The Major Business Issues in Establishing and Operating Regional Transportation Payment Systems and Clearinghouses

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Abstract- This document identifies and provides options for resolving key issues in establishing regional transportation payment systems and clearinghouses. Different solutions will, however, evolve over time as such payment systems expand and mature.

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Introduction

This paper was prepared by the Business Process Work Group of the UTFS Task Force's (Universal Transit Farecard Standards) Financial Management Committee. This Task Force operates under the auspices of APTA (American Public Transportation Association).

The task force mission is to develop a series of documents that provide guidance to the transit industry on creating open architecture payment environments that enable the integration of independent payment systems and promote greater access and convenience to the public transportation network.

This paper utilizes input from transit agency staff, vendors, and consultants as well as the experiences of various regional payment systems in the U.S. and abroad.

This document provides a concise overview of the major business issues involved with forming and operating regional payment systems and clearinghouses and provides transportation agency staffs with some alternatives for addressing these issues. This document does not intend to resolve all aspects of these issues, only to identify key considerations for addressing them.

APTA Intellectual Property Policy and Procedures, as applicable to the UTFS program, protect all documents prepared under the auspices of the UTFS Task Force.

1. Overview

This document identifies and provides options for resolving key issues in establishing regional transportation payment systems and clearinghouses (CH). Different solutions will, however, evolve over time as such payment systems expand and mature

2. Key terms- Terms utilized in this paper are defined in the UTFS glossary which can be found on the APTA UTFS web site.

3. Original agreement provisions

In addition to all the normal provisions of such agreements, the original agreements to form a regional payment system should include the following provisions which can be easily overlooked:

- – Sale of assets

- – Mergers with other regions

- – Changes in the structure of the CH or Regional Service Center (RSC)

- – System liquidation

Procedures should exist so that, if the system is unsuccessful or subsequent developments materially modify its function, an orderly shut down can occur. These procedures should address residual assets and/or debt distribution. Systems usually base residual asset and debt allocation on share in ownership or the amount of capital an entity contributes.

4. Funding

The original agreement should also address funding, including provisions for obtaining necessary start-up capital, replacing or upgrading equipment and systems in the future due to depreciation or technical obsolescence, and raising additional capital in the future if needed due to unanticipated events.

Participating agencies may agree to fund specified amounts over the first several years to cover start-up costs. An outsourced vendor could cover certain initial capital expenses, depreciation, obsolescence, or upgrade expenses. It may not be politically feasible to make subscription to future capital calls binding, unless the original agreement enumerates certain amounts and limits.

Provisions should be made for obtaining alternative sources of funding if all owners do not respond to a request for additional funds.

5. Governance structure

A strong governance structure is essential for the effective operation of a regional payment system. Normally, the agencies that are forming the regional processing system hold an extended series of meetings to develop a governance model and make appropriate legal agreements. A large agency may take the lead in this process, so long as this large agency is sensitive to the needs of smaller members. Often, a consultant or facilitator will assist in this effort.

It is important to realize that this is a political process with all parties concerned about a potential loss of control. There is no single right answer, and protracted negotiations are often necessary to come up with a solution tailored to that specific region's needs.

It is critical that the staff of all the agencies (and particularly the larger agencies) keep their boards continuously informed about the progress and direction of the negotiations so that there is strong buy-in for the proposed solution.

The governance structure is affected whether or not a regional payment system operates the clearinghouse directly or outsources its operations. Payment systems that outsource most of their system operations have simpler management structures and less staffing needs. Payment systems that perform a more direct role in operations need more staff. Section 5.4.1.2 discusses the pros and cons of managing the regional payment system/ clearinghouse directly, versus outsourcing.

5.1 Ownership

5.1.1 Legal ownership structures

Potential legal structures for establishing a regional payment system include:

– Joint powers authority

– Memorandum of authority

– Special purpose corporation

– Compact organization

– Corporation with shares held by operators

– Single operator as the owner

There is no single approach that is preferable. Legal advice about applicable local laws is essential. The political dynamics of the area and the respective sizes and contributions of participating operators determines the legal form a region should adopt. The legal structure the region adopts should be flexible enough in its agreements for easy modification so that the structure can change and grow as the system evolves. Subsequently approved rules and regulations should govern the normal operation of the system.

5.1.2 Ownership allocation

Participating agencies should have overall control of the regional payment system (RPS). Regional system ownership is typically allocated between participants based on the capital each participant contributes to the system.

The governing board of the RPS should operate the clearinghouse (CH) and/or the regional service center (RSC) either directly or through outsourcing. Typically, the board selects a company that specializes in regional payment system operations to run the CH/RSC under board supervision. The roles of the CH and RSC are described in section 6.0.

5.1.3 For-profit or non-profit?

Regional payment systems are usually non-profits since public transportation agencies are responsible for organizing them.

However, assuming state law permits such activities, it could be organized as a for-profit corporation if the organizers felt that this structure would better support their goals.

5.1.4 Private company ownership

Depending on respective state laws, a private company could be one of the owners of the regional payment system. Conflicts may result from this type of venture, however, if public and private owners do not have common objectives. Nonetheless, involving a private company or companies as owners may reduce the capital requirements for participating agencies, create incentives for further additional investment, and generate new revenue sources from private sector applications.

5.1.5 Owner authority and responsibilities

Owners should only vote on major issues. Otherwise, the governing board should set and enforce policy.

Examples of major decisions that could require owners to vote include:

– The merger or liquidation of the regional system

– A substantial change in the role of the payment system that was not anticipated in the original plans

– A major, unanticipated capital call

– A change in the by-laws

– Withdrawal of an existing member

– A major new brand initiative

5.2 The Board

5.2.1 Size

It is important that the board be large enough to represent a diverse section of the membership, yet not so large as to make decision making cumbersome.

5.2.2 Composition

Typically, each participating transportation agency has one seat allocated to it on the board. However, if the system has a large number of participants, the size of the board may become cumbersome, making this type of allocation unfeasible. In such cases, the smaller agencies might, as a group, select a fixed number of board members. Larger agencies that commit larger resources to the regional system may have two or more board seats allocated to them.   This arrangement could, however, raise concerns for smaller agencies that the larger agencies may dominate. If the larger agencies have only one board member, granting them special voting provisions for major decisions that materially impact operating or capital costs and service levels (such as a change in the bylaws or a CEO selection) could protect their interests . Such decisions could require a

super majority or a vote weighted by capital contributions, revenue, or number of riders.

5.2.3 Selection of board members

Participating agencies nominate board members whom the current Board then approves. It is very unusual for a Board not to approve an agency's nominee. It is, however, beneficial for agencies to specify a proposed board member's qualifications for participating.

5.2.3.1 Chair selection

The Chair of the Board is a policy-level position and is generally not a full-time employee of the regional system. This person may be an employee of one of the member agencies.

The regional payment system's CEO has the daily responsibility of insuring compliance with the Board's policy decisions, managing the internal functions of the system, and supervising contractors. One person can serve as both the Chair of the Board and the CEO, although having two separate individuals for these jobs is preferable.

The board members elect the Chair. If a single agency orchestrates the formation of the regional payment system, the Chair is often from that agency, at least for an initial period. It is beneficial for the Chair to be a rotating position among the participating agencies.

5.2.3.2 Selection of additional officers

The Board may elect additional officers such as a Vice-Chair, Treasurer, and Secretary.

It is beneficial to select alternate board members to fill in for regular members who are unavailable to attend specific meetings.

5.2.4 Term limits

A board member's term should be 2-3 years in length. Shorter terms prevent board members from achieving appropriate levels of board experience. Longer terms may lead to a lack of receptiveness to new approaches. Term limits insure an infusion of new thinking into the management of the regional system. However, removing key individuals that were instrumental to forming and running the regional system from the board may not be desirable or politically appropriate, making term limits politically unfeasible for such systems.

5.2.5 Voting requirements

The following list contains possible voting requirements for decision-making:

– Majority vote

– Super majority vote such as two-thirds approval (for key issues)

– Unanimous vote

– Majority vote with larger agencies having a veto power

– Number of votes based on size of the participants (e.g., number of riders or revenue)

Participating agencies should agree on which voting requirements to use. Voting parameters should protect the interests of both the large and small agencies. The voting policies regional systems opt to use varies depending largely on the size-range of the participants, but one vote per board member with a majority rule is preferable for most issues. Universal consent or high super majority voting requirements can paralyze decision making and should only be used for a limited range of issues.

5.2.6 Authority of the Board

The board should have the authority to enter into contracts and make all normal decisions necessary for running the system. If the regional payment system has not yet been established as a separate legal entity, it may be necessary for one of the member agencies to enter into contracts on behalf of the Board.

5.2.7 Board committees

The Board should have a number of standing committees suitable to the business requirements of the region. The Board should implement only the minimal number of committees necessary to cover the system's needs in order to reduce time commitments for board members. Board committees should develop broad policies, but should not become involved in the daily operations of the system.

The following list contains examples of possible committees:

– Finance Committee (clearing, settlement, funds movement, reporting, audit, funds pool management, record keeping, etc.)

– Infrastructure and Operations Committee (including vendor management)

– Administration/ HR Committee

– Security Committee

– Nominating Committee

– Marketing/Public Relations Committee

– Membership Committee

–   Customer Service Committee

–   Policies & Procedures Committee

–   New Business Opportunities Committee

–   Strategic Planning Committee

–   Standards Committee

5.3 Membership

Transportation agencies which initiate the formation of a regional system need to establish rules for initial membership and for expanding membership in the future. Membership is a specified form of participation in the regional payment scheme that may be different than ownership, which may be limited to the original funding organizations.

If the operation of the CH/RSC is outsourced, the vendor is responsible for running the CH/RSC as stipulated in the contract. Under these circumstances, membership may allow some form of participation in the oversight of the vendor's compliance with the contract terms.

5.3.1 Rules for initial membership

Initial membership is usually limited to transportation agencies, transportation planning agencies, or governmental entities involved in transportation that serve the region. After the approval of all necessary documents and the funding plan, the process usually includes a subscription period during which eligible organizations could join. If appropriate in a given region, the system could attract private capital by making some form of membership/ownership available to non-transportation entities. London uses such a model.

5.3.2 Membership categories

There can be different classes of members depending on criteria such as when the member joins the system, the size of their funding contribution, number of riders, or rider revenue. Classes of membership may have different voting rights, board participation, and financial responsibilities.

5.3.3 Rules for adding new members

The governing board should designate a committee or task force to make recommendations for soliciting and adding new members. The Board approves all new members. In order to encourage agencies to join during the initial subscription period, members that join after this period may have less governance participation rights and/or pay higher initiation fees upon joining.

5.3.4 Certification for new members

There should be a rigorous certification process that all members and service providers must pass to operate in the system. This process should insure that there is no disruption of service when a new member or service provider joins the system. A similar certification plan is necessary to insure that any changes or upgrades to the system also do not disrupt operations.

5.3.5 Cost responsibility for adding new members

There is usually a standard fee schedule for new members or non-member participants that join the system. These fees are designed to recover the costs of implementing new members, including any incremental capital investment, and may be deliberately set at attractive levels to encourage participation. Any incremental costs these fees do not recover are allocated to the participants using standard allocation formulas.

5.3.6 Member agency authority

It may be necessary for board members to consult with the management of their respective member agencies before voting on major business decisions, particularly those involving a material change in direction. However, in order to insure prompt decision making, individuals on the Board should be at such a level in their organization that they can vote on most matters without prior consultation.   Circulating detailed agendas and Board minutes within each agency in advance should allow for a consensus to be reached on major decisions within an agency before a board meeting.

5.4 Management/operations

Either a facility established and owned by the payment system, an operator, or an outsourced entity will operate the CH/RSC.   The system can revisit this decision when the term of any outsourcing agreement expires.

5.4.1.1 In-House model

If the CH/RSC is run internally by the system, the system must obtain all the requisite hardware and software necessary for running the system and must recruit the staff to operate it.

The reasons for managing the system in-house include:

- Already has the operational expertise and system resources (generally through a large operator with a pre-existing program)
- Greater degree of direct control over various aspects of the project
- Processing the transactions through a transportation industry facility
- Shift some costs to the capital budget rather than the operational budget
- Interest in servicing other payment consortium to generate revenue

- Regulatory concerns over control of transportation funds, privacy, etc.
- More of a fixed cost model where marginal costs might be lower once adequate volumes are achieved
- Timelines are not dependent on a vendor's other commitments or capabilities

5.4.1.2 Outsourcing- operator as manager model

If the regional system has a large operator with a pre-existing multi-agency system, the capacity, and the operational expertise, this operator could run the regional system through its own facilities.

In choosing this sort of arrangement, the payment system must be sensitive to the smaller operators' potential concern over dominance. The payment system should evaluate this type of relationship as an outsourcing alternative to be reviewed along with proposals from other vendors.

5.4.1.2.1 Outsourcing- third party-as-manager model

If the regional system wishes to outsource and does not have any members equipped to run the system, a third party can be utilized. Reasons for outsourcing these activities include:

- o Obtaining the expertise that might not be available within the membership
- o Lower initial capital investment since a vendor would be responsible for acquiring the hardware, software, computer center, etc.
- o Vendor would be responsible for obtaining the staff
- o Economies of scale if the vendor processed several regional programs through the same systems
- o Greater speed to market if the vendor has established similar systems previously and was able to execute its commitments expeditiously
- o Greater political cover in case delays arise if a qualified vendor is selected
- o Shift some costs to the operational budget rather than the capital budget
- o More of a variable cost model

Outsourcing criteria

Different regions may use different criteria for evaluating vendors although some commonalities in the vendor review process exist. The following list cites some possible criteria for vendors:

- – Expertise in regional payment system operations

- – Track record on similar projects

- – Quality of their personnel

- – Size of personnel

- – Pricing

- – Functionality of their solution

- – Capacity to be interoperable with other payment systems

- – Flexibility to meet future requirements

- – Degree to which the vendor's solution inhibits the system's ability to switch vendors in the future

5.4.1.3 The Chief Executive Officer

The CEO should have all the powers necessary to supervise the business on a daily basis. If the CH/RSC operations are outsourced, the CEO is distinct from the individual at the vendor with responsibility for daily operations activities. The CEO would monitor the compliance of the vendor and its manager with the terms of the contract. The Board selects and removes the CEO. The vendor selects the manager of the outsourced operation with input from the Governance Board in order to insure a harmonious working relationship. A majority vote is preferable for electing a CEO in order to preclude delays in selecting management, although some form of veto or super majority may be necessary in order to achieve consensus when initially approving these criteria. The Board should approve all major policy decisions and not intrude in the daily operations of the system under ordinary circumstances.

5.4.1.4 Staff

The staff of the regional system should provide the CEO with the necessary resources for supervising the regional payment system, including the management of vendors and outsourcing relationships. The CEO should have the authority to hire and fire staff based on Board approved budget parameters. The CEO normally consults with the Board prior to making major staff decisions. The system should utilize the smallest sized staff required to fulfill its responsibilities.

5.5 Auditor

The CH/RSC and all participants should be subject to written audit requirements.

Normally, a qualified independent firm(s) which the Board of the payment system approves annually performs a third party financial and operational audit on the CH/RSC.

The Board of the payment system should stipulate audit requirements for individual participants. The participants usually prepare this required information as part of their normal annual audit. The specified forms are sent to the appropriate party at the regional payment system for review. These forms may require written signatures from an officer(s) of the participant and its independent auditors.

6. Functions Performed by a Regional Payment System

Section 6 of this document lists the functions performed by regional payment systems... The regional payment system can be viewed as the entity that is responsible for both the governance and the operation of a regional transportation payment system.

The function of the CH is to provide the regional system with clearing, settlement, and the associated financial reports and management information. When the CH begins to offer additional services, it may more accurately be described as a "regional service center" (RSC) rather than a "clearinghouse." However, since a considerable overlap can exist between these two functions, there may not be a clear distinction between the two. The roles of regional service centers and clearinghouses listed herein may be distributed among multiple service providers if cost savings or enhanced service justifies the overhead of managing multiple vendors.

A critical decision in the formation of the regional payment system is the degree to which its operations are outsourced or performed directly by the staff of the payment system. If most of the operations of the payment system are outsourced, the main responsibility of the governing board of the payment system is to set policies and ensure they are implemented. This implies a relatively small staff at the governing level. If the regional payment system decides to perform more functions directly, rather than through contracted services, it needs a commensurately larger staff.

6.1 Primary functions

6.1.1 Funds pool management

6.1.1.1 Funds pool management

If the region has a single card issuer, the payment system's managing board usually designates funds pool management to the CH. If individual agencies are card issuers, such agencies may manage their own funds pool.

Funds pool cash should be invested on each business day unless the foregone income from not investing on a daily basis is minimal. Funds may be invested using a sweep

account. The payments system should establish an Investment Policy for how funds are managed. An independent funds manager, such as a bank, may be utilized to execute this policy.

If the CH maintains the funds pool, contractual parameters should be established specifying how to handle this process.

Legal requirements for managing funds of the regional system must be determined. Legal requirements may vary within different jurisdictions. Depending on the laws of the respective states and the risk management parameters established by the governing body of the regional payments system, it may be appropriate to require that invested funds be collateralized to provide added security.

Settlement in a multi-issuer model is more complex and can involve multiple funds pools, but such an approach potentially allows an operator to process its cardholders' transactions, on its own system, completely within its own system, avoiding external fees.

In a multi-issuer model, only transactions requiring inter-agency settlement might go to the CH. Agencies pursuing this model would assume more responsibility for activities such as reporting.

6.1.1.2 Earnings, expense, and loss allocation

Allocations for Funds Pool: If the regional system maintains a single funds pool, the system should allocate the funds pool earnings, expenses, and any losses on the funds pool among the card issuing agencies based on an equitable formula. Developing a formula for equitable allocation is difficult and can be a very politically charged process. There are no clear-cut resolutions. However, the easiest solution is to utilize the revenue or rider activity by each agency within the regional payment system, using monthly activity by riders as data.

If each agency issues its own cards and maintains its own funds pool, the system does not need an earnings allocation formula for the funds pool. The card issuing agency is generally responsible for funds pool losses on cards that it issues. This is the norm in the banking industry.

Allocations for Card Activity: In a single issuer system, the regional system allocates card-oriented losses and expenses to the operators based on either the funds pool formula or a special formula it derives specifically for card-oriented activity. (Special formulas may have to be developed for other unique categories of losses.) The operator of the card acceptance device may be held liable, under the operating rules of the system, if the loss was due to negligence in servicing their equipment or not following payment system procedures.

In a multi-issuer system, the regional system may allocate such losses to all agencies based on the system formulae or to the card-issuing agency. For regions covering

multiple states, the escheat laws for each state must also be reviewed. (Escheat laws cover the disposition of abandoned property, such as unredeemed value on a card). If the state escheat laws allow it, unredeemed funds could be allocated to the operators based on the same formula used for funds pool earnings and losses.

Abandoned funds can be ascertained from expired cards that have balances that are not transferred to a new card within a stipulated time and cards that have not been used for a specified time period.

Allocations for Regional Costs: Regional fees, losses and other expenses can be allocated to the participants based on the same formula used for funds pool earnings and losses. Special formulae may, however, have to be developed to cover the allocation of unique cost categories. .

The allocation of costs associated with losses could include items such as:

– Bad check losses and associated fees

– Credit card reversals and associated fees

– Costs for fraud detection, control, and prosecution

– Administrative overhead for managing loss prevention

Allocating Costs for New Products or Services: Many proposals for new products and services may generate offsetting revenue. The regional system could allocate the costs of modest projects on the same basis as all other costs. Funding major new projects may require a special allocation formulae and approval process due to the magnitude of the funding required.

Some new services or activities that involve public transportation may be eligible for state or federal funding.

6.1.2 Settlement

Settlement is the process of moving funds among the participants accepting common fare media for fare payments. Settlement occurs between the transit funds pool and the transit operators. Settlement also occurs between entities selling the fare products and a transit funds pool account.

Two major processes occur within settlement: (1) accounting for funds flows and (2) distribution of funds. Accounting is the process that allocates funds to all the parties which may include sellers of fare products, transit operators and the CH processor. The process typically occurs daily.

Distribution of funds is the actual movement of money. This is typically done using a wire transfer or Automated Clearinghouse (ACH) transaction. ACH transactions are in

effect electronic checks processed by the banking system. The movement of funds can occur daily, weekly, monthly or anytime the participant(s) agree upon.

Examples of settlement activities include:

- Transferring funds on a daily basis between participants to compensate for fare payments, and/or purchases. Includes also the daily transfer of funds between participants to compensate for value loads by one participant's cardholders on another participant's system.

- Periodic transfer of funds related to earnings on any central funds pool.

- Periodic payment of fees for services provided by the CH or RSC.

- Handling reversals for transactions that should not have been posted.

6.1.3

6.1.3.1 Timing of settlement

In the early stages of a regional program, it may be feasible to move settlement funds on a weekly or monthly basis, but as volume increases this can make reconciling funds more difficult. It is preferable to move money on all business days when financial markets are open. When handling settlement on a business day basis, funds from weekend activity are moved the following Monday. Holiday activity is posted on the next business day. In most cases, participants need reporting data that breaks out daily activity for weekends and holidays. Moving funds on a business day basis is the preferred long-term solution.

The settlement day can either be from midnight to midnight or a settlement cut-off can be tailored to the specific needs of the region.   The cut-off time indicates when the settlement data moves to the next business day.   For example, depending on a participant's timetable, a 2 AM cut-off may allow collections for the previous day's bus activities, whereas a midnight cutoff may not. Multiple cut-off times might be permitted in order to meet the business needs of individual participants. If payment devices are not polled for activity every business day, as a result of hardware problems or low activity levels, their activity settles on the business day the data is collected (even if the activity actually took place on an earlier business day). Since it is operationally impossible to settle all devices at a specific time, payment devices need to be settled at various times within a business day. Due to these restrictions, each device's activities are recorded according to the business day its activities are settled on and not by the actual business cut-off (such as midnight) for the entire regional system.

Examples of activities that settlement may cover include:

- Inter-agency rides within the region

- Riders utilizing transit systems outside the region (where a business agreement exists between the two regions)

- Loads funded from bank accounts or cash

- Use of transit purses at merchants. (A transit purse has a dollar value which can be redeemed for services or products as opposed to the purchasing of a certain number of rides during a specified time period.)

- Expense allocations for the CH/RSC and other expenses of the regional payment system (including third party fees such as bank loading fees)

- Agent commissions

- Subsidy collections and allocations

- Collection of any revenues derived from third parties

- Funds pool earnings and abandoned funds (fund not utilized on a card)

6.1.3.2 Movement of funds

The CH handles banking transactions required for settlements. The CH can transmit settlement entries to one settlement bank if participants maintain individual accounts at this bank. This approach requires each participating operator to open and maintain an account at the same bank. Alternatively, the CH can settle using wire transfers or by storing each participant's bank routing and transit numbers for Automated Clearinghouse (ACH) entries (which are like electronic checks). Wire transfers can be expensive but are processed immediately. ACH entries are economical, but are not processed on a same day basis. Utilizing ACH entries seems the most cost effective solution for most programs. With ACH entries, participants can use an existing account or open a new account at their current bank to receive the payment transfers. Having an account that is dedicated solely to settlement simplifies the process and is recommended. However, additional bank fees are often charged for opening and maintaining a separate account. These fees may not be justified for an agency generating limited regional activity. Some jurisdictions may have legal requirements that specify the geographical location of a public agency's bank and may require a public bidding process for bank accounts.

Where a regional payment system has a single card issuer, each agency receives payments to compensate for the usage of their facilities, but all payments for the purchase of electronic transit cash or multi-agency ride plans are centralized in the central funds pool. The funds pool is then used to pay the agencies for rides. Agencies may negotiate with other participating agencies for discounts, causing certain transactions to settle at a different value than what is charged at the point of payment.

6.1.3.3 Reversals and charge backs

Common types of reversals/charge backs include:

– Incorrect consumer charges (such as double posting)

– Inter-agency adjustments to reflect resolution of disputed transactions between agencies

– Adjustments for disputed load transactions adding value to the card

The resolution of reversals, charge backs, and other frequent adjustments between participants should be performed online through the normal settlement process. These actions may be performed manually offline while volume is low but provisions should be made in the contract with the CH vendor to eventually move to an online solution.

6.1.4 Rules and regulations

The regional payment system should establish a method for adopting, maintaining, and modifying rules and regulations (RR) that govern the network's operation.

6.1.4.1 Creation of RR draft

The regional payment system (RPS) should organize committees or work groups to develop rules and regulations for the RPS operations. These committees should have broad representation from the operators and include CH/RSC staff who are actively involved in the areas that the rules and regulations are to cover. CH/RSC staff may create the initial draft for RR's that are highly technical. The regional payments authority and its vendors should agree on service levels in order to insure compliance with relevant RR's.

6.1.4.2 Adoption and modification

The governing board or management group that contracts with and oversees the operation of the CH/RSC typically approves the RR's. Approval of RR's does not require unanimous consent, except for perhaps a very limited number of key business issues that would materially impact the cost of operations or the delivery of services. A majority vote is sufficient for most issues. The governance section of the organization agreement between the participants should include such consent requirements. If a transit agency operates the CH, that agency should be a key contributor in developing the RR's. However, the governing entity for the regional payment system still has final approval of the RR's.

6.1.4.3 Circulation

The RR's should be available online or on CD. It may, however, be necessary to make a paper document available.

6.1.4.4 Compliance rules

The organization or enterprise agreement between participants should include provisions for enforcing the RR's (compliance rules). The RR's will evolve over time as participants gain experience in how regional systems function. Provisions to insure that participants comply with the RR's may include inducements or penalties such as:

– Payment of any costs incurred by the system or its members for non-compliance

– Fines proportionate to the issue

– For more serious matters, suspension of certain member privileges (such as voting rights on the governing board)

6.1.5 Security

6.1.5.1 Key management

Key management is critical to the security of a smart card system. Keys are the secret codes that are utilized by complex mathematical formulas to encode or secure data. The UTFS glossary provides a more extensive definition of the terms involved with key management. A UTFS document will be available discussing security issues in great detail.

There may be several security layers for a smart card depending on the relationship between the clearinghouse, card issuer(s), and application owners.

Each application on the card may have its own key management scheme.

6.1.5.2 Managing Security Application Modules (SAMs)

Each regional system must decide whether it wishes to check keys in software or use hardware devices known as SAMs. SAMs are considered more secure but can involve significant additional expenses. The owner of the device or a third party designated by the owner of the device would manage the SAMs in compliance with the security rules of the payment system.

6.1.5.3 Fraud prevention

Fraud prevention is an essential role of the CH, but it requires close coordination with all participants for developing and implementing rules and procedures. Security and fraud prevention detects, remedies, and/or prevents attempts to penetrate, attack, or defraud any facet of the system.

6.1.5.4 Fraud investigation

The CH or any other party that handles customer service for the regional payment system

usually handles fraud and loss investigations that involve a patron's use of an inter-agency card. The customer service entity requests any requisite information from the card issuer and terminal operator. Agency staff and/or local police may assist in more serious investigations.

6.1.6 Reports

6.1.6.1 Report responsibility

The CH typically generates settlement and analytical reports that require inter-agency data since the CH is responsible for capturing and storing such data. However, participants may supply supplemental data such as attempted fraud activities. Agencies may generate reports for activities for which they hold the necessary data, such as maintenance data within their system and cardholder ridership activity on their system. The CH and participants are responsible for maintaining an archiving schedule for essential data, such as information on financial transactions and settlement that must be retained for long periods. Agencies and other participants generate internal reports to reconcile with the CH and to cover areas where the CH does not have the requisite data, such as terminal malfunctions.

6.1.6.2 Types of reports (online/offline)

Reports that are available online are preferable to microfiche or paper reports so that users can download requisite reports to their own systems. The CH should supply pre-formatted reports to balance and settle the system and standard MIS. Users should also be able to download data to their own systems via the web in order to prepare reports that meet their individual business needs.

6.1.6.3 Frequency of reports

The CH should prepare reports that impact settlement daily and performance and analytical reports either weekly or monthly, depending on user needs.

6.1.6.4 Report data

6.1.6.4.1 Settlement report

Some examples of settlement reports:

– Amounts of financial transactions

– Dates of financial transactions

– Time of day of financial transactions

– Method of funding for the loads

– Inter-regional activity

– Inter-agency ride activity within the region

– Card activity at merchants

– Fees

6.1.6.4.2 Analytical report

Some examples of analytical reports:

– Operating system performance (availability, throughput, etc.)

– Investigations

– Management information (e.g., ridership statistics)

– Inventory controls (e.g., card stock)

– Equipment performance and maintenance schedules

– Fraud and other security issues

– Exceptions (suspicious transactions, refunds, reversals, charge backs, etc.)

– Service provider performance vs. service level agreements

– Help desk volume and associated response times/ resolution rates

6.1.7 Change management

Every system must have rigorous and fully documented change management policies for the CH/RSC and all participants in order to maintain quality service. The CH/RSC change management procedures should cover all material changes and all levels of system upgrades, including test plans for such activities, and should complement the operators' existing change management procedures.

The system should determine fees for certification and testing, if appropriate, and may need to issue fines for non-compliance with change management policies in order to insure the system's operational integrity. The certification process should cover:

– New equipment

– Adding members

– New services or applications

– New card types

– Changes to the IT links throughout the system

6.2 Additional functions

6.2.1 Card base management

The CH/RSC, third party card bureaus, operators, or a combination of such parties can manage the card base.

Card base management includes:

– Card production and distribution

– Management of the registered cardholder database

– Initializing and activating cards with the transit application

– Ensuring that customer service mechanisms exist that can track and resolve issues.

If the system expands to deploy open systems with multi-application/multi-issuer models that utilize a number of card platforms, card base management may also include:

– Qualifying, certifying, and monitoring the introduction of new card platforms

In a multi-issuer system, each issuer or its agents performs these foregoing activities, although there may be some group buying arrangements to reduce costs through volume discounts.

6.2.1.1 Card design

a) An outside design firm presents design concepts for the cards

b) CH staff and a committee of operators review the designs

c) The governing board gives final approval of design

6.2.1.2 Card graphics in the multi-issuer model

The multiple-issuer model enables different agencies to have different card graphics for branding. This gives agencies more control over the product than with the single-issuer model but may increase costs and necessitate a common logo that informs consumers where the transportation application can be used. Having different graphics on each operator's card could reduce brand recognition for the regional payment system and limit commercial revenue opportunities from non-transportation uses of the card or

advertising. Purchasing standardized cards at higher volumes can substantially reduce costs.

6.2.1.3 Regional brand and graphics management

The governance rules of the region should include provisions for managing the regional system brand and graphics. A committee made up of operators should manage the regional brand and graphics with input from CH/RSC staff. The governing board should approve major branding decisions. .

6.2.1.4 Card stock acquisition

The CH typically manages card stock acquisition unless a large operator can obtain greater price discounts due to its volumes and prior vendor relationships. Cards are acquired from a card manufacturer.

6.2.1.5 Card production/initialization

Card manufacturers supply cards to card service bureaus which stock inventory, respond to distribution orders, print, personalize, initialize, encode, and ship cards.

6.2.1.6 Card issuance

The card issuer is the legal entity that owns the card and controls which services the card offers. The card issuer can be a transportation agency or group of agencies. Transportation agencies can also enter into an agreement with a partner/contractor who owns the card (as in London). One or more third parties specializing in card creation and consumer distribution, such as financial institutions or the CH/RSC, may assist the card issuer.

6.2.1.6.1 Single issuer model

In the single issuer model, card management is centralized. A single party, such as the CH, another third party, or a large operator, is responsible for handling the mechanics of card issuance; not the individual agencies. Utilizing the single issuer model for a regional transportation system lowers costs but may cause agencies to perceive a loss of control or identity.

6.2.1.6.2 Multiple issuer model

In the multi-issuer model, individual transportation agencies may take responsibility for card issuance. Third parties with unique expertise or cost advantages may also be involved. Each issuer (or its agent) typically has its own card stock, distributes the cards, maintains a database as needed, and addresses customer problems. This provides issuers with greater control over the product and customer service than the single issuer model. However, this model creates more work for the individual agency since it now acts as a card issuer. Settlement is more complex in this model since settlement must reflect the

activity of multiple card issuers (like the credit card world). Unless the issuers are very large, the cost is usually higher than the single issuer model. This model best suits participants that require a great deal of product differentiation from that of other issuers.

Multiple issuers automatically exist if banks, retailers, or other third parties issue multi-application cards with a transit application. Such issuers may issue these cards themselves or utilize third party card bureaus. Such multi-application cards might offer additional services, such as loyalty plans on the card.

The multiple card issuer model is the norm for banking systems.

6.2.1.6.3 Financial institutions as card issuers

The Regional System can seek bank participation to help increase payment usage within the transportation system and the number of cards in use. In this scenario, banks absorb the cost of card issuance and may also provide loading facilities. This may enable transportation agencies to reduce their role in card issuance. Transit agencies must still, however, provide suitable fare media for riders that don't wish to use bankcards. Consumers may also see a benefit in carrying one card that performs multiple functions.

Some banks may have an interest in placing transportation applications on their cards to increase the card's attractiveness to consumers. In the early stages of a regional system, banks may be willing to pursue such a program for the marketing advantages that it provides, even if it generates no income. Banks' primary focus at this time may be loading transportation value to accounts...

Unfortunately, due to the small size of most individual ride payments, many banks do not consider asking consumers to pay for individual rides through a credit or debit account economical. Also, banks may seek to charge transit agencies fees when customers use bank cards for transportation payments. Such an arrangement can still benefit all parties if the savings in card issuance and maintenance costs and loading expense sufficiently offsets such bank fees. However, since bank participation in regional transit systems is a relatively new concept in the U.S., banks may find it difficult to assess the benefits of such relationships.

6.2.1.6.4 Third party load agents

Third party load agents are non-transportation agencies such as merchants or banks that are capable of reloading transit purses or applications on cards. Third parties may act as both card issuers and load agents. Load agents should be located near transportation facilities such as bus stops or stations. Systems should review the financial integrity of potential load agents and closely monitor them to minimize fraud risk. Load agents are valuable supplements to transportation-operated load facilities, particularly for bus systems that lack convenient ticketing locations near bus routes.

Load agents usually charge t a transaction fee or ask for a percentage of each transaction

for providing loading services. The amount of the fee varies among regions. Some merchants may sell paper or magnetic media without fees, but ask for fees for inventorying and dispensing smart cards due to the task's greater complexity. Merchants may be more flexible on fees if the customer traffic that load activity generates helps increase their sales.

In single card issuer programs, regional systems usually allocate the load costs to the participating agencies based on their normal expense sharing formulae. In multi-issuer systems, systems may allocate fees (such as load agent fees, and regular bank fees for credit, debit, or ACH transactions) to the participating agencies based on the normal expense sharing formulae or allocate them to the card issuing agency. Regional systems can also charge consumers service fees as part of load transactions once they become accustomed to the benefits of using advanced payment media and autoloads. It is probably not feasible in the early stages of a new program to charge fees when consumers are being asked to use a new type of payment media. In addition, the operator may consider this form of payment to be less expensive in the aggregate than alternative fare media and may not want to inhibit card usage through such fees.

6.2.1.7 Card distribution

The CH/RSC often handles phone, mail-in, and Internet card orders.

Agencies that have relationships with merchants for distributing magnetic or paper media may utilize and manage such merchant channels.

Operators can also make cards available through dedicated card sales locations, third parties, ticket windows, and unattended card vending/reloading devices.

6.2.1.8 Card recycling

Systems can recycle cards that are in good physical condition and do not utilize signature panels or any other form of personalization. This can reduce litter in stations from used cards that no longer have value. However, the system should closely analyze the costs of a card recycling program to ensure that cost savings takes place.

There are currently minimal opportunities for third parties to remanufacture used cards for other purposes.

6.2.1.9 Customer service

Customer service addresses any type of inquiry that impacts patrons that utilize the inter-agency transportation services.

This section focuses on the responsibilities of a central staff group that responds to patron issues pertaining to the regional payment program and assumes that operators retain responsibility for customer service for areas not involving the regional payments

program. This section does not address the customer service functions of operator staff. The CH/RSC should provide a separate customer service group that responds to inquiries from agencies and other participants, such as merchants. This group should have comparable procedures, standards, and tracking capabilities to those features outlined for a consumer service area.

6.2.1.9.1 Centralized customer service

Each region must evaluate the merits of centralized customer service versus having the agencies perform customer service.

6.2.1.9.1.1 Advantages

Centralized customer service has several potential advantages including cost reduction and the creation of a service group with more expertise in addressing regional payment issues than individual participant agencies (since this would be its primary function). In addition, patrons can rely on a single customer service number that covers inter-agency payments for the entire region. The CH/RSC, a large agency in the system, or another third party that specializes in customer service could fulfill the function of centralized customer service.

6.2.1.9.1.2 Disadvantages

Centralized customer service also has disadvantages including the potential for agencies to loose control over interactions with their patrons and increased fees paid to the regional payment system for the operation of centralized customer service. Also, many questions that initially come to a central number may need to be routed back to an agency.

6.2.1.9.2 Providers outside the region

Customer service providers located outside the region could handle customer service. Using such a provider for centralized customer service may be economically beneficial, but an agent from outside the region may have less personal knowledge of the transportation system than an agent from inside the region. There are also political considerations in employing customer contact personnel located outside the area, particularly in terms of providing local jobs.

6.2.1.9.3 Allocation of responsibility

A given region may elect to centralize almost all customer service at the CH/RSC (or another third party) or may allocate certain questions between the CH/RSC and the operators. The region should maintain a central customer service number to address customer issues and should attempt to resolve as many questions as possible without referring callers to an agency in order to minimize customer inconvenience. If the CH/RSC cannot immediately answer the patron's inquiry, it may need to request

information from participating agencies or route the patron to the customer service area of an operator. Rather than giving the customer another number to call, the CH/RSC should be linked to the customer service department of the operators and have the capacity to transfer calls directly to them. The CH/RSC may also need to contact a supplier for help in resolving issues involving potential defects with individual cards.

A computerized link between the centralized service bureau and the customer service departments of the agencies can help to facilitate data flows between the CH/RSC and the operators. If there is a major service disruption that may trigger customer calls, a message should be broadcast to all central and operator customer service agents. There should be an automated tracking system for logging all customer inquiries and monitoring their disposition.

Operators should also be able to transfer calls directly to the CH/RSC.

6.2.1.9.4 Policies and procedures

Written policies and procedures for customer service within a regional payment system should identify the roles and responsibilities of the centralized customer service area and the agencies. These procedures should stipulate time frames for resolving customer inquiries and possibly penalties for failure to meet the stipulated requirements. Written timelines are particularly important for identifying the turnaround for customer service information requests. If response times are not adequate and result in a loss, the party not responding within set timeframes may need to absorb any loss resulting from the subject transaction. An appeals process should also be available for both the consumer and any agency that is asked to absorb a loss.

6.2.1.9.5 Customer fees

Operators may charge patrons a fee or deposit when issuing a smart card for the added convenience the card provides to the customer and to help cover the additional costs the operator incurs from issuing smart cards. However, operators may choose not to charge a fee or deposit in the early stages of a smart card program until patrons are familiar with the service.

The use of a deposit or fee may encourage the consumer to safeguard the card more than with a free card and will discourage riders from getting multiple cards. Requiring deposits also reduces the risk of incurring a loss if the system allows patrons to incur negative balances to complete rides.

6.2.1.9.6 Balance protection

The system can provide balance protection for lost, stolen, or damaged cards. Regional systems typically offer balance protection only if a database identifies the card as belonging to a specific individual.

There must be sufficient time for terminals to collect transaction data before they can determine the redeemable balance.

Since resolving claims with balance protection can be a time consuming process, operators may wish to charge patrons an extra fee for cards that carry this protection. Balance protection then becomes a form of insurance. Balance protection should limit each patron to a small number of claims to limit fraud attempts.

Balance protection is a valuable incentive for patrons to convert from a magnetic or paper product to a smart card.

Some bank card programs involving electronic cash do not maintain cardholder information, and do not offer balance protection due to high potential for fraudulent reimbursement claims.

6.2.1.9.7 Charge for replacing lost or stolen card

Operators can charge fees to replace lost or stolen cards to help cover the costs of replacing cards. Whether or not to charge fees for lost or stolen cards is a policy question. Typically, systems charge for lost/stolen cards if they charge a fee or deposit for new cards. The fee should be large enough to encourage consumers to safeguard their cards.

For bank-issued cards, the bank may elect to charge fees for issuing, replacing, and loading value onto cards. There may be an opportunity for the agencies to share in portions of those fees.

6.2.1.9.8 Investigation of disputed or suspicious transactions

The CH/RSC and the operators should identify and report suspicious transactions and have a process for investigating and resolving any transactions that impact passengers within a specified amount of time. Exceptions to the set timeline may be necessary for atypical occurrences. Patrons should also bring potential problem transactions to the attention of the CH/RSC or an operator.

6.2.1.9.9 Card registration

The names and addresses of card holders can be maintained on a central data base for management information purposes and to support balance protection for lost, stolen, or damaged cards. Adequate security procedures must, however, be instituted to protect the privacy of consumers. Maintenance of such a data base is an expensive and resource intensive effort and should be supported only if sufficient business benefits are determined. These costs can, however, be offset by fees paid by consumers at card issuance, non-refundable deposits, or the earnings on deposits. Each region must decide whether it wants to support card registration and balance protection. If the transit application is located on a bank issued card or autoloads are permitted, the card will be

registered to a specific individual. .

6.2.1.9.10 Database maintenance and access

The card issuer or its service provider maintains records of card use data, which may include customer specific information.

Operators maintain records pertaining to the use of their individual system.

The CH/RSC should maintain a central database system for logging and tracking all aspects of customer service.

6.2.1.9.11 Usage of data

A central database can help the CH/RSC, operators, and card issuers:

– Evaluate system performance

– Resolve system problems

– Assure that all transactions are paid and accounted

– Identify and resolve incorrect transactions

– Identify reconciliation problems

– Provide support for balance protection for lost, stolen, or damaged cards

– Investigate fraud claims

– Monitor customers' transaction histories

– Answer customer inquiries

– Record and assess outcomes and timeliness for resolving customer inquiries

– maintain the names and addresses of card holders for

The system must decide who "owns" or controls specific data. If the regional payment system has a single card issuer, the managing board of the region controls data usage. The regional system should establish a written policy that governs regional program data usage within the region. This policy should reflect relevant state or federal statutes and/or regulations governing privacy, and be available for public inspection.

6.2.1.9.12 Safeguarding customer records

Customer privacy is a politically sensitive area. If the regional system plans to use customer data for any non-transportation-related purposes, they should allow customers to "opt-in" or "opt out" of having their personal data used in this way. The opt-out approach is easier to administer and less costly, but requires the consumer to take concrete action to preserve the confidentiality of their data. Consumer privacy groups prefer an "opt-in" process where the consumer must specifically authorize the use of their data.

If the regional system maintains a database with customer specific information, the regional system should have safeguards built into the IT systems that prevent unauthorized access to customer data and protect consumer privacy. The CH/RSC should utilize a customer specific database only if it determines that there are sufficient business benefits, since maintaining such databases is expensive and resource intensive. However, consumer fees for card issuance, non-refundable deposits, or earnings on deposits can offset these costs.

6.2.1.9.13 Patron access to records

Allowing patrons some level of access to their own files online, with appropriate security safeguards, may speed up response time to inquiries and reduce customer service expenses. Consumers can have access to their transaction history and make inquiries online so long as security is provided for viewing this data. A higher level of security is necessary for registered cards that contain specific customer data. The Internet can also make fare and route information, time schedules, trip planners, and system maps for each participating agency available to the public within a single site.

6.2.1.10 Non-transportation uses of card

Allowing third parties to use transportation cards or applications for other purposes can help underwrite system costs and increase consumer convenience and acceptance of the card.

Non-transit uses of cards could include the following:

– Payments at merchants

– Parking

– Toll payments

– Banking

– Electronic benefits transactions (EBT) such as welfare payments or food stamps

– Government ID (licenses, registrations, etc.)

– Authorized medical or pharmaceutical reimbursements

– Secure access (building, computer network)

– Vending machines/self-service laundries

– Pay phones

– Loyalty plans

– School campus programs

The governing Board should assign a committee or task force to develop a business plan for such opportunities. This could involve developing sample legal documents for licensing the use of the transportation application on cards that have multi-application capabilities. Plan provisions may include:

– Criteria for determining suitable opportunities

– Fee flows

– Security considerations

– Card issuance/card management

– Certification plan

– Card architecture

– Quality assurance

– Customer service

– Protocol if a program is terminated

6.2.1.10.1 Seeking third parties for non-transportation uses of cards

Government agencies normally utilize RFPs to seek private sector involvement (such as bank participation). It may be more effective to engage banks in dialogue during the early stages of regional programs to craft a partnership that works for all parties. Trade group meetings may provide a good forum for such discussions. Agencies must insure that meetings are acceptable under the procurement rules of their jurisdiction. When all parties have an understanding of the business model, RFPs are a more appropriate way of seeking private sector involvement.

6.2.1.10.2 Merchant Participation

Any of following entities can be responsible for signing up merchants:

– CH/RSC

– Individual operators

– Consortium of operators (such as the regional payment system managing entity)

– Banks

– Other third parties the payment system authorizes to perform these activities (Banks authorize Independent Sales Organizations [ISOs] to sign up and service smaller merchants to accept credit and debit cards.)

The party that signs up a merchant is usually responsible for the following activities for that merchant:

– Obtaining, installing, and servicing terminals

– Setting and collecting fees (subject to the overall fee policies of the regional system)

– Settlement

– Signage in stores

– Customer support and service (for merchants)

The entity responsible for these tasks may outsource their execution to another provider.

6.2.1.10.3 Fees for non-transportation uses of cards

Third parties that utilize transportation cards for non-transportation applications are in effect renting real estate on the card. If the transportation agency issues a multi-application card, the non-transit third party should compensate the card issuer. Such arrangements have little precedence, however, so it is difficult to determine what type of fees are appropriate. Initial trials may waive fees for a period to better understand the value of this type of arrangement.

If customers use the dollar denominated purse on their transportation card for payments at merchants or similar third parties, such as to pay for coffee or a newspaper at a station, the regional system should charge merchants a fee. Bankcards use this type of fee flow for credit or debit purchases. Regional systems can use the fee levels bank charge for similar payments as a model.

6.2.1.11 New products or services

Regional systems should adopt guidelines and/or procedures for considering new activities.

The managing board of a regional payment system should establish a committee with participants from the CH/RSC staff and operators to consider proposed new products and services. The committee should encourage the continual exploration of new services and business relationships.

A formal proposal outlining all aspects of the new activity, including a cost/benefit analysis, is usually developed. The committee then reviews the proposal content and cost estimates and decides whether or not to adopt the new activity. A significant new activity would require approval from the managing board.

A single operator may wish to pioneer a new offering on its own system that the regional system could subsequently utilize.

Examples of new products and services include:

a) Allowing banks or retailers to put transit applications on their multi-application card

b) Acceptance of the dollar denominated transit purse for non-transit payments

c) New fare plans involving multiple operators

d) Adding new third party card issuers

6.2.2 Fare policy management

A regional system's fare policy impacts how individual agencies run their businesses. The regional transportation purse is usually a standard product on all cards. Regional payment systems often support pre-existing fare policies but recognize the need to standardize these policies in the future. A system task force should pursue standardization of fare policies once the system is operational.

As part of this process, participants in the regional system may wish to standardize how they define specific products. Often different operators use different definitions for the same type of products. Regional systems should review how participating agencies define common products as early in the process as possible since there may be valid business or political reasons for differing definitions that can prolong discussions.

6.2.2.1 Fare types

Regional system fare cards usually support a regional transportation e-purse as well as fare plans for individual agencies within the system. Regional systems should limit inter-agency fare payments to e-purse payments and select plans for patrons that use multiple

operators that are agreed upon by the respective operators. Examples of linked transfer arrangements include flat fares or zone fares that enable patrons to use multiple operators. Although smart cards and magnetic cards can both offer inter-agency plans, smart cards are the current trend. Regional systems generally will limit such payments to smart cards since smart cards are more secure and have greater memory capacity for supporting multiple fare agreements.

6.2.2.2 Card purses

Each operator can technically have a separate dollar-denominated purse from the regional system purse on its card. Operators may want this degree of control over the funds pool, particularly in reference to unredeemed value and earnings on the funds pool. However, having multiple dollar-denominated purses on a card may confuse patrons, hindering their use of the regional payment card.

If a card supports a bank e-cash system, separate monetary purses may be necessary due to the higher security requirements for bank purses. A bank purse requires a special security application module (SAM) at each card acceptance device which may make the transaction time too slow. This should change over time as the technology matures. The optimum solution for the consumer is to have a single monetary purse on the card. Patrons must carry transit benefit dollars in a separate purse because of legal restrictions on the utilization of such funds. For example, patrons cannot use transit benefit dollars to purchase newspapers at stations.

6.2.3 Load management

Having convenient and fast methods for consumers to reload their cards is important to the success of any card program.

6.2.3.1 Methods for reloading cards

Methods for patrons to reload cards include:

- Automated self-service devices such as TVMs or ATMs

- Agency staff at a station

- Agency staff at a service center

- Authorized reloading agents using a POS terminal

- A website

- Autoload

6.2.3.1.1 Autoloads

Autoloads involve automatically adding transit cash or a ride purchase plan to a card when the patron utilizes a fare collection device. Each region must decide whether or not to allow autoloads. Consumers may fund autoloads through credit or debit cards, employee subsidized payments, or ACH debits to their bank account. Autoloads require systems to establish and maintain a database that charges patrons' funding sources. Autoloads are very convenient for the consumer and encourages additional participation in the system. They can also reduce capital expenditures for reload devices and reduce the workload on station staff in ticket booths and on automated reload devices. If the transit application is on a bank-issued card, the bank funds the autoload value through one of the customer's accounts at that bank.

6.2.3.1.1.1 Funding autoloads

Systems that use pre-funded and post-funded autoloads automatically reload cards that fall below a specified threshold.

When the system reloads a pre-funded card, it automatically charges the funding source on record for the cardholder, but does not add the value until the cardholder next uses the card at a fare collection device. Post-funded cards also automatically reload at a certain threshold but the customer is not immediately charged for the load. The charge is processed to the funding source after the consumer's card receives the added value. Both forms of funding help insure that patrons either maintain a minimum balance or do not exceed a specified negative balance for entering or exiting the system. Pre-funding reduces the risk of funds not being available. Post-funded autoloads reduces the risk of negative balances by automatically reloading cards as soon as they reach a specified threshold. There is, however, a risk that funds may not be available with post-funding. Pre-funding involves two operational steps to process the transaction and is a more complex process than post-funding.

All fare acceptance devices should ideally support autoloads. Systems may be able to vary the dollar threshold that triggers autoloads based on an automated computer analysis of the cardholder's history.

6.2.3.1.2 The Internet

 The Internet can also support reloads. Vendors should document the level of support they will offer for Internet loading. For most Internet reloads, the consumer initiates the load via the Internet and the actual value transfer occurs as an autoload the next time the card is used at a fare acceptance device.

Currently few consumer PCs have card readers, but, if this capacity grows in the future, the Internet could be a very cost effective option for processing entire reloads, including adding value to cards.

6.2.3.1.3 Network links

Participating agencies can link to credit, debit, and ACH networks directly or through the CH or another third party. Except for large agencies with pre-existing relationships to the networks, it is usually less expensive to link through the CH. Initiating and maintaining such links can be technically demanding. Consolidating system volume in order to receive volume discounts from networks can help offset costs. Agencies that link through the CH with a substantial volume of transactions may consider adding direct links to networks in the future in order to eliminate third party fees.

6.2.3.2 Minimum and maximum load amounts

The regional system should set a minimum and maximum amount for loads from bank cards or bank accounts.

The minimum amount insures the load amount offsets the cost of processing the load, including bank fees. (Cash loads for less frequent riders have less of a need for minimum load amounts.) Higher minimum load amounts reduce the total number of loads customers purchase, thereby reducing infrastructure costs. Higher minimums for initiating autoloads also reduce the risk of cards going into negative balances.

The maximum amount should protect the operator against returned transactions and the consumer against lost cards. State or federal regulations may impact maximum e-purse value amounts.

6.2.3.2.1 Negative balances

Each system must decide whether or not to permit negative balances on cards.

Negative balances are more typical where fares are variable within a system based on distance traveled since patrons must be able to exit the system. Alternatively, the transit system may use reload units to facilitate loading the card to exit the system. Cards with negative balances may be blocked from using the system. Patrons can remove blocks by adding value to the card. Systems may also require patrons with negative balances to contact the CH/RSC or operator personnel in person, by phone, or on the web.

If a system permits negative balances, they should set a maximum negative balance to offset risk. Systems can require a deposit for cards. The system can then use funds from these deposits to protect against negative balances.

Allowing modest negative balances is beneficial from a customer service perspective.

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6.2.3.2.2 Negative file (hot card list) management

The CH maintains a centralized negative file. The operator or the CH designates the

reason to place a card on the negative file. Operators that are card issuers may also maintain a negative file for their agency.

The CH can remove cards that have been subsequently used in the system and disabled from the negative file. The CH may place such cards on a "watch list" in case there is an attempt to use it in the system at a later date.

Terminals should regularly download negative file updates from the CH to manage the risk of fraud. The CH should determine the frequency of these downloads which may vary depending on the type of terminal. (For example, updates may occur daily for off-line devices but occur more frequently for on-line devices).The CH must develop a procedure for dynamically adding and deleting cards from the negative file in order to manage its size. If the size of the negative file becomes too large, the system may need to define parameters for which card numbers to carry at the terminal level. Limiting the terminal files to only recent additions (cards added to the list after a specified date) is an example of such a parameter.

6.2.3.3 Financial sources for reloading cards

Agencies may accept the following sources of funding for reloading cards:

– Cash

– Checks

– Credit cards (including Visa, MasterCard, American Express, Discover)

– Debit/ATM network cards

– ACH (electronic) debits to consumers' bank accounts

– Employer subsidized payments (Transit Checks)

Agencies must establish procedures for updating cardholder expiration dates. MasterCard and Visa offer services for updating card holder information via a central data base inquiry. The agency may wish to provide the consumer with a notice when the card expiration date is approaching. The financial institution will reject expired cards.

6.2.4 Network and equipment

6.2.4.1 Purchasing

Regional systems generally order, install, and maintain the system's communication networks and equipment in consultation with operators. Members may elect to collectively buy equipment for the AFC system to achieve better pricing.

6.2.4.2 Procedures and standards for equipment maintenance

The quality of regional system performance impacts patrons from all participating agencies and is a highly visible service in local communities. Systems should therefore have written procedures and standards for monitoring and correcting any problems that apply to participants. A system taskforce should develop these procedures and standards with staff from the CH/RSC and operators. The standards should specify normal response times for solving problems. The regional system should develop service level agreements with all relevant participants on how to enforce compliance with these standards.

A centralized reporting system that provides a history of problem resolution by agency is beneficial. Such a system focuses on material issues and identifies problems that impact inter-agency activity.

6.2.4.3 Installation, maintenance, and servicing

Equipment that operators traditionally install and maintain typically remains the operators' responsibility.

A simple rule of thumb for servicing equipment is that the CH should be responsible for equipment connected to the CH system, and operators should be responsible for equipment linked to the operators' systems. The CH often takes greater responsibility during a pilot or a test.

The CH (or some other third party such as the RSC) usually installs and maintains the following equipment:
- CH computer systems & data center
- Communications backbone
- Communications equipment at operator's host that communicates with the CH system

The operator usually installs and maintains the following equipment:
- Fare boxes/fare gates
- Card vending machines
- Validators
- Add balance machine
- Parking devices
- Balance reading devices
- Card readers
- Communications network from operator's computer system to fare collection equipment
- Operator headquarters computer
- Operator station or garage computers

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NOTE–This is an oversimplification of the process since in many instances the allocation of responsibility may not be so clear cut.

A CH, RSC, a large agency, or a regional authority may handle all the above tasks in the pilot stages of a regional system.

6.2.4.4 Levels of service

Several levels of service will be required for equipment within the system.

First line

– Replacing equipment that require no special tools (may include module replacement)

– Clearing bill, coin, or card jams (no tools required, no modules removed or replaced)

– Revenue servicing (removing bank notes or coins, or replacing their containers)

Second line

– Replacing equipment that requires special tools or diagnostics (may involve on-site visit by a vendor)

Third line

– Repairing board or modules (requires specialized expertise and may require service at a workshop or depot)

6.2.4.5 Communications

The CH and each operator must agree on the division of responsibilities for designing, installing, and maintaining the communications system between the CH and each operator. In many instances, they use third parties to assist in this process.

The CH usually monitors and is responsible for servicing the communications equipment that links the operator to the CH. The CH may order third party servicing as necessary (e.g., contacting the phone company to fix a line problem). If the system utilizes an operator's preexisting communications network, the CH and the operator should collaborate on managing this network.

6.2.4.5.1 Interface development and maintenance

System specifications for linking to the CH are being developed by the UTFS. The operator or the operator's vendor will be responsible for programming an interface that conforms to these specs and should establish a rigorous test plan to test and certify its

operation and subsequent changes to this interface. Testing is a joint process that involves both the CH and the operator (and its vendors).

6.2.5 Marketing

Joint marketing between the regional system and the operators is appropriate for regional systems, particularly in the early stages of a program. The operators should allocate costs among themselves on some equitable basis, such as ridership or revenue for the regional system's share of the marketing expense. The governing board should approve marketing budgets. When the participating operators initially approve the regional program, they should identify potential marketing expenditures as pro forma expenses of forming the system and should explore cooperative promotional opportunities with local businesses such as banks, merchants, or consumer product companies. The following options are applicable for marketing:

 – Individual agencies develop and implement their own marketing programs

 – Individual agencies implement their own marketing programs but utilize a common theme

 – Individual agencies implement a regionally-coordinated marketing program

 – The region centrally implements a consolidated marketing program

Most regions seem to favor a consolidated marketing program during system rollout. Individual agencies may supplement this effort.

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