, and fare calculation activities in the back-office.
10. The front-end fare validation device needs to be able to be assigned an IP address in the field (currently a fixed IP address) to differentiate between multiple devices onboard a bus or installed at a rail platform.
11. Validators will communicate with the back-office through UTA-provided communications infrastructure.
    a. Bus validators will communicate using the existing mobile gateway. The validator will include an Ethernet port that enables connection to a mobile gateway and other devices, as necessary.
    b. The rail platform validator will communicate with the back-office through a hardwired connection at stations and platforms for power and data communications.
    c. If additional communications components are required, all such components will be mounted in a secure and sturdy enclosure, with the location and function approved by the UTA.

Customer Service

Customer Service must have the tools required to handle all customer calls relating to fare payments. Customer Service must have an integrated web interface that gives agents the ability to manage back-office accounts. This interface must also enable Customer Service agents to resolve concerns relating to TVM transactions and mobile tickets.

Here are requirements relating to our Customer Service interface:

Back-office

12. The back-office shall provide a single web interface for UTA to handle all customer service issues relating to close-loop, open-loop, and sponsored accounts. See Section C for more details.

13. The back-office shall enable UTA to handle customer service directly with their customers.
14. Access by authorized UTA employees to the customer support solution shall be secure and include user authentication.
15. The customer support solution shall be fully compatible with mainstream modern web browsers such as Google Chrome.

TVMs

16. Customer Service shall be able to view health metrics for each device.
17. Customer Service shall be able to view sales records by device, by customer.
18. The Parties have mutually deleted this requirement.
19. The Parties have mutually deleted this requirement.
20. Ability to confirm fund entered and change given
21. Ability to verify credit/debit transaction responses (declined; not readable; invalid media)
22. The Parties have mutually agreed to delete this requirement.

Mobile App

23. Authorized UTA employees shall be able to view the tickets which are currently available to customers to purchase.
24. Authorized UTA employees shall be able to view the customer's account details: 1) Email address; 2) Device details; 3) Relevant funding source attached to the account
25. Authorized UTA employee shall be able to view: 1) The customer's ticket purchase history including the status of the ticket (Inactive/activated/expired); 2) When the ticket was purchased; 3) When the ticket it was activated.
26. Authorized UTA employees shall be able to block or unblock a customer's account. Authorized UTA employees shall be able to deactivate and reactivate a customer's account.
27. Authorized UTA employees shall be able to change rider type to permit access to restricted tickets.
28. Authorized UTA employees shall be able to issue full or partial refunds.
29. Authorized UTA employees shall be able to cancel unused tickets from a customer's wallet.
30. Authorized UTA employees shall be able to issue a new ticket to a customer's wallet without taking payment.
31. Authorized UTA employees shall be able to record and view notes on a customer's account.
32. It shall be possible to have multiple authorized UTA employee user roles with different levels of permissions to the customer support functions.
33. A UTA admin user role shall be able to: 1) Create new users; Assign user roles; Delete users
34. Each customer record shall contain an audit trail of all transactions processed, tickets used, and scans validated.
35. Manage or request "white listing" of customers payment method.
36. Customer can gift/give funds or pass for another user
37. Access to customer account for investigation must track who was in the account and what they did.
38. Access to customer account for investigation must require UTA employee to leave detail note of why they were in the account.

Accounting

Accounting must have a web interface that enables users to generate various reports.

Here are requirements relating to the Accounting interface:

39. Authorized UTA employees shall be able to generate reports on ticket sales, usage and their

associated revenue for variable date ranges.
40. Reporting shall be segregated for transit sponsor.
41. Reports to enable reconciliation of transactions to merchant account.

<u>UTA Datastore</u>

UTA has designed a database, referred to as the Datastore, specifically for capturing and retaining business data for various UTA functions. The Datastore provides the primary source of data for internal UTA business reporting and ad-hoc queries of data. The Datastore includes tables for taps, trips, linked trips, account information, payment information, institutions, and inspection data for daily ridership activities on buses and trains. This data provides a variety of purposes including billing for third-party institutions, researching open-loop and closed-loop payment problems, researching rejected taps, monitoring ridership, and researching EFC card account activities. The UTA Datastore includes a subset of tables of data pertaining to EFC functionality. Real time extracts (also referred to as Data Warehouse Extracts – DWE) are performed from various databases into the UTA Datastore. The data in the Datastore is near-real-time (updated every 15 minutes).

The Datastore contains tables relating to:

- Closed-loop accounts, inventory, payments
- E-Fare inspections
- Taps/trips
- Reduced fare accounts
- Mobile ticketing activity
- Sponsor contracts and sponsored accounts
- Fare capping

Here are requirements relating to the Datastore:

42. All reports shall be in standard export formats (e.g., Excel, PDF, CSV, etc.).
43. API's must be available to enable UTA to receive all relevant data in real-time or near real-time to central back-office systems.
44. All data must be stored in an open data warehouse.
45. UTA shall own all the data that comes through the proposed platform.

E - BACK OFFICE FUNCTIONAL REQUIREMENTS
1. The back-office will be browser accessible.
2. The back-office will be role-based so that individual users' access can be controlled based on the role that they are assigned. The system must support the following roles: a) institution administrators; b) institution reps; c) super users; d) customer service administrators; e) customer service reps; f) marketing reps; g) accounting; h) read only.
3. The back-office will require secure login to access the system.
4. The back-office will be fully auditable. All changes to user and institution accounts must be logged. All changes to patron accounts (online and via bulk import processing) must be logged. All changes to product offerings and subscriptions must be logged. All account validation events must be logged. All trip construction, fare calculation, and payment processing transactions must be logged.
5. The back-office must provide system health monitors, dashboards, and alerts that give UTA meaningful information whenever there are issues with institution management, transit sponsor website functionality, account management, bulk import processing, product management, FAREPAY website functionality, fare validation, trip construction, fare calculation, payment processing, or reporting functions.

Institution Management

6. The back-office shall allow for UTA to create and edit institution accounts for those UTA transit partners that wish to fully or partially subsidize transit for their employees or students. Institution accounts include details about contract type, contract limits, contact information, JDE#, Contract number, and bulk import automation configuration.
7. The back-office shall allow UTA to associate default product offerings to the institution account so that any new patron accounts are automatically subscribed to this default product offering.
8. The back-office shall allow for UTA to create institution administrator accounts and associate those accounts to the Institution account.

Transit Sponsor Website

9. Select back-office functions shall be accessible by institution administrators via a transit sponsor website. The transit sponsor website shall allow for institution administrators to lookup patron accounts online, activate/deactivate patron accounts, or edit patron account details.
10. All graphical user interfaces and public communications within or concerning the transit sponsor website shall meet the UTA brand guidelines.
11. The transit sponsor website shall allow for UTA to grant access to 3rd party corporations to subscribe their students or employees to fare product offerings online and via bulk import processing.
12. The transit sponsor website shall allow for institution administrators to activate/deactivate patron accounts, and/or edit patron account details via bulk import processing.
13. The transit sponsor website shall allow for institution administrators to replace patron's account token with a new account token (e.g., card or mobile phone).
14. The transit sponsor website shall allow for institution administrators to create and manage additional institution administrator accounts.
15. The transit sponsor website shall allow institution administrators to run reports such as the aggregate ridership report and the action history report.
16. The transit sponsor website shall give institution administrators access to a user guide.
17. The transit sponsor website shall give institution administrators the ability to contact UTA.

Sponsored Patron Account Management

18. The back-office shall allow for UTA to create, lookup, and manage sponsored patron account details individually (e.g., product subscriptions, current state, account history, trip history (if applicable) etc.).
19. The back-office shall allow for UTA to create and manage (activate, deactivate, or move) sponsored patron accounts in bulk.
20. The back-office shall allow UTA and institution administrators to subscribe sponsored patron accounts to product offerings.
21. The back-office must support sponsored patron card replacement scenarios.
22. The back-office shall allow for institution administrators to override the default product offering that is associated with the Institution account for select employees or students.
23. Using a web interface, anonymous users shall be able to view sponsored patron account status (active/inactive) and subscription details (expiration date).

FAREPAY Account Management

24. The back-office shall allow for UTA to create, lookup, and manage FAREPAY account details individually (e.g., product subscriptions, current state, account history, trip history (if applicable) etc.).
25. The back-office shall maintain a card balance associated with each FAREPAY account.
26. The back-office shall support the loading and reloading of FAREPAY account balances with

value (money). Patrons should be able to perform this function via a FAREPAY website, via a mobile application, and/or at a ticket vending machine.

27. The back-office must support the debiting and crediting of FAREPAY account balances by UTA operations, customer service, and accounting personnel.
28. The back-office must support FAREPAY card replacement scenarios.
29. Select back-office functions shall be accessible to patrons via a FAREPAY website (e.g., reload, auto-reload, auto notification, balance transfer).
30. All graphical user interfaces and public communications within or concerning the FAREPAY website shall meet the UTA brand guidelines.
31. The back-office must allow UTA to associate FAREPAY accounts with custom product offerings (e.g., low-income product offering).
32. The back-office must allow UTA to bulk import FAREPAY cards or move cards to an institution that is associated to a reduced fare product.

Product Management

33. Access by authorized UTA employees to fare product management functions shall be secure, including user authentication.
34. The fare product management interface shall be fully compatible with mainstream modern web browsers such as Google Chrome.
35. Authorized UTA employees shall be able to create and manage service types & fare product offerings that comply with UTA's fare structure.
36. Authorized UTA employees shall be able to set and alter fare rates & fare schedules associated with each product offering.
37. Authorized UTA employees shall be able to add and remove fare product offerings from availability. UTA shall have the ability to subscribe back-office accounts to fare product offerings individually and in bulk.
38. The back-office shall restrict the modification of product offerings with active subscriptions.
39. The back-office shall interface with a contract renewal website to support periodic contract renewal processes (e.g., annual, quarterly, monthly, etc.). This website is used by our transit sponsors to renew their contract (See Appendix D for more details about the contract renewal web interface).
40. The administration and pricing of fare products is done in one place, and all related subsystems (e.g., TVMs, mobile app) are updated accordingly.

Fare Validation

41. The front-end validation devices shall indicate (using lights and audio signals) if the account token (cards, smartphones, etc.) that is presented to the device represents a valid form of fare payment for the service that the patron is attempting to board. This function must be performed in less than 500 ms.
42. The front-end validation devices shall support online and offline validation.
43. The front-end validation devices must be notified of all patron account changes within 5 minutes.
44. The front-end validation devices must briefly display account details (e.g., institution name, product subscription, expiration, balance, etc.) on the screen when the account token is presented to the device. Notwithstanding the foregoing, the Parties acknowledge and agree that there are space constraint limitations on the validation equipment screen and, additionally, ADA compliance requirements for the same. Accordingly, the Parties acknowledge and agree that there is a corresponding restriction of what messaging can be shown on the screen and that the Parties will discuss and agree on the scope of this requirement during the design review phases.
45. The front-end validation devices must create and transmit a validation event record to the back-office every time a patron presents an account token to the device. This validation event record must include details such as service type, location name, GPS, route, etc. As noted earlier in this

document, data transport on the buses occurs by way of ethernet connections to a mobile data gateway. All rail platforms are equipped with fiber connections.

Trip Construction

46. The back-office shall pair validated tap on and tap off (or scan on and scan off) validation event records to form trip records based on UTA business rules. This trip construction should take place as near real-time as possible.
47. The back-office shall have trip construction logic that handles scenarios where the patron failed to tap off within a configuration time according to UTA's business rules.
48. The back-office shall associate trip records to journey records based on UTA business rules.

Fare Calculation

49. For every trip record, the back-office must calculate the nominal base fare based on the associated product subscription and UTA's fare structure.
50. For every trip record, the back-office must determine if transfer credits are applicable according to UTA's business rules.
51. For every trip record, the back-office must determine if any fare caps are applicable according to UTA's business rules.

Payment Processing

52. For FAREPAY cards, the back-office shall interface with a payment processor to process fare payments for trips taken according to UTA business rules. Back-office account balances must be immediately updated.
53. The back-office must comply with PCI security standards in place as the Effective Date of the Contract (e.g., DSS v4.0, P2PE, etc.).

Reporting

54. The back-office must keep UTA's data repository up to date (near real-time) with all validation event records, trip records, journey records, and payment processing records.
55. The back-office must provide UTA with an **Action History** report that details all changes across the user's available institutions. So, an admin could see all changes on their institutions. Super users can see all changes across all institutions.
56. The back-office must provide UTA with a **Subscription History** report that details the subscription history associated with a patron's account.
57. The back-office must provide UTA with an **Aggregate Ridership** report that displays trip records grouped by institution and by service type. Institutions should only be allowed to see their own data.
58. The back-office must provide UTA with a **FAREPAY Settlement** report.
59. The back-office must provide UTA with an **Unsettled FAREPAY Transactions** report.
60. The back-office must provide UTA with an **Unprocessed Taps** report.
61. The back-office must provide UTA with an **Unprocessed Trips** report.
62. The back-office must provide UTA with an **Institution Contract Limit** report.
63. The back-office must provide UTA with a **Tap Gap** report.
64. The back-office must provide UTA with a **FAREPAY Reconciliation File Upload** report.
65. The back-office must provide UTA with a **Closed-loop Financial** report that shows aggregate activations, loads, reloads, redemptions, adjustments, and total liability within the period.

Fraud Detection

66. The fare collection system will support fraud prevention policies, including the ability to automatically identify suspect usage patterns based on sales and ridership data, and block the use

of fare media, transit accounts, and fare products based on configurable fraud rules.

67. The fare collection system will support UTA-configurable velocity checks, and other fraud prevention measures, that identify excessive or potentially fraudulent use of fare media or payment cards. The velocity thresholds and time periods will be configurable per sales channel type, service type, or geographical location.

68. The fare collection system will support the setting of a configurable upper limit of rides for unlimited ride passes (e.g., 50 rides for a one-day pass) that will generate an automated alert within the system, and optionally block the fare media or product, when the limit is reached.

69. If the same card or account is used for payment in two geographically separated locations within a configurable period of time, the fare collection system will detect and generate an automated alert for potential fraudulent duplication of fare media.

70. For transit accounts with stored value, the system will support the configuration of a "floor limit," or value below which the account balance is not allowed to fall (so long as the device generating a fare payment is online). The floor limit may be configured to be a zero or negative balance. Transit accounts with balances at or below the floor limit will be automatically blocked by the system.

71. The fare collection system will support configurable rules to prevent the sharing of fare media and accidental payments through "pass back protection," or a configurable time period in which a card will not be accepted for payment at a device after an initial use. Pass back protection shall be configurable by fare media type, fare product, and rider classification, and will be enforceable at the bus, rail station, and individual device level.

72. The fare collection system will support the placing of fare media and transit accounts into "observation mode", which will generate an automated alert when the fare media or account is used. This may be used by fare enforcement staff to monitor known stolen or compromised fare media or transit accounts.

73. The blocking of fare media, transit accounts, and individual fare products may be performed automatically or manually, and on an individual or bulk basis (e.g., if a known batch of cards was lost, the entire batch may be blocked).

74. Additional fraud prevention policies may be defined during design review.

F - FARE VALIDATION HARDWARE REQUIREMENTS

Here are the requirements for the front-end fare validation devices:

1. Electronic validation units shall have their own secure processing capability and shall be multi-format; capable of reading 2D barcodes, Bluetooth LE, NFC, and contactless-EMV. The Contractor's validation devices support multi-format with barcodes, NFC and contactless-EMV. Notwithstanding the foregoing, BLE functionality is not supported by the Contractor's validation device. For clarity, the Contractor could support Bluetooth LE ("BLE") however, it would require the implementation of functionality supported by separate beacons placed in the vehicles to optimize receipt of the signal. Therefore, the Parties further acknowledge and agree that the BLE requirement is not an obligation that the Contractor will deliver and is not considered for any testing activities, and will not have any bearing on Phase Final Acceptance or Final System Acceptance. The Parties may, at a future point in time, discuss adding the BLE functionality into the UTA's system, with scope, pricing and schedule impacts mutually agreed to in writing.

2. The electronic validation software shall be highly secure, ensuring that validation logic is processed by the validator and not the mobile device.

3. For every electronic fare validation event, the front-end fare validation device will create a validation event record containing the details of tickets scanned, the validation results, the date and time. This record will also include the GPS location of validation events along with other details (e.g., service type, vehicle number, route, etc.). Notwithstanding the foregoing, the Parties

acknowledge and agree that the UTA will provide the GPS, vehicle number, route, and other identifying information through the onboard Mobile Data Device ("MDD").

4. The front-end fare validation devices must be able to electronically perform validation functions when offline.

5. ███

6. The device screen must be large enough so that the rider can read the content that is displayed. Please describe the color quality rating for your display. Please describe your display size options.

7. The device must support tactile / braille signage to help a person with a visual disability use the front-end validation device. Please describe how the device supports any other features that would assist a person with a visual disability in using the front-end validation device.

8. The front-end fare validation device will provide clear visual and audible indicators as part of the fare validation response. These indicators will meet ADA requirements in place at the Effective Date of the Contract.

9. The device must meet ADA requirements in place at the Effective Date of the Contract. The device, when mounted and installed must comply with US FTA ADA compliance standards in place at the Effective Date of the Contract.

10. The device must meet readability standards for brightness in sunlight and darkness. The device must have the ability to programmatically adjust the brightness of the display.

11. Device audible notifications must have programmatically adjustable volume level.

12. The device must support fiber, RJ45, and serial connections. It is desired that the device also support cellular connectivity. Notwithstanding the foregoing the Contractor supplied equipment will support RJ45, and any other connections that may be required due to the UTA updating its infrastructure will be handled under the Change Order Process as separate installs, for example within the connection booth.

13. The device must meet IP54 rating.

14. The device must be designed and constructed to operate in the presence of vibration and shock consistent with the intended installation location.

15. The device must support branding options to match the agency logo and color schemes.

Near-field Communication (NFC)

16. The device must be able to read ISO14443 A/B NFC media.

17. The device must be able to read ISO15693 NFC media at the Effective Date of the Contract.

18. The device must be able to read HID I-Class and/or HID Seous NFC media.

19. The device must be able to read Discover Zip Card NFC media.

20. The device must have support for contactless open payment types (e.g., Visa, MasterCard, American Express, Discover).

21. Enabling support for contactless open payments must be configurable by the customer.

22. The device must comply with PCI security standards in place at the Effective Date of the Contract (e.g., DSS v4.0, P2PE, etc.). Please provide third-party proof that your hardware solution is PCI compliant.

23. The device must support contactless EMV. Please provide third-party proof that your hardware solution meets EMV certification standards.

24. The device must support Apple's "Express Transit Card".

Ability to Read Barcode Media

25. The device must read various barcode types (one-dimensional and two-dimensional). Please describe speed and range attributes for the device. Please describe how different lighting scenarios impact speed and range of the device (e.g., strong sunlight, LED, etc.).

<u>Front-end validation device Hardware Attributes</u>

26. The device must detect the presence, absence, or return of the 10 to 30 vdc ignition sense, and perform triggered tasks base on that condition. █████████████████████████████████

27. The device must support the following power specifications: 1) For bus, Operational 12V (9VDC-30VDC; 2) for rail, AC line power is converted to 24V DC (110 VAC is available at the pedestal location, the device must be configured to accept this, even if by use of an external AC to DC convertor to provide DC power to the device itself) ██████████████████████████

    Rail front-end validation devices have platform conduits and cutouts for front-end validation device power and data connections. This project assumes that the existing platform power and data connections on rail platforms will be used and no new conduit or platform cutting will be required for installation.

28. The device must be securely mounted in various model years of Gillig, New Flyer, MDC, and Glaval buses. █████████████████████████████████

<u>Device and Hardware Management Features</u>

29. The Contractor must have a method for managing firmware, OS updates, patches, device drivers, and validation software releases.

30. The Contractor must have a strategy for ensuring that the devices maintain PCI certification (e.g., PCI DSS v4.0).

31. UTA must have the ability to remotely manage device features (e.g., brightness, sound, reader sensitivity, etc.). Notwithstanding the foregoing, the Parties acknowledge and agree that due to EMV certification requirement, the Contractor's Front-end Validation device does not have the functionality to remotely adjust the brightness and reader sensitivity. Additionally, the barcode reader is not designed to have remote sensitivity modification functionality. Therefore, the Parties further acknowledge and agree that the specific remote device management requirements identified herein are not obligations that the Contractor is required to deliver and is not considered for any testing activities, and will not have any bearing on Phase Final Acceptance or Final System Acceptance.

32. UTA must have the ability to reconcile front-end validation device events (e.g., NFC scans, barcode reads) with validation event records (taps) in the back-office.

33. Authorized UTA employees shall be able use a web application to perform real-time monitoring of all validator devices deployed throughout the system. This interface shall display the health of all validation devices, including: a) Online / offline status; b) Diagnosis of relevant issues; c) Software app version; d) system utilization metrics (e.g., CPU, memory, disk storage, etc.); e) Vehicle ID; f) Scan history.

34. The device must support easy access for UTA Field Technicians who need to service equipment on bus and rail platforms.

35. Contractor will be required to outline a tiered support agreement for the equipment where UTA will be authorized and trained to be Tier 1 support.

<u>Validation</u>

36. Online validation of a token (e.g., NFC smartcard, 2D barcode, etc.) should occur within 500ms. Notwithstanding the foregoing, the Parties acknowledge and agree to the following: 1) That the

Contractor cannot control network latency and its downstream impact on being able to conform to this requirement, therefore any network latency that causes the Contractor's solution to exceed the 500ms will not be considered a fault or defect of the Contractor's delivery; and 2) That the Contractor's solution is designed to revert to local validation if an online validation cannot be completed in 500ms and, accordingly, this Contractor delivered functionality will supersede the requirement if the validation cannot be completed in 500ms.

37. Offline validation of a token (e.g., NFC smartcard, 2D barcode, etc.), after it has been completely read by the system, should occur within 100 ms ████████████████████████████████ ███████████████████████████

38. The validator must not allow a token to be used more than once within the anti-pass back period (30 seconds).

39. The validators will include sufficient embedded storage to hold at least 30 days of fare payment transactions, and all risk mitigation lists as determined necessary during design review.

40. The validators will support expandable storage in a common, commercially available format (e.g., USB drive, compact flash, secure digital, etc.) that can be quickly and easily swapped or expanded without modification to the rest of the device components.

41. The validator housing will be resistant to corrosion, abrasion, scratching, impacts, and vandalism, and withstand standard bus cleaning and disinfectant materials. Validator housing color and finish will be such that it minimizes reflection and is highly resistant to fading, cracking, and peeling. All validator corners will be rounded, and there will be no exposed bolt heads, nuts, sharp edges, or cracks on outside surfaces. The validator display will be flush mounted in the housing. Covers on the validator housing for accessing modules and subassemblies will be secured with mechanical locks and keys that are not readily duplicated nor readily available to the public, and uniquely serialized and stamped "Do Not Duplicate."

42. The validator will be installed on each bus according to the following expectations:
    a. The reader will be in proximity to the front and/or back door and will be positioned so that a customer may easily present fare media for payment upon boarding and alighting the bus.
    b. All required mounting hardware and brackets for each bus type will be provided by the Contractor.
    c. The validator and components will be securely mounted using steel hardware in a location and manner that is safe for customers and operators.
    d. When installed, the validator will not obstruct the operator's view out the vehicle windows and will not cause glare on the windshield during bright sun conditions or at night with the vehicle interior lights off.
    e. Mounting will not interfere with the maintenance of other onboard bus systems and components.
    f. Validator design and mounting will be compliant with all applicable ADA requirements in place at the Effective Date of the Contract and will be approved by agency ADA compliance officers.
    g. All validator components, cabling, installation methods, and mounting will be prototyped on each bus type and subject to written approval by the agency before installation. ████ ███ ███████████████████████████████████████

43. When bus power is turned off, the validator will remain powered for a configurable time to allow completion of transmission of any and all data files, transaction records, and fare tables.

44. The validator will be installed on the rail platform according to the following expectations:
    a. Positioned so that a customer may easily present fare media for payment on the platform.

      b.   All required mounting hardware, stainless steel masts, and brackets will be provided by the Contractor.

      c.   The validator and components will be securely mounted using stainless steel hardware in a location and manner that is safe for customers and maintenance personnel.

      d.   When installed, the validator will not obstruct access to the station platform and vehicle(s).

      e.   Validator design and mounting will be compliant with all applicable ADA requirements in place at the Effective Date of the Contract and will be approved by agency ADA compliance officers.

      f.   All validator components, cabling, installation methods, and mounting will be prototyped and subject to written approval by the UTA before installation.

45. If a failure is detected that causes the validator to cease functioning or cause transactions to fail, the validator will go out of service and provide visual indication of the device status. The detected failure will be recorded as an event record.

G - TICKET VENDING MACHINE REQUIREMENTS

1. Accept all forms of U.S. bank note and coin currency
   a. Give change for U.S. bank note ($1, $5) or coin currency transactions. The Contractor may use banknote recyclers and recirculating coin magazines in the TVM.
   b. Inserted note or coin currency shall be temporarily held in escrow until completion or cancellation of the transaction
   c. Ability to dispense change in the form of bank note or coin currency (TVM should be able to give a receipt to the customer if it is unable to give valid change).
   d. Ability to hold 3 or more additional coin dispensers, each with a unique denomination
2. Accept all major credit and debit cards (mag stripe, EVM, loadable debit cards like "vanilla visa").
3. Meet all applicable ADA requirements in place at the Effective Date of the Contract.
4. Multi-language functionality with text and audio capabilities, minimum of 2 languages to be supported (Spanish, English).
5. User interface and display screen must be clear and visible in low light and in direct sunlight
6. Authorized UTA employees must be able to administer, customize, and price fare products sold at ticket machine. UTA must have the ability to add, remove, and edit screen instructions and communications.
7. Ability to dispense and encode ISO 14443 compliant fare media in form of durable smartcards and limited-use smartcards as tokens to prepaid closed-loop accounts in the EFC back-office.
8. Detailed transaction reporting for device events (e.g., open door, admin login, hardware fault), sales transactions, and inventory levels.
9. Physical requirements include a) 110-120 VAC; b) Data connection; c) Demonstrated anti-theft/vandalism construction; d) Functional reliability in extreme cold and heat, humidity, rain, and snow climate of Utah. Air conditioning unit required.

Other functionality and requirements

10. The TVMs must comply with PCI security standards (e.g., DSS v4.0, P2PE, etc.) in place as of the Effective Date of the Contract.
11. Accept Mobile NFC Payments
12. Interface with EFC backend to view balance associated with closed-loop account in the EFC back-office.
13. Interface with EFC backend to reload funds to closed-loop account in the EFC back-office. It is preferred that patrons are able to initiate this function by tapping their smartcard to an NFC-enabled TVM. Scanning a 2D barcode for this purpose might work as a secondary option.

14. Provide centralized monitoring and alarm displaying TVM status including sub-component error states.

H - MOBILE APP REQUIREMENTS

Background

Today, patrons can download the UTA GoRide app, a UTA-branded mobile ticketing solution. This solution is a standalone solution; this solution is not integrated to UTA's EFC back office or any other fare collection subsystem. This mobile app allows patrons to purchase a variety of fare tickets:

- **One-Way** – Valid on Local Bus, TRAX, and Streetcar for 2.5 hours. Additional fare required on FrontRunner and other premium services. Must be used within 90 days of purchase.
- **Day Pass** – Valid on Local Bus, TRAX, and Streetcar until 3 am. Additional fare required on FrontRunner and other premium services. Must be used within 90 days of purchase.
- **One-Way R/Sr./Y** – For pre-qualified disabled riders, age 65+, youth 6-18, or Medicare card holders. Valid on local service for 2.5 hours. Transfer upgrade allowed. Must be used within 90 days of purchase.
- **FrontRunner One-Way** – Valid on FrontRunner and local service for 2.5 hours. Additional fare may be required on other premium services. Must be used within 90 days of purchase. No service on Sunday.
- **Ski One-Way** - Valid on Ski and local service for 2.5 hours. Additional fare may be required on FrontRunner and other premium services. Must use in current ski season.
- **Ski One-Way R/Sr./Y** – For pre-qualified disabled riders, age 65+, youth 6-17, or Medicare card holders. Valid on Ski and local service for 2.5 hours. Additional fare may be required on FrontRunner and other premium services. Must use in current ski season.
- **Park City One-Way** – Valid on Express Bus, Park City-SLC Connect, Local Bus, TRAX, and Streetcar for 2.5 hours. Must use within 90 days.
- **Park City One-Way R/Sr./Y** – For pre-qualified disabled riders, age 65+, youth 6-18, or Medicare card holders. Valid on Express Bus, Park City-SLC Connect, Local Bus, TRAX, and Streetcar for 2.5 hours. Must use within 90 days.
- **Express One-Way** – Valid for Express Bus, Local Bus, TRAX, and Streetcar service for 2.5 hours. Must use within 90 days.
- **Express One-Way R/Sr./Y** – For pre-qualified disabled riders, age 65+, youth 6-18, or Medicare card holders. Valid for Express Bus, Local Bus, TRAX, and Streetcar service for 2.5 hours. Must use within 90 days.
- **Group Day Pass** – Valid for 1-4 riders on Local Bus, TRAX, Streetcar, and FrontRunner. Must ride together. Expires 3:00 AM after activation. Excludes Express, Ski, Park City, and Via.

Patrons are expected to activate their mobile ticket prior to boarding bus or rail service. GoRide tickets are validated/enforced by operators and fare inspectors by visually inspecting the mobile ticket.

The rest of this section describes the requirements for a new integrated mobile app solution for UTA. Note that there are requirements for the mobile app solution to serve as a token to a prepaid card account in the EFC back office as well as requirements to allow patrons to purchase mobile tickets.

Integrated Mobile App Solution

1. The mobile app solution shall be flexible and easily scalable for growth as more customers download the app, as well as for additions of new fare products, group, or individual customer types and profiles.
2. All graphical user interfaces, fare media, and public communications within or concerning the mobile app solution shall meet the UTA brand guidelines. This includes the customer web portal.
3. The entire solution (including the app, interfaces, business operations, hardware, applications, physical security and) shall be and remain compliant with the latest versions of PCI security standards (e.g., PCI-DSS v4.0) in place at the Effective Date of the Contract.
4. The solution shall be hosted by the Contractor or their sub-contractor within a suitable secure data

center that will provide the resilience and uptime to ensure they meet required service levels.

5. System availability during the SLA:
    a. The solution shall be operational 24 hours a day, seven days a week
    b. All Supplier provisioned system components shall have an agreed minimum overall availability of 99.9%
    c. When any aspect of the solution is unavailable and preventing user functionality a clear and relevant error message shall be displayed to the user.

Customer App

6. The mobile app solution shall be available for Android and iOS. It should support at least the last two major versions of those operating systems.
7. For the duration of the contract, the app shall always be fully functional on the latest version of the OS of supported platforms as new OS versions are released. If an update is required to make the app fully functional on a new version of a supported OS, the update shall be available to customers on the day of the OS launch. Notwithstanding the foregoing, the Parties acknowledge and agree that this requirement is met but limited to the current version of the OS that is in place and the latest the preceding two versions. The release of any new versions of the OS will be subject to development and testing prior to the release going live.
8. The mobile app solution shall be downloadable for free.
9. The mobile app solution shall be downloadable from the official app store of the supported platforms.
10. The mobile app solution will be made available without using UTA resources or servers and maintaining updates for the duration of the contract.
11. It shall be possible for the app to link to online customer information outside of the app specified by UTA (e.g., twitter, rideuta, FaceBook, Instagram, Transit). Notwithstanding the foregoing, the Parties acknowledge and agree that the requirement, as written, is open ended and may have an impact on an unknown number and type of functionalities, including but not limited to, UTA requested login credentials, which may also be used by app users to log into the app. Accordingly, the Parties acknowledge and agree that this requirement of supported credentials will be finalized and mutually agreed to during the design phases of the project, subject to the Change Order process

Systemwide Solution

12. The platform shall meet the ADA accessibility standards at the Effective Date of the Contract.
13. Customers shall have the ability to purchase tickets through a single UI.
14. Customers shall have the ability to purchase tickets through a white label application provided by the Contractor.
15. Must support an SDK or API to enable purchasing of tickets through a 3rd party application such as Transit.
16. The Contractor shall be able to support electronic validation, providing UTA the option for both dynamic 2D barcode validation and NFC validation mobile solution. Notwithstanding the foregoing, the Parties acknowledge and agree that due to market factors, the NFC validation mobile functionality is removed from this requirement. Therefore, the Parties further acknowledge and agree that the specific NFC validation mobile solution requirements identified herein are not obligations that the Contractor is required to deliver and will not be considered for any testing activities, and will not have any bearing on Phase Final Acceptance or Final System Acceptance. The Parties agree that if the industry standards for this functionality are updated in the future the Parties may utilize the Change Order process to update or implement this requirement.
17. The mobile app must be able to serve as a token to an institution account in the EFC back-office. These institution accounts are fully or partially sponsored by employers or schools. The token

will initially take the form of an open-source 2D barcode, but could shift to NFC technology in the future.

18. The mobile app must be able to serve as a token to a closed-loop prepaid account in the EFC back-office. These closed-loop accounts (e.g., FAREPAY) are loaded/reloaded with value online, via the mobile app, via the ticket vending machine, at retail merchant locations, or at customer service locations. The token will initially take the form of an open-source 2D barcode, but could shift to NFC technology in the future.

19. Customers must be able to manage their back-office closed-loop account via the mobile app, including features such as 1) view balance, 2) load/reload value, 3) view payment history, and 4) view trip history.

20. UTA shall be able to push notifications to customers that have opted in for alerts/communications.

21. UTA shall have the ability to refund/gift tickets on individual account and in bulk.

Account Registration and Login

22. The Parties agree to delete this requirement.

23. A customer shall be able to register for an individual UTA mobile ticketing account in the app or using an online web portal.

24. The account registration process shall capture the customer's email address.

25. There shall be a mechanism for amending the terms and conditions and privacy policy as needed.

26. Customers shall be able to change their password from the app or using an online web portal.

27. Customers shall be able to reset their forgotten password from the app or using an online web portal.

28. The app shall allow customers to login using native authentication services on supported iOS and Android devices. Notwithstanding the foregoing, the Parties acknowledge and agree that the Contractor's solution will meet this requirement so long as the requirement is limited to the native authentication requirement. However, if the UTA wishes additional functionalities, such requests will be subject to the Change Order process.

29. Customer shall have the ability to change their own email address as needed.

Tickets

30. The solution shall support all current types of fare products.

31. Customers shall be able to view the full range of UTA tickets available to purchase in the app.

32. It shall be possible for tickets to be grouped and categorized by route and fare type so that customers select a category to view the range of tickets available under that category to simplify the UI.

33. Favorite/frequent ticket types should be accessible from the home screen.

34. For each ticket the customer shall see the following information:
    a. Ticket Name
    b. Price
    c. Description

35. Tickets shall have an expiration period after which the ticket (be it unused or active at the time) expires. This shall be configurable.

36. It shall not be possible to activate a ticket beyond the expiration period.

37. Return tickets shall be stored in the wallet as two, linked, single tickets requiring activation by the customer prior to each leg of the journey.

38. It shall be possible to configure products that are restricted so are not available for general sale (i.e., only customer accounts granted permission can access these restricted products)

39. It shall be possible to configure the visual elements of each ticket so that different fares can display different visual elements. The intent of this requirement is to be able to display a color, an icon, and/or a 3-4 digit code on the ticket so that operators and inspectors can easily differentiate

between ticket types. We don't expect these visual elements to change during the ticket's lifetime. However, we may need to change (redesign) the visual elements from time to time.

40. Activated tickets cannot be shared on more than one device
41. The Parties have agreed to delete this requirement.

Ticket Purchase Process

42. Customers shall be able to purchase the available tickets from within the app.
43. There is no minimum number or value of tickets a customer must purchase.
44. UTA must be able to set expiration dates for all ticket types.
45. Customers shall be able to purchase multiple tickets in a single transaction.
46. Customers shall be able to pay using all major credit and debit cards as well as cash-loaded digital wallets. The system will accept Credit, including Visa/MC/AMEX/Discover, Debit cards, Prepaid debit cards, transit benefit cards including TRANServe.
47. Patrons can purchase tickets using TANF cards (e.g., Horizon card). ████████████
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48. Patrons can purchase tickets using PayPal, Venmo, and cash networks; The Parties will determine the deliverable through the design process. Any changes or finalization after the final design review will be subject to the Change Order process.
49. For security, customer must input a security code CVV.
50. Customers shall have the option to save their payment details securely for one or more payment methods.
51. Customers shall be able to delete their saved payment details.
52. A ticket purchased in the app shall be immediately available in the app's ticket manager.
53. Customers may opt in to receive ticket purchase notifications (e.g., text, email).

Cash-loaded Mobile Wallet

54. For our cash customers, the mobile app must support a mobile wallet that can store value for future ticket purchases.
55. UTA/retail networks shall have the ability to accept cash and add that value to a rider's mobile wallet.
56. All added/topped up value shall be available for immediate use.

Ticket Manager

57. Customers shall be able to view a variety of ticket details including 1) view history of used tickets, 2) view tickets which have not yet been activated and have not expired, 3) view tickets which they have activated and are currently active, and 4) view tickets that have recently expired.
58. Device connectivity (either through WiFi or a data plan) shall not be required to view purchased tickets of any status.

Ticket Activation

59. Customers shall be able to activate unused ticket stored in their ticket manager.
60. Customers shall be able to activate multiple tickets at one time from one device.
61. The Parties have agreed to delete this requirement.
62. The date and time of the activation shall be recorded.
63. The mobile app shall provide a means to make it clearly visible to inspecting staff when a ticket has been recently activated and if ticket was validated (tapped) on EFC front-end validation

device. The active ticket shall display 1) ticket type, 2) origin and destination points (if applicable), and 3) expiration date and time and/or a countdown to the ticket's expiration.

64. The active ticket shall provide an open-source 2D/QR barcode that can be scanned by a mobile app or fixed validators.
65. The mobile app does not need to be connected to cellular in order to scan the ticket and establish validity.
66. The active ticket view shall include security measures which minimize the possibility of fraudulent use. such as screenshotting, copying, replicating via an app or sharing of a ticket. For 2D/QR, the barcode should be dynamic to prevent screen capture fraudulent use.

User-Experience Capabilities

67. Ability to purchase tickets from website and have those tickets appear on the passenger app.
68. Ability to access order history from the app and online.
69. Ability to change password for app log-in directly from the app and from e- commerce website.

Ticket Validation

70. The Contractor will supply a ticket validation solution for both visual and electronic validation, whichever the UTA wishes to deploy.
71. The Contractor should also be able to offer a "phased" deployment starting with visual validation and can roll out an electronic validation solution when UTA is ready.

Back-office Capabilities

[This section covers the back-office capabilities of the platform for customer service, reporting, analytics, fare management, entitlement / rider type setting, and partner management.]

72. The back-office will be browser accessible and will be role-based so that individual users' access can be controlled based on the role that they are assigned.
73. The back-office will require secure login to access.

Customer Support

74. The back-office shall enable agencies to handle customer service directly with their customers.
75. Customers shall be able to find UTA's customer support contact details in the app.
76. Access by authorized UTA employees to the customer support solution shall be secure and include user authentication.
77. The customer support solution shall be fully compatible with mainstream modern web browsers such as Google Chrome.
78. Authorized UTA employees shall be able to view the tickets which are currently available to customers to purchase.
79. Authorized UTA employees shall be able to view the customer's account details:
    a. Email address
    b. Device details
    c. Relevant funding source attached to the account
80. Authorized UTA employee shall be able to view:
    a. The customer's ticket purchase history including the status of the ticket (Inactive/activated/expired)
    b. When the ticket was purchased
    c. When the ticket it was activated
81. Authorized UTA employees shall be able to block or unblock a customer's account.
82. Authorized UTA employees shall be able to change rider type to permit access to restricted tickets.

83. Authorized UTA employees shall be able to deactivate and reactivate a customer's account.
84. Authorized UTA employees shall be able to issue full or partial refunds.
85. Authorized UTA employees shall be able to cancel unused tickets from a customer's wallet.
86. Authorized Transit Agency] employees shall be able to issue a new ticket to a customer's wallet without taking payment.
87. Authorized UTA employees shall be able to record and view notes on a customer's account.
88. It shall be possible to have multiple authorized UTA employee user roles with different levels of permissions to the customer support functions.
89. A UTA admin user role shall be able to:
    a. Create new users
    b. Assign user roles
    c. Delete users
90. Each customer record shall contain an audit trail of all transactions processed, tickets used, and scans validated.

Tickets and Fares Administration

91. Access by authorized UTA employees to the ticket administration configuration shall be secure, including user authentication.
92. The ticket administration solution shall be fully compatible with mainstream modern web browsers such as Google Chrome.
93. Authorized UTA employees shall be able to associate a token with an institution/product.
94. Authorized UTA employees shall be able to create new ticket types.
95. Authorized UTA employees shall be able to set and alter ticket pricing.
96. New ticket types, unless otherwise specified, shall be available to all customers to buy immediately after being created.
97. Authorized UTA employees shall be able to remove ticket types from availability to be purchased.
98. UTA shall have the ability to issue tickets and or entitlements (changes to rider types) in bulk
99. The back office shall allow 3rd party partners to push tickets to their eligible members.

Finance and Reporting

100. Authorized UTA employees shall be able to generate reports on ticket sales, usage, and their associated revenue for variable date ranges.
101. Reports shall be in (or exportable to) a CSV format.
102. API's must be available to enable UTA to receive all relevant data in real-time or near real-time to central back-office systems.
103. All data must be stored in an open data warehouse.
104. UTA shall own all the data that comes through the proposed platform.

Maintenance and Support

105. The Contractor shall provide support, maintenance, and optimization for future OS releases.
106. The app shall always be fully functional on the latest version of the OS of supported platforms as new OS versions are released. Notwithstanding the foregoing, the Parties acknowledge and agree that this requirement is met but limited to the current version of the OS that is in place and the latest the preceding two versions. The release of any new versions of the OS will be subject to development and testing prior to the release going live.
107. The Contractor shall be responsible for releasing updates through the relevant app stores.
108. Any planned preventative maintenance of the solution shall be scheduled in advance with UTA.
109. The Contractor shall provide a web portal for UTA staff to quickly reference common

customer support requests and triage responses.
110.   The Contractor shall be available as a second-line support if UTA needs to escalate any queries.

Service Management Process

111.   Where the provided service does not meet the SLA, the Contractor will have a defined service management process that shall be used to measure service quality and determine appropriate action.
112.   The awarded Contractor shall provide an account manager who shall be UTA's main contact.
113.   The Contractor shall record and report on performance against the agreed services levels on a determined basis.

Marketing

114.   The Contractor shall provide UTA with design and templates for the following marketing collateral:
   a. Posters
   b. Digital ds
   c. Printed ads
   d. Inserts into
   e. Cards
   f. Bus Cards
115.   The Contractor shall provide launch day materials.

Training

116.   The Contractor shall provide adequate experienced training resource to support the UTA in producing staff training materials.

MaaS Applications

117.   The Contractor shall have the ability to offer a solution for both iOS and Android operating systems that would allow UTA mobile ticketing services to be embedded within selected third-party applications such as Transit app, Moovit, Uber, etc. Notwithstanding the foregoing, the Parties acknowledge and agree that MaaS functionalities can be broadly defined with room for interpretation. The Contractor's solution can serve MaaS processes. Therefore, the Parties acknowledge and agree that this requirement will be finalized during the design review phases that will focus on system architecture and business process and the current requirement of the Compliance Matrix will not be considered for any testing activities and will not have any bearing on Phase Final Acceptance or Final System Acceptance.
118.   The Contractor shall utilize a software development kit to facilitate integration within third party applications. Notwithstanding the foregoing, The Parties acknowledge and agree that MaaS functionalities can be broadly defined with room for interpretation. The Contractor's solution can serve MaaS processes. Therefore, the Parties acknowledge and agree that this requirement will be finalized during the design review phases that will focus on system architecture and business process and the current requirement of the Compliance Matrix will not be considered for any testing activities and will not have any bearing on Phase Final Acceptance or Final System Acceptance.

Customer Web Portal

119.   Customer Web Portal shall enable riders to:
   a. Create an account

      b. Push ticket to mobile device
      c. Manage smartcards
120. Customers shall purchase tickets with credit, debit, and Pre-tax benefit cards.
121. Customers shall have the ability to review past transactions and ticket usage.
122. Customers shall have the ability to remove/add funding sources
123. Customers shall have the ability to request receipt resend.

I - MOBILE INSPECTION DEVICE REQUIREMENTS

Transit police officers have long helped UTA accomplish its mission to strengthen and connect communities by improving public safety, reducing fare revenue leakage, improving transit service, and increasing ridership. These benefits are realized, in part, as these officers enforce ordinances set by the Board of Trustees, many of which relate to the proof of payment system that UTA has implemented.

Cards are deemed valid as fare payment when the card front-end validation device signals an 'accepted' validation response (green light) at the front-end validation device. Cards that are not subscribed to a valid product offering in the back office will receive a 'rejected' (red light) validation response when tapped to a front-end validation device.

Every transit police officer has been equipped with a handheld electronic device that enables the officer to see if a patron tapped their smartcard to a front-end validation device before boarding rail service. Further, if the card was tapped, the device indicates what the validation response was at the time of the tap. If the patron failed to tap, or if the patron tapped and received a 'rejected' (red light) validation response, then the e-fare inspection device will flash a red screen along with some limited text to further explain the e-fare inspection result. Otherwise, the e-fare inspection device will flash a green screen.

Our vision is to have our transit police officers confidently, regularly, and efficiently perform accurate e-fare inspections with the understanding that this function helps UTA accomplish its mission to provide integrated mobility solutions that service life's connections, improve public health, and enhance quality of life.

Here is a list of requirements for the e-fare inspection solution:

1. **Supported Card Types.** The inspection device must be able to read supported contactless smart cards at the time of inspection. The device must be capable of RFID communications to read and interpret the data embedded in the proximity or vicinity smartcards including the card UID. Note that several of our transit sponsors, such as Alta, Solitude, Salt Lake Visitors Bureau, LDS Church, and Utah Valley University, have chosen to source their own smartcards (e.g. Axess 15693,MIFARE Classic)

2. **Barcodes.** The inspection device must be able to scan barcodes presented by smartphones as proof of payment.

3. **Inspection Event Record.** The inspection device must transmit an inspection event record to the back office every time a card is inspected within an hour of the inspection event. The UTA Data Repository will store these inspection event records. This is needed for data analysis & reporting. Data elements for inspection event records include: Inspector ID (Badge #); Inspection Date/Time; Card UID; Inspection Mode (FrontRunner, TRAX, MAX); Inspection Response Time (in milliseconds); Inspection Result (Green, Yellow, Red); Number of Taps within X hours.

4. **Lookback Window.** The inspection solution must allow for a configurable tap validation look-back window ("x" hours). If there is no Tap record within a configurable amount of time preceding the inspection event, then we can safely say that the patron failed to tap on before boarding the service.

5. **E-Fare Inspection.** The inspection solution must contain a method to allow the inspector to validate at the time of inspection that the card or phone being offered by the patron was used to pay the fare for the current trip. Display last known validation response for a smartcard or smartphone within the transfer period, according to UTA's business rules.

6. **Validation History.** Display last known validation response history for a smartcard or smartphone.

7. **Account Status.** Display the current account status associated with the card or phone. In other words, would the validation response have been 'accepted' at the front-end validation device if the patron had remembered to tap on?

8. **Remote Deactivation.** The inspection devices must allow for remote deactivation in case the device is lost.

9. **Location.** The inspection devices must have GPS capability. GPS coordinates should be included as part of the inspection event record to help meet the burden of proof requirement.

10. **Service Type.** The inspection device must allow the user to specify the service type that is being inspected (e.g., TRAX, FrontRunner).

11. **Inspection Result Indicators.** User Interface should display the appropriate color, sound, and message after each card scan. The device should display a distinct color, message, and sound for: 1) cards that tapped green on the validator; 2) cards that tapped amber on the validator; 3) cards that tapped red on the validator or had no tap.

12. **User Authentication.** The inspection device must authenticate the user before enabling card validation functionality.

13. **Read Results.** The inspection device should display the type of card read along with the read results to ensure the card was read correctly.

14. **Screen Refresh.** Screen change on scan. When inspecting it is difficult to differentiate between scans when the scans produce like results (2 greens in a row with 1 tap each, 2 yellows with no taps, etc.) The device needs to refresh the previous scan screen result when the next card is read and display an intermediate screen (white screen with the text "Scanning") so the inspector knows the device is working. The intermediate screen should be displayed for approximately 500 milliseconds.

15. **Automatic log off.** The device should automatically log the inspector out of the software after "x" minutes of inactivity.

16. **Response Time.** Inspection event must complete in 500 Milliseconds or less. The clock starts when the token is presented to the inspection device.

17. **Availability.** The inspection system must be fully functional 99.9% for every 10-hour shift.

18. **PCI.** The inspection solution must be PCI compliant.

19. **Form Factor.** The device should easily fit in the hand of an Inspection Officer and should be lightweight and easy to carry. The device cannot be large or heavy for officers while transporting and using the device.

20. **Configuration Details.** Each EFC inspection device must transmit device configuration details to the back office every time the inspection application is launched. This is needed so that we know which release each device is using. That the following data elements are stored in the data repository in a location and in a manner that makes sense: DeviceConfigurationRecordID; DateTime; Firmware version; InspectionAppVersion; LastUpdatedDateTime.

21. **Software Update.** EFC inspection devices must be able to receive automated software updates.

22. **Paper Pass.** The inspection solution must have a feature to allow an inspector to push a button when the patron presents a non-EFC pass product (paper ticket, monthly pass, etc.). This button will be the "Paper Pass" button. Display a gray colored screen on the inspection application to acknowledge that the inspector pushed the "Paper" button and that a non-EFC pass product was counted. This will trigger an inspection event record that is transmitted to the back office.

23. **Free Fare.** The inspection solution must have a feature to allow an inspector to push a button when contacting patrons in the "free fare zone". This button will be the "Free Fare" button.

Display a brown-colored screen on the inspection application to acknowledge that the inspector pushed the "Free Fare" button and that a patron was counted in the free fare zone. This will trigger an inspection event record that is transmitted to the back office.

24. **No Fare Payment.** The inspection solution must have a feature to allow an inspector to push a button when contacting patrons outside of the "free fare zone". This button will be the "CC" (Customer Contact) button. Display a salmon-colored screen on the inspection application to acknowledge that the inspector pushed the "No Fare" button and that a patron had no proof of fare payment. This will trigger an inspection event record that is transmitted to the back office.

25. **Customer Contact.** The inspection solution must have a feature to allow an inspector to push a button when inspecting fares and the patron has no form of payment. This button will be the "No Fare" button. Display an orchid-colored screen on the inspection application to acknowledge that the inspector pushed the "CC" button and that a customer contact was made outside the free fare zone. This will trigger an inspection event record that is transmitted to the back office.

26. **Visual Inspection.** The inspection solution must have a feature to allow an inspector to push a button when inspecting fares and the patron has no form of payment. This button will be the "No Fare" button. Display an orchid-colored screen on the inspection application to acknowledge that the inspector pushed the "CC" button and that a customer contact was made outside the free fare zone. This will trigger an inspection event record that is transmitted to the back office.

27. **Scan Count.** The scan count for an active inspection session must increment by one for each inspection event (card scan, button press, etc.).

J – MAINTENANCE AND SUPPORT

███ The Parties further acknowledge and agree that the requirements of this Section J will be incorporated into the SLA in whole or in part however, the Parties are not required to do so as long as the intent of the Parties regarding the SLA services are fully documented.

Subject to the preceding statement, the following requirements remain in place for illustrative purposes only:

1. The solution shall be hosted by the Contractor or their sub-contractor within a suitable secure data center that will provide the resilience and uptime to ensure they meet the required Service Levels and availability detailed in this section.
   a. System availability:
      i. The solution shall be operational 24 hours a day, seven days a week
      ii. All Supplier provisioned system components shall have an agreed minimum overall availability of 99.9%
   b. When any aspect of the solution is unavailable and preventing user functionality a clear and relevant error message shall be displayed to the user.
2. The Contractor shall be responsible for maintenance and support for all operating systems associated with fare collection subsystems (e.g., system administration, patches, upgrades, etc.).
3. Fare subsystems shall always be fully functional on the latest version of the OS for respective platforms as new OS versions are released.
4. If proposing open-source software as part of the fare collection system, the Contractor must provide operational support for the proposed software.
5. For the mobile app, the Contractor shall be responsible for releasing updates through the relevant app stores.
6. Any planned preventative maintenance for fare collection subsystems shall be scheduled in advance with UTA.

7. No international processing for UTA Data. Bidding Contractors are advised that any processing or storage of data outside of the continental U.S. is prohibited.
8. **SLM**: Where the provided service does not meet the SLA, the Contractor will have a defined service management process that shall be used to measure service quality and determine appropriate action.
9. **SLM**: The awarded Contractor shall provide an account manager who shall be UTA's main contact.
10. **SLM**: The Contractor shall provide on-going support directly to UTA.
11. **SLM**: The Contractor shall record and report on performance against the agreed services levels on a determined basis.
12. **Incident Response**: The Contractor shall provide a portal for UTA staff to quickly reference common customer support requests and triage responses.
13. **Incident Response**: The Contractor shall be available as a second-line support if UTA needs to escalate any queries.

K – DISASTER RECOVERY and DATA

1. The Contractor shall maintain or cause to be maintained disaster avoidance procedures designed to safeguard UTA data and other confidential information, the Contractor's processing capability, and the availability of hosted services. Any force majeure provisions of the Contract do not limit the Contractor's obligations.
2. The Contractor shall have robust contingency and disaster recovery (DR) plans in place to ensure that the services are maintained in the event of disruption to operations (including, but not limited to, disruption to information technology systems), however caused.
3. The Contractor shall test the contingency/DR plans at least twice annually to identify any changes that need to be made to the plan(s) to ensure a minimum interruption of service. The Contractor will coordinate with UTA to ensure limited system downtime when testing is conducted. At least one (1) annual test shall include backup media restoration and failover/fallback operations at the DR location. The Contractor shall send the UTA Program Manager a notice of completion following completion of DR testing.
4. Such contingency and DR plans shall be available for the UTA to inspect and practically test at any reasonable time, and subject to regular updating, revising, and testing throughout the term of the Contract.
5. In the event of a disaster, "normal service" should be resumed within a period not greater than 12 hours.
6. The Contractor shall, at no additional cost or charge to UTA, in an industry standard/nonproprietary format: 1) perform a full or partial import/export of UTA data within 24 hours of a request; or 2) provide to the UTA the ability to import/export data at will and provide the UTA with any access and instructions which are needed for the UTA to import or export data.
7. Data, databases and derived data products created, collected, manipulated, or directly purchased as part of this RFP are the property of the UTA. UTA is considered the custodian of the data and shall determine the use, access, distribution and other conditions. Notwithstanding the foregoing and subject to the terms of the Contractor's Software License, the Parties acknowledge and agree that the UTA will own all data created and extracted in the EFC. However, the UTA will not own databases or derived products thereto as they are the Contractor's or their third parties intellectual property that the UTA will have a perpetual use license grant.
8. Public jurisdiction user accounts and public jurisdiction data shall not be accessed, except (1) in the course of data center operations, (2) in response to service or technical issues, (3) as required by the express terms of the Contract, including as necessary to perform the services hereunder or (4) at the UTA's written request.

9. The Contractor shall limit access to and possession of UTA data to only SI Personnel whose responsibilities reasonably require such access or possession and shall train such SI Personnel on the confidentiality obligations set forth herein.

10. At no time shall any data or processes – that either belong to or are intended for the use of the UTA or its officers, agents or employees – be copied, disclosed or retained by the SI or any party related to the SI for subsequent use in any transaction that does not include the UTA. Notwithstanding the foregoing and subject to the terms of the Contractor's Software License, the Parties acknowledge and agree that the UTA will only own the data created and extracted in the EFC. However, the UTA will not own databases, derived products, and processes thereto as they are the Contractor's or their third parties intellectual property that the UTA will have a perpetual use license grant.

11. The Contractor shall not use any information collected in connection with the services furnished under the Contract for any purpose other than fulfilling such services.

Leads

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L – SECURITY

1. The Contractor shall comply with and adhere to UTA's IT Security Policy and Standards in place as of the Effective Date of the Contract. These policies may be revised from time to time and the Contractor compliance with all such revisions may be subject to the Change Order process.

2. The Contractor shall not connect any of its own equipment to a UTA LAN/WAN without prior written approval by UTA. The Contractor shall complete any necessary paperwork as directed and coordinated with the UTA Program Manager to obtain approval by the UTA to connect Contractor owned equipment to a UTA LAN/WAN. The Contractor shall:

   a. Implement administrative, physical, and technical safeguards to protect UTA data that are no less rigorous than accepted industry best practices for information security such as those listed below.

   b. Ensure that all such safeguards, including the manner in which UTA data is collected, accessed, used, stored, processed, disposed of and disclosed, comply with applicable data protection and privacy laws in place at the Effective Date of the Contract as well as the terms and conditions of the Contract; and

   c. The Contractor, and SI Personnel, shall (i) abide by all applicable federal, State and local laws, rules and regulations in place at the Effective Date of the Contract concerning security of Information Systems and Information Technology and (ii) comply with and adhere to UTA's IT Security Policy and Standards in place at the Effective Date of the Contract, as each may be amended or revised from time to time however, such amendments or revisions are subject to the Change Order process.

3. The Contractor shall ensure a secure environment for all UTA data and any hardware and software (including but not limited to servers, network and data components) provided or used in connection with the performance of the Contract and shall apply or cause application of appropriate controls so as to maintain such a secure environment ("Security Best Practices"). Such Security Best Practices shall comply with an accepted industry standard, such as the

National Institute of Standards and Technology (NIST) cybersecurity framework in place as of the Effective Date of the Contract.

4. To ensure appropriate data protection safeguards are in place, the Contractor shall implement and maintain the following controls at all times throughout the Term of the Contract (the Contractor may augment this list with additional controls):

   a. Establish separate production, test, and training environments for systems supporting the services provided under the Contract and ensure that production data is not replicated in test or training environment(s) unless it has been previously anonymized or otherwise modified to protect the confidentiality of Sensitive Data elements. The SI shall ensure appropriate separation of production and non-production environments

   b. Apply hardware and software hardening procedures as recommended by Center for Internet Security (CIS) guides https://www.cisecurity.org/, Security Technical Implementation Guides (STIG) http://iase.disa.mil/Pages/index.aspx, or similar industry best practices to reduce the systems' surface of vulnerability, eliminating as many security risks as possible and documenting what is not feasible or not performed according to best practices. Any hardening practices not implemented shall be documented with a plan of action and milestones including any compensating control. These procedures may include but are not limited to removal of unnecessary software, disabling or removing unnecessary services, removal of unnecessary usernames or logins, and the deactivation of unneeded features in the   system configuration files.

   c. Ensure that UTA data is not comingled with non-UTA data through the proper application of compartmentalization Security Measures.

   d. Apply data encryption to protect Sensitive Data at all times, including in transit, at rest, and also when archived for backup purposes. Unless otherwise directed, the SI is responsible for the encryption of all Sensitive Data.

   e. For all UTA data the SI manages or controls, data encryption shall be applied to such data in transit over untrusted networks.

   f. Encryption algorithms which are utilized for encrypting data shall comply with Federal Information Processing Standards (FIPS), "Security Requirements for Cryptographic Modules", FIPS PUB 140-2: http://csrc.nist.gov/publications/fips/fips140-2/fips1402.pdf http://csrc.nist.gov/groups/STM/cmvp/documents/140-1/1401vend.htm in place as of the Effective Date of the Contract.

   g. Enable appropriate logging parameters to monitor user access activities, authorized and failed access attempts, system exceptions, and critical information security events as recommended by the operating system and application manufacturers and information security standards.

   h. Retain the aforementioned logs and review them at least daily to identify suspicious or questionable activity for investigation and documentation as to their cause and remediation, if required. UTA shall have the right to inspect these policies and procedures and the SI or subcontractor's performance to confirm the effectiveness of these measures for the services being provided under the Contract.

   i. Ensure system and network environments are separated by properly configured and updated firewalls.

   j. Restrict network connections between trusted and untrusted networks by physically or logically isolating systems from unsolicited and unauthenticated network traffic.

   k. By default "deny all" and only allow access by exception.

   l. Review, at least annually, the aforementioned network connections, documenting and confirming the business justification for the use of all service, protocols, and ports allowed, including the rationale or compensating controls implemented for those protocols considered insecure but necessary.

      m. Perform regular vulnerability testing of operating system, application, and network devices. Such testing is expected to identify outdated software versions; missing software patches; device or software misconfigurations; and to validate compliance with or deviations from the security policies applicable to the Contract. The SI shall evaluate all identified vulnerabilities for potential adverse effect on security and integrity and remediate the vulnerability no later than 30 days following the earlier of vulnerability's identification or public disclosure, or document why remediation action is unnecessary or unsuitable. The UTA shall have the right to inspect the Contractor's policies and procedures and the results of vulnerability testing to confirm the effectiveness of these measures for the services being provided under the Contract.

      n. Enforce strong user authentication and password control measures to minimize the opportunity for unauthorized access through compromise of the user access controls. At a minimum, the implemented measures should be consistent with UTA's Information Security Policy, including specific requirements for password length, complexity, history, and account lockout.

      o. Ensure UTA data is not processed, transferred, or stored outside of the United States ("U.S."). The SI shall provide its services to the UTA and the UTA's end users solely from data centers in the U.S. Unless granted an exception in writing by the UTA, the SI shall not allow SI Personnel to store UTA data on portable devices, including personal computers, except for devices that are used and kept only at its U.S. data centers. The SI shall permit its SI Personnel to access UTA data remotely only as required to provide technical support.

      p. Ensure Contractor's Personnel shall not connect any of its own equipment to a UTA LAN/WAN without prior written approval by the UTA, which may be revoked at any time for any reason. The SI shall complete any necessary paperwork as directed and coordinated with the UTA Program Manager to obtain approval by the UTA to connect Contractor owned equipment to a UTA LAN/WAN.

      q. Ensure that anti-virus and anti-malware software is installed and maintained on all systems supporting the services provided under the Contract; that the anti-virus and anti-malware software is automatically updated; and that the software is configured to actively scan and detect threats to the system for remediation. The SI shall perform routine vulnerability scans and take corrective actions for any findings.

      r. Conduct regular external vulnerability testing designed to examine the service provider's security profile from the Internet without benefit of access to internal systems and networks behind the external security perimeter. Evaluate all identified vulnerabilities on Internet-facing devices for potential adverse effect on the service's security and integrity and remediate the vulnerability promptly or document why remediation action is unnecessary or unsuitable. The UTA shall have the right to inspect these policies and procedures and the performance of vulnerability testing to confirm the effectiveness of these measures for the services being provided under the Contract.

5. The Contractor shall at all times comply, and ensure compliance with, all applicable Payment Card Industry ("PCI") Data Security Standards ("DSS") in place at the Effective Date of the Contract, including any and all changes thereto. Contractor shall provide the UTA with documented evidence of current compliance to PCI DSS within 30 days of an UTA request.

6. The Contractor shall annually furnish to the UTA evidence of the PCI Security Standards Council's (SSC) acceptance or attestation of the Contractor's conformance to the relevant PCI DSS requirements in place at the Effective Date of the Contract by a third party certified to perform compliance assessments.

7. The Contractor shall ensure that the scope of the annual SOC 2 Type II Report includes testing to confirm the PCI assessment results.

8. The Contractor shall notify the UTA when any Contractor system that may access, process, or store UTA data or UTA systems experiences a Security Incident or a Data Breach as follows:
    a. notify the UTA within twenty-four (24) hours of the discovery of a Security Incident by providing notice via written or electronic correspondence to the UTA Program Manager, UTA IT Director, and UTA Information Security Manager;
    b. notify the UTA within two (2) hours if there is a threat to Contractor's Solution as it pertains to the use, disclosure, and security of UTA data; and
    c. provide written notice to the UTA within one (1) Business Day after Contractor's discovery of unauthorized use or disclosure of UTA data and thereafter all information the UTA or UTA requests concerning such unauthorized use or disclosure.
9. The Contractor's notice shall identify:
    a. the nature of the unauthorized use or disclosure;
    b. the UTA data used or disclosed,
    c. who made the unauthorized use or received the unauthorized disclosure;
    d. what the Contractor has done or shall do to mitigate any deleterious effect of the unauthorized use or disclosure; and
    e. what corrective action the Contractor has taken or shall take to prevent future similar unauthorized use or disclosure.
    f. The Contractor shall provide such other information, including a written report, as reasonably requested by the UTA.
10. The Contractor may need to communicate with outside parties regarding a Security Incident, which may include contacting law enforcement, fielding media inquiries and seeking external expertise as mutually agreed upon, defined by law or contained in the Contract. Discussing Security Incidents with the UTA should be handled on an urgent as-needed basis, as part of SI communication and mitigation processes as mutually agreed upon, defined by law or contained in the Contract.
11. The Contractor shall comply with all applicable laws in place at the Effective Date of the Contract that require the notification of individuals in the event of unauthorized release of UTA data or other event requiring notification, and, where notification is required, assume responsibility for informing all such individuals in accordance with applicable law in place at the Effective Date of the Contract and to indemnify and hold harmless the UTA and its officials and employees from and against any claims, damages, and actions related to the event requiring notification.
12. If the Contractor reasonably believes or has actual knowledge of a Data Breach, the Contractor shall, unless otherwise directed:
    a. Notify the appropriate UTA-identified contact within 24 hours by telephone in accordance with the agreed upon security plan or security procedures unless a shorter time is required by applicable law in place at the Effective Date of the Contract;
    b. Cooperate with the UTA to investigate and resolve the data breach;
    c. Promptly implement commercially reasonable remedial measures to remedy the Data Breach; and
    d. Document responsive actions taken related to the Data Breach, including any post incident review of events and actions taken to make changes in business practices in providing the services.
13. If a Data Breach is a direct result of the Contractor's breach of its Contract obligation to encrypt UTA data or otherwise prevent its release, the Contractor shall bear the costs associated with (1) the investigation and resolution of the data breach; (2) notifications to individuals, regulators or others required by State law in place at the Effective Date of the Contract; (3) a credit monitoring service required by State or federal law in place at the Effective Date of the Contract; (4) a website or a toll-free number and call center for affected individuals required by State law in place at the Effective Date of the Contract; and (5) complete all corrective actions as reasonably

determined by Contractor based on root cause; all [(1) through (5)] subject to the Contract's limitation of liability or indemnities defined in the Contract.

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M – SOC 2 TYPE 2 AUDIT REPORT

1. A SOC 2 Type 2 Audit applies to the Contract. The applicable trust principles are: Security, Availability, Processing Integrity, Confidentiality, and Privacy.

2. In the event the Contractor provides services for identified critical functions, handles Sensitive Data, or hosts any related implemented system for the UTA, the Contractor shall have an annual audit performed by an independent audit firm of the Contractor's handling of Sensitive Data or the UTA's critical functions. Critical functions are identified as all aspects and functionality of the Solution including any add-on modules and shall address all areas relating to Information Technology security and operational processes. These services provided by the Contractor that shall be covered by the audit will collectively be referred to as the "Information Functions and Processes." Such audits shall be performed in accordance with audit guidance: Reporting on Controls at a Service Organization Relevant to Security, Availability, Processing Integrity, Confidentiality, or Privacy (SOC 2) as published by the American Institute of Certified Public Accountants (AICPA) and as updated from time to time, or according to the most current audit guidance promulgated by the AICPA or similarly-recognized professional organization, as agreed to by the UTA, to assess the security of outsourced client functions or data (collectively, the "Guidance") as follows:

    a. The type of audit to be performed in accordance with the Guidance is a SOC 2 Type 2 Audit (referred to as the "SOC 2 Audit" or "SOC 2 Report"). All SOC2 Audit Reports shall be submitted to the UTA Program Manager. The initial SOC 2 Audit shall be completed within a timeframe to be specified by the UTA. The audit period covered by the initial SOC 2 Audit shall start with the Contract Effective Date unless otherwise agreed to in writing by the UTA Program Manager. All subsequent SOC 2 Audits after this initial audit shall be performed at a minimum on an annual basis throughout the Term of Contract, and shall cover a 12-month audit period or such portion of the year that the Contractor furnished services.

    b. The SOC 2 Audit shall report on the suitability of the design and operating effectiveness of controls over the Information Functions and Processes to meet the requirements of the Contract, including the Security Requirements.

    c. The audit scope of each year's SOC 2 Report may need to be adjusted (including the inclusion or omission of the relevant trust services principles of Security, Availability, Processing Integrity, Confidentiality, and Privacy) to accommodate any changes to the environment since the last SOC 2 Report. Such changes may include but are not limited to the addition of Information Functions and Processes through modifications to the

Contract or due to changes in Information Technology or the operational infrastructure. The Contractor shall ensure that the audit scope of each year's SOC 2 Report engagement shall accommodate these changes by including in the SOC 2 Report all appropriate controls related to the current environment supporting the Information Functions and/or Processes, including those controls required by the Contract.

d. The scope of the SOC 2 Report shall include work performed by any subcontractors that provide essential support to the Contractor or essential support to the Information Functions and Processes provided to the UTA under the Contract. The Contractor shall ensure the audit includes all such subcontractors operating in performance of the Contract.

e. All SOC 2 Audits, including those of the Contractor, shall be performed at no additional expense to the UTA.

f. The Contractor shall provide to the UTA Program Manager, within 30 calendar days of the issuance of each SOC 2 Report, a complete copy of the final SOC 2 Report(s) and a documented corrective action plan addressing each audit finding or exception contained in the SOC 2 Report. The corrective action plan shall identify in detail the remedial action to be taken by the Contractor along with the date(s) when each remedial action is to be implemented.

g. If the Contractor currently has an annual, independent information security assessment performed that includes the operations, systems, and repositories of the Information Functions and Processes being provided to the UTA under the Contract, and if that assessment generally conforms to the content and objective of the Guidance, the UTA will determine in consultation with appropriate audit authorities whether the Contractor's current information security assessments are acceptable in lieu of the SOC 2 Report(s).

h. If the Contractor fails during the Contract term to obtain an annual SOC 2 Report, the UTA shall have the right to retain an independent audit firm to perform an audit engagement of a SOC 2 Report of the Information Functions and Processes utilized or provided by the Contractor and under the Contract. The Contractor agrees to allow the independent audit firm to access its facility/ies for purposes of conducting this audit engagement(s), and will provide the necessary support and cooperation to the independent audit firm that is required to perform the audit engagement of the SOC 2 Report. The UTA will invoice the Contractor for the expense of the SOC 2 Report(s), or deduct the cost from future payments to the Contractor.

N – KEY PERSONNEL

1. The Contractor shall propose responsible and experienced individuals to serve as Key Personnel project staff. Within the past three years, both the proposed Project Manager and Lead Engineer shall have had at least five years of demonstrable and extensive experience with electronic payment system projects of similar size and scope to the work outlined in this RFP. The Contractor shall provide with its technical proposal the following proposed staff specific information:

    a. Identify the name, title, organization name, and business address of the Key Personnel proposed for the Project, including but not limited to proposed individuals with the following responsibilities:
        i.   Project Manager
        ii. Lead Engineer
        iii. Technical leads (e.g., hardware, software, testing, etc.)

    b. For each of the Key Positions above, provide a bio, which should include the following information:

       i. A detailed description of the relevant qualifications and experience of each of the individuals identified above.

      ii. Information about the Key Personnel's current projects or to which the Key Personnel is currently committed, including:
   1. Name and address of customer;
   2. Contract price;
   3. Kind of product and/or service being provided;
   4. Location of work; and
   5. Percent complete and expected completion date.

    c. Identify the commitment (percentage of time dedicated) to this Project of Key Personnel through the different phases of the Project; and

    d. Two (2) current references from the most current projects.

2. Key Personnel shall be available to perform Contract requirements as of the NTP Date. Unless explicitly authorized by the UTA Program Manager or otherwise specified in the Contract, Key Personnel shall be assigned to the UTA as dedicated resources.

3. Key Personnel shall perform continuously for the duration of the Contract, or such lesser duration as specified in the Technical Proposal. Key Personnel may not be removed by the Contractor from working under the Contract without the prior written approval of the UTA Program Manager.

4. When the Contractor proposes a substitution to Key Personnel, the SI shall demonstrate to the UTA Program Manager's satisfaction that the proposed substitute has qualifications at least equal to those of the SI Personnel to be replaced. The substitution request that shall include:
   a. A detailed explanation of the reason(s) for the substitution request;
   b. The resume of the proposed substitute, signed by the substituting individual and his/her formal supervisor;
   c. The official resume of the current personnel for comparison purposes; and
   d. Evidence of any required credentials.

5. The UTA Program Manager may direct the Contractor to replace any SI Personnel who, in the sole discretion of the UTA Program Manager, are perceived as being unqualified, non-productive, unable to fully perform the job duties, disruptive, or known, or reasonably believed, to have committed a major infraction(s) of law, UTA policies, or Contract requirements. Normally, a directed personnel replacement will occur only after prior notification of problems with requested remediation.

6. If deemed appropriate in the discretion of the UTA Program Manager, the UTA Program Manager may give written notice of any Contractor Personnel performance issues to the SI, describing the problem and delineating the remediation requirement(s). The SI shall provide a written response to the remediation requirements in a Remediation Plan within ten (10) days of the date of the notice and shall immediately implement the Remediation Plan upon written acceptance by the UTA Program Manager.

7. Should performance issues persist despite an approved Remediation Plan, the UTA Program Manager may give written notice of the continuing performance issues and either request a new Remediation Plan within a specified time limit or direct the substitution of Contractor Personnel whose performance is at issue with a qualified substitute, including requiring the immediate removal of the SI Personnel at issue.

8. In circumstances of directed removal, the Contractor shall provide a suitable replacement for approval within fifteen days of the notification of the need for removal, or the actual removal, whichever occurs first.

9. Prior to Contract execution or within thirty (30) days after Contract execution, the Contractor may not substitute proposed Key Personnel except under the following circumstances:

a. for actual full-time personnel employed directly by the Contractor: the vacancy occurs due to the sudden termination, resignation, or approved leave of absence due to an extraordinary personal event, or the death of such personnel; and

b. for any temporary staff, subcontractors or 1099 contractors: the vacancy occurs due to an incapacitating event or the death of such personnel.

Proposed substitutions shall be of equal caliber or higher, in the UTA's sole discretion. Proposed substitutes deemed by the UTA to be less qualified than the originally proposed individual may be grounds for pre-award disqualification or post-award termination.

O – PROJECT MANAGEMENT

UTA will provide a program manager to oversee the various projects associated with this effort to install and migrate to the new and integrated fare collection subsystems. UTA will provide office working facilities for a project manager and lead technical integrator. UTA will be responsible for power and network availability for TVM and validator hardware devices.

1. The Contractor shall follow project management methodologies consistent with the most recent edition of the Project Management Institute's Project Management Body of Knowledge Guide.
2. The Contractor shall designate responsible and experienced individuals to serve as the PM and Lead Engineer for the entire term of the contract. Both the PM and Lead Engineer will maintain close collaboration throughout the project lifecycle.
3. The PM shall be fluent in English and possess at least five years of demonstrable, recent, and extensive experience managing electronic payment system projects of similar size and scope as this project, and that includes multiple points of integration with third-party systems and devices. The PM will have a project management certification, such as Project Management Professional (PMP) or equivalent.
4. The Lead Engineer shall be fluent in English and possess at least five years demonstrable, recent, and extensive experience serving in a lead technical role on electronic payment system projects of similar size and scope as this project, and that include multiple points of integration with third-party systems and devices.
5. The designated PM and Lead Engineer must be two different individuals, both shall be subject to agency review and approval.
6. The Lead Engineer shall be located in the Salt Lake City area to provide daily onsite support beginning no later than 30 calendar days following Notice to Proceed (NTP) and continuing through Final System Acceptance.
7. The PM shall be located in Salt Lake City and/or be onsite no less than two weeks per month to provide daily onsite management support Notice-to-proceed (NTP) and continuing through Final System Acceptance.
8. Contractor staff consistency is important and key SI staff, including the PM and Lead Engineer, shall be assigned to this project throughout its duration unless contractually released.
9. Removal or replacement of the PM or Lead Engineer by the Contractor will require prior approval by the agency. The request to remove or replace the PM or Lead Engineer must be made in writing and include the reason for removal or replacement.
10. In the event that any key Contractor staff (Project Manager, Lead Engineer, Safety Engineer, or Quality Engineer) is found unacceptable by the agency, or needs to be replaced for any reason, the SI shall provide a replacement candidate within 30 calendar days. Replacement candidates will be subject to UTA approval.
11. No later than 21 calendar days following NTP, the Contractor shall participate in a project kickoff meeting to be held at the agency's office. A virtual meeting may be used in lieu of an in-person meeting at the discretion of the UTA.

12. The Contractor shall work with the UTA to assemble an agenda for the kickoff meeting that covers the following topics at a minimum:
    a. Introductions of key UTA and SI points of contact
    b. Review of project roles and responsibilities
    c. Review of   scope of work
    d. Presentation of the draft project baseline schedule
13. Progress reviews will be held at UTA facilities on a monthly basis, at a minimum. Live video or teleconference meetings on a more frequent basis will occur as required.
14. The Contractor shall prepare and submit an agenda at least five business days prior to all progress review meetings for review and approval by the UTA. The topics to be discussed and reviewed will include, but are not limited to:
    a. Minutes of the prior progress review meeting
    b. Updated master program schedule
    c. Updated Contract Data Requirement List (CDRL)
    d. Updated CDRL submittal list and schedule
    e. Updated action item log
    f. Updated issues list
    g. Progress since the last meeting
    h. Issues arising since the last meeting, including design status, fabrication problems, product delivery
    i. problems, schedule slippages, and problems arising from proposed changes and other circumstances
    j. which affect the progress of the work
    k. Sequence of critical work and schedule of manufacturing using the master program schedule and monthly progress reports
    l. Engineering, manufacturing, and quality control summary
    m. Contract budget, milestone payment, and invoice status and schedule
    n. Any needed corrective measures to maintain the project schedule
    o. Assessment, review, and update of the safety assurance program
    p. Assessment, review, and update of the risk management plan and risk register
    q. Any other issues related to the project
15. The Contractor shall prepare and submit to the agency a monthly progress report that addresses the following topics and serves as the agenda for the progress review meeting:
    a. Review and status of actions from previous meetings
    b. Updated master program schedule showing progress against the baseline schedule
    c. Status of all current key activities, upcoming activities, issues, and corrective actions
    d. Update of all identified project risks and the actions taken towards mitigating those risks, and an updated risk register
    e. Updated CDRL list indicating the current status of each CDRL
16. The Contractor shall be responsible for documenting minutes for all monthly progress review meetings and submitting those minutes for agency review within three business days following each meeting.
17. The Contractor shall prepare and submit an agenda and project status report at least two business days prior to all weekly coordination meetings for review and approval by the agency. The status report must include a timeline of activities, and deliverables completed since the last meeting, deliverables that will be completed in the next calendar month, and a detailed explanation and mitigations for any deliverables that are delayed.
18. The Contractor's Lead Engineer will be present during all weekly coordination meetings. The PM and other designated staff may participate remotely in weekly project coordination meetings as required.

19. The Contractor's Lead Engineer, PM, and other designated staff shall participate as required in other ad-hoc meetings to facilitate project coordination and decision making.
20. The Contractor shall be responsible for documenting minutes for each weekly coordination and ad-hoc meeting and submitting those minutes for UTA review within three business days following each meeting.
21. A **Program Management Plan (PMP)** will be submitted no later than 21 calendar days following NTP and will be subject to the UTA's review and approval. This plan will be updated to incorporate each Phase's unique requirements no later than 21 calendar days following the notice to proceed for the applicable Phase. The schedule should show the interdependencies between deliverables, activities, milestones, and resources. The PMP will include but is not limited to the following elements:
    a. **Organization chart** identifying key project personnel and contact information
    b. **Master program schedule**, identifying key program milestones and activities
    c. Schedule for all project design and manufacturing elements that require agency approval
    d. **Project meeting schedule**
    e. **Methodology** to control program schedule, scope, cost, and risk
    f. Subcontractor management and communications
    g. Document a master issues list control processes and procedures, including version and traceability controls
    h. Configuration management processes and procedures for all submittals and subsequent revisions
    i. As part of the PMP, the Contractor will provide a **scope management plan** that will guide how project scope will be defined, documented, verified, managed, and controlled by the project management team. This plan will include:
        i. Scope definition: A process to prepare detailed project scope statements based on the preliminary project scope
        ii. Creation of a Work Breakdown Structure (WBS): A process that establishes how the WBS will be maintained and approved
        iii. Scope Verification: How formal verification and acceptance of the completed project deliverables will be obtained
        iv. Scope Control: A process to control changes to project scope directly linked to integrated change control.
    j. As part of the PMP, the Contractor must include a **master program schedule**. The master program schedule must meet the following requirements:
        i. The master program schedule will identify all program activities, deliverables, and key milestones (including those owned by the UTA and third-party vendors), with expected and actual completion dates.
        ii. The master program schedule will be cost-loaded and developed using Microsoft Project.
        iii. The SI will work with the UTA to determine acceptable delivery/review timeframes for all UTA owned deliverables/activities within the master program schedule. All proposed times will be subject to review and approval by the UTA.
        iv. The listing of activities in the master program schedule will be insufficient granularity and detail to identify all predecessor and dependent activities, including the activities of other entities that impact the Contractor's delivery of the system.
        v. The master program schedule approved by the agency will become the baseline schedule, against which subsequent schedule updates will show performance.
        vi. The master program schedule will designate intermediate program milestones and target dates to track ongoing performance.

      vii. The SI shall update the master program schedule on a monthly or more frequent basis and submit the updated schedules for UTA review and approval.

k. As part of the PMP, the SI will include a **cost management plan** that clearly defines how the costs of the project will be managed throughout the project lifecycle. The cost management plan will set the format and standards by which the project costs are measured, reported, and controlled. It will identify who is responsible for managing costs and who has the authority to approve changes to the project or its budget. The cost management plan will also specify how cost performance is quantitatively measured and detail cost report formats, frequency, and to whom they are presented.

l. As part of the PMP, the SI will include a **risk management plan** that will address risk planning, risk identification, risk analysis, and risk control, and will be reviewed and updated on a monthly basis, or as requested by the agency. The risk management plan must meet the following requirements:

      i. The processes that the SI shall follow for mitigating risk from the project will be identified, along with the processes for identifying, evaluating, and reporting (i.e., to the agency) future risks.

      ii. The processes for developing and implementing corrective action plans to lessen the impact an unexpected event has on the project will be identified, as will the process for returning the project to steady-state.

      iii. The SI shall maintain a comprehensive program risk register comprised of data fields including, but not limited to: Risk Title, Risk Statement, Risk Owner, Risk Status, Risk Consequence, Probability Score, Impact Score, Initial Risk Rating, Current Risk Rating, Mitigation Approach, Mitigation Status, and Due Date. Regular updates to the risk register will occur as part of scheduled project meetings.

m. As part of the PMP, the SI shall include a **transition and change management** plan for review and approval by the agency. This plan must meet the following requirements:

      i. The SI shall detail a transition plan from current operations to the new system for the agency, as well as for external stakeholders and the public.

      ii. The transition and change management section will document critical changes to program stakeholders, as well as change management and risk mitigation procedures.

      iii. The transition management section will document the transition process, including any additional, temporary, or special equipment and/or staffing requirements.

n. The SI shall include a **safety assurance plan** as part of the PMP that identifies all safety processes and procedures for review and approval by the agency. This section must include the following elements:

      i. The safety assurance section will identify and document safety risks, owners, and mitigation plans throughout the project, and will be reviewed and updated on a monthly basis, or as requested by the agency.

      ii. The SI shall designate an experienced Safety Engineer to be responsible for safety assurance over the entire term of the contract. The designated Safety Engineer will be subject to agency approval.

      iii. The Safety Engineer shall document, review, and approve all system safety analyses to ensure that all hazards are adequately identified, and their impact is eliminated or controlled.

      iv. The Safety Engineer will verify that all SI staff is trained in agency-required safety policies and procedures and that those procedures are followed to the satisfaction of the agency.

o. As part of the project management plan, the SI shall establish, implement, and maintain a **quality assurance (QA) plan**. The QA plan will governing the work performed by the SI, as well as all subcontractors. The QA plan will describe the overall quality policies and responsibilities that will ensure the quality of work performed for each phase of the project. This QA plan must meet the following requirements:

    i. The QA plan will contain a collection of all forms to be used for the documentation of quality control activities, which ensure compliance of materials, processes, personnel, and products with the applicable specifications.

    ii. The QA plan will include written descriptions of quality assurance and control policies and procedures, including the procedures that the SI shall follow to ensure that controls and detailed documentation are maintained throughout software development and configuration changes.

    iii. The QA plan will at minimum include procedures for the following activities:

        1. Surveillance overall work, including by subcontractors, to ensure compliance with all contract requirements

        2. Verification of compliance, including audit; discrepancy identification, notification, and control; and corrective action

        3. Evaluation and assessment of subcontractors' QA programs

        4. Provision of technical documentation, drawings, specifications, handbooks, manuals, data flow diagrams, and other technical publications for the new system and supplied equipment

        5. Design control and version management for changes to documents, drawings, data, and specifications System software development (consistent with IEEE Standard 730 or equivalent ISO 9001 standards for software quality assurance)

        6. Equipment handling, inventory, storage, and delivery

        7. Factory inspection and testing

        8. System integration testing

        9. Installation testing

        10. Defect management, including explanations, on how defects will be identified, categorized, reported on, tracked, approved/rejected, and closed out

        11. Calibration/verification of measuring equipment

        12. System configuration management

        13. Qualification and certification for all personnel performing work under the contract

    iv. The SI shall use the defined quality assurance procedures as an integral part of its design development and review process.

    v. The SI shall define hardware and software quality and version control procedures.

    vi. The SI shall identify design variances from contract requirements and document and report variances to the agency before equipment procurement, fabrication, or installation.

    vii. The QA program will define methods of designing for, achieving, and maintaining quality. If damage, defect, error, or inaccuracy is found in any provided equipment or work, the agency shall have the right to reject or require corrective action to bring the work into compliance with the contract requirements. The SI shall bear all costs incurred in correcting rejected equipment or work.

> viii. The SI shall designate an experienced Quality Engineer responsible for quality assurance over the entire term of the contract. The designated Quality Engineer will be subject to agency approval.
>
> ix. The SI shall not commence the performance of any design or manufacturing work until the agency has approved the QA program.

p. As part of the PMP, the Contractor will include a **subcontractor management plan** outlining all activities to be performed by subcontractors, and procedures for organizing and communicating with subcontractors. The SI shall provide all necessary plans, specifications, and instructions to its subcontractors and suppliers to enable them to properly perform their work. This plan must meet the following requirements:

> i. The SI shall ensure that subcontractors or suppliers are informed of all applicable requirements in this specification and that appropriate engineering and project management tools are utilized for coordination and communication.
>
> ii. The SI shall have all subcontractors and suppliers available when required for meetings, testing, and resolution of design deficiencies, production problems, and similar situations. During all Phases of the project, the agency will have access to all subcontractors.
>
> iii. The subcontractor management section will include activities to be performed by Disadvantaged Business Enterprises (DBEs), and other recognized subcontractor categories, as defined by the U.S. Department of Transportation. It will identify the contract revenues to be allocated to such firms, and the means of encouraging, tracking, and controlling DBE participation throughout the project.
>
> iv. The subcontractor management section will include procedures and processes to be followed for the replacement of any subcontractors throughout the duration of the contract.

q. As part of the PMP, the Contractor will provide a **communications management plan**. This plan will outline who is responsible to deliver and respond to various communications, who receives which communications, and how and when communications will be delivered. The SI will ensure that stakeholder communication needs are understood. This includes determining what communication products will be exchanged throughout the project (e.g., status updates, meeting minutes, reports, deliverables, etc.). The communications management and document control plan must meet the following requirements:

> i. Describe how to store and maintain all program documents, manuals, meeting materials, submittals, and correspondence in an editable electronic form to provide robust and secure document control, as per the terms of the contract.
>
> ii. Program documents will be categorized and numbered within the document control system according to an established document control scheme.

r. As part of the PMP, the Contractor shall provide UTA with a **release management process** that shall be used to ensure that all releases to the hardware or software environment- both during testing and after implementation - are being correctly controlled by both the Contractor and their partners/sub-contractor.

s. As part of the PMP, the Contractor shall provide a change control process. Related procedures will be documented in a **change control plan** and will include provisions for UTA review and approval of all changes. This plan must include the following elements:

> i. Hardware and software changes, and updates to approved documents, drawings, and data, will be controlled through Engineering Change Requests (ECRs).
>
> ii. The Contractor shall support software change management meetings no less than monthly, either in person or via phone. The SI shall track and maintain a list of software maintenance issues and open items. The SI shall distribute the list to the UTA in advance of each monthly meeting.

        iii.   The Contractor shall notify the UTA whenever corrections, modifications, or revisions of system software are available, and in advance of deployment.

        iv.   ECRs will include documentation describing the reasons for and effects of the change and will be submitted to the UTA for review and approval.

        v.   Accompanying each ECR for proposed software changes will be comprehensive software release notes containing the following information at a minimum:

1. A description of the change
2. Affected equipment and modules
3. List of the software modules updated by the release, including file names, version numbers, sizes, and checksums
4. List of all defects corrected, including references to agency correspondence where applicable
5. List of all new features included
6. List of all features to be tested
7. Copies of all applicable test procedures
8. Complete installation instructions, including steps to verify proper installation and to uninstall the updates, if necessary
9. Complete build instructions
10. List of software tools used
11. Back-out procedures if the software fails to update

22. The SI shall maintain an electronic master issues list for the ongoing tracking and management of project issues and action items. These items will be identified and updated at design review meetings, weekly project coordination meetings, monthly progress review meetings, and on an ad-hoc basis. The list of issues should track the following attributes for each entry at a minimum:
    a. Item number
    b. Date opened
    c. Requesting party
    d. Description
    e. Required action
    f. Assigned party
    g. Status (open/closed/in progress/deferred/etc.)
    h. Date closed

23. Throughout the performance of this Contract, the SI shall **adhere to the hardware and software quality and version control procedures** submitted and approved as part of the quality assurance plan. The version identifiers for all provided hardware and software will be unique. After completing an approved hardware update, the SI shall submit an updated listing of the serial numbers and versions of the affected hardware components in an agency approved format. This listing will include the date the revision was applied to each item. The SI shall maintain accurate records of the versions of all serialized components, including all spare parts in inventory and shall track all equipment taken from spares so that it can be replaced by SI.

24. The Contractor must provide a **component identification plan**. This component identification must meet the following requirements:
    a. All equipment will be permanently identified with a manufacturer or supplier name, part number, and serial number.
    b. The Contractor shall assign unique serial numbers to equipment and modules, enabling tracking of components for maintenance, repair, and to provide sufficient identification to analyze failures.
    c. The serial numbering scheme and format will be submitted for agency review and approval. Where possible, serial numbers for like components will be sequential.
    d. Serial numbers will be engraved on metal labels that are riveted in place or attached by another approved permanent method.

    e.   Labels will be placed in areas where they are likely to avoid wear and fading. The location of the serial number labels will be chosen for readability without disassembly of equipment or components.

    f.   The visible serial number will match the Electronic Serial Number (ESN) in all instances where an ESN is assigned to a device.

    g.   At a minimum, the following equipment will have serial numbers applied:

        i.   Bus Validators

        ii.   Ticket Vending Machines (and all major internal components/modules) (if the option is exercised)

        iii.   Platform Validators

        iv.   Mobile Fare Inspection Devices

    h.   Within 30 calendar days following each Phase's Final Design Review (FDR) approval, the SI shall furnish a list of the items that will be serialized for agency review and approval. Serial numbers of all components will be presented to the agency in the form of an MS Excel spreadsheet included with the shipment of all equipment and modules.

25. Throughout the performance of this contract, the Contractor will conduct **formal design reviews** to evaluate design progress as well as the technical, functional, and programmatic adequacy of the design in meeting the requirements described in this SOW. The SI shall submit a design review plan for UTA review and approval within 30 calendar days of the kickoff of each Phase. This plan will describe the scope, schedule, and deliverable format for each of the formal design reviews. The following guidelines apply to these formal design reviews:

    a.   The Contractor shall conduct three formal design reviews for each phase of the project: 1) Conceptual Design; 2) Preliminary Design; Final Design

    b.   Design reviews will consist of the following activities at a minimum:

        i.   A design review package will be submitted by the SI and reviewed by the UTA and consultant staff

        ii.   A Master Issues List (MIL) will be created as a result of the review and will be provided to the SI

        iii.   A formal design review meeting, or series of meetings, will be held between SI and UTA staff, where the SI will explain the design and the UTA will confirm compliance with the applicable requirements.

        iv.   Where possible, issues will be resolved during the design review meetings.

        v.   All issues discussed during the meetings will be documented.

        vi.   The UTA will determine the appropriate action to close an issue, considering where the project is in the overall design.

        vii.   If required, the SI shall resubmit the design review package, or parts of the package, to address the issues identified during the agency review and subsequent design review meeting

        viii.   The design review package will be approved upon the UTA's determination that there are no critical open issues remaining in the MIL for that design Phase

    c.   Each design review package will include documents in a searchable electronic format (e.g., PDF) that will be shared via the UTA-provided document control system, and at least one reproducible hard copy.

    d.   The SI shall submit design review packages at least 30 calendar days prior to each formal design review meeting.

    e.   The UTA will provide comments on the design review packages at least seven (7) calendar days prior to each formal design review meeting.

    f.   Design review meetings will occur in Salt Lake City with the Contractor project manager, lead engineer, and all relevant technical staff attending in person. The specific location will be identified by the UTA, and a teleconference phone number will be available for remote participation where permitted.

    g. The Contractor and/or the UTA may establish suitable confidentiality and nondisclosure agreements associated with design review submittals.

    h. Each phase's conceptual design package will be submitted within 45 calendar days of the applicable Phase's kickoff. At a minimum, each Phase's **conceptual design review** will include the following:

        i. Confirm the structure of the management team and the scope of any subcontractors

        ii. Provide preliminary specifications for all equipment described in these specifications

        iii. Provide narrative descriptions of the major systems and subsystems proposed by the SI

        iv. Provide system block diagrams identifying all interfaces between system components, including external systems that will not be provided by the SI but will interface with the system

        v. Describe the responsibilities and schedule for completion of detailed system interface definitions

        vi. Provide a software conceptual design, including software block diagrams for key system components

        vii. Confirm the understanding of the intended operations and maintenance environment

        viii. Identify key information and decisions required from the agency.

        ix. A preliminary list of user stories will be provided for any systems that interface with end-users, including internal and external end-users

    i. Each Phase's **preliminary design review** will be submitted within 60 days of the applicable Phase's conceptual design approval. Each Phase's preliminary design will represent approximately 75% completion of the total technical and operational system design of the applicable Phase. Each Phase's preliminary design review may be conducted as a series of meetings in Salt Lake City locations relevant to the topics being discussed. Where possible, the formal preliminary design review meetings should be limited to confirmation of previously reviewed and approved-in-principle submittals, as well as the resolution of open items. At a minimum, each Phase's preliminary design review will include the following:

        i. Schedule compliance review and discussion of variances or delays

        ii. Detailed hardware and software specifications for all Contractor-supplied devices, including power diagrams, functional block diagrams, mounting arrangements, and installation methods

        iii. Detailed software flow charts for all back-office systems

        iv. Complete customer and operator user interface specifications, flow charts, and messages for all Contractor-supplied devices and systems, including accommodations for all boundary and error conditions

        v. Detailed interface and communication specifications for all internal and external system interfaces

        vi. Detailed specifications for all configuration control systems

        vii. Detailed specifications for access control systems supporting back-office operations

        viii. Detailed descriptions of system backup and recovery procedures

        ix. List of special tools and diagnostic test equipment needed for the maintenance of each CONTRACTOR-supplied device and system

        x. A substantially complete list of user stories will be provided for any systems that interface with end users, including internal and external end-users.

j. Each Phase's final design package will be submitted within 60 days of FDR approval for the applicable project Phase. Each Phase's **final design review** will represent 100% completion of the detailed system design with production specifications and drawings ready for release for the applicable project Phase. Data submitted for each Phase's preliminary design review will be updated to a level of detail consistent with a completed design and resubmitted as part of final design review for the applicable project Phase. At a minimum, each Phase's final design review will include the following:

   i. Schedule compliance review and discussion of variances or delays
   ii. Assembly drawings for all Contractor-supplied devices, down to the Lowest Level Replaceable Unit (LLRU)
   iii. Electrical schematic drawings for all Contractor-supplied devices
   iv. Preliminary "as-built" drawings and prototypes for all device mounting configurations
   v. Final system architecture drawings
   vi. Detailed software specifications for all back-office systems with software module descriptions in a narrative format and data flow diagrams to the lowest level of decomposition
   vii. Detailed specifications for all application programming interfaces (APIs) supporting frontend and back-office operations
   viii. Detailed specifications for all system transaction formats
   ix. Detailed descriptions of all message formats and data elements for device and system events and alarms
   x. Interface control documentation for all systems and subsystems
   xi. Complete data dictionary and detailed database design documentation, including all tables, views, and materialized views for all database schemas in the system, in electronic format
   xii. Documentation of database programming features including, but not limited to, queries, query formats,
   xiii. triggers, jobs, functions, and procedures
   xiv. A complete list of user stories will be provided for any systems that interface with end-users, including internal and external end-users

k. Each Phase's final design review will include a review of the spare parts required to support the system. The SI and UTA shall jointly review the spare parts listed in the contract and reallocate, delete, and add parts, as necessary.

l. If resubmittal of all or part of the Phase's final design review package is required, the SI shall provide the revised documents within fourteen (14) calendar days following completion of the formal design review meetings.

26. The Contractor shall provide a detailed **installation plan** for UTA review and approval at each Phase's final design review, and a final version no later than 120 calendar days prior to the first delivery of equipment. The installation plan will describe all aspects of device and system installation for each Phase of the implementation, including but not limited to, site and vehicle surveys, antenna testing, prototype installations, site preparation, pre-wiring, equipment, and vehicle staging, production installation, quality assurance and control, scheduling, and storage/disposal of removed equipment according to local and EPA regulations (in place at the Effective Date of the Contract). It will also detail the installation and configuration of all software systems, including the back-office, systems, interfaces and web applications, and their respective schedules. In the install plan, the SI shall provide the power and communication requirements for each piece of equipment and at each install location. The communication requirements will include a description of the networking equipment necessary at all bus yards and rail stations to connect the SI devices to the UTA-provided fiber backbone. Regarding the fabrication, assembly, and/or installation of any system parts, the SI shall submit shop drawings no less than 45 calendar

days prior to the start of installation for UTA review and approval. The SI shall document each device installation in the form of an as-built drawing no later than 30 calendar days following each equipment installation. The as-built documentation will identify equipment location information, wiring traces, and all additional information needed to maintain the newly installed infrastructure. All drawings will contain dimensions, physical details, connections, and other information pertinent to system diagnostics, maintenance, and troubleshooting. The installation plan will include, but is not limited to:

    a. Bus Validators
    b. Bus Validator mounting hardware
    c. Ticket Vending Machines
    d. Platform Validators
    e. Mobile e-Fare Inspection Devices
    f. Back-office hardware, including redundant system hardware
    g. Back-office applications and databases
    h. Web applications
    i. Mobile Application
    j. System interfaces and API configuration
    k. Test environment hardware and devices
    l. Spare parts
    m. Support equipment
    n. Smartcard media

27. The Contractor shall develop a plan outlining processes and procedures to be implemented to meet all specified hardware services, software services, P2PE services, and hosting & back office operations of the ISLA and SLA requirements. A draft of the ISLA will be submitted at the final design review and a final version will be provided a minimum of 90 calendar days prior to the start of the ISLA ███████████████████████

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P – INCIDENT RESPONSE

1. The Contractor must provide and maintain an Incident Response Procedure (IRP) for both routine and emergency situations. The IRP must state how the SI will address problem situations as they occur during the performance of the Contract, especially problems that are not resolved to the satisfaction of the UTA within appropriate timeframes.
2. The Contractor shall provide contact information to the UTA Program Manager, as well as to other UTA personnel as directed should the UTA Program Manager not be available.
3. The Contractor must provide the IRP no later than ten business days after notice of recommended award. The IRP shall include:
    a. The process for establishing the existence of a problem;
    b. Names, titles, and contact information for progressively higher levels of personnel in the Contractor's organization who would become involved in resolving a problem;
    c. For each individual listed in the Contractor's IRP, the maximum amount of time a problem will remain unresolved with that individual before the problem escalates to the next contact person listed in the Contractor's IRP;
    d. Define expedited escalation procedures and identify any triggering circumstances;
    e. The method of providing feedback on resolution progress, including the frequency of feedback to be provided to the UTA;

    f.   Contact information for persons responsible for resolving issues after normal business hours (e.g., evenings, weekends, holidays) and on an emergency basis; and

    g.   A process for updating and notifying the UTA Program Manager of any changes to the IRP.

Q – TRAINING

The Contractor must meet the following training requirements:

1. The Contractor shall develop and deliver train-the-trainer courses that provide agency training instructors with the necessary instruction to deliver system training in the future without additional SI support. This training program must meet the following requirements:
   a. The training program will include classroom training provided by the   staff. The Contractor may supplement their training, as appropriate, by allowing OEM representatives to train agency staff on subassemblies and devices.
   b. The Contractor's training program will include formal and informal instruction with working equipment, manuals, and diagrams as instructional tools.
   c. The Contractor shall assume that the agency staff does not have knowledge of any system features. However, the Contractor may assume that maintenance personnel have the basic skills pertinent to their crafts.
   d. Course sizes will be designed to assure that all trainees have some level of one-on-one training with equipment and software.
   e. Courses will be limited to a maximum of eight hours per day.
2. The Contractor shall provide device training units that enable students to receive hands-on equipment operation and maintenance instruction while in a classroom setting. The training units will be powered by a standard 120V AC power source. Device training will meet the following requirements.
   a. When appropriate, training will occur in the field or location of service.
   b. The Contractor may use installed revenue equipment or spare parts as training aids in lieu of mockups and for demonstration and for practical exercises in replacing, testing, disassembly, and assembly of equipment. However, the Contractor shall be responsible for ensuring that such parts are not damaged or modified in any way.
3. The UTA will furnish the following training-related items upon Contractor request:
   a. Space for classroom lectures and practical training on equipment (location and class times will be set by the agency)
   b. Projectors, screens, whiteboards, and similar equipment
   c. Shop space as needed
   d. Buses or stations with installed system equipment
   e. Requests shall be made at least two weeks prior to the scheduled training.
4. The Contractor will provide video of all training sessions to the agency.
5. The Contractor shall provide records of the training provided on a weekly basis to the agency.
6. All materials used in the training programs, such as training rigs, fare media, manuals, simulators, and drawings, will become the property of the agency upon completion of the training.
7. The Contractor shall develop and submit for agency approval a training plan that documents the design of the program for training agency personnel and each course to be delivered. This training plan will include at a minimum the following for each course:
   a. Identification and summary descriptions of the training course, including course lengths
   b. The methods of training to be used
   c. Learning objectives and outcomes
   d. The sequence of activities
   e. Targeted trainees for each course

      f.   Maximum number of trainees per course

      g.   Methods and criteria for evaluating performance, including an objective grading system to report the progress of trainees during the training

      h.   Resources required, such as equipment, shop space, video recorders, etc.

      i.   A minimum of two training sessions for each course will be provided.

      j.   A training schedule will be included in the Contractor's training plan. The schedule will consider the sequence of training, hours of instruction, trainee availability, limitations on course sizes, and venue for the training.

      k.   The training plan will address the Contractor's approach for training agency trainers to deliver training subsequent to the Contractor's involvement. It will describe the Contractor's approach, resources and hours required, and any training aids that might be included.

8. The Contractor shall provide all necessary training materials for the delivery of each course discussed in the training plan. At a minimum the following training materials will be provided by the Contractor:

      a.   Course agenda and objectives

      b.   Resources and facilities required for the course

      c.   Detailed lesson plans or outlined presentations

      d.   Pre- and post-training assignments

      e.   Instructions for using any audiovisual support and equipment

      f.   Student discussion guides and handouts

      g.   All relevant manuals

      h.   Quick reference guides

      i.   Operational system equipment

      j.   Computer-based presentations

9. Training documentation will be separate from the operation and maintenance manuals but may reference those manuals.

10. The Contractor will provide hard copies of the training materials for all expected attendees.

11. Final training materials will be submitted to the agency at least 30 calendar days before training classes are scheduled to begin. All documentation and training material will be submitted in an electronic form specified by the agency.

12. Training materials will be updated as required during the course of instruction to reflect the installed system.

13. The Contractor shall provide updated course instruction and materials resulting from any significant system hardware or software changes.

14. The agency reserves the right to edit and reproduce portions or all of the training materials for internal use.

15. Training manuals must meet the following requirements. Notwithstanding the foregoing, The Parties acknowledge and agree that the Contractor will deliver initial documentation that includes its standard training manual and those manuals do not fulfill all the requirements of Q.15 inclusive of the requirement to produce thirty (30) of each manual, which the UTA accepts as a modification to this requirement. Thereafter, any updates to the documentation will be performed in electronic format and the Contractor is not required to re-print the manuals and documentation so long as it submits the updates via electronic means:

      a.   Manuals will contain all text, step-by-step procedures, illustrations, drawings, block diagrams, schematics, parts lists, troubleshooting guides, and repair and replacement procedures needed to allow the agency to operate, maintain, diagnose and repair all equipment and systems.

      b.   All manuals will be written in clear and concise English, will use English and/or metric units of measurement, and will be written to assume the reader has no more than an 8th - grade education.

    c. Care will be taken to provide easily understood explanations and step-by-step instructions with cross references to all drawings, diagrams, and photographs.

    d. Block diagrams illustrated parts breakdowns, and schematic drawings will be used to facilitate descriptions of assemblies and the relationships of components, subsystems, and systems.

    e. Electrical wiring diagrams and other diagrams necessary for the operation of the equipment will be provided. No single diagram will show more than one system or parts thereof, and diagrams will be complete and legible in all respects.

    f. Device and software manuals will include the following content at a minimum:
- i. General field equipment familiarization material
- ii. Location, function, and operation of all controls, and indicators
- iii. Field equipment setup, login, and shutdown procedures
- iv. Symptoms, diagnostic methods, and procedures for isolating minor faults
- v. Description of all user messages and enunciations

    g. Manuals related to repair, maintenance, and installation will provide all information needed for troubleshooting service failures, performing equipment and installations and replacements, and for performing preventative maintenance for each component, including general servicing, and inspecting.

    h. Manuals related to back-office operation and maintenance will be presented in terms that are meaningful to users. They will include functional explanations and descriptions of each application program and its use. Step-by-step procedures will be provided that explain how each parameter is configured and the effects obtained by varying each parameter. All user guidance, alarms, and error messages will be described, along with the steps necessary for recovery from error.

    i. Operating instructions will describe procedures to be followed as a result of system restarts or failures. The documents will contain sufficient information to enable the user to restart or reconfigure the system and analyze diagnostic data dumps.

    j. Disaster recovery procedures will be clearly specified in sufficient detail to consider all possible scenarios. Recovery instructions will describe detailed procedures to be followed in the event that system recovery is needed. Detailed data backup and recovery procedures will be provided.

    k. The Contractor shall submit an illustrated parts catalog including all installation hardware, wiring assemblies, and LLRUs. Each listed part in the illustrated parts catalog will be referenced by the SI using an assigned part number and, where applicable, OEM part number. The illustrated parts catalog may be a subset of the maintenance materials.

    l. All manuals will be submitted in hard copy and electronic format. At least 30 hard copies of each manual and will be delivered to satisfy the hard copy requirement.

    m. Documentation provided in electronic file format will include:
- i. Manuals and illustrated parts catalogs will be provided in PDF format and in a modifiable electronic format (MS Word)
- ii. CAD files will be provided in PDF format
- iii. Schematic drawing will be provided in PDF format

    n. Electronic files will be able to be deployed individually or hosted on a server to allow multiple users to access the same data. Information will not be encrypted and will be developed and delivered using standard authoring tools such as MS Word, Excel, Visio, and PowerPoint, or Adobe Acrobat.

    o. One complete set of documents will be provided to the agency 90 calendar days prior to the start of acceptance testing.

    p. Information gathered during installation and acceptance testing will be incorporated into the manuals for submittal to the agency.

    q. Revisions to the manuals will be recorded on a control list in the front of each document.

The list will be issued with each revision and will show the date of each revision and the page reference. The SI shall maintain all updated lists for each document. The agency will review and comment on each manual submission as required.

r. Sensitive information that is not to be distributed to all departments will be contained in a separate document marked "Confidential." The nature of this information will be mutually agreed upon between the SI and agency.

R – TESTING

1. The Contractor shall submit a draft inspection and test plan for UTA review and approval during each Phase's design review, and shall submit a final inspection and testing plan to be used in connection with all inspections and tests described in this specification no less than thirty (30) calendar days prior to the start of any Phase's testing.
2. Each Phase's inspection and test plan will include a detailed schedule indicating the sequence of each test, where and when each test will take place, and the number of Contractor-provided staff covering each test.
3. Each Phase's inspection and test plan will cover all Contractor, equipment supplier, and subcontractor inspections and tests to be performed, including those performed under the QA program.
4. Subject to finalization of the applicable testing that is required for the deliverables of the Phase, which will occur during the design review of each Phase, the Phase's inspection and test plan may include plans for each factory and integration test defined in this section, including:
    a. First Article Configuration Inspection (FACI)*
    b. Factory Acceptance Test (FAT)*
    c. Production Acceptance Test (PAT)*
    d. Functional Unit Testing (FUT)
    e. System Integration Test (SIT)
    f. Field Integration Test (FIT)
   Acceptance testing will be described in a separate acceptance test plan.
   *Items a-c are only required in the project Phase's test plan if the project Phase being tested requires hardware delivery.
5. Subject to finalization of the applicable testing that is required for the deliverables of the Phase, which will occur during the design review of each Phase, the Phase's inspection and test plan will detail the number and range of tests, as well as the criteria for acceptance of each Phase of testing. All performance measurement procedures and acceptance criteria, including the number and type of failures allowed in each Phase of

testing, will be subject to UTA review and approval. The plan will also include any UTA-specified requirements.

6. Each Phase's inspection and test plan will identify any requirements the Contractor intends to meet by any means other than the testing process described in this specification.

7. Subject to finalization of the applicable testing that is required for the deliverables of the Phase, which will occur during the design review of each Phase, the Phase's inspection and test plan may include performance testing such as load, stress, endurance, and spike testing for applicable devices and software that simulates peak ridership and transaction volumes over various time intervals. The UTA may provide updated transaction volume projections for use in the inspection and test plan at design review.

8. No Phase's inspections or tests will be performed until the Contractor has received UTA approval of the applicable Phase's inspection and test plan and the associated schedule.

9. The Contractor shall prepare and submit to the UTA a detailed procedure for each inspection and test to be performed.

10. Detailed inspection and test procedures will be submitted to the UTA for review and approval a minimum of 30 calendar days prior to the corresponding test unless otherwise specified herein.

11. The Contractor shall conduct no inspection or test until approval of the corresponding test procedure has been granted by the UTA.

12. Detailed inspection and test procedures should include mapping or references to the project Phase's design documents and functional requirements related to the test. This mapping will be present both in the testing documentation and a separately maintained Requirements Traceability Matrix (RTM).

13. Inspection and test procedures will include detailed test scripts for each test case to be performed as part of the test. Test scripts will include test case setup instructions and preconditions, step-by-step instructions for performing the test, and expected results for each step.

14. A re-test may be performed for any failed test cases and for system components requiring adjustment, repair, or replacement as a result of the testing.

15. Subject to finalization of the applicable testing that is required for the deliverables of the Phase, which will occur during the design review of each Phase, the detailed inspection and test procedures will be delivered for each factory and integration test defined in this section, including:
    a. First Article Configuration Inspection (FACI)*
    b. Factory Acceptance Test (FAT)*
    c. Production Acceptance Test (PAT)*
    d. Functional Unit Testing (FUT)

   e. System Integration Test (SIT)
   f. Field Integration Test (FIT)

  *Item's a-c are only required for inspection and test procedures in Phases with hardware delivery.

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17. The Contractor shall submit a written report for each inspection and test that is performed, including copies of all data generated during the test, for UTA review and approval, which will not be unreasonably withheld.
18. Inspection and test reports will include the detailed test scripts from the associated procedures noting any exceptions to the stated test conditions, recording all relevant setup and configuration information (e.g., fare media serial numbers and device IDs), and marking each step as passed or failed.
19. Inspection and test reports will include detailed test results, including all transaction data generated, detailed failure descriptions and resolution, modifications or repairs pertaining to the components or systems being tested, and any re-test results.
20. All transaction data generated during testing will be submitted in Excel format to allow for simple storage and analysis by the UTA.
21. Subject to finalization of the applicable testing that is required for the deliverables of the Phase, which will occur during the design review of each Phase, the detailed inspection and test reports will be delivered for each factory and integration test defined in this section, including:
   a. First Article Configuration Inspection (FACI)
   b. Factory Acceptance Test (FAT)*
   c. Production Acceptance Test (PAT)*
   d. Functional Unit Testing (FUT)*
   e. System Integration Test (SIT)
   f. Field Integration Test (FIT)

  *Item's a-c are only required for inspection and test procedures in Phases with hardware delivery.

22. Reports will be submitted to the UTA for review and approval within 10 calendar days of the completion of any test.
23. No stage of testing will be considered complete until the associated report is approved by the UTA, such reports will be timely approved in a reasonable manner.
24. If a component or subsystem is considered by the UTA to be identical or substantially similar in design and configuration to equipment previously deployed in other applications with similar or more stringent environments, specific tests of that system component may not be necessary. To obtain a waiver, the Contractor must provide a formal request to waive testing for each applicable component or subsystem.
25. If the Contractor desires a waiver of testing, the SI shall submit required information for each applicable component or subsystem within in a reasonable period of time that the Parties may agree to in writing prior to the date of planned testing. A request to waive testing will include the following information:
   a. List of the locations and quantities of previously installed equipment, including duration of revenue service
   b. Description of all relevant differences between the other installation locations those described in this specification

     c. Description of all relevant differences between the previously installed equipment and the components being provided to meet the requirements of these specifications
     d. Test results for all relevant tests that have been conducted on the equipment
     e. Reliability data for the equipment, as verifiable through the purchasers
     f. Proposed cost credit to the contract for granting the waiver of testing

26. Based on the submitted data, the UTA will determine whether requirements for testing will be waived. The Parties acknowledge and agree that this requirement is in reference to requirement R.25.

27. Specific testing requirements for each system component will be considered individually, and waivers will be issued on an individual test and component basis; it is possible the UTA may grant a waiver for certain tests while others will still be required.

28. The Parties acknowledge and agree that this requirement has been deleted.

29. The Contractor shall furnish a test facility on UTA property for both Contractor and UTA use.

30. The Contractor shall update the UTA test facility software as necessary to maintain a fully mirrored environment of Contractor's test facility.

31. The test facility will include a separate back-office instance, including the account-based transaction processor and all specified support systems, which fully replicates the production environment. The test facility back-office hardware will be identical to the production system hardware, but will not require system redundancy.

32. The test facility will include at least two (2) units of every equipment type deployed within the system, including any existing equipment that is integrated with the new fare system. The UTA will be responsible for maintaining the configuration of any test facility equipment that is not provided by the Contractor.

33. The UTA test facility will be fully installed and configured for the Phase being tested prior to the commencement of integration testing and will include at a minimum:
     a. Fully integrated back-office and all support systems
     b. Two (2) bus validators
     c. Two (2) TVMs supporting both bus and rail configurations
     d. Two (2) mobile fare inspection devices
     e. Two (2) internet-connected PCs configured to access customer and institutional websites, and all web-based back-office tools

34. With the exception of factory testing, all specified formal testing will be conducted in Salt Lake City, and all laboratory-based testing will be conducted in the UTA test facility.

35. The UTA test facility will have the ability to connect directly to the merchant acquirer or any other processing entity to fully test the processing of credit and debit transactions.

36. The Contractor shall provide all special tools, documentation, and test and inspection equipment necessary for troubleshooting, testing, repairing, and calibrating all devices and modules in the UTA test facility down to the LLRU.

37. **FACI** – The UTA will be notified no less than 60 business days prior to the commencement of any Project Phase's FACI; subsequently, the Contractor shall be advised regarding the UTA's attendance.

38. **FACI** – The Contractor shall deliver all data, including the latest drawings, specifications, quality documentation, and test procedures required for adequate inspection of the first article system components a minimum of 30 calendar days prior to any Phase's FACI.

39. **FACI** – Each Phase's FACI will take place at the point of assembly, after manufacture or procurement of the first production units for each of the system components: bus validators, ticket vending machines (if option exercised), mobile fare inspection devices, mobile fare validation devices, and the back-office, including all subsystems.

40. **FACI** – Each Phase's FACI will verify that the production units comply with these specifications, including design configuration and drawings as approved during the final design review, or the latest revision thereof.

41. **FACI** – At each Phase's FACI, the UTA will have the right to inspect any and all of the units produced to date.

42. **FACI** – Expectations for the quality of workmanship for the future production of components will be established at each Phase's FACI.

43. **FACI** – Documentation of quality inspections performed at subcontractor facilities or of the Contractor's quality inspections of components manufactured by others will be available for the UTA review at each Phase's FACI.

44. **FACI** – No additional production units will be manufactured or procured by the Contractor until the applicable Phase's FACI has been approved by the UTA.

45. **FAT** – Successful completion of the applicable project Phase's FACI, including UTA approval of all inspection reports, is a pre-requisite for the commencement of the applicable Project Phase's FAT.

46. **FAT** – The Contractor shall prepare and submit the applicable Phase's FAT test procedures within 21 calendar days following the completion of the applicable Phase's FACI for review and approval by the UTA.

47. **FAT** – System components to be tested in the applicable Phase's FAT will be from the first run of production units and may be chosen by the UTA. Once chosen, the units may not be modified without the express consent of the UTA. Once a particular series of tests begins on a particular unit, it should be completed on that unit.

48. **FAT** – Each Phase's FAT will be conducted by the Contractor at the facility or at a subcontractor's facility designated by the SI. The SI shall provide all necessary supplies for FAT.

49. **FAT** – The UTA will, at its discretion, assign staff or representatives to witness and/or periodically audit each Phase's FAT progress.

50. **FAT** – Human factors testing will demonstrate device compliance with the general design requirements.

51. **FAT** – Environmental testing will demonstrate compliance with environmental requirements.

52. **FAT** – Maintainability testing will demonstrate compliance with the maintainability requirements.

53. **FAT** – If the Contractor has already conducted substantially similar tests to those described herein the SI shall submit the procedures and results of those tests to the UTA for consideration at least 60 calendar days prior to the applicable Phase's scheduled FAT.

54. **FAT** – The Contractor shall be responsible to maintain reports of all tests conducted throughout each FAT, showing each test conducted and the test results. The reports will be submitted to the UTA at the conclusion of each Phase's FAT for review and approval.

55. **FAT** – Results not meeting specified requirements will be fully documented and explained by the Contractor, and a corrective action plan will be submitted.

56. **FAT** – Successful completion of the applicable Phase's FAT will be a prerequisite for the manufacturing of the applicable Phase's production system components.

57. **FAT** – The UTA may delay the delivery of any applicable Phase's system components until FAT procedures are successfully completed and approved.
58. **FAT** – If at any time after the FAT results have been approved a design change is made, the performance of the modified system components will be demonstrated as conforming to this specification and the test results will be resubmitted for UTA approval. Notwithstanding the foregoing, within in a reasonable period of time that the Parties may agree to in writing.
59. **PAT** – The Contractor and their subcontractors shall perform PATs on each system component at the point of manufacture as an integral part of their QA program prior to each shipment.
60. **PAT** – Each Phase's PATs will verify, and the Contractor shall certify, that all appliable system components contain the correct materials, are assembled properly, and function all in accordance with these specifications. Testing should include validation against established performance metrics.
61. **PAT** – Each Phase's PATs will verify that each unit is produced to at least the same quality level as the unit presented for in the applicable Phase's FACI and FAT.
62. **PAT** – At a minimum, and as applicable, these tests will test the following functions:
    a. General device operation and performance in all modes
    b. Data generation and transfer
    c. Alarms generation and transmittal
    d. User interface control and display
63. **PAT** – The Contractor shall update PAT procedures based upon experience gained from subsequent testing and/or system component operation. Test procedures will be expanded to focus on areas that prove to be, or have historically been, troublesome.
64. **PAT** – The Contractor shall be responsible for maintaining complete reports of all PATs that are performed. The reports will note any failures, subsequent corrective measures, and retests.
65. **PAT** – All reports shall be submitted to the UTA for review and approval within 5 business days of the completion of the Phase's PAT testing.
66. **PAT** – The UTA may choose to observe, participate in, conduct, or repeat testing on any item to confirm the validity of the Contractor's test procedures and results. The UTA may also perform, at their discretion, ad-hoc tests to ensure the quality of the system components. The SI shall provide appropriate access to support ad-hoc testing if required.
67. **PAT** – Successful completion of a Phase's PAT on all applicable equipment will be a prerequisite for the installation of that equipment at UTA facilities.
68. **FUT** – Successful completion of component-level software development and installation of production equipment in the UTA test facility for the project Phase being tested are pre-requisites for the commencement of FUT.
69. **FUT** – All FUT tests will be conducted by the Contractor at the UTA test facility in Salt Lake City.
70. **FUT** – Each Phase's FUT test procedures will be submitted to the UTA for review and approval at least 60 calendar days prior to the scheduled FUT.
71. **FUT** – Each Phase's FUT functional and cycling tests will demonstrate all base functions of the system components.
72. **FUT** – All device interfaces with the back-office necessary to perform the FUT testing may be simulated if the interfaces or back-office software is not ready to be tested.
73. **FUT** – All contactless media to be used in FUT will be provided by the Contractor. The

SI shall document, inventory, and track media usage during testing. Contactless media will be the same or similar to those planned for revenue service.

74. **FUT** – The UTA will, at its discretion, assign staff or representatives to witness and/or audit FUT testing.
75. **FUT** – The Contractor shall be responsible for maintaining complete reports of all tests performed throughout FUT, showing each test conducted and the test results.
76. **FUT** – Results not meeting specification requirements will be fully documented and explained by the Contractor, and a plan for corrective action will be submitted.
77. **FUT** – All test reports will be submitted to the UTA at the conclusion of each project Phase's FUT for review and approval.
78. **FUT** – If at any time after the FUT results have been approved a design change is made, the performance of the modified system components will be demonstrated as conforming to these specifications and the test results will be resubmitted for UTA approval.
79. **Device Testing** – The Contractor shall complete functional tests for all devices to verify the proper performance and operation of the devices. The SI and the UTA shall jointly develop the structure, timing, and pass/fail criteria of the functional FUT testing.
80. **Device Testing** – After completing the device functional testing, the Contractor shall conduct device cycling tests, which will consist of performing transactions using all media and transaction types.
81. **Device Testing** – Cycle testing will be comprised of at least:
    a. 8,000 transactions each for bus validator and ticket vending machine (if option exercised)
    b. 4,000 transactions each for mobile fare inspection devices
82. **Device Testing** – Subsequent to the successful completion of each Phase's FUT, the Contractor shall conduct an environmental cycling test. The environmental cycling test will subject each type of applicable device to a scaled down cycling test under the environmental extremes to demonstrate the capability of the device to operate successfully under these conditions. Notwithstanding the foregoing, the Parties acknowledge and agree that any environmental cycling testing will be submitted and approved as part of the design phase in accordance to applicability to an individual Phase.
83. **Software Functional Testing** – The Contractor shall complete functional tests for the back-office tools and websites which will demonstrate and verify all functions described in these specifications, including the review and usability testing of all user-accessible screens and commands.
84. **Software Functional Testing** – Any required interfaces to external systems to demonstrate this functionality may be simulated.
85. **Software Functional Testing** – The Contractor shall generate samples of all available reports as compliant with the designs approved at the applicable project Phases' FDRs for review and approval by the UTA.
86. **SIT** – The applicable project Phase's FUT for all applicable components and systems must be completed and approved prior to the commencement of SIT.
87. **SIT** – All SIT testing will be conducted by the Contractor at the UTA test facility in Salt Lake City.
88. **SIT** – Prior to any Phase's SIT, the Contractor shall complete the setup of the UTA test facility, including the installation and configuration of all applicable system components, the test facility back-office, workstations required for backoffice operation, and all integration required in these specifications. The SI shall connect fare collection

equipment to additional equipment or simulators as necessary to create a functional model of the system.

89. **SIT** – The Contractor shall submit detailed SIT test procedures for each Phase to the UTA for review and approval no later than 60 calendar days prior to commencement of the applicable Phase's SIT. A software installation plan and system configuration diagram for the UTA test facility will be submitted as part of the SIT procedures.

90. **SIT** – For each Phase's SIT, the test system will be provisioned with test data simulating the system's operational databases under full operational load. Full operational load will be defined in the applicable Phase's SIT test procedure and approved by the UTA prior to the commencement of SIT.

91. **SIT** – The Contractor shall conduct a series of detailed transactions and other operations that will fully emulate a broad spectrum of usage and operating scenarios, in sufficient quantity to ensure the validity of the test results. The SI shall provide a list of operating scenarios as part of the SIT test procedure for UTA review and approval.

92. **SIT** – At a minimum, each Phase's SIT will include:
    a. Ten (10) days of continuous testing of all system components, during which the components will be operational 24 hours a day
    b. A minimum of 500 transactions at each system component type, including bus validators, ticket vending machines, mobile fare inspection devices, testing all transaction types
    c. A minimum of 100 transactions each performed through the customer and institutional websites, testing all available functions
    d. All alarm and boundary conditions tested at a minimum of 50 times each
    e. Applicable online and offline transactions
    f. Phase 2 and Phase 3's SIT will include applicable regression test cases that cover transactions tested in previous Project Phases
    g. Specifics of each Phase's SIT testing will be included in the SIT procedures to be reviewed and approved by the UTA.

    The Parties acknowledge and agree that any SIT will be submitted and approved as part of the design phase in accordance to applicability to an individual Phase.

93. **SIT** – The Contractor shall conduct data transmission testing during SIT to demonstrate, exercise, and verify transaction processing and data uploads from all devices, and the download of configuration data to each of the various device types. The SI shall confirm proper data transfer rates between all devices and systems.

94. **SIT** – SIT will demonstrate monitoring, configuration, and control of all field devices using the system monitoring and management application.

95. **SIT** – SIT will include database accuracy testing, which will demonstrate the accuracy between the application under test (AUT) and the relational database in which application-generated data is stored. The testing should also demonstrate atomicity, consistency, insolation, and durability of the database.

96. **SIT** – Each Phase's SIT will include a full system audit and settlement test, which will demonstrate the flow of all transactions through the system with the appropriate reporting, accounting, and settlement calculations demonstrated.

97. **SIT** – The UTA test facility will be connected directly to the merchant acquirer or any other processing entity to fully test the processing of purchases through all sales channels supporting credit/debit sales.

98. **SIT** – The UTA will, at their discretion, assign staff or representatives to witness and/or augment SIT tests. This could include providing ad-hoc test scripts to be undertaken by the Contractor and witnessed by the UTA.
99. **SIT** – During SIT, all software modifications will be reviewed, demonstrated, tested, and approved by the UTA. The Contractor shall record version information for all software modules including the date and time the software was created, the size of each file, and version number.
100. **SIT** – The Contractor shall provide detailed test reports and "as-tested" software documentation at the conclusion of each Phase's SIT for UTA review and approval.
101. **FIT** – Installation of the applicable system components at the UTA's properties will commence upon approval of the applicable Phase's SIT. The entire production back-office and at least 10% of the total install base for each type of equipment must be fully installed and configured prior to the commencement of the applicable Phase's FIT.
102. **FIT** – All FIT testing will be conducted by the Contractor in the production environment in Salt Lake City.
103. **FIT** – The Contractor shall submit detailed FIT test procedures to the UTA for review and approval no later than 60 calendar days prior to commencement of the applicable Phase's FIT. Pre-and post-installation checklists and test reports will be included for all installed equipment as part of the FIT procedures.
104. **FIT** – For each project Phase's FIT, the production system will be provisioned with test data simulating the system's operational databases under full operational load. Full operational load will be defined in the FIT test procedure and approved by the UTA prior to the commencement of FIT.
105. **FIT** – Similar to SIT, the Contractor shall conduct a series of detailed transactions and other operations in FIT that will fully emulate a broad spectrum of usage and operating scenarios, in sufficient quantity to ensure the validity of the test results. All functional characteristics of the installed system components at each location will be tested to ensure the operation of the components as specified, including interfaces with the back-office and integration with UTA systems.
106. **FIT** – At a minimum, each Phase's FIT will include:
    a. Twenty (20) days of continuous testing of all system components, during which the components will be operational 24 hours a day
    b. A minimum of 500 transactions at each system component type, including bus validators, ticket vending machines, and mobile fare inspection devices, testing all transaction types
    c. A minimum of 100 transactions each performed through the customer and institutional websites, testing all available functions
    d. All alarm and boundary conditions tested at a minimum of 50 times each
    e. Phase 2 and Phase 3's FIT will include applicable regression test cases that cover transactions tested in previous Project Phases
    f. Final transaction volumes and specifics of FIT testing will be included in the applicable Phase's FIT procedures to be reviewed and approved by the UTA.
107. **FIT** – The applicable Phase's FIT procedures will identify and describe all necessary tests to verify proper installation and interfacing of the system components across all system facilities.
108. **FIT** – The Contractor shall conduct data transmission testing during FIT to demonstrate, exercise, and verify transaction processing and data uploads from all

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devices, and the download of configuration data to each of the various device types. The SI shall confirm proper data transfer rates between all devices and systems.

109. **FIT** – FIT will demonstrate monitoring, configuration, and control of all field devices using the system monitoring and management application.

110. **FIT** – FIT will include database accuracy testing, which will demonstrate the accuracy between the application under test (AUT) and the relational database in which application-generated data is stored. The testing should also demonstrate atomicity, consistency, insolation, and durability of the database.

111. **FIT** – FIT will fully test all system redundancy measures and successfully demonstrate the execution of the disaster recovery plan. This will include at a minimum:
    a. Failover testing, in which the Contractor validates that each of the hosted back-office systems and system hardware/software components correctly fails over automatically to the remaining online back-office site or backup hardware/software component with no degradation of service under peak projected operating loads
    b. Disaster recovery simulations in which the SI runs mock simulations with UTA staff to validate their Disaster Recovery Plan is adequate to handle a total system outage

112. **FIT** – Each Phase's FIT will include a full system audit and settlement test, which will demonstrate the flow of all transactions through the system with the appropriate reporting, accounting, and settlement calculations demonstrated.

113. **FIT** – The system will be connected directly to the merchant acquirer or any other processing entity to fully test the processing of purchases through all sales channels supporting credit/debit sales.

114. **FIT** – UTA witnessing and participation will be required for the successful completion of FIT. This could include providing additional test scripts to be undertaken by the Contractor and witnessed by the UTA.

115. **FIT** – The Contractor shall submit all FIT test reports to the UTA for approval at the conclusion of each Phase's FIT.

116. **FIT** – A 30-day settling period will commence upon approval of each Phase's FIT test reports.

117. **FIT** – The UTA may, at their sole discretion, conduct additional ad-hoc testing during the 30-day settling period. Ad-hoc testing may include limited "friendly user" testing.

118. **FIT** – Installation of system devices may continue to occur throughout the 30-day settling period, but all devices must be installed and tested prior to the start of acceptance testing.

119. **Pilot** – At least 90 calendar days prior to the scheduled start of the applicable Phase's pilot, the Contractor shall submit an acceptance test plan, developed jointly with the UTA that includes the structure, timing, and measurement criteria for conducting and evaluating the pilot.

120. **Pilot** – Each Phase's pilot will not commence until the applicable Phase's FIT has been approved, the subsequent 30-day settling period has passed, and 100% of the applicable field equipment has been installed.

121. **Pilot** – All test data will be purged from the system prior to the start of the pilot.

122. **Pilot** – The Contractor shall commence reporting on all applicable system performance requirements at the start of each Phase's pilot.

123.   **Pilot** – Each Phase's pilot will be designed to exercise all system functions, fare products, and policies in a Phased approach.

124.   **Pilot** – Each Successive Phase's pilot will be designed to validate that system functions, fare products, and policies exercised in previously delivered Phases still function as expected. Any critical defect/failure found related to previous functionality will be recorded, and corrective actions taken prior to the completion of the pilot.

125.   **Pilot** – The Contractor will be responsible for supporting all elements of each pilot, including, but not limited to, system and equipment maintenance, media distribution, funds settlement, reporting, and customer support.

126.   **Pilot** – Performance testing such as load, stress, endurance, and spike will occur during each 90-day pilot and will include at a minimum the successful processing of an equivalent of 22 days of transactions at projected peak volumes. Transaction volumes and how they will be generated will be detailed in the acceptance test plan.

127.   **Pilot** – During each Phase's pilot period, the UTA and the Contractor shall meet no less than two times per week to discuss progress, issues, and results. The SI shall provide written status reports against established measurement criteria.

128.   **Pilot** – Each pilot stage will undergo analysis, review, and approval of data integrity and system performance by the UTA before moving to the next pilot stage. All critical issues will be recorded, and corrective actions taken prior to the completion of the pilot.

129.   **Pilot** – If all Phases are completed successfully, the Phase's pilot duration will be no longer than 90 days.

130.   **Pilot** – Each Phase's pilot will continue for its scheduled duration unless a critical failure or failures cause suspension of the pilot. When a critical failure has been resolved, the pilot will resume for a duration determined by the UTA, up to and including a full 90-day period.

131.   **SAT** – Each Phase's SAT will commence upon the successful completion of the applicable Phase's pilot.

132.   **SAT** – SAT will be performed in the production environment with all applicable components, subsystems, and networks completely operational, online, and in service.

133.   **SAT** – The Contractor shall submit any revisions necessary to the acceptance test plan as a result of the pilot at least 10 calendar days prior to the commencement of the applicable Phase's SAT for UTA review and approval.

134.   **SAT** – Each Phase's SAT will be comprised of three consecutive 30-day periods in which all system components (including those delivered in previous Phases) must meet or exceed all performance requirements. The acceptance test plan will describe in detail how the Contractor will measure and report on each of the performance requirements throughout SAT.

135.   **SAT** – The level of system use during each SAT will be decided by the UTA and included in the acceptance test plan and may range from a group of friendly users to unrestricted public use.

136.   **SAT** – The Contractor will be responsible for supporting all elements of SAT, including, but not limited to, system and equipment maintenance, media distribution, funds settlement, reporting, and customer support.

137.   **SAT** – If the applicable performance requirements defined in these specifications are not attained during any one of the 30-day periods, the SAT will be extended a minimum of 90 days to allow for three consecutive 30- day periods in which the

requirements are met.

138.   **SAT** – The Contractor shall identify and implement remedial action at no cost to the UTA in the event that an applicable system component does not meet the specified performance requirements during SAT.

139.   **SAT** – During each SAT, the UTA and the Contractor shall meet no less than two (2) times per week to discuss progress, issues, and results. The SI shall provide formal reports on system performance at the end of each 30-day period.

140.   **SAT** – Periodically during each Phase's SAT, the UTA will audit the reports generated by the system to confirm the accuracy and completeness of the information presented. All event records shall be reviewed and compared to known events such as door openings events, alarms, and power outages.

141.   **SAT** – Within 10 business days following the completion of each Phase's SAT, the Contractor shall provide all testing data, reports, and other testing information to the UTA for review and approval.

142.   **Final System Acceptance** – The Contractor shall submit a request for Final System Acceptance upon the Phase 4 functionalities entering into revenue service or the UTA granting Phase 4 Final System Acceptance, whichever comes first.

143.   **Final System Acceptance** – Final System Acceptance will be contingent on satisfying all of the following conditions:

   a.   All system devices are delivered, installed, and operational in accordance with Exhibit A, SOW.
   b.   All back-office systems and software, including all required reports, are installed and fully-functional in accordance with Exhibit A, SOW.
   c.   All websites are live and fully-functional in accordance with Exhibit A, SOW.
   d.   All spare parts have been delivered as detailed in Exhibit A, SOW and / or the ISLA and SLA, as applicable.
   e.   All disaster recovery plans have been successfully demonstrated and approved by the UTA in accordance with Exhibit A, SOW.
   f.   All training has been provided in accordance with Exhibit A, SOW.
   g.   All required intellectual property has been delivered to the UTA or the escrow agent in accordance with the Contract.
   h.   The Contractor has resolved all outstanding critical issues identified by the Parties, acting reasonably.

144.   ████████   **Final System Acceptance** – Once the terms of Section R.143 have been met, the UTA will respond to the request within 10 business days confirming the Contractor's conformance with the requirements of Section R.143.

S – SYSTEM OPERATIONS MANAGEMENT

The Parties acknowledge and agree that the Contractor will provide both interim and on-going services.

T – PERFORMANCE MONITORING

Subject to the preceding statement, the following requirements remain in place for illustrative purposes only:

1. The Contractor shall be responsible for measuring performance against all KPIs. System performance will be measured using the data generated by the system and stored in the data warehouse. Data generated manually will be used when it is the only option for tracking an activity associated with a particular KPI (e.g., response time).
2. The Contractor shall automate the capture of all necessary data and KPI calculation wherever possible. For validation purposes, the UTA will have full access to the source data and code used to perform the calculations.
3. The Contractor shall commence performance measurement during the operations agreements.
4. The Contractor's ▇▇▇ obligations must meet the following expectations relating to the failure review board:
    a. At a minimum, the failure review board will be comprised of the UTA's project manager, or a designated representative, and the lead engineer.
    b. The failure review board will be established during the 30-day settling period prior to any acceptance testing to evaluate equipment and back-office failures, as well as other system issues, throughout acceptance testing.
    c. The members of the failure review board will attempt to settle any disputes based on the requirements in these specifications and will use best judgment in any scenarios where the requirements are silent or unclear.
    d. The UTA's project manager will make the final and binding decision on any disputes that remain unsettled by the failure review board after a period of 10 business days.
5. Chargeable failures will affect the reliability, accuracy, and availability KPI calculations. Chargeable failures include, but are not limited to, the following:
    a. A malfunction which prevents the system component from performing its designated function, or meeting the performance criteria, when used and operated under the environmental and operational conditions stated in these specifications
    b. A malfunction that might cause a threat to customers, employees, or others
    c. An occurrence that does not cause the system component to become entirely inoperable, but requires some form of maintenance attention to restore normal function
    d. Any occurrence where data is not successfully transmitted between elements of the system

e. Planned software updates or fixes that adversely affect the operation or performance of the system

f. Scheduled maintenance or repair activities that adversely affect the operation or performance of the system

g. Software anomalies and bugs (every incident of a software anomaly or bug causing a malfunction will be considered a failure)

h. Hardware failures that are not clearly a result of conditions outside the requirements of this specification

i. Failures of mounting hardware

j. Data storage failures, including those due to the disk space provided

k. Partial or complete failure of a passenger display

l. Failure to accurately read and/or process a card

m. Failure to properly register and report any transactions

n. Data download/upload failure

o. Event or alarm transmission failure

p. Unexpected shutdown of equipment or a system

q. All maintenance requiring module replacements

6. Non-chargeable failures will not affect the reliability, accuracy, and availability KPI calculations. Non-chargeable failures include, but are not limited to, the following:

   a. Mishandling of equipment or back-office system components

   b. Any failures caused by externally applied stress conditions outside of normal operating conditions and in excess of the requirements in these specifications

   c. Failures caused by incorrectly exercised operating, maintenance or repair procedures performed by the agency where correct procedures have been delivered by the Contractor (failures resulting from any maintenance or repair performed by the SI will be chargeable)

   d. Failure caused by vandalism

   e. Communications failures beyond the control of the SI

   f. Downtime due to scheduled maintenance

   g. Heater or battery adjustments

   h. Dependent failures as a result of a nonchargeable failure

8. The ▮▮▮ will include the severity of incidents, with the following as baselines:

   a. At a minimum, critical failures will include incidents that produce a major or substantial business impact, or impact to normal operations, such as:

      i. Non-trivial loss of revenue or expense

      ii. Significant negative customer experience

      iii. Limited or loss of access to a production application

      iv. System operation at a degraded level, such that normal business operations cannot be conducted

      v. Application or system experiencing continual or repeated issues

   b. At a minimum, non-critical failures will include incidents that produce little or no business impact, or impact to normal operations, such as:

      i. Negligible loss of revenue or expense

      ii. Minor customer inconvenience

      iii. System operating at a degraded level such that normal business operations are minimally impacted

9. The Contractor shall be responsible for reporting on performance against all KPIs on a monthly basis. The Contractor shall commence performance reporting ▮▮▮▮▮ The following expectations apply to these performance reports:

   a. The Contractor shall create canned reports that can be run, viewed, and downloaded by

the UTA.
    b. The reports will be generated without manual data entry by the SI wherever possible.
    c. The reports will include tables and graphical charts showing the current and historical performance of each device of the system under measurement.
    d. The reports shall include a calculation of any credits to be assessed in the current month based on current and prior performance.
    e. These reports will not count toward the custom reports to be defined by the UTA.
    f. At a minimum, the following reports will be provided:
        i. Device reliability
        ii. Device accuracy
        iii. Device availability
        iv. Back-office accuracy
        v. Back-office availability
        vi. Server authorization rate
        vii. Maintenance response time
10. The Contractor will be responsible for calculating credits due to the UTA based on the number of failures identified throughout the month and the following credit rules:
    a. Credits will be assessed for a failure to meet any KPIs identified as having an associated credit.
    b. A failure will result in the percentage in the "Credit Assessed" column being applied to the full amount of the operations payment identified in the "Payment Impacted" column for the month of measurement.
    c. A failure to meet the same KPI for two or more months in a row will constitute a persistent failure, and result in a multiplier being applied to the credit percentage.
    d. The credit multiplier will increase by a factor of one for each month that a KPI is not met (e.g., if a KPI is not met two months in a row, the credit will be doubled in the second month; if a KPI is not met three months in a row, the credit will be tripled in the third month).
    e. Successfully meeting a KPI will end a persistent failure and reset the credit multiplier.
    f. The total credit applied to an operations payment will be capped at 25% of the full amount of that payment in a calendar month. Credits will not be carried over from month to month.
    g. The Contractor shall be responsible for reporting on credits in the system performance reports and will deduct credits directly from any invoices submitted to the UTA.

U – FARE SYSTEM

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The Contractor shall meet the following requirements:

Pricing

1. The fare system will support fare pricing fully configurable by UTA based on the following parameters at a minimum:
    a. Rider category
    b. Mode
    c. Service type
    d. Route
    e. Day and time
    f. Discounts

    These fare pricing parameters will also govern whether an additional fare payment must be made upon boarding.

2. The default fare set will be associated with transit accounts that have a Full Fare rider category. Additional rider categories will be supported with unique fare sets including but not limited to children 5 years and younger, youth, disabled, paratransit, and elderly. Rider categories will be able to be modified manually or automatically based on the customer date of birth or the granting of a temporary category with a configurable end date.

3. The system will support fare pricing based on the mode being traveled. UTA will be able to add new modes including system participants (e.g., parking and bike share) with unique fare pricing as needed and without development.

4. The system will support fare pricing based on the time of day and day of week (e.g., peak, and off-peak fares). Peak/off-peak fare pricing will be able to be configures for specific rider categories, modes, and service types, and put into effect at all times or on a schedule (e.g., every weekday).

5. The system will support the offering of discounted fares on a temporary and permanent basis, up to and including the offering of free fares. Discount fare pricing will be configurable for specific fare media types, rider categories, modes, service types, and routes, and put into effect indefinitely or for a defined period (e.g., from July 4 to July 7).

6. The fare system will support station or zone-based fares where customers are charged different fare rates depending on the number of stations or fare zones traveled. Station/zone-based fare will be configurable for specific fare categories, modes, service types, and routes. The fare system will allow for configuration of station/zone designations and fare levels.

7. The fare system will support event-based fares. Event-based fares will be configurable for specific fare categories, service types, regularly occurring events (e.g., sporting events), and one-off events (e.g., concerts), which will be subject to the design review process and the Change Order Process.

Payment

8. The fare system will support stored value, which will serve as an electronic cash-equivalent, and will be accepted for payment across all modes and services. When stored value is used for payment, the system will deduct the correct fare at each boarding, or entry in real-time from the account, based on the fare pricing configuration described in the pricing section.

9. The fare system will support the following pass products:

      a. Calendar passes valid for unlimited rides during a pre-defined calendar period
      b. Time-based passes valid for unlimited rides for a pre-defined time or other period starting at pass activation, with may occur upon sale or first use
      c. Trip-based passes valid for a pre-defined number of trips

10. Pass products will be configurable by mode and other parameters described in the pricing section.
11. Pass products will be able to be configured to grant a partial credit towards a fare for a premium service.
12. The fare system will support fare incentives based on bonus rides. Ride bonuses will be able to be configured to grant a free number of rides after a certain number of rides have been paid for using stored value or a trip-based pass (e.g., ride 10 times, get one free).
13. The fare system will support the granting of a transfer fare credit for a boarding that occurs within a defined time period of another boarding. The transfer period will be configurable.
14. The transfer credit amount and validity will be able to be configured based on all of the fare pricing parameters described in the pricing section.
15. Transfers will be able to be configured to grant a partial credit towards a fare for a premium service.
16. The fare system will support fare capping and will allow customers to pay base fares using a stored value until they reach a pre-defined amount over a calendar period. The fare system will support fare capping at multiple levels.
17. The fare system will support fare caps for individual service types, service levels, and modes.
18. The fare system will allow customers to reach fare caps for multiple service types and modes. The modes that will have fare capping applied will be configurable and grouped by premium and regular service modes.
19. At the end of a capping period fare accumulator for any fare cap associated with that period will be reset for all customers.
20. The fare system will support special fare programs, or institutional programs, with unique a fare distribution channel, fare products, and business rules.
21. The fare system will support the current range of special fare programs offered by UTA, and future programs.
22. Special fare programs will include post-bill programs where the institution is invoiced based on the participants' actual usage of the system.

V - CONTRACTOR QUALIFICATIONS

The Parties have mutually agreed to delete this Section V.

W – APPROACH

The Parties have mutually agreed to delete this Section W.

Appendix A – Glossary

Term	Definition
Account Based Electronic Fare Collection System	An Electronic Fare Collection System ("EFCS") where processing of fares for transit travel occurs against accounts in the back office with no writing of data to the card. An account-based system does not preclude data maintained on the validator to be used in determining the validity of the card. Determination of validity for travel can also occur at the back office as an online process.
Account Management	Back-office functionality including card account management, institution management, and product management.
Acquirer	Also referred to as "acquiring bank" or "merchant bank". Bank that that has the banking relationship with the merchant. This bank is also known as the acquiring financial institution.
Adjusted Fare	Also known as "final fare". Base Fare minus transfer credit.
Administrative Rules	Administrative Rules refer to the business rules surrounding the procurement, distribution, and activation of contactless cards for third party institutions.
Authorization	Confirmation from a card issuing bank that payment is assured. This usually includes media Authentication as well as verification that the financial account associated with a card has sufficient funds to assure payment. Does not include confirmation of a right to travel due to the availability of a valid fare product. See *Validation*.
Back Office	See *Hosted Back Office*.
Bank Issued Contactless Cards	Commonly referred to as "BICC". Banks issue contactless smart cards (credit or debit cards containing an EFC chip), which are accepted by validators as a means of payment. BICCs must comply to the ISO 14443 (Type A or B) standard. (e.g., VISA, MasterCard, Discover, American Express)
Base Fare	In the back office a base fare is assessed to every trip. This fare is defined by rate schedules, which can be viewed and modified by UTA via a web interface.
Basic Service	Includes Regular Bus, TRAX (light rail), and S Line (Streetcar) service types. These service types charge the current Basic Fare.
BICC	See *Bank Issued Contactless Cards*.
Blocked Bank Card List	See *Hotlist*.
BO	Acronym for "Back Office"; short for "Hosted Back Office". *See Hosted Back Office*.
Bulk Import File	The Bulk Import File is a comma-delimited text file containing one or more rows; each row contains a card account UID and activate or deactivate command. Each row consists of 15 fields, delimited by commas. The last ten fields are available for use by institutions for aggregate reporting and are optional. In addition, a fare product can be assigned to each card (or a default product for the institution will be used).
Bulk Import	Bulk Import is the process by which a third-party institution sends bulk import files containing TPICC card updates to be processed by the EFC back office.
Card	See *Supported Contactless Smartcards*.
Card Accounts	The hosted back office is account-based. Card accounts are based on the card UID.
Card Activation	The process of adding a TPICC and PICC to the coldlist.
Card Data	Also known as "card account data", "CD", "coldlist", or "hotlist". Card Data is all data relating to card accounts. In the case of TPICC cards, card data includes the institution that each card account is associated with, and the fare product assigned to each card account. This card data feeds the validators for card validation. In the case of PICC cards, the database only has a record of a prepaid card if it has been legitimately purchased and activated by InComm.
Card Data Format Specification	Card Data Format Specification ("CDFS") details the technical specifications for the contactless smartcards that should be purchased and manufactured for third party institutions to distribute to their employees, students, or patrons.
Card Deactivation	The process of removing a TPICC or PICC from the coldlist. Web interfaces are used by UTA to deactivate individual TPICC cards; a Partner Web interface is available for third party institutions to deactivate individual TPICC cards; and Bulk Import Files can be used to deactivate multiple TPICC cards for an institution.
Card Reader	A printed circuit board, located inside a validator, which reads data from contactless smartcards. Also, a card reader device (e.g., RF Ideas) can be connected to any computer to read the Card UID from a smartcard.

Term	Definition
Card Subscription	An association between a card account and a fare product, which tells the system when to accept the card as a valid form of payment while riding a bus or rail service. The subscription ultimately governs validator behavior with respect to red/yellow/green lights when a smartcard is tapped. Subscriptions are bounded by start and stop dates.
Card Type	Supported card types include third-party-issued contactless cards ("TPICC and prepaid-issued contactless cards ("PICC"). Card validation rules vary by card type. CD creation processes also vary by card type.
Card Unique Identifier	Also commonly referred to as the "card UID" or "UID", every smartcard has an embedded microchip, which has a unique identifier that is readable by the validator.
Card Validation	Card Validation refers to the process of validating that a contactless smart card is an acceptable form of fare payment. For TPICC cards, the validator checks the coldlist for the card UID. Further, if the card account exists for a given UID, the validator checks to ensure that the card account is subscribed to a current product offering that is valid for the service mode travelled. Card validation results in a green light/high tone, yellow light/mid tone, or red light/low tone based on the card data results. If a card account is not found, then a red light is triggered. If a card account is found, but is subscribed to a lesser service, then a yellow light is triggered, indicating that an upgrade fee is required from the patron. If a card account is found, and it is subscribed to a valid product, then a green light is triggered. PICC cards get a green light if there is sufficient balance on the card for the service mode travelled.
Front-end Validation Device	Also known as "Card Reader", "Validator", "Station Terminal", and "Card Processor" "CP", or "ST". These devices serve as the patron interface for electronic fare collection ("EFC"). These devices are installed at all bus doors and at strategic locations at each rail platform. Patrons are expected to tap a contactless card on a validator to 'tap on' when boarding and 'tap off' when exiting all UTA services. The device has a built-in contactless smart-card reader along with a small graphical/messaging display. The device also features red/yellow/green lights and audible beep-tones to help communicate card validation results to the bus operator and the patron.
Cardholder Rules	Cardholder Rules refer to UTA business rules for the patron with respect to Tap On/Tap Off behavior.
CD	See *Card Data*.
CD Web Service	A web service that receives requests from validators to retrieve card account updates from the EFC back-office database. This web services runs in the EFC back office.
CD Publish Adapter	CD Publish Adapter is an automated job that runs in the back office. This job periodically checks for changes to the hotlist, coldlist, or card subscriptions, and makes these changes available to the CD Web Service.
Closed Loop Card	See *Prepaid Issued Contactless Cards*..
Coldlist	The coldlist contains TPICC and PICC cards that have active subscriptions. The coldlist is maintained by the EFC back office and updates are transmitted to the validators and RTVS. See *Card Data*.
Commissioned, Commissioning	The process of preparing the validator for software installation plus installing the current software. Before a validator can be tested and put into service, it must be commissioned.
Consignment Contract	A contract between UTA and a third-party institution where the institution agrees to sell/distribute period passes to their employees, students, or patrons. The institution may contribute full or partial subsidy toward the card purchase. Cards are typically valid for a month.
Contactless Smartcard	A contactless smart card (also called a contactless card) includes an embedded microcontroller, internal memory and a small antenna. These cards communicate with card readers through a radio frequency ("RF") interface. See *Supported Contactless Smartcards*.
Couponing	In marketing, a coupon is a ticket or document that can be exchanged for a financial discount or rebate when purchasing a product. Mobile couponing is the distribution of traditionally paper coupons through electronic delivery to mobile devices, including cell phones and PDAs.

Term	Definition
Credit/Debit Transaction	Usage data ("UD") records are transferred to the back office for processing, including trip construction, fare calculation, transfer credit allocation, etc. If the card associated with the UD record is a PICC, then the back office prepares a credit/debit transaction record to be submitted to the appropriate payment processor for authorization and settlement. The processor returns an 'Accepted' or 'Declined' status to the back office based on the response received from the issuing bank. If the transaction is declined. Otherwise, the acquiring bank receives the revenue for the transaction. PICC payments are processed through InComm.
Customer Service Representative (CSR)	A UTA person tasked with managing card accounts and subscriptions in the EFC back office.
Data Store	The Data Store is a UTA database of all EFC daily transactions and EFC data (CD and UD). This data repository is managed and maintained by UTA. Nightly data extracts (DWE: Data Warehouse Extract files) are provided by the EFC back office to be loaded into the UTA Data Store. This data is utilized by UTA for ridership analysis and various EFC data reporting.
Distribution Points	Locations where a patron can pick up, purchase, or reload supported contactless fare media. Same as point of sale. Examples: retailers, issuing institutions, and vending machines.
EcoPass	A TPICC card associated with a third-party institution.
Electronic Fare Collection	Commonly referred to as "EFC". Electronic Fare Collection relates to the utilization of the validators to collect fares from patrons riding bus and/or rail services. The validators are installed at all bus doors and strategic locations at each rail platform. Card validators communicate with an open, account-based fare engine. All business logic is executed in the EFC back office, including trip construction, fare calculation, transfer credit allocation, and payment processing.
EFC	See *Electronic Fare Collection*.
EFC Service Level	Also known as 'system performance expectation'. UTA has defined six EFC service levels: 1) media validation, 2) tap enforcement, 3) fare calculation / collection, 4) account / product management, 5) customer service, and 6) decision support. For each service level, there are various service level metrics.
Electronic Serial Number	Commonly referred to as "ESN". All validators have a unique identifier associated with the hardware that can only be determined by booting the device. This number is distinct and different from the Case Serial Number.
Express Bus	Express Bus is a Premium Service that provides direct routing, faster travel time and inter-county travel. These routes typically travel on freeways and provide transit connection between different cities.
Fare	A fare is the fee collected from a patron allowing him or her to ride a bus or rail service. Fares are defined in fare products (rate schedules) and can be maintained via a Web interface.
Fare Calculation	The fare engine calculates a fare for all trips. The final or adjusted fare depends on the fare structure (e.g., flat or distance-based), service type, and transfer credit rules. Note that fare calculation logic must account for taps that arrive late to the fare engine due to communication issues between the bus and the back office.
Fare Engine	See *Hosted Back Office*.
Flat Fares	Currently, UTA employs a flat fare system where the patron pays a set fare when riding bus or TRAX service. The fare may vary by service mode (e.g., Express Bus, Ski Bus, Regular Bus, etc.).
Fare Evasion	A patron is guilty of fare evasion if they fail to Tap On with a valid TPICC or PICC, contactless smart card; or fails to pay the ridership fare by any other means (cash, TVM ticket, etc.).
FAREPAY	Also known as "UTA FAREPAY" or "FAREPAY card". FAREPAY is what UTA has branded its prepaid reloadable closed-loop smartcard. FAREPAY was made available to the public mid-Oct of 2013. FAREPAY cards can be purchased online, at UTA customer service locations, or at any participating local retail merchant locations. There is a one-time activation fee of $3.00, but no other fees after that. Patrons can check their balance or reload their FAREPAY card(s) online. Patrons can link their FAREPAY card(s) to web accounts to take advantage of additional features such as loss/theft protection and auto-reload. See *Prepaid Issued Contactless Cards*.
Final Fare	See *Adjusted Fare*.

Term	Definition
Fixed Rate Annual Contract	A third-party institution contract where the partner agrees to pay a fixed price (based on estimated usage) for unlimited transit use on specified modes for their employees, students, or patrons. UTA prepares billing for these institutions monthly, quarterly, or annually.
Front Office	The Front Office includes all portions of the system that are installed on a bus ("CP") or rail platform ("ST"). Front Office validators generate taps, also referred to as Usage Data ("UD"), which is sent to the EFC Back Office for processing.
FrontRunner	UTA commuter rail service that currently travels from Ogden to Salt Lake City, and from Salt Lake City to Provo. FrontRunner is a Premium Service with fares based on number of stations traveled.
Hosted Back Office	Also known as the "fare engine" or "back office". The BO is an account-based fare collection system comprising a suite of hosted webservers and database servers. All the business logic for taps processing is performed in the EFC back office, including trip construction, fare calculation, transfer credit allocation, and journey construction. The back office also implements account management functionality. Institution and card account data originates at the back office. Data extracts are provided nightly from the back office to the UTA Data Store for reporting purposes.
Hotlist	Also known as the "Blocked Bank Card List", the hotlist is a list of known invalid credit/debit cards. If a credit/debit card is on this list, then the validator will give a red light/low tone when the card is presented to the validator and the patron must use an alternate form of payment. This list is also maintained on a central server in the back office to facilitate online validation ("RTVS"). Each validator also receives and maintains this list locally for reference when an online validation is not possible. A contactless credit/debit card is automatically added to this list when the system determines that the card is not valid. Cards can be removed from the hotlist by UTA via a Web interface. See *Card Data*.
Inspection	A process that determines if a patron has access to a valid payment account with sufficient funds to pay the appropriate fare for their transit trip.
Inspection Device	UTA Transit Officers utilize a handheld inspection device that is capable of reading EFC card data and validating tap history against the back office. These devices are NFC-enabled cell phones capable of reading the card UID from supported contactless cards. UTA software on the inspection device checks to see if the EFC card tapped green on a rail platform within 2 hours.
Inspection Officer	UTA Transit Officers inspect rider cards on rail to prevent fare evasion.
Institution	A single, recognizable entity comprised of collection of individuals belonging to the group for an extended period. *Examples: colleges and employers.*
Institution Accounts	When an institution enters a contract with UTA, an institution account is created in the EFC back office. Card accounts for associated students or employees are grouped under their institution account for card account management and reporting purposes.
ISO 14443 (Type A and B)	The international standard for proximity smart cards, the contactless cards that operate at 13.56 MHz in proximity with a reader antenna. To create interoperability among smart card products, ISO 14443 sets communication standards and transmission protocols.
ISO 15693	The international standard for vicinity smart cards, the contactless cards that are intended for operation "at a longer distance" from the associated coupling device than ISO 14443 and ISO 10536 smart cards.
ISO and IEC	The ISO ("International Organization for Standardization") and IEC ("International Electrotechnical Commission") form the international bodies for worldwide technical standardization.
Issuer	Any institution that is distributing supported contactless fare media products. *Examples: banks, employers, prepaid networks, schools, etc.*
Issuing Bank	Bank that issues a credit or debit card to the cardholder.
Journey	See *Linked Trip*.
Leg	See *Unlinked Trip*.
Linked Trip	Also referred to as "Journey". A linked trip is one or more trips taken by a single patron within a defined transfer period (e.g., 2 hrs.). A base fare is calculated for each trip segment, and transfer credits are applied according to UTA's business rules.

Term	Definition
Mandated Discounts	Per federal law, qualified persons with disabilities and senior citizens (65 or over) are entitled to a reduced fare on fixed route services. The reduced fare rate can be no more than half of the peak-hour full adult fare. Example: the current local bus cash fare is $2.25 for adults and $1.10 for seniors and disabled patrons reflecting at least the 50% mandated discount.
Max Fare	Also known as "fully capped fare". In a distance-based fare structure, this is the maximum possible fare that a patron could be charged for a single boarding.
MDC (a.k.a. MDD)	Mobile Data Computer or Mobile Data Device – a computer that is part of the UTA bus communication system equipment. The card validator hardware communicates with the MDC to receive login information and to send card status messages, which appear on the bus operator's console screen.
Mode	See *Service Type*.
Offline Validation	When RTVS is not possible due to interruptions of communications between card validators and the EFC back office, the secondary or fallback validation strategy called offline validation is employed. Card validators rely on local copies of the card data ("CD") residing on the validator for offline validation of cards.
Open Loop Card	See *BICC*.
Passback	The act of a patron tapping a TPICC or PICC and then passing it to another potential rider to use as payment. The validator disallows a "pass back" scenario and provides a red light to the patron when this occurs.
Passback time	A period of time (e.g., 2 minutes) wherein passengers are disallowed from using their TPICC or PICC as a form of fare payment, thereby preventing a pass back scenario.
Patron	Any person using public transit with a supported EFC card at a validator. Also known as 'Customer', 'Rider', 'Passenger', or 'Cardholder'. Patrons are issued contactless smart cards from banks, local businesses, ski resorts, or universities for use as fare payment when riding bus and/or rail services. Patrons can also purchase a UTA FAREPAY Card ("PICC") for use as fare payment on bus and rail services.
Patron History Report	A report that enables PICC patrons to view ride history and reconcile charges against bank statement(s).
Payer	Individual or institution that pays the transit fare.
Pay As You Go Fare	Fare calculated per trip taken.
Pay Per Trip	See *PPT*.
Payment Card Industry	Also known as "PCI Security Standards Council". The PCI Security Standards Council is an open global forum for the ongoing development, enhancement, storage, dissemination, and implementation of security standards for account data protection.
Payment Gateway	A payment gateway is an e-commerce application service provider service that authorizes payments for e-businesses, online retailers, bricks and clicks, or traditional brick and mortar. It is the equivalent of a physical point of sale terminal located in most retail outlets. Payment gateways protect credit card details by encrypting sensitive information, such as credit card numbers, to ensure that information is passed securely between the customer and the merchant, and between merchant and the payment processor.
Payment Processing	Back-office functionality that deals primarily with creating and submitting payment requests to a payment processor, including payment authorization requests and payment settlement requests.
Payment Processor	A payment processor is a company appointed by a merchant to handle credit card transactions for merchant banks. UTA has at least one terminal setup with TransFirst to handle BICC authorization and settlement requests submitted by the fare engine. Additionally, UTA has at least one terminal setup with InComm to handle PICC authorization and settlement requests submitted by the fare engine.
PCI	See *Payment Card Industry*.

Term	Definition
PCI Data Security Standard	Also known as "PCI DSS". The PCI DSS, a set of comprehensive requirements for enhancing payment account data security, was developed by the founding payment brands of the PCI Security Standards Council, including American Express, Discover Financial Services, JCB International, MasterCard Worldwide and Visa Inc. Inc. International, to help facilitate the broad adoption of consistent data security measures on a global basis. The PCI DSS is a multifaceted security standard that includes requirements for security management, policies, procedures, network architecture, software design and other critical protective measures. This comprehensive standard is intended to help organizations proactively protect customer account data.
Period Pass	UTA sells period passes for TPICC cards that are valid for a set period, such as a daily pass or a monthly pass. Third party institutions often enter into annual agreements that result in annual passes (e.g., "EcoPass"). Marketing may decide to run limited promotions that call for passes to be valid for a certain length of time (e.g., 7-days). Some passes are configured to activate on first tap and remain active for a fixed number of days after first tap.
PICC	See *Prepaid Issued Contactless Cards*.
PPT	An acronym for "Pay Per Trip". Also known as "Pay Per Trip billing" or "PPT Contract". Many of our third-party institutions have agreed to pay UTA for total trips taken by their employees, students, or patrons. PPT invoices are generated by UTA using data from the EFC Data Store. Typically, PPT invoices are generated monthly or quarterly.
Prepaid Card Manager	An entity that is responsible for activating, deactivating, and managing prepaid card accounts, as well as processing PICC fare payment requests. Currently, InComm is the UTA Prepaid Card Manager.
Prepaid Issued Contactless Cards	Commonly referred to as "PICC". UTA prepaid cards, created and supported by InComm. Also referred to as UTA FAREPAY cards. These cards conform to ISO 14443 (Type A or B). PICC cards are only valid for fare on UTA bus or rail service. The funds loaded to these cards cannot be used to purchase other items. PICC cards can be reloaded by patrons using InComm's web interfaces. Funds do not expire. These cards can also be registered for loss/theft protection using InComm's web interfaces.
Premium Service	Includes the Express bus and FrontRunner rail service types.
Priceable Items	See *Service Type*.
Product	Also referred to as "Fare Products" or "Product Offerings". Product offerings dictate card validation behavior as well as fare calculation for supported contactless smartcards. Products are created and made available for card accounts for a definable period. Product offerings contain a list of priceable items or valid transit modes that a card account can be used for as valid fare. Products also contain rate schedules and business rules which serve as the basis for the base fares that will be assessed to unlinked trips. Card accounts are subscribed to product offerings. Card validation and fare calculation for a card account is dependent on the product subscription. Card accounts may have their product subscription renewed, changed, or cancelled without reissuing a new smartcard. Product offerings are created and managed by UTA using a web interface for the fare engine.
Product Offering	See *Product*.
Product Subscription	Card accounts are associated to product offerings by virtue of a product subscription. A product subscription essentially defines the validity period (start/end dates) during which a card account will be linked to a product offering.
Qualifications	Patron description and/or unique identifier (such as an ID card) that may entitle the person to a reduced fare or other benefits.
Rail Inspection	Program on handheld devices used by inspection officers on light rail trains and commuter rail trains to determine if a patron has provided proper fare payment of TPICC, PICC and BICC smart cards.
Rate Schedule	Fares charged by priceable item. Each priceable item has its own rate schedule.
Reader	See Validator.

Term	Definition
Real Time Validation Service	Commonly referred to as "RTVS". A service that all card validators initially attempt to communicate with when validating contactless cards. The RTVS server's repository of card data essentially mirrors that of the EFC back office. If the card validator is unable to perform card validation using RTVS, then it uses fallback offline validation strategies using the local data residing on each validator.
Refund	A transaction where UTA essentially gives the patron his/her money back for a settled credit/debit fare transaction. Today this is a manual process that is performed by UTA Accounting.
RTVS	See *Real Time Validation Service*.
Service Type	Also referred to as "Mode" or "Priceable Item". From a UTA perspective, there are currently seven transit modes: Regular, Express, Ski, Park City, Streetcar, TRAX, and FrontRunner.
Shell Card	A card that does not have a payment network associated with it and allows the patron to pre-pay for travel so that each trip is not charged separately. *Examples: period pass, cards on billing contracts, Operator test card, MAX promo card; Opposite of a pay as you go card.*
SI or Systems Integrator	Can be used interchangeably with Contractor.
Smartcard	See *Supported Contactless Smartcards*.
Supported Contactless Smartcards	UTA Card validators will read proximity ("ISO 14443") and vicinity ("ISO 15693") smartcards. UTA issues NXP MIFARE Ultralight ("ISO 14443 Type A") smartcards. Several third-party institutions have chosen to source their own compatible smartcards (e.g. Axess 15693, HID iClass, MIFARE Classic). Cards issued by UTA or third-party partners are referred to as TPICC cards. *See Third Party Issued Contactless Cards (TPICC).* BICC cards are also supported (ISO 14443 – Type A or B). *See Bank Issued Contactless Cards (BICC).* PICC cards are also supported (ISO 14443 – Type A or B). *See Prepaid Issued Contactless Cards (PICC).*
Tap	A tap is an event where the patron presents a contactless card to the card validator as fare payment resulting in a validation response. This is also referred to as UD data.
Tap Cache	A rolling list of all recent taps within a defined time window (e.g., last 2 hours). The tap cache is used by the inspection devices to determine if a patron has tapped before boarding rail service.
Tap Enrichment	A back-office process in which tap records are 'enriched' with human readable columns (as opposed to codes or enums) in preparation for export to the EFC Data Store.
Tap Location	The tap location consists of the GPS coordinates where a tap took place. Tap location is included in the UD that is transmitted to the back office. This location data is sent to the validator from the bus computer.
Tap On / Tap Off	Tap On refers to the patron's tap when boarding a bus or train. Tap Off refers to the patron's tap when exiting the vehicle. The fare engine must be able to identify tap on and tap offs for trip construction.
Third Party Institutions	See *Third Party Partners*.
Third Party Issued Contactless Cards	Commonly referred to as "TPICC". These cards conform to UTA Card validators will read proximity (ISO 14443) and vicinity (ISO 15693) smartcards. UTA issues NXP MIFARE Ultralight (ISO 14443 Type A) smartcards. Several third-party institutions have chosen to source their own compatible smartcards (e.g., Axess 15693, HID iClass, MIFARE Classic).
Third Party Partners	Also known as "Third Party Institutions". UTA partners with third parties such as corporate clients, universities, and ski resorts on discounted programs (e.g., EcoPass) for their employees, students, or patrons respectively. When an institution enters a contract with UTA, an institution account is created in the EFC back office. A product offering is also created, with priceable items that correspond to transit modes that are valid per the institution contract. Card accounts are then created, associated with the institution account, and subscribed to the product offering. The institution issues the contactless smartcards (also referred to as TPICC cards) to their employees, students, or patrons, and is responsible for card management & support.

Term	Definition
Token	Tokens are associated to EFC accounts in the back-office. A token is something that the customer possesses that enables them to pay their fare using the associated EFC back-office account. Examples of tokens are contactless smartcards issued by a transit partner (employer or school), a bank-issued contactless open-loop cards, FAREPAY cards (prepaid, reloadable, contactless, closed-loop), and smartphones (mobile app).
TPICC	See *Third Party Issued Contactless Cards*.
Transfer Credit	UTA's current business rule regarding transfers between buses and rail is that patrons will only be charged for the most expensive trip segment within a 2-hour period, regardless of the number of trips. Transfer credits are forfeited by the patron if they fail to tap-off of each trip segment of their journey.
TransFirst	TransFirst is a transaction processing service, which provides payment-enabling technologies. TransFirst is the processor associated with the UTA Merchant Bank for BICC credit/debit card payments.
Transport Network Topology (TNT)	The definition of where transit vehicles travel, including routes, lines, service types, stations, and bus stops.
Trapeze Data Feed	The Trapeze data feed is an XML file from UTA's planning system which contains information about routes and stop locations. This file is transmitted weekly via email and manually imported into the fare engine for two purposes: 1) tap enrichment and 2) distance-based fare calculation.
TRAX	Short for "UTA Transit Express" this is UTA's light rail transportation system. TRAX is a Basic Service (like regular bus).
Trip	Also known as "Unlinked Trip", "Segment", or "Leg". Patrons are required to Tap On when boarding a service, and tap-off when alighting a service. The tap on and tap off usage data records are paired in the EFC back office to form a trip. The fare calculation and transfer credit business logic are applied to trips in the EFC back office.
Trip Construction	UTA patrons that use a contactless smart card product for fare payment are required to tap their card at a card validator when boarding and alighting bus and rail services (tap on / tap off). Usage data collection services collect all tap event records and submit them to the EFC back office. Those tap records are then processed by the fare engine to form trip records. If a patron failed to tap-off, the system would generate an artificial tap-off record with a generic tap-off location so that the trip can be formed. If a patron tapped-off, but failed to tap-on, the system interprets this tap as a tap-on. Note that trip construction logic must account for tap records that arrive late to the fare engine due to communication issues between the bus and the EFC back office.
UD	See *Usage Data*.
UD Web Service	A web service in the back office which receives tap data from validators, persists the tap data in the back-office database, and then sends a response to the validator confirming receipt of the tap (and therefore allowing the validator to delete the UD record from local storage). The UD Web Service is also responsible for performing duplicate checks to avoid persisting the same UD record twice.
UID	Also commonly referred to as the 'card UID'. Every smart card has an embedded microchip, which has a unique identifier that is readable by the card validator.
Unlinked Trip	See *Trip*.
Usage Data	Also known as "tap data" or "UD". UD is generated by a validator every time a patron performs a Tap-On or Tap-Off. Included in the usage data is the date/time of the tap, location, vehicle ID, route, service type, etc. Usage data is immediately sent to the back office for processing (e.g., trip construction, fare calculation, transfer credits, etc.) via the bus network infrastructure (3G/WiFi). This data is made available to UTA for ridership reporting & analysis via the UTA Data Store which is updated daily.

Term	Definition
User Interface	UTA EFC operations analysts and administrators use a web-based user interface to manage institution accounts, card accounts, and fare products. UTA Customer Service agents use this user interface to lookup card accounts and activate/deactivate cards. Third party institutions use a separate user interface to manage their card accounts and analyze their ridership.
UTA Partner Web Site	A web interface where Third party institutions can view ridership data, manage bulk import files, and manage updates to individual card accounts associated with their institution.
Validation	Depending on the type of card, validation may include card authentication, financial account authorization and/or confirmation of a valid transit fare product. This is the complete confirmation that payment is secured to the satisfaction of agency business rules, no matter what the source of payment.
Validator Models	The two validator models are typically referred to by the first letters in their model's name: CP for CP5002Lx (installed in buses) and ST forST5002Lx (installed in pedestals on commuter and light rail platforms).
Vicinity card	See *ISO 15693*.

Appendix B – Transit Sponsor Web Interface

About half of all fares for UTA services are paid electronically. The great majority of riders that pay their fares electronically today have their fares fully or partially subsidized by a transit sponsor. UTA currently manages contract relationships with more than 100 transit sponsors, including schools, employers, and ski resorts.

Each transit sponsor is associated with an institution account in the EFC back-office which is created/managed using the transit sponsor web interface. See D2, E.9 thru E.17, E.40, and E56 for requirements relating to this interface.

Currently the institution account record contains the following information:
a) Institution name
b) Address
c) Billing contact information (e.g., name, email, phone number)
d) Contract information (e.g., contract type, contract number, contract limit, JDE billing number)
e) Default product offering. This product offering details the authorized service types that are included as defined in the contract.

Each transit sponsor has at least one employee that is designated as the institution administrator (a.k.a. transit coordinator). Currently, this individual uses the transit sponsor web interface to perform the following functions:

a) Create and manage user accounts for additional transit coordinators, if needed.
b) Provide customer support for card holders, as needed (e.g., card lookup to check/update card status, perform card replacements)
c) Use the bulk import process to maintain the list of active transit users (e.g., employees, students) associated with the institution in the fare system back office. Cards (or tokens) that are activated using this process will automatically be subscribed to the default product offering associated with the institution account. The institution Admin is also responsible for managing the 10 custom property fields for every card account.
d) Review reports, as needed (e.g., Aggregate Ridership, Action History). The Action History report shows all actions on card accounts (e.g., activations, replacements, etc.). The Aggregate Ridership report provides a ridership history for cards registered with the institution which can be grouped by service type or by transit account.

Appendix C – Bulk Import Processing

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███
███
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███

Note that bulk import files may be submitted via the web-based user interface or by email. **The back-office must support both bulk import submission methods.**

Introduction

The purpose of this specification is to detail the file format used by Transit Sponsors (e.g., Employers or Schools) to activate and deactivate card accounts in UTA's back office fare system.

> An Activated card applies the appropriate contractual fare arrangement.

> A Deactivated card discontinues the contractual fare arrangement.

The Bulk Import process was designed to accommodate mass updates to card accounts of card activations and deactivations from UTA's 3rd party partners.

> *NOTE: The bulk import file should only contain updates (changes) to card accounts. It is not acceptable to send UTA a complete file of all transit accounts every time an update occurs to a few card accounts.*

These card account changes are provided in a comma-separated file (csv) with one record per card account. The scope of this document is limited to the file-based import of card account updates using the Bulk Import File.

> *NOTE: The Transit Sponsor Web Site can also be used by 3rd party partners to activate and deactivate individual card accounts as needed.*

Bulk Import Process Flow

The existing bulk import process flow is as follows:

a) UTA receives bulk import files from transit sponsors as email attachments, or by using the Upload File feature in the Transit Sponsor Web Site.

b) For emails, bulk import files are sent to a UTA email account.
   NOTE: The email sender must be an approved contact for the 3rd party institution. Your contact list must be submitted to UTA EFC Operations before you can begin submitting bulk import files to UTA. Multiple contacts are permitted.

c) If the bulk import file is emailed to UTA, the sender will receive an email acknowledgment indicating that their file has been received and will be processed.

d) As files are uploaded (via email or the Transit Sponsor Web Site), the file is inspected for proper file name, format, and structure. If the file was submitted via email, another email notification is sent to the 3rd party contact list acknowledging that the file has passed initial validation.

e) UTA EFC Operations reviews the files that are ready and processes each file. As the bulk import file is processed, it is further analyzed to ensure correct data contents.

f) When the bulk import application finishes processing a file, an email notification is automatically sent to the 3rd party contact list with results of successful card account updates and failed card account updates.

g) The email notifications for file results are manually inspected by the 3rd party partner and/or UTA EFC Operations for failures. If failures are detected, then the respective card accounts

may need to be resubmitted via a new bulk import file. On occasion, the card accounts with errors are manually updated in the back office by UTA EFC Operations.

NOTE: For questions regarding failures in bulk import files, please contact UTA EFC Operations.

h) This process is repeated until all card accounts in each bulk import file are successfully processed.

Bulk Import File Specification

1. The existing bulk import file specification is as follows:

File Name

In order for UTA to process the file, it must be identified as belonging to a specific institution.

File Name Format:

<UTAAssignedAccountName>_<Date>_<Version>.csv

<UTAAssignedAccountName> must be the name assigned to your institution by UTA.

<Date> must be the date file is submitted to UTA in YYYYMMDD format.

<Version> an optional number or identifier to further identify the file.

Examples of File Names:

LDSBC_20110308.csv

BYU_20110307_1801.csv

NOTES:

1. *Do not include the brackets <> in the file name; they are used here for explanation purposes only.*

2. *Separate the three parts of the file name with an underscore _, as shown above.*

3. *Your file will be rejected if it does not follow these rules.*

File Type:
CSV file (comma delimited fields)

<u>Record Format</u>

    a) Each line (or row) in the CSV file represents a card account record.

    b) Each record must contain a minimum of the first five fields (see field descriptions below), separated by commas. The last ten fields may be optionally included.

    c) Records must be followed by ASCII CR and LF characters (0x0D and 0x0A).

Field Descriptions:

Field	Type	Description
Card UID *	String(20)	**Required.** This field must contain the UID (Unique Identifier) from the chip on the contactless card. The EFCS uses the UID to create the card account and associate it with the Institution account specified in the file name. The UID must be provided in hexadecimal format, with the most significant byte first: e.g., 8002CBE9B08C04
Command	String(10)	**Required.** This field must contain either the **ACTIVATE** or **DEACTIVATE** command for card activation or deactivation.

Start Date	String(8)	**Required.**
		This field is ignored when Command = DEACTIVATE
		
		    FORMAT: YYYYMMDD
		    e.g. 20110315
		
		1. For Initial Activation
		For Command = ACTIVATE this field may be left blank. If left blank, the Start Date is set to either today's date or the Institution's Subscription Start Date, whichever is later. If the specified Start Date is outside the effective date range for the product subscription associated with the Institution, then EFCS will use the Institution's Subscription Start Date or today's date, whichever is later.
		
		2. Any Subsequent Activation
		You must include a Start Date and an End Date, or the bulk import application will ignore the ACTIVATE command. The application will skip that record and go to the next record *unless* the Start and End Date fields are populated.
		
		3. For either Initial or Subsequent Activation
		You can enter a future Start Date for card activation; however, if the future date is before the Institution's Subscription Start Date, it will default to the Subscription Start Date for the Institution.
		
		An Institution's Subscription Start and End Dates are based on their contract terms with UTA.
		
		Card activation occurs at midnight (12:00 AM) at the *beginning* of the Start Date.

End Date	String(8)	**Required.** **This field is ignored when Command = DEACTIVATE** For Command = ACTIVATE this field may be left blank. If this field is left blank, or if the specified End Date is outside the effective date range for the product subscription associated with the Institution, then EFCS will use the Institution's Subscription End Date. FORMAT: YYYYMMDD e.g. 20110925 The card will not work on the specified End Date because deactivation is effective at midnight (12:00 AM) at the *beginning* of the End Date.
Face Serial *	String(20)	**Required.** This field must contain the Face Serial number on the face of the contactless card. This should be a number the card holders know (or can easily locate on their card) so they can identify themselves to UTA Customer Service if they call.
Property1	String(20)	**Optional.** All Property fields (numbered 1 through 10) are available for institutions to use as they see fit. These fields can be defined and utilized by the Institution. These fields are informational and are not required for any EFCS functionality. Refer to Section 2.3 for more information on using the Property fields.
Property2	String(20)	**Optional.**
Property3	String(20)	**Optional.**
Property4	String(20)	**Optional.**
Property5	String(20)	**Optional.**
Property6	String(40)	**Optional.**
Property7	String(40)	**Optional.**
Property8	String(80)	**Optional.**
Property9	String(80)	**Optional.**
Property10	String(160)	**Optional.**

*   Card UID and Face Serial NOTE: When using a spreadsheet program (e.g., Microsoft Excel) to create the CSV file, the Card UID and Face Serial fields must be set up as a string so leading zeroes are not eliminated. For example, using Excel you would insert an apostrophe before entering the Face Serial if the Face Serial begins with a zero.

<u>Using the Optional Property Fields</u>

The data provided in the Property fields (Property 1 through Property 8) are:
• Stored in the UTA EFC Back Office System.
• Ignored by the UTA EFC Back Office System.
• If populated, the Property values provided will overwrite any previous values.
• If empty, the previous Property values will remain in UTA EFC Back Office System.
• To clear out a Property field to a blank value, send ##### in the Property field.

In the UTA Partner Web Site, the Property fields are available for search purposes against card accounts. For example, an Institution could use Property 1 to store staff classifications such as Employee, Student, Graduate; and use Property 2 to store department names. Institution personnel can use that information in the UTA Partner Web Site to search for card accounts based on that data.

<u>Examples of Bulk Import Files</u>

Sample of Bulk Import File in Excel format (with Property 1/Property 2 fields in Columns F and G):

Sample of same Bulk Import File saved in CSV format:
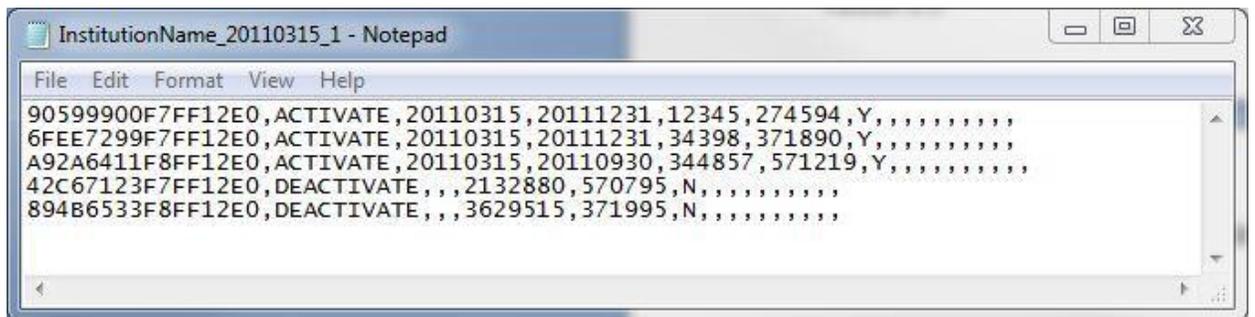
<u>Examples of Bulk Import Records</u>

The examples below demonstrate sample records in the bulk import file.

Deactivation Record:

8002fca15db104,DEACTIVATE,,,08700124

The result of processing this record would be that card with Car d UID = 8002fca15db104 will be immediately deactivated in EFCS and will generate a "red light" when next presented to a UTA EFCS card reader on buses and rail platforms.

Activation Records:

8002fca15db104,ACTIVATE,20110302,,08700124,,,,,,,,,,

The result of processing this record would be that card with Card UID = 8002fca15db104 and Face Serial = 08700124 will become activated in EFCS on March 2, 2011, after which it will generate a "green light" when next presented to a UTA EFCS card reader on buses and rail platforms. The card will not expire until the Institution's Subscription End Date (when contract with UTA expires).

8002fca15db104,ACTIVATE,20110802,20110904,08700124,,,,,,,,,,

The result of processing this record would be that card with UID = 8002fca15db104 and Face Serial = 08700124 will become activated in EFCS on August 2, 2011. The card will not generate a "green light" when presented to a UTA EFCS card reader until that date. The card will expire on September 4, 2011; from that date the card will generate a "red light" when presented to a UTA EFCS card reader on buses and rail platforms.

Activation with Custom Properties:

8012fdd15db109, ACTIVATE,,,08700651,Employee,,,,,School of Engineering,,,, Note

that custom Property fields are stored, but ignored, by EFCS.

2. The current fare system bulk import file transmission protocols, including email (at a minimum), SFTP, and API are as follows:

Emailing the File to UTA

Follow this protocol when submitting the CSV text file to UTA via email:
- Attach the CSV file that follows the naming convention
   <UTAAssignedAccountName>_<Date>_<Version>.csv
- You can use the file name as the Subject of the email, but this is not required.

NOTE: Your file should only contain card accounts that have changes. DO NOT submit a file containing all card accounts every time you submit card account updates. Files containing all card accounts may not be processed by UTA.

SFTP

Follow this protocol when submitting the CSV text file to UTA via Secure File Transfer Protocol: [*to be defined*].

API

Follow this protocol when submitting the CSV text file to UTA via API: [*to be defined*].

Bulk Import File Management

3. The number of active transit accounts should not exceed the contract limit when processing bulk import files.

4. The current existing bulk import file management capabilities, including the following:

   a) Provide an admin view listing all bulk import files loaded within a specified period (start/end dates). Each line includes the filename, upload date, upload user, status (e.g., Imported With No Errors, Imported With Errors, etc.), and details (e.g., 100 OK, 0 Failed).

   b) Click to view individual bulk import files. Display error messages (if any) so that it is clear what went wrong.

   c) Provide capabilities to search for bulk import files by name, submitter, or date.

   d) Allow administrators to download, rerun, and/or cancel the file.

   e) Allow administrators to sort view by filename, upload date, upload user, or status.

   f) Allow administrators to enable/disable the Autoflow features. When Autoflow is enabled, then transit sponsors can submit bulk import files for automatic processing by the back-office. When Autoflow is disabled, the file is held until an administrator reviews the file and then clicks the 'process file' icon.

Appendix D – Contract Activation/Renewal Web Interface

Currently, the great majority of UTA's 100+ transit sponsors use a transit sponsor web interface at the end of each year to renew their pass program. Some of these sponsors prepay for annual passes for their constituents. Other sponsors are billed monthly to purchase monthly passes for their constituents. Some sponsors sign up for pay-per-use contracts where the monthly invoice is based on actual EFC data records detailing actual ridership.

Currently, the signee completes an online web form to provide the company name, address, number of employees, contact information, and program selection. Once the signee completes the online final review and agrees to the online terms and conditions of the program agreement, the form is routed via Laserfiche to UTA administration personnel to enable the fare products and setup the billing.

Currently, there are four pass programs available for online contract renewal:

  a) **Annual Preferred** – Requires a minimum of 100 employees and 100% participation; passes are prepaid at the beginning of the year.
  b) **Annual Select** – Requires a minimum of 30 employees; passes are prepaid at the beginning of the year.
  c) **Monthly** – Monthly payment required from employer to UTA, invoiced at the end of each month, 10 pass minimum.
  d) **Daily** – Monthly payment required from employer to UTA, invoiced at the end of each month and based on actual monthly use, or $500, whichever is greater.

Currently, throughout the year, transit coordinators can also use this contract renewal web interface to add more passes for new employees.

1. The contract activation/renewal web interface may integrate with Laserfiche to automate contract creation, archival, and internal notification activities.
2. The contract activation/renewal web interface may ntegrate with the fare system back-office to automate product configuration and subscription tasks associated with contract activation/renewal activities.
3. The contract activation/renewal web interface may integrate with the fare system back-office to appropriately set and manage the contract limit based on contract activation/renewal activities.
4. The contract activation/renewal web interface may provide a report to UTA administrators that shows most recent contract details for all transit sponsors.

Appendix E – Reduced Fare Management Web Interface

Background

Currently, the UTA offers a 50% discount to Seniors, Youth, Disabled, and low-income.

Previously, the UTA has built an in-house web application to allow eligible customers to apply on-line for reduced fare. This solution enables 3rd party partners such as homeless shelters, aging services, schools, etc. to apply on behalf of their client, according to UTA guidelines.

Currently, eligibility requirements:

APPLICATION TYPE	FARE DISCOUNT	ELIGIBILITY	EXPIRATION PERDIOD
Youth	50%	Ages 6 - 18	5 Years or 19th birthday
Senior	50%	Ages 65+	5 years from application date
Persons with Disabilities	50%	Medicare or Healthcare Professional verification	5 years from application date
Low-income	50%	Member of a participating program* or income level 150% or less of federal poverty guidelines	1 year from application date

For Individuals Applying for Reduced Fare

Currently, applicants use the web interface (https://www.reducedfaresuta.com) to create a secure account. Each applicant must submit an online application for a reduced fare card and upload an official form of ID. Applicants can choose to upload "selfie" photos that can be printed on the FAREPAY card.

3rd Party Eligibility Program

Currently, partners can qualify eligible riders on UTA's behalf upon signing a human service contract with UTA. Partners will complete a simplified version of the application for the rider that is automatically approved. If a partner uploads a picture and provides mailing address, UTA will mail a FAREPAY card for the rider. If no picture is uploaded, the customer will be instructed to go to nearest UTA Customer Service location to show ID and receive card. Partners can renew the application on the customers behalf when eligibility expires.

UTA Personnel

Currently, authorized administrators securely access the web application to review and approve/reject applications. There are four admin roles:

    a.   Customer Service Info Agents have basic read only access to look up a customer account and tell them the status, expiration date, etc.

    b.   Customer Service Location Agents can view accounts, enter paper applications, verify eligibility to approve or decline an application, resend emails.

    c.   The Approver role can view accounts, verify eligibility to approve or decline an application, resend emails.

    d.   The Processor role is the super user role that can do everything. This role also has access to SQL database for reporting/troubleshooting purposes.

Note: Currently, the UTA uses IdentiSys SpIDer software to print picture on the reduced-fare FAREPAY card.

Impact of Integration if Contractor Uses Current UTA Web Solution

The Parties acknowledge and agree that the Contractor can design a solution to integrate into the EFC back-office for this interface however, it has the option to integrate with the UTA's existing solution if it so chooses so long as the solution meets or exceeds the current customer experience.

If the Contractor uses the current UTA web solution, the following integration functionalities may be required:

1. Vendor-hosted user management web portals give only registered transit riders the ability to access the Reduced Fare Management Web Interface in order to apply for a reduced fare card.
2. The Reduced Fare Management Web Interface integrate with the EFC back-office to activate/expire reduced-fare FAREPAY cards for approved applicants and ensure the cards are subscribed to appropriate product offering (with 50% discount pricing).
3. When a reduced fare FAREPAY card is tapped to a validation device, a light will indicate if eligibility is valid or needs to be renewed.

Appendix F – FAREPAY User Web Interface

Currently, the URL for our existing FAREPAY user web interface is: https://farepay.rideuta.com/. This web interface allows riders to purchase and manage FAREPAY cards that are associated with back-office transit accounts. This site, which is currently hosted and maintained by InComm, complies with PCI security standards.

Online Purchase

1. Host and maintain a PCI-compliant FAREPAY user web interface that enables riders to purchase and manage FAREPAY cards that are associated with back-office transit accounts. The look and feel of the website should be in parity with the existing site, which is described elsewhere in Exhibit A.
2. The FAREPAY web interface must allow riders to make online purchases of up to 10 reloadable FAREPAY cards at a time with a one-time $3.00 card fee per card. Note that funds loaded to FAREPAY cards never expire. See the publicly available FAQs for more information about the FAREPAY card (https://farepay.rideuta.com/).

Unregistered Account Holders

1. Unregistered FAREPAY account holders use the FAREPAY user web interface to perform the following functions:
   a. **Activate Card** by entering the following:
      i. the last four digits of the number on the back of the card packaging under the barcode
      ii. the order ID number which is found in the order confirmation email

   The card activation function requires an integration with the same InComm platform used by the existing network of retail merchants throughout the Wasatch front.

   b. **Reload Card** by entering the last 16 digits found on the back of the card.
   c. **Check Card Balance and Activity** by entering the last 16 digits found on the back of the card.

Registered Account Holders

2. Registered FAREPAY account holders use the FAREPAY user web interface to perform the following additional functions:
   a. **Manage multiple cards**.
   b. **Setup auto-reload**.
   c. **Get email alerts for low balances**.
   d. **Put Lost/Stolen Cards On Hold**.
   e. **Transfer balances** between registered cards.
   f. **Nickname your cards** for management ease.

128
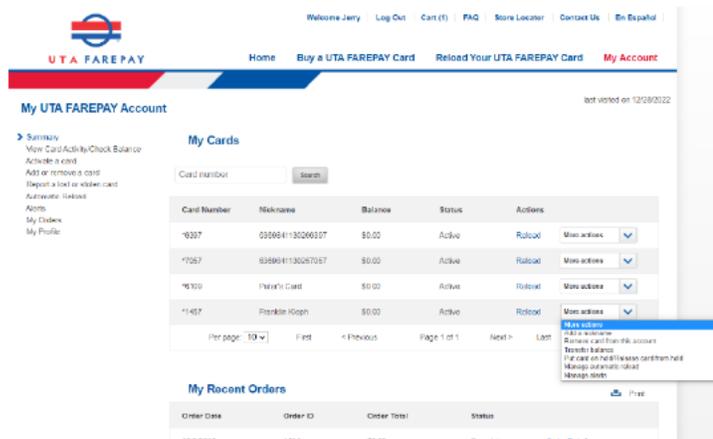
g. **View transaction history details**.

Appendix G – System Transaction Volume

Total ridership for 2018, 2019, 2020, and 2021 was 44.2M, 44.2M, 27.8M, and 24.0M respectively. According to our 2019 onboard survey, more than half of our riders are paying their fares electronically today (54%), the great majority of which are using contactless smartcards issued by 3rd party transit sponsors that fully or partially subsidize fares for their employees or students. The fares for nearly 10% of boardings are paid using the UTA FAREPAY Card (a contactless token to a prepaid, reloadable, closed-loop account in the EFC back office. See the following table for a sales breakdown by sales channel by year:

Revenue Channel	2019		2020		2021	
Contracts	$ 21,372,400.34	40%	$19,292,745	59%	$12,052,467	44%
Farebox	$ 4,147,061.32	8%	$1,227,770	4%	$2,813,240	10%
FAREPAY	$ 4,314,666.67	8%	$1,852,181	6%	$1,785,431	7%
Microtransit	$ 1,260.95	0%	$34,358	0%	$59,707	0%
Mobile Ticket	$ 1,865,224.83	3%	$1,289,044	4%	$1,865,551	7%
Other*	$ 8,698,600.89	16%	$3,776,709	11%	$4,187,350	15%
Pass Sales**	$ 5,293,321.75	10%	$2,585,644	8%	$1,610,652	6%
TVM	$ 7,739,712.49	14%	$2,786,822	8%	$2,812,367	10%
	$ 53,432,249.24		$ 32,845,273.00		$ 27,186,764.31	

* includes VanPool, Flex, and Paratransit
** includes Summer Youth Pass, Monthly Pass, and Tokens

[The following information is based on 2019 data]

CD Updates

Average Daily Requests: 375,000 (includes 1300 active readers)
                                Each response can contain up to 250 records (300 KB)

Usage Data Volume

Average Daily Taps: 105,283 (98% validated online)
Average Daily Trips: 51,512
Average Daily Journeys: 39,206

Inspection Volume

Average Daily Inspections: 7,500 inspection per day

Payment Request Volume

Average Daily Redemptions: 6,555 payment requests

Sponsor Bulk Import Volume

We load anywhere from 35-60 bulk import files from sponsors per day.
Each file can contain 1-1,000,000 (unlimited) records.
Sponsors can load files as often as needed. Schools send files as often as hourly.
Seasonal bulk import ski resorts files can be as large as a 1,000,000 records per ski season.

Institutions

UTA currently has 234 active sponsors. Here is a sample:

Institution Name ⬦	Alias ⬦	Product Name ⬦	Contract Type ⬦	Contract Limit ⬦	Active Card Count
Solitude Ski Resort	Solitude	Bus, Ski, Streetcar, TRAX	SKI	999999	984294
UTA FAREPAY	UTA FAREPAY	FAREPAY	FAREPAY	999999	154970
Salt Lake Convention and Visitors Bureau	SLCVB	14 Day, Bus, Ski Bus, TRAX, Streetcar, FrontRunner	SKI	999999	137056
University of Utah	U of U	Bus, Express Bus, Streetcar, TRAX, FrontRunner	Ed	80000	58103
Brigham Young University	BYU	Bus, Express Bus, Streetcar, TRAX, FrontRunner	Ed	60995	52426
Salt Lake Community College	SLCC	Bus, Express Bus, Streetcar, TRAX, FrontRunner	Ed	30000	28396
Utah Valley University	UVU	Bus, Express Bus, Streetcar, TRAX, FrontRunner	Ed	999999	27345
Snowbird	Snowbird	Ski	SKI	999999	20119
Brighton Ski Resort	Brighton	Ski	SKI	999999	19959
Sundance Ski Resort	Sundance	Ski	SKI	999999	15700
The Church of Jesus Christ of Latter-day Saints	CHC	Bus, Express Bus, Streetcar, TRAX, FrontRunner	ECO Non Profit	999999	11933
Weber State University	WSU	Bus, Express Bus, Streetcar, TRAX, FrontRunner	Ed	20000	11739
Alta	Alta	Ski	SKI	999999	10703
UTA reduced FAREPAY	UTA reduced FAREPAY	Reduced FAREPAY	FAREPAY	999999	10584
UTA Day Pass	UTA Day Pass	1 Day, Bus, Express UpGr, S-Car, TRAX, FR UpGr	Customer Service	999999	6875

Users

UTA currently has 775 active users between UTA employees and sponsors. Role breakdown is as follows:

User Role	Count of Role
Accounting	1
Customer Service	25
Customer Service Admin	7
EFC Operations	14
Institution Admin	288
Institution Rep	433
Marketing Rep	6
Read Only	1
Grand Total	**775**

Appendix H – Service Types & Product Offerings

Service Types (modes)

- Bus
- Express Bus
- Ski Bus
- FrontRunner (commuter rail)
- TRAX (light rail)
- Streetcar (light rail)
- On Demand (being added this year)
- BRT possible future add

Rate Tables

UTA is currently using 6 rate tables

Name ⬍
Full Fare
FAREPAY
Reduced FAREPAY
Test FAREPAY with cap
Reduced FAREPAY 75% discount
Test Reduced FAREPAY with cap

Product Offerings

UTA is currently using 38 product offerings. Here is a sample:

Short Name ⬍	Name ⬍	Description ⬍	Start Date ⬍	End Date ⬍	
5D:RB:XD:SB:SC:TX:FR	5 Day Premium w/ Ski	5 Day Premium w/ Ski	11/10/2021, 00:00:00		☑ ▤
5D:RB:XB:SC:TX:FR	5 Day, Bus, Express Bus, S-Car, TRAX, FrontRunner	5 Day, Bus, Express Bus, S-Car, TRAX, FrontRunner	08/22/2019, 00:00:00		☑ ▤
7D:RB:XB:SC:TX:FR	7 Day, Bus, Express Bus, S-Car, TRAX, FrontRunner	7 Day, Bus, Express Bus, S-Car, TRAX, FrontRunner	08/07/2018, 00:00:00		☑ ▤
RB	Bus	Bus	04/04/2018, 00:00:00		☑ ▤
RB:XB:SC:TX:FR	Bus, Express Bus, Streetcar, TRAX, FrontRunner	Bus, Express Bus, Streetcar, TRAX, FrontRunner	04/05/2018, 06:00:00		☑ ▤
RB:XB:SC:TX:FR:PC	Bus, Express Bus, Streetcar, TRAX, FrontRunner, Pa	Bus, Express Bus, Streetcar, TRAX, FrontRunner, Park City	04/05/2018, 06:00:00		☑ ▤
RB:XBU:SC:TX:FRU	Bus, Express UpGr, Streetcar, TRAX, FR UpGr	Bus, Express Bus Upgrade, Streetcar, TRAX, FrontRunner Upgrade	04/04/2018, 18:00:00		☑ ▤
RB:XB:SC:TX:FR:PC:SB	Bus, Express, S-Car, TRAX, FR, Park City, Ski	Bus, Express Bus, Streetcar, TRAX, FR, Park City, Ski Bus	04/04/2018, 00:00:00		☑ ▤
RB:XB:SC:TX:FR:SB	Bus, Express, S-Car, TRAX, FrontRunner, Ski	Bus, Express Bus, Streetcar, TRAX, FrontRunner, Ski Bus	04/04/2018, 00:00:00		☑ ▤
RB:SC:TX	Bus, S-Car, TRAX	Bus, Streetcar, TRAX	04/04/2018, 00:00:00		☑ ▤
RB:SC:TX:PC	Bus, S-Car, TRAX, Park City	Bus, Streetcar, TRAX, Park City	04/04/2018, 06:00:00		☑ ▤
RB:SB	Bus, Ski	Bus, Ski Bus	04/04/2018, 00:00:00	12/17/2018, 00:00:00	☑ ▤
RB:SB:SC:TX	Bus, Ski, Streetcar, TRAX	Bus, Ski Bus, Streetcar, TRAX	11/17/2021, 00:00:00		☑ ▤
RB:SC:TX	Bus, Streetcar, TRAX no upgrades	Bus, Streetcar, TRAX	08/07/2018, 00:00:00		☑ ▤
RB:TX:FR:SB	Bus, TRAX, FrontRunner, Ski Bus	Bus, TRAX, FrontRunner, Ski Bus	04/04/2018, 18:00:00		☑ ▤

Product Offerings List Q Global Filter   EXPORT

⧏ ◂ 1 **2** 3 4 ▸ ⧐

Appendix I - Station Platform Mounting Template for Current Readers

Any replacement reader must accept mounting, data and power based on the current platform installation template.

UTA Electronic Card Reader Pedestal Mount
Existing Conditions (Not to scale)

M12 Highload safety anchors (Typ.)

PVC Conduit
85 mm dia.
(3.45 in)

PVC Conduit
40 mm dia.
(1.57 in)

110 mm
(4.33 in)

216 mm
(8.50 in)

81 mm
(3.19 in)

110 mm
(4.33 in)

180 mm
(7.01 in)
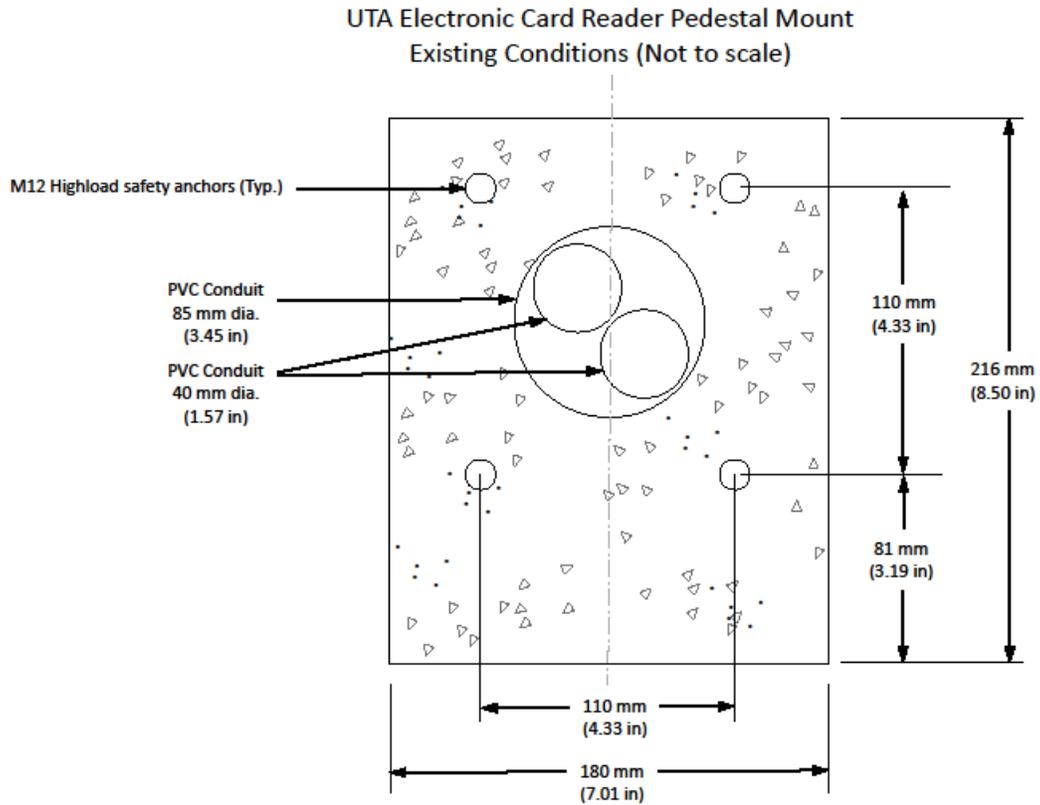
NOTES
- Existing concrete is rated to Bs 5238: 1997 Spec. Type B5 or equivalent
- Field conditions to be verified by vendor

Appendix J – EFC Block Diagram for Buses
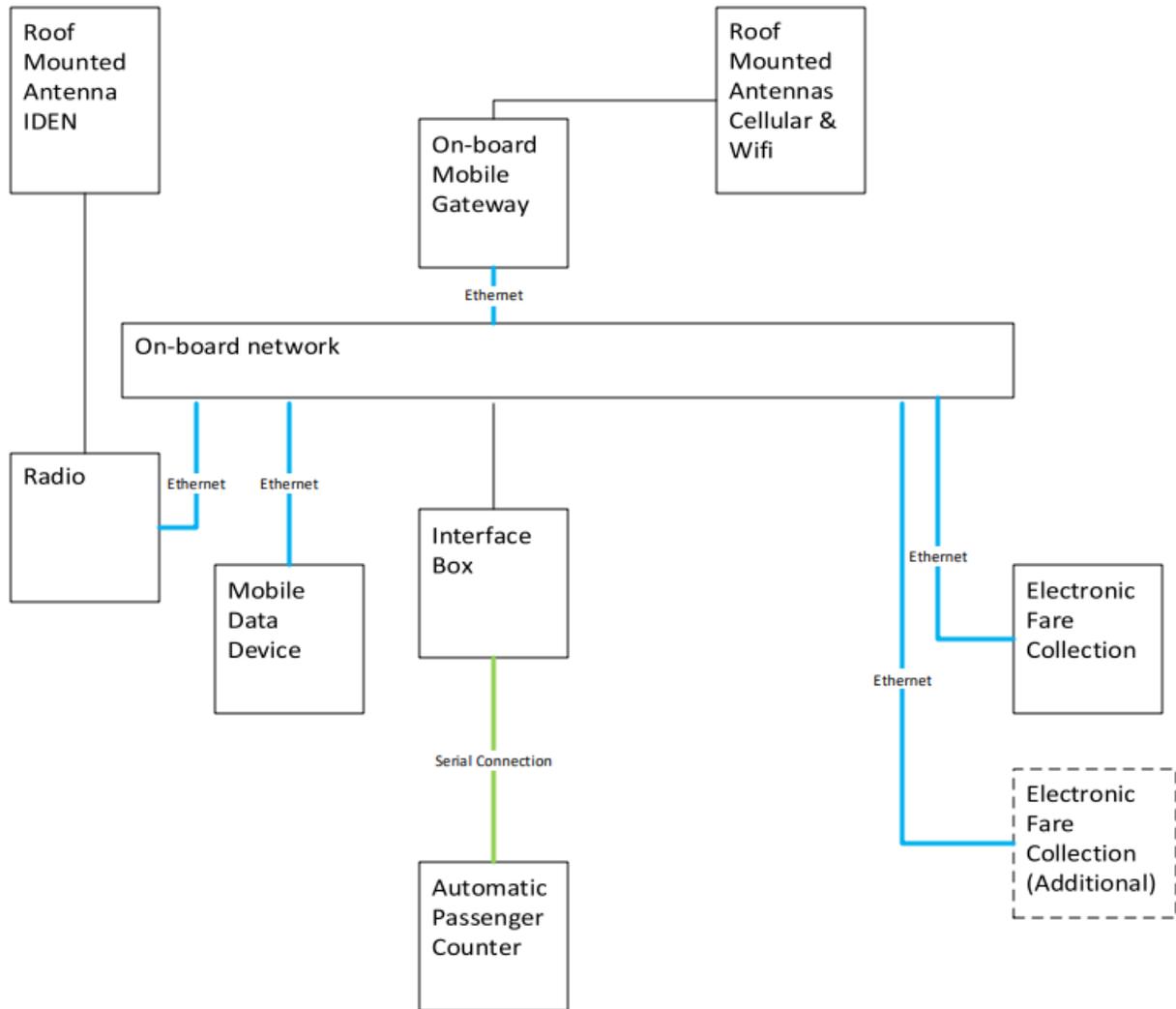
Roof Mounted Antenna IDEN

Roof Mounted Antennas Cellular & Wifi

On-board Mobile Gateway

Ethernet

On-board network

Radio

Ethernet   Ethernet

Mobile Data Device

Interface Box

Ethernet

Electronic Fare Collection

Serial Connection

Ethernet

Automatic Passenger Counter

Electronic Fare Collection (Additional)

UTA IT HARDWARE, SOFTWARE AND ASSOCIATED SERVICES SUPPLY AGREEMENT
UTA CONTRACT 22-03566 NextGen Electronic Fare Collection System

EXHIBIT B:

PRICING and PAYMENT MILESTONES

Exhibit B- Pricing Summary

Item	Pricing	
Section 2: Initial Costs	$ 21,941,687	
Section 3: Variable Ongoing Costs	$ 472,531	
		i
Section 4: Fixed Ongoing Costs	$ 9,757,198	
Total Proposed Cost	**$ 32,171,416**	

Exhibit B- Pricing Assumptions

Hardware Quantities

The specific quantities of validators are not specified in the RFP.

In the Q&A from UTA, the guidance is to assume the following, which we have used for Pricing.

Platform Validators: 130	Based on 1,300 total devices and 130 of which are platform validators
Onboard Validators: 936 on double door buses	Based on 90% of 1,170 bus validators, according to Q&A,
	80% on double-door
234 on single door buses	Based on 90% of 1,170 bus validators, according to Q&A,
	20% on single-door

TVMs: 175

Handheld inspection devices: 90

Retail Network Integration with InComm Payments

Integration costs between the Contractor and InComm have been included in the Pricing.

The Pricing requires that there will be a direct contract between UTA and InComm, which details the transaction pricing between InComm and UTA.

PCI Transaction Fees (P2PE Pricing)

The P2PE transaction fee Pricing calculated in Section 3 (Variable Ongoing Pricing) are based on an example of 850,000 transactions in a year.

Notwithstanding the foregoing, the Pricing that the UTA will be charged by the Contrator will be based on the actual amount of P2PE TVM transactions performed in each year.

Transaction fees for P2PE TVM transactions exclude the acquirer transaction fees, interchange fees, and any other acquirer

 bank or card issuer related fees, which will be chargeable by the aquirer to the UTA (as the merchant of record).

Payment Processing

The Contractor will continue to use Chase as the payment acquirer, with UTA as the merchant of record.

Hardware Installation

The UTA's existing power and data cabling will be reused for platform validators and TVM.

The UTA will provide all cabling on the busses for the validators. If there is any rewiring of the busses that are required to run cables into

the validators, the UTA will be solely responsible for those costs.

Milestones / Payment Milestones

Pricing Payment Milestones for this Exhibit B are defined in Exhibit B.1, Pricing Payment Milestones.

EXHIBIT B.1- PRICING PAYMENT MILESTONES

1. **PHASE 1-4 PRICING TOTAL PRICING**

(*Section 2: Initial Pricing + Applicable Section 3 Variable Ongoing P2PE Pricing)

- **Back Office**: Total Pricing for █████████████████████
- **Fare Validation HW** ████████████████████████████
- **TVM**: Total Price for ██████████████████████
- **Mobile App**: Total Pricing for ███████████████
- **Mobile Inspection Device**: Total Pricing for ████████████
- **Other**: Total Pricing for ████████████
  Total Pricing for ███████████████ $21,941,687.00 USD

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Individual Phase Total Pricing

The Individual Phase Total Pricing is broken out into Payment Milestones as set-out below. All of the Payment Milestones listed are listed for each individual Phase and are to be applied to that Phase only. ██

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Phase 1

- **Payment Milestone 1-** ████████████████████████

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- **Payment Milestone 3-** ████████████████

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Payment Milestone 4- █████████████████████████████

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- <u>Payment Milestone 6</u> ██████████
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<u>TOTAL PHASE 1 MILESTONE PRICING:</u> **$9,905,399.00 USD + Applicable Section 3 Variable Ongoing**
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Phase 2

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TOTAL PHASE 2 MILESTONE ██████████████████████████████████
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TOTAL PHASE 3 MILESTONE PRICING: ████████████████████████
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Phase 4

- <u>Payment Milestone 1-</u> █████████████████████
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TOTAL PHASE 4 MILESTONE PRICING: ████████████████████
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2. ██████████████████████ **Fixed Ongoing Pricing**

(*Section 4: Fixed Ongoing Pricing + Applicable Section 3 Variable Ongoing ██████

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Pricing Payment Milestones in Percent

Project ID reference	Pricing Milestone Payments							
	Phase 1							
	A) Back Office							
	B) Fare Validation Hardware							
	C) Ticket Vending Machine							
	D) Mobile App							
	E) Mobile Inspection Device							
	F) Other							
	Phase 2							
	A) Back Office							
	B) Fare Validation Hardware							
	C) Ticket Vending Machine							
	D) Mobile App							
	E) Mobile Inspection Device							
	F) Other							
	Phase 3							
	A) Back Office							
	B) Fare Validation Hardware							
	C) Ticket Vending Machine							
	D) Mobile App							
	E) Mobile Inspection Device							
	F) Other							
	Phase 4							
	A) Back Office							
	B) Fare Validation Hardware							
	C) Ticket Vending Machine							
	D) Mobile App							
	E) Mobile Inspection Device							
	F) Other							
	Final Acceptance							
	A) Back Office							
	B) Fare Validation Hardware							
	C) Ticket Vending Machine							
	D) Mobile App							
	E) Mobile Inspection Device							
	F) Other							

Note: Project ID references to be filled out during design phase when project plan will be detailed and agreed

			Yes or No
1)	Are merchant fees included in your pricing estimates?		No

Section 2: Initial Pricing

Area	Description (Item, Units, Price, Years)	Category						
		Program Management	Development	Training	Hardware	Installation	Software	Other
A) Back Office								$ -
								-
								-
								-
								-
								$ -
Total		$ 429,960	$ 1,132,420	$ 16,540	$ -	$ 243,730	$ 1,716,540	$ -
B) Fare Validation Hardwa								$ -
								$ -
								$ -
								$ -
								$ -
	6.	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total		$ 396,850	$ 968,990	$ 4,130	$ 3,400,850	$ 1,383,980	$ 138,150	$ -
C) Ticket Vending Machi								$ -
								$ -
								$ -
								$ -
								$ -
	6.	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total		$ 100,550	$ 76,260	$ 12,410	$ 9,099,240	$ 537,250	$ 203,890	$ -
D) Mobile App								$ -
								$ -
								$ -
								$ -
								$ -
								$ -
Total		$ 147,880	$ 212,580	$ 28,607	$ -	$ 4,370	$ 1,059,460	$ -
E) Mobile Inspection Device								
	6.	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total		$ 83,040	$ 27,290	$ 2,790	$ 77,480	$ 10,800	$ 206,230	$ -
F) Other								
	6.	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total		$ -	$ -	$ -	$ 113,040	$ 12,560	$ -	$ 93,820
Grand Total		$ 1,158,280	$ 2,417,540	$ 64,477	$ 12,690,610	$ 2,192,690	$ 3,324,270	$ 93,820	$ 21,941,687

$ 472,531.25

Section 3: Variable Ongoing Pricing

Area	Category	Units	Unit Cost	Total	Year	Description of Units
TVM	Fees					
TVM	Fees					
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TVM	Fees					

$ 9,757,198.25

Section 4: Fixed Ongoing Pricing

Area	Category	Total	Year	Comments
Other	Other	$ 927,185.00		
Other	Other	$ 1,082,100.00		
Other	Other	$ 45,900.00		
Other	Other	$ 23,663.25		
Fare Validation Hardware	Services	$ 222,300.00		
Fare Validation Hardware	Services	$ 222,300.00		
Fare Validation Hardware	Services	$ 222,300.00		
Fare Validation Hardware	Services	$ 222,300.00		
Fare Validation Hardware	Services	$ 222,300.00		
Fare Validation Hardware	Services	$ 24,700.00		
Fare Validation Hardware	Services	$ 24,700.00		
Fare Validation Hardware	Services	$ 24,700.00		
Fare Validation Hardware	Services	$ 24,700.00		
Fare Validation Hardware	Services	$ 24,700.00		
TVM	Services	$ 225,750.00		
TVM	Services	$ 225,750.00		
TVM	Services	$ 225,750.00		
TVM	Services	$ 225,750.00		
TVM	Services	$ 225,750.00		
Mobile Inspection Device	Services	$ 21,600.00		
Mobile Inspection Device	Services	$ 21,600.00		
Mobile Inspection Device	Services	$ 21,600.00		
Mobile Inspection Device	Services	$ 21,600.00		
Mobile Inspection Device	Services	$ 21,600.00		
Other	Software	$ 445,430.00		
Other	Software	$ 445,430.00		
Other	Software	$ 445,430.00		
Other	Software	$ 445,430.00		
Other	Software	$ 445,430.00		
Back Office	Hosting	$ 595,890.00		
Back Office	Hosting	$ 595,890.00		
Back Office	Hosting	$ 595,890.00		
Back Office	Hosting	$ 595,890.00		
Back Office	Hosting	$ 595,890.00		

UTA IT HARDWARE, SOFTWARE AND ASSOCIATED SERVICES SUPPLY AGREEMENT
UTA CONTRACT 22-03566 NextGen Electronic Fare Collection System

EXHBIT C:

HIGH LEVEL PHASED PLAN APPROACH

EXHIBIT C- High Level Phase Plan

UTA IT HARDWARE, SOFTWARE AND ASSOCIATED SERVICES SUPPLY AGREEMENT
UTA CONTRACT 22-03566 NextGen Electronic Fare Collection System

EXHIBIT D: Contractor's Software License

EXHIBIT D:
SCHEIDT & BACHMANN USA, INC. SOFTWARE LICENSE AGREEMENT

Licensee Name:	**Utah Transit Authority**
Licensor Name:	**Scheidt & Bachmann USA, Inc. and inclusive of any rights afforded to its parent company Scheidt & Bachmann GmbH and all of its subsidiaries and affiliate.**
Licensee State:	**UTAH**
Licensee Address:	**669 West 200 South** **Salt Lake City, UT 84101**
Effective Date:	**EFFECTIVE DATE OF CONTRACT**
Licensed Object Code (name, version, and release - list or reference separate schedule, if necessary):	**Intellectual Property and Software (including but not limited to FareGo products) found on Licensor delivered products and equipment, and revisions as identified.**
Licensed Source Code (name, version, and release - list or reference separate schedule, if necessary):	**Source Code related to the Licensed Object Code, to be determined and licensed pursuant to future requests by Licensee.**
Third Party Software (list or reference separate schedule, if necessary):	**All Third Party Software found on or with Licensor delivered products and equipment,** ███████████████ ███████████████ **and revisions as identified.**

This Software License Agreement ("Agreement") sets forth the terms and conditions on which Scheidt & Bachmann USA, Inc. ("Licensor"), a Delaware corporation with offices at 1001 Pawtucket Boulevard, Massachusetts, grants and **Utah Transit Authority** ("Licensee"), accepts, a license as set forth herein to use the Licensed Technology. In consideration of the mutual covenants and agreements set forth herein, Licensor and Licensee agree to all of the provisions of this Agreement, including the provisions of this Cover Page, the Software License Terms and Conditions attached hereto, and any appendices, schedules, and exhibits attached hereto, or documents expressly referenced above or described herein, all of which are incorporated by reference herein, and all of which together constitute the Agreement. Except as otherwise defined herein by general reference to the Contract Documents or by way of direct reference thereto, this Agreement shall take precedence over any conflicting provisions in any other contract or any other agreement between the Licensee and Licensor. Notwithstanding the foregoing, if there are conflicts between the terms of this Agreement and the terms of the Contract, the Order of Precedence of the Contract will prevail. Accordingly, intending to be legally bound, Licensor and Licensee have executed this Agreement as of the Effective Date set forth above.

Utah Transit Authority   **Scheidt & Bachmann USA, Inc.**

By:_____   By:_____
    Name: ███████████████
    Title: ███████████████

SOFTWARE LICENSE TERMS AND CONDITIONS

1. Definitions. For all purposes of this Agreement, the terms defined below, when used with initial capital letters, shall have the following meanings:

(a) "Bit Pattern" means a specific defined bit organization with bit value definitions, containing information regarding the position, organization, grouping, and meaning of different fields in the memory of a fare medium now in existence or developed in the future, including, but not limited to, a smart card or magnetic ticket.

(b) "Change of Control" with respect to a person means a sale of all or substantially all the assets of such person or a merger, sale of stock, or other transaction in which one person or a group of persons acting in concert acquire at least a majority of the equity interests and voting power in such person.

(c) "Contract Documents" means **the "UTA Contract 22-03566" executed on the Effective date of the Contract by and between Utah Transit Authority and Scheidt & Bachmann USA, Inc. including all exhibits as listed and any written mutually agreed changes to the Contract Documents**.

(d) "Cover Page" means the first page of this Agreement, containing information with respect to Licensee and the License, and bearing the signatures of the parties.

(e) "Designated Location" means the UTAH TRANSIT AUTHORITY's service area.

(f) "Documentation" means the standard user manuals and standard operator instructions issued by Licensor in conjunction with the Licensed Object Code and/or Licensed APIs and shall specifically exclude any source code, source code printouts, flow charts, software listings, systems documentation, and programming documentation.

(g) "Effective Date" means the Effective Date set forth on the Cover Page.

(h) "Escrow Agreement" means the Iron Mountain Three-Party Master Escrow Service Agreement (Deposit Account No. **[to be filled in by the parties after executing the Escrow Agreement]**.

(i) "Intellectual Property Rights" means any rights which exist now or shall exist in the future under copyright law, patent law, industrial design rights law, semiconductor production law, data and database protection law, trade secret law, trademark law, and any and all similar proprietary rights, including without limitation, all applications and registrations relating to the foregoing. The term "Intellectual Property Rights" includes such rights as they exist as of the execution of this Agreement, and all such rights as subsequently acquired by a party to this Agreement during the Term. Reference in this Agreement to Licensor owned Intellectual Property Rights, shall also include Intellectual Property Rights owned by Licensor's parent company.

(j) "Interfacing Software" means one or more software applications developed by or on behalf of Licensee solely to interface with and interoperate with Licensor System through the Licensed APIs.

(k) "License" means the license granted by Licensor to Licensee as provided in Section 2.

(l) "Licensee" means the entity identified on the Cover Page as the Licensee.

(m) "Licensed Object Code" means the proprietary computer software program(s), in object code form only, identified as "Licensed Object Code" on the Cover Page, including any maintenance releases, bug fixes, or other changes made to the Licensed Object Code that are delivered to Licensee by Licensor under this Agreement and/or the Contract Documents. **Licensed Object Code shall not include any Third Party Software delivered by Licensor to Licensee for which Licensee must procure a license to use such software**

from the Licensor thereof prior to any use of such software with the Licensed Object Code.

(n) "Licensed Source Code" means the proprietary source code identified as "Licensed Source Code" on the Cover Page, including any maintenance releases, bug fixes, or other changes made to the Licensed Source Code that are delivered to Licensee by Licensor under this Agreement.

(o) "Licensed APIs" means the application program interfaces provided by Licensor to enable interoperability between Licensor System and Interfacing Software.

(p) "Licensed Technology" means the Licensed Object Code, the Licensed Source Code, the Licensed APIs, all rights held by the Licensor with respect the Licensor's System, and the Documentation.

(q) "Licensee's Public Transit System" shall mean the regional public transit system operated by Licensee in **UTAH**, for which Licensor supplies and installs the Licensor System in accordance with the Contract Documents.

(r) "Licensor Proprietary Information" has the meaning set forth in Section 12(b)(i).

(s) "Licensor System" means the **Scheidt & Bachmann Automated Fare Collection System** substantially specified in the Contract Documents and that is to be used as a means of fare collection in the Licensee's Public Transit System.

(t) "Fare Medium Encoding Format End Product" means the encoding Bit Pattern representing the corresponding unique definition of how to apply the Bit Pattern to Licensee's tariff system.

(u) "Term" means the period commencing on the Effective Date and continuing until termination of this Agreement.

(v) "Territory" means the territory of services by the Licensee on the Effective Date.

(w) "Third Party Software" means the software referenced on the Cover Page as Third Party

Software and other software developed by third parties, including standard commercially available software, required to be provided under the Contract Documents and/or this Agreement, and all documentation concerning such software.

2. License.

(a) <u>License Grant</u>. Subject to the terms and conditions of this Agreement, and as of the Effective Date, Licensor grants to Licensee solely within the Territory a non-exclusive, non-transferable, perpetual, limited right and license during the Term hereof as follows:

(i) To install and use the Licensed Object Code in object code form only as delivered pursuant to this Agreement and/or the Contract Documents and consistent with the use limitations of Section 2(c) for the purposes of the operation and use of the Licensor System in conjunction with Licensee's Public Transit System;

(ii) [REDACTED]
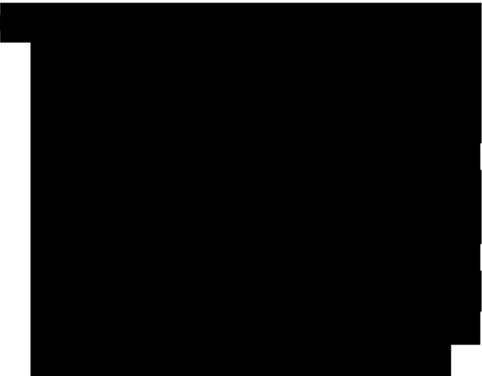
(iii) To make one (1) additional copy of the Licensed Object Code and Documentation for back-up or archival purposes; and

(iv) [REDACTED]

(b) Reserved Rights. Any rights not expressly granted in Section 2(a) are reserved by Licensor. Without limitation of the foregoing, Licensor reserves the right to license the Licensed Technology to others on such terms as Licensor may establish in its sole discretion. Licensee acknowledges that no exclusive right of any kind is granted to Licensee by the terms of this Agreement. Licensee shall promptly notify Licensor of any infringement or violation of Licensor's Intellectual Property Rights that come to the attention of Licensee.

(c) Limitations and Restrictions. It is expressly understood and agreed that the License is subject to the following limitations and restrictions:

(i) Licensee may not use the Licensed Object Code, Licensed Source Code, and/or Licensed APIs except as specified in the Contract Documents, and solely for the purposes of the operation and use of the Licensor System in conjunction with the Licensee's Public Transit System.

(ii) Licensee may not distribute the Licensed Technology, or any copy thereof, by transfer, lease, loan or any other means, or make it available for use by others in any manner, including without limitation by any time-sharing, service bureau or similar arrangement.

(iii) Licensee shall not remove, obliterate, obscure, or conceal the proprietary notices or legends which appear on the Licensed Technology, and shall reproduce such notices or legends on all copies of the Licensed Technology, or of any part of the Licensed Technology, made under Section 2(a)(ii).

(iv)
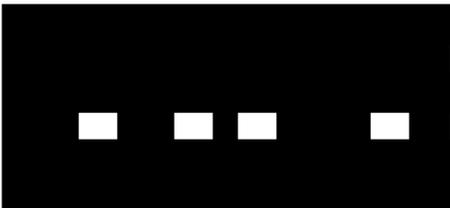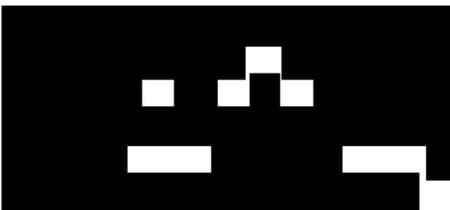
(v)

Licensee may not alter, modify, adapt or create derivative works from the Licensed Technology, and shall further use all due diligence to protect the Licensed Technology from such alterations, modifications, or adaption. Licensee may not, and may not permit any third party to, decompile, disassemble, translate, or otherwise reverse engineer the Licensed Object Code or any part thereof.

(vi) Licensee is required to purchase a separate license for each additional copy of the Licensed Object Code, over and beyond that which is included and purchased under the terms of the Contract Documents. Unless the Contract Documents provide for otherwise, the Licensee is required to purchase a separate license to install the Licensed Object Code in connection with testing or training facilities.

(vii)
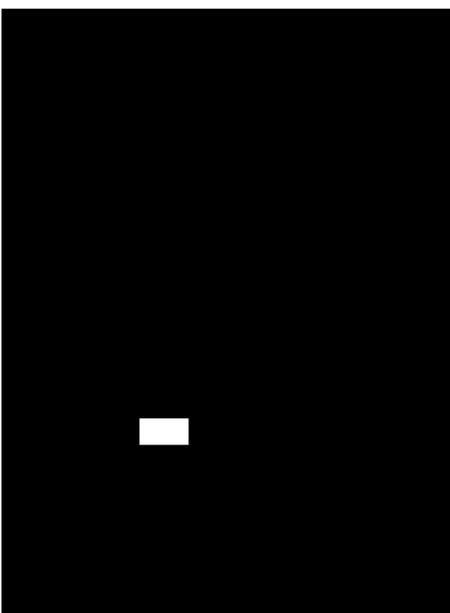
(viii) Licensee shall use the Licensed APIs only to the extent of its documented capabilities as disclosed in the Documentation and/or as otherwise provided for in this Agreement or in the Contract Documents. Licensee shall not use or attempt to use the Licensed APIs in contravention of any applicable law, regulation, or generally accepted practices or guidelines in the relevant jurisdictions.

(ix) Except as otherwise expressly set forth in this Agreement, no other rights in the Licensed Technology are granted. These license terms as set forth in this Agreement shall take precedence over and replace any other license or agreement between the Parties.

3. Delivery and Acceptance. Licensor shall deliver to Licensee the Licensed Technology in accordance with the Contract Documents (including but not limited to the requirements of the mutually agreed to project schedule attached thereto), as may be modified in writing from time to time, and the Licensed Technology shall be deemed accepted by Licensee in accordance with the acceptance and testing procedures adopted in the Contract Documents, as may be modified in writing from time to time.

4. Consideration.

(a) <u>Consideration</u>. In consideration of the License granted under Section 2(a), Licensee agrees to pay any fees mutually agreed upon in the Contract Documents in accordance with the terms set forth therein.

5. Other Obligations of Licensee.

(b) <u>Consulting Services</u>. This license agreement does not provide for any consulting services. Any consulting services provided by Licensor are governed by a separate written services agreement as may be mutually agreed to between the parties, or by the Contract Documents.

documenting software that has been altered by Licensee or by any third party.

(d) **Export Control Compliance**. Licensee understands that the Licensed Technology and the information contained therein are subject to restrictions on export under the Export Administration Regulations of the U.S. Bureau of Export Administration and other applicable laws, in addition to restrictions imposed by this Agreement. Licensee agrees to comply with all such restrictions at all times.

(e) **Notice of Certain Events**. Licensee agrees to give prompt written notice to Licensor if at any time Licensee becomes aware that any person has received, used, or had access to any Licensor Proprietary Information in violation of Licensor's rights therein.
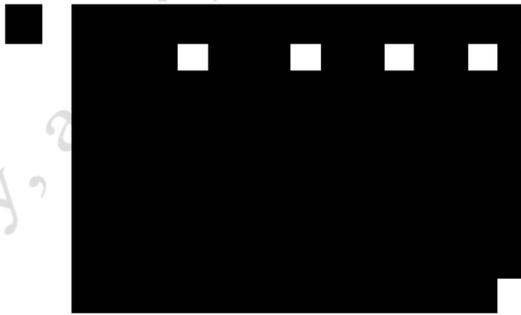
6. Source Code.

(a) **Licensed Object Code**. For avoidance of doubt, the license granted hereunder to the Licensed Object Code is limited to the object code of the software, and no source code for the Licensed Object Code will be provided to the Licensee under this Agreement except as otherwise provided for by the Escrow Agreement or by written mutually agreement between the Licensor and Licensee that grants limited use license terms for Licensed Source Code .
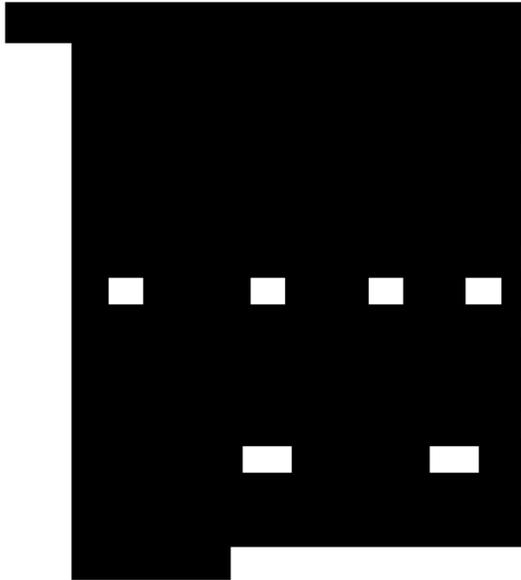
(b) **Source Code Escrow**. Escrow of source code material relating to the Licensed Object Code will be established in accordance with the terms of the Escrow Agreement. Licensor shall not be responsible for updating, maintaining, escrowing, troubleshooting, or
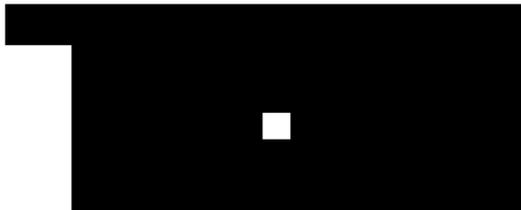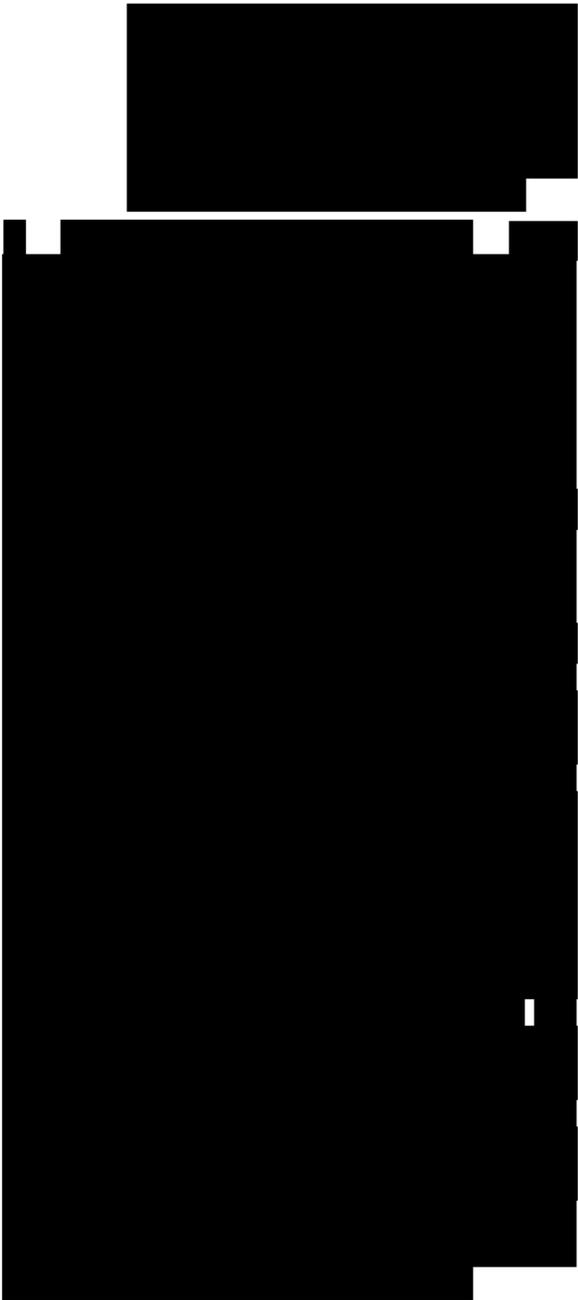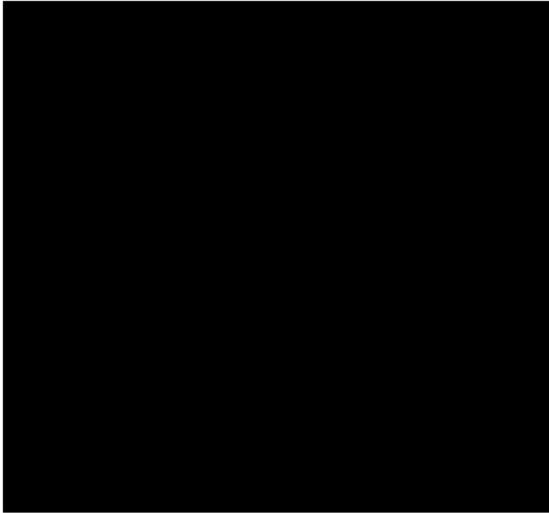
Party Software as part of the Licensor's system or equipment. Use of any Third Party Software shall be subject to the license conditions of the respective third party that owns the Third Party Software. Licensor shall not be liable for damages arising from use of Third Party Software or by Licensee's failure to use Third Party Software in accordance with the relevant Third Party License. Upon request, Licensor shall provide Licensee with evidence of such Third Party Licenses and requisite rights. The number of licenses for Third Party Software is specifically limited to the number required in the Contract Documents. Licensee acknowledges that no Intellectual Property Rights will be transferred to the Licensee in relation to the Third Party Software. To the extent that Licensee requires Licensor access to additional Third Party Software in order to comply with the terms of the Contract Documents or any warranty obligations with respect to the Licensor System, components or related equipment, Licensee shall procure the license to such Third Party Software.

8. Third Party Software.

(a) <u>Third Party Licenses</u>. Licensor shall obtain all requisite licenses to Third Party Software ("Third Party Licenses") as required under the Contract Documents, and Licensee shall make reasonable efforts to procure any other Third Party Licenses, not provided by the Licensor, that shall permit the Licensor to install and integrate the Third Party Software allowing the Licensee to use the Licensor provided Third

(d) <u>Compliance With All Third Party End User License Conditions</u>. Licensee hereby acknowledges and hereby agrees to comply fully with any and all end user license conditions of Third Party Licenses, including without limitation the Oracle and Microsoft end user license conditions, and agrees to indemnify and hold harmless the Licensor from any claims, losses, or damages, whatsoever, resulting from or caused by Licensee's and/or Licensee's sub-licensees' failure to comply with any applicable end user license conditions for Third Party Software or with any third Party Licenses.

(e) If Licensee wishes to modify its use of any Third Party Software, differing from that originally required under the Contract Documents, it is the responsibility of the Licensee to obtain any corresponding licenses from the provider of the Third Party Software.

9. No Warranties. Licensor warrants to Licensee that:

i) Licensor owns the Licensed Technology or is otherwise authorized to grant Licensee a license; and,

ii) Licensee's use of the Licensed Technology pursuant to this Agreement is not an infringement of any third party's intellectual property rights. Licensee's exclusive remedy for any breach of this infringement warranty shall be to invoke

the provisions of section 11(a) of this Agreement.

Save and except for the foregoing and the Licensor's obligations during the ISLA and SLA periods, the (a) Licensor does not make any express or implied warranties, conditions, or representations to Licensee, any of its affiliates or any other party with respect to the Licensed Technology or any services provided hereunder or otherwise regarding this Agreement, whether oral or written, express, implied, or statutory. Without limiting the foregoing, any implied warranty or condition of merchantability, or fitness for a particular purpose are expressly excluded and disclaimed to the fullest extent allowed by law; and (b) Licensor does not warrant that the Licensed Technology will meet the Licensee's requirements or expectations, or that the Licensed Technology will operate uninterrupted or error-free, or that all Licensed Technology errors will be corrected.

10. Related Services. Except as otherwise provided for in the Contract Documents, this Agreement does not provide for the performance of any installation, training, customization, support, maintenance or other services with respect to the Licensed Object Code and/or Licensed APIs. Licensor shall have no obligation to provide, and Licensee shall have no right to receive, any such services except as may be provided in a separate mutually agreed to written agreement between the Licensor and Licensee, and any services performed by Licensor for Licensee or at Licensee's request shall be subject to such separate mutually agreed to written agreement.

11. Indemnification.

(a) <u>By Licensor</u>. Licensor shall defend or settle any third party suit or proceeding brought against Licensee based upon a claim that the Licensed Object Code and/or Licensed Source Code directly infringes any existing and valid U.S. copyright, patent, trademark or trade secret in the United States (any such suit or proceeding, a "Claim"), provided that Licensee: (i) promptly notifies Licensor in writing of such Claim (ii) promptly gives Licensor the right to control and direct the investigation,

preparation, defense and settlement of such Claim with counsel of Licensor's own choosing (provided that Licensee shall have the right to reasonably participate, at its own expense, in the defense or settlement of any such Claim); and (iii) gives assistance and full cooperation for the defense of same. This indemnity does not extend to any suit or proceeding based upon alleged infringement of any patent, copyright, trade secret, by the combination of any product or software provided by Licensor with other elements added thereto by Licensee or third parties, nor does it extend to any alleged infringement arising out of compliance with Licensee's specifications, designs, or instructions, or use of Licensee-furnished components that are outside the scope of the Contract Documents. Subject to Licensee's compliance with the foregoing requirements and further subject to Section 11(c) below, Licensor shall pay damages and costs awarded by a court of competent jurisdiction against Licensee in such Claim or amounts payable pursuant to a settlement agreed to by Licensor, but in no event shall Licensor be liable for any cost, expense or compromise incurred or made by Licensee without Licensor's prior written consent. If any Licensed Technology is in the opinion of Licensor likely to or does become the subject of a claim of infringement, Licensor may, at its sole option, procure for Licensee the right to continue using the Licensed Technology, modify the affected materials to become non-infringing, or replace it with non-infringing Licensed Technology that meets the obligations of the Licensor under the Contract Documents. Notwithstanding the foregoing, the foregoing defense and indemnity obligations shall not apply to any Claim based upon or arising from (a) use of the Licensed Object Code and/or Licensed Source Code by Licensee in a manner for which it was not designed or not in accordance with applicable Documentation, (b) any modification of the Licensed Object Code and/or Licensed Source Code by any party other than Licensor, (c) any use of the Licensed Object Code and/or Licensed Source Code in combination with hardware or software not provided or authorized by Licensor, or (d) use of the Licensed Object Code and/or Licensed Source Code when use of a subsequent software release which Licensor has made commercially available would have avoided such infringement, provided that Licensee was notified about such a software release that would remedy a potential infringement. Licensor shall have no liability whatsoever for any use Licensee makes of the Licensed APIs and/or the Interfacing Software.

(b) By Licensee. Licensee hereby agrees to indemnify Licensor, and hold it harmless, against any actual loss or damage that is suffered by Licensor, and any substantiated claims that may be made against Licensor by a third party, as a direct result of the use by Licensee of the Licensed Technology other than as expressly contemplated by this Agreement, or of any breach of Licensee's covenants herein. Notwithstanding the foregoing, the Parties acknowledge that UTA's indemnity obligation is subject to the limitations of the Utah Governmental Immunity Act.
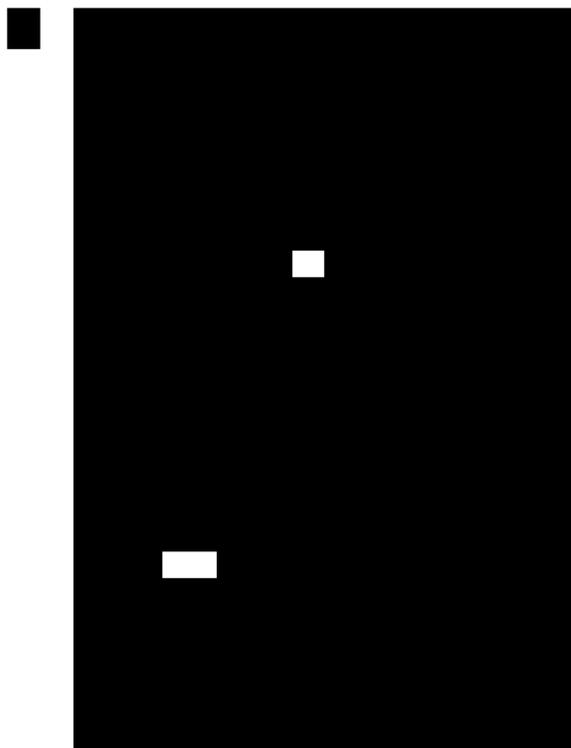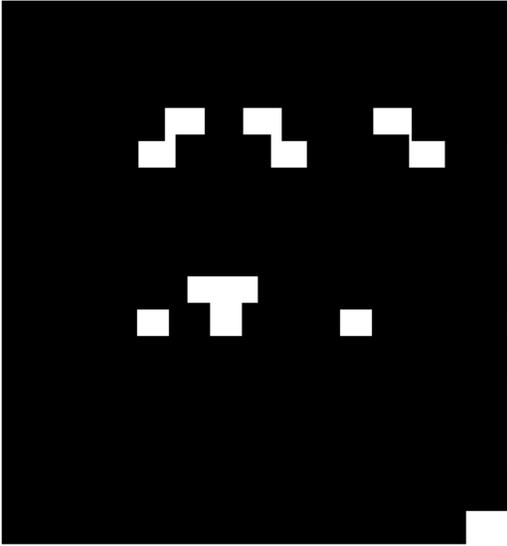
12. Proprietary Rights and Confidentiality.

(a) <u>Proprietary Rights</u>. The Licensed Technology and all proprietary rights therein, including without limitation any and all copyrights, patents, trademarks, and trade secret rights with respect to any of the Licensed Technology, shall be and remain at all times the property of Licensor, and Licensee shall have no right, title or interest therein except as expressly provided herein. The foregoing shall also apply to any derivative works of or improvements to any of the Licensed Technology that are made either by Licensor or by Licensee, or by any person under contract to either of them. Licensee agrees to assign, and does hereby assign, to Licensor any right, title or interest which it may have or obtain in any derivative works of the Licensed Technology which it has developed or may in the future develop, and will upon Licensor's request execute and deliver such instruments of transfer and other documents to effect, complete and confirm such assignment. The Licensor and Licensee acknowledge that the Licensee has legal obligations under the Utah Government Records Access Management Act, and the Licensee agrees that it will not take any action to jeopardize, limit, or interfere with Licensor's proprietary rights and will notify the Licensor of any request under GRAMA so the Licensor may object to such request. Licensee agrees not to remove, deface,

diminish, or obscure in any way, any proprietary notices of ownership, copyright notices, logos, and trademarks that are contained on or in any of the Licensed Technology.

(b) <u>Confidentiality</u>.

(i) For purposes hereof, "Licensor Proprietary Information" shall mean (A) the Licensed Technology and any and all information with respect thereto, and any and all derivative works of the Licensed Technology, and (B) any other information that is disclosed by Licensor to Licensee under or in connection with this Agreement that may be reasonably understood, from legends, the nature of such information itself or the circumstances of such information's disclosure to be confidential and ./ or proprietary, in oral, written, visual, electronic or other form, provided that "Licensor Proprietary Information" shall not include any such information that (1) is generally known to the public or in the trade, or becomes so generally known without breach of this Agreement by Licensee; (2) is shown by written record to have been known to Licensee without restriction of confidentiality prior to its disclosure by Licensor hereunder; or (C) is disclosed to Licensee without restriction of confidentiality by a third party who is not in breach of an obligation of confidentiality to Licensor in making such disclosure.

(ii) Licensee acknowledges that the Licensor Proprietary Information constitutes trade secrets and proprietary information of great value to Licensor. Subject to Licensee's legal obligations under the Utah Government Records Management Act and Licensee notifying the Licensor of any request under GRAMA so the Licensor may object to such request,, Licensee agrees tol keep confidential the Licensor

Proprietary Information and all copies or physical embodiments thereof in its possession, and shall limit access to the Licensor Proprietary Information to those of its personnel who (A) have a demonstrable need for such access in connection with Licensee's use of the Licensed Technology as permitted by this Agreement and (B) and who are bound by confidentiality obligations reasonably equivalent to the provisions of this Section 12(b). To the extent that Licensee is subject to a subpoena, governmental administrative process, or other judicial process, calling for disclosure of Licensor Proprietary Information, Licensee shall object to such disclosure on the ground of this Agreement and, unless otherwise restricted by law or judicial order, provide prompt notice to Licensor within five business days of receiving the subpoena, or other judicial process. Unless within 30 days of service of such notification Licensor applies for a court order precluding compliance with the subpoena or judicial process, Licensee shall be free to disclose the information as required. But if Licensor applies for such a court order, then Licensee shall not disclose the information unless the court rules otherwise. If such protective orders or other remedies are not obtained, the Licensee will disclose only that portion of the Licensor Proprietary Information which the Licensee is legally compelled to disclose, only to such person or persons to which the Licensee is legally compelled to disclose.

(iii) Licensee shall not seek to reverse engineer, reverse assemble or decompile any part of the Licensor Proprietary Information in an attempt to discover any of the proprietary algorithms or techniques or other trade secrets of Licensor embodied therein or used in the development thereof,

and Licensee shall not allow any of its personnel or Licensees or any other person to do so.

(iv) Licensee shall not use any part of the Licensor Proprietary Information in any manner other than as expressly authorized under this Agreement or otherwise in writing by Licensor.

(v) Licensee shall secure and protect the Licensor Proprietary Information and any and all copies thereof in its possession through security measures at least as protective as those used by Licensee to maintain the security of its own proprietary source code and information of a similar nature and value, and in any event no less than a reasonable degree of security.

13. **Term and Termination.**

(a) Term. The term of the License and of this Agreement shall commence upon the Effective Date and shall continue until termination of this Agreement.

(b) Termination. In the event of the occurrence of any of the following: (i) if Licensee violates the confidentiality provisions of this Agreement, or uses, reproduces, distributes or sublicenses any of the Licensed Technology in any manner not authorized by the License granted herein; (ii) if Licensee assigns, attempts to assign or is deemed to have assigned this Agreement contrary to the provisions of this Agreement; (iii) if Licensee fails to observe or perform any term or condition of this Agreement and does not cure such failure within 30 days after written demand by Licensor; (iv) if Licensee makes a general assignment for the benefit of creditors, or files a voluntary petition in bankruptcy or for reorganization or arrangement under bankruptcy laws, or if a petition in bankruptcy is filed against Licensee and is not dismissed within 30 days after the filing, or if a receiver or trustee is appointed for all or any part of the property or assets of Licensee, Licensor shall be possessed of the following

remedies: (1) If the Contract Documents have not expired or been earlier terminated in accordance with their terms, then Licensor may seek relief through the dispute resolution provisions contained within the Contract Documents or injunctive relief in a court of competent jurisdiction; and 2) If the Contract Documents have expired or been earlier terminated in accordance with their terms, then Licensor may terminate this Agreement in whole or in part by written notice to Licensee. This Agreement shall terminate: (v) if both parties sign a mutual agreement to terminate this Agreement; or (vi) the Licensor System or Licensed Technology supplied to Licensee is permanently discontinued from use, with no reasonable expectation that the same will continue to be used at a later date.

(c) Rights and Obligations on Termination. Upon any termination of this Agreement the License granted under this Agreement shall terminate, and Licensee shall immediately cease all use of the Licensed Technology and return to Licensor all copies, notes, memoranda, and other tangible embodiments of Licensor Proprietary Information in its possession or under its control, or destroy all such tangible embodiments and certify such destruction in writing to Licensor. Upon such termination, all rights and obligations of the parties under this Agreement shall cease except that (i) Licensee shall remain obligated to make any payment due or to become due under this Agreement; (ii) Licensee' obligations under Section 12(b) shall continue and survive such termination; and (iii) the provisions of Sections 1, 5, 6, 7, 8, 9 and 10, 11, 12, and this Section 13(c) shall remain in effect.

(d) The termination of this Agreement or any license shall not limit either party from pursuing any other remedies available to it, including injunctive relief.

14. **General.**

(a) Entire Agreement. This Agreement contains the entire understanding of the parties about the terms of the Licensed Technology and Licensor System. Subject to the Contract Documents, the Agreement supersedes and replaces all prior or contemporaneous understandings or agreements, written or oral, regarding such subject matter, and prevails over any conflicting terms or conditions contained on printed forms submitted with purchase orders, sales acknowledgments or quotations.

(b) Amendment. This Agreement may not be amended or modified, in whole or part, except by a writing signed by duly authorized representative of both parties.

(c) Waivers. No provision or part of this Agreement or remedy hereunder may be waived except by a writing signed by a duly authorized representative of the party making the waiver. Any such waiver shall be narrowly construed to apply only to the specific provision and under the specific circumstances for which it was given, and shall not apply with respect to any repeated or continued violation of the same provision or any other provision. Failure or delay by either party to enforce any provision of this Agreement will not be deemed a waiver of future enforcement of that or any other provision.

(d) Relationship of Parties. Nothing in this Agreement shall be construed to place Licensor and Licensee in an agency, employment, franchise, joint venture, or partnership relationship. Neither party will have the authority to obligate or bind the other in any manner, and nothing herein contained shall give rise or is intended to give rise to any rights of any kind to any third parties. Neither party will represent to the contrary, either expressly, implicitly or otherwise.

(e) Assignment; Change of Control. Licensee may not assign this Agreement, or sublicense, transfer, sell, assign, or distribute any of the rights granted herein, in whole or in part, without the prior written consent of Licensor, which consent may be withheld at the sole discretion of Licensor.

For purposes of the foregoing, a Change of Control with respect to Licensee shall be deemed to be an assignment, and shall give rise to Licensor's right to terminate this Agreement. Any attempt by Licensee to assign or transfer any of the rights, duties or obligations of this Agreement without Licensor's consent shall be null and void.

(f) Severability. In the event that any provision of this Agreement is found to be unenforceable, such provision will be reformed only to the extent necessary to make it enforceable, and such provision as so reformed will continue in effect, to the extent consistent with the intent of the parties as of the Effective Date. If any provision or part of this Agreement will, to any extent, be or become invalid, illegal or unenforceable, the remainder of this Agreement will continue in effect, and every other provision of this Agreement will remain valid and enforceable to the full extent permitted by applicable law. In such event, the invalid or unenforceable provision shall be reformed only to the extent necessary to make it enforceable, and such provision as so reformed will continue in effect, to the extent consistent with the intent of the parties as of the Effective Date.

(g) Remedies. The remedies provided herein are cumulative, and may be exercised either successively or concurrently. The parties acknowledge that any breach of the conditions and restrictions contained in this Agreement may cause irreparable harm to a party, and/or third parties, and that monetary damages would not be adequate protection in certain cases. It is therefore agreed that any party affected by any such breach may seek injunctive or other equitable relief, as appropriate, from a court in the event of such breach.

(h) Force Majeure. Neither party shall be liable to the other party for failure or delay in performance of any obligation under this Agreement, directly or indirectly, owing to war, acts of terrorism, natural disasters, embargoes, riots, strikes, and other events beyond its control. In the event that such

failure or delay occurs, the affected party shall notify as soon as possible the other party of the occurrence thereof, and the parties shall negotiate in good faith a fair resolution to the failure or delay in performance.

(i) Notices. All notices under or related to this Agreement will be in writing and will reference this Agreement. Notices will be deemed given when: (i) delivered personally; (ii) sent by confirmed telecopy or other electronic means; (iii) three (3) days after having been sent by registered or certified mail, return receipt requested, postage prepaid; or (iv) one (1) day after deposit with a commercial overnight carrier, with written verification of receipt. All communications will be sent to the addresses set forth on the Cover Page or such other addresses designated pursuant to this Section 14(i).

(j) Governing Law. This Agreement is made under and will be governed by and construed in accordance with the laws of the State of Utah, without regard to its conflict of laws principles, and specifically excluding from application to this Agreement the United Nations Convention on the International Sale of Goods.

(k) Jurisdiction. Any legal proceedings under or related to this Agreement shall be subject to the exclusive jurisdiction of the state and federal courts of competent jurisdiction located in the State of Utah. Each party submits to the personal jurisdiction of, and waives any objection against jurisdiction by, such courts.

(l) Counterparts. This Agreement may be executed in two or more counterparts, each of which will be deemed an original, but all of which will constitute but one and the same instrument.

SCHEIDT&BACHMANN

APPENDIX 2(a)

Software License Appendix 2(b)

UTA IT HARDWARE, SOFTWARE AND ASSOCIATED SERVICES SUPPLY AGREEMENT
UTA CONTRACT 22-03566 NextGen Electronic Fare Collection System

EXHIBIT E:

SERVICE LEVEL AGREEMENT

Exhibit E will be incorporated no later than Phase 1 Final System Acceptance.