

Comprehensive Fare Payment System (CPS) Update

(It's no longer just about fares)

DART's Electronic Payment Initiative

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DART CEPS Expanded Overview – A hybrid payment solution using mobile, contactless closed and open loop, mag stripe, and cash

A robust account-based payment solution which utilizes new innovative technologies to:

- Allow customers to obtain and purchase fares that are convenient and easy to understand using a variety of payment options, including mobile, contactless and cash;
- Create a unified customer account of record;
- Allow for registration of all reduced riders using one platform;
- Allow customers to participate in fare capping on a daily and monthly basis;
- Significantly reduce the total amount of physical cash that the agency collects;
- Provide operational efficiencies across the agency as the system solution is less complex;
- Increase system reliability as there are fewer points of failures; and
- Permit a scalable design for future fare and third party payment initiatives such as integration with Uber, Lyft, and Taxi and sports and entertainment venues.



Evolution of the decision to move to an electronic (as opposed to fare) payments strategy

- Industry fare payment system situation assessment undertaken in 2011.
- At recommendation of New York MTA undertook development of a concept of operations document written in non-technical terms
- At suggestion of New Jersey Transit evaluated mobile ticketing payment options
- At suggestion of LTK attended Smart Card Alliance meetings to learn about current state of contactless payment
- Based on UTA experience began to focus on account-based backend and third party retail merchant card distribution and support
- DART concluded could not eliminate farebox on board buses but could definitely simplify the product functionality, reliability and cost

Evolution of the decision to move to an electronic (as opposed to fare) payments strategy

- Determination made that a major transition was underway from stored value to account-based and open payments, but it was in early stages of deployment.
- Election to adopt a comprehensive (all types of payment from all channels, including payments for sales of services other than transit) payment strategy and proceed first with mobile ticketing.
- RFP for mobile issued in spring of 2012; a contract to Unwire was awarded in October 2012; and full deployment occurred in September 2013.

Evolution of the decision to move to an electronic payments strategy

- In spring of 2014, fare collection vendors were invited to submit their own proposals for development and deployment of an account-based system.
- In summer of 2014, two vendors submitted full proposals and three others provided outlines of their proposed approach.
- In fall of 2014 a three-part solicitation (RFQ Level 1/RFQ Level 2/RFP) was released. Eight responses were received. Four were advanced to Level 2 function verification assessment. All four advanced to RFP submission phase.
- In September of 2015, a contract was awarded to VIX for comprehensive electronic payment system under a managed services, remotely-hosted solution.

Evolution of the decision to move to an electronic payments strategy

- DART elected to separately solicit, evaluate and obtain a mobile ticketing agreement, subsequently renewed with Unwire, which will include upgraded interfaces with Uber, Lyft, Taxi, and other ridesourcing services.
- DART also elected to separately solicit and obtain a retail distribution agreement, awarded to PayNearMe (in partnership with Blackhawk and Fidelity Express) in April 2016 which will serve over 900 locations and is integrated with mobile ticketing application.
- Full deployment is scheduled for July-August 2017.

Mobile Ticketing Solution Decisions



GoPass will be upgraded to version 2.0

- Quicker loading speed;
- Sign-in using email address;
- Provides direct customer feedback in app;
- Interactive route and system mapping;
- Customers can set up auto load for pass products;
- Purchase and display multiple rider fares on one ticket;
- Pay by using cash (proposed via retail solution);
- Supports NFC solutions: Apple Pay, Android Pay.

Passes will still require visual acceptance until NFC is fully deployed across all platforms

Payment and Media Acceptance on VIX EMV ready validators



On-Board Validators (OBVs)



When a customer taps the validator, the screen will display:

- Green – valid ride
- Yellow – low balance, but current ride is valid
- Red – unacceptable

It is proposed that the OBV will be integrated with MDT to display the color and the message for the Operators.



Platform Validators (PVs)



When a customer taps the validator, the screen will display:

- Green – valid ride
- Yellow – low balance, but current ride is valid
- Red – unacceptable
- All light rail and TRE (~ 400 validators)

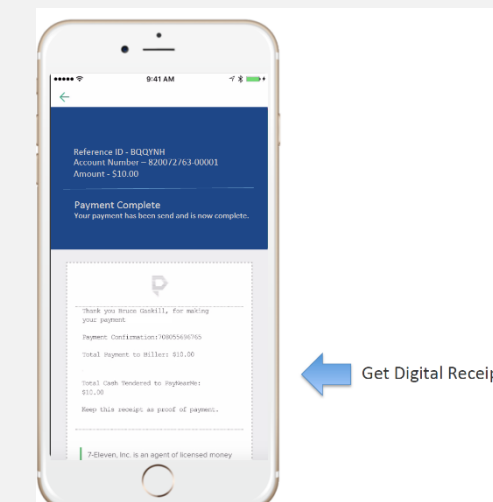
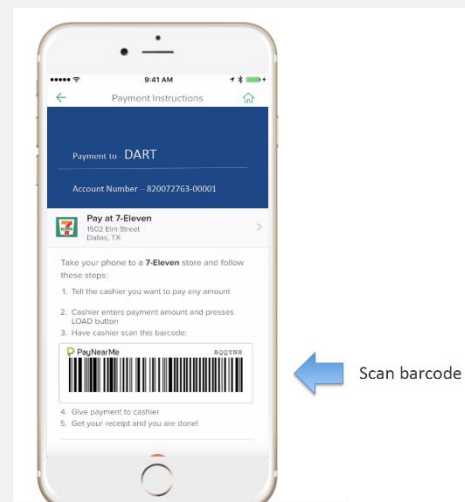
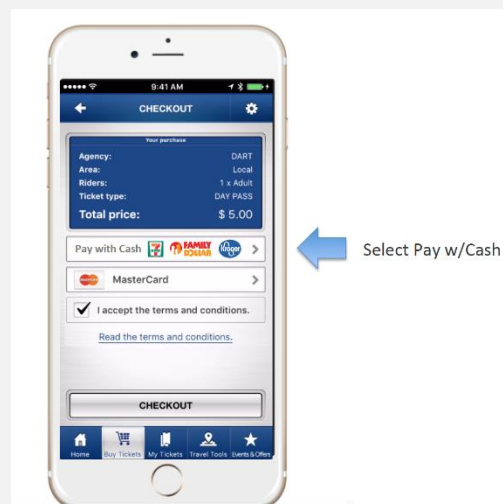
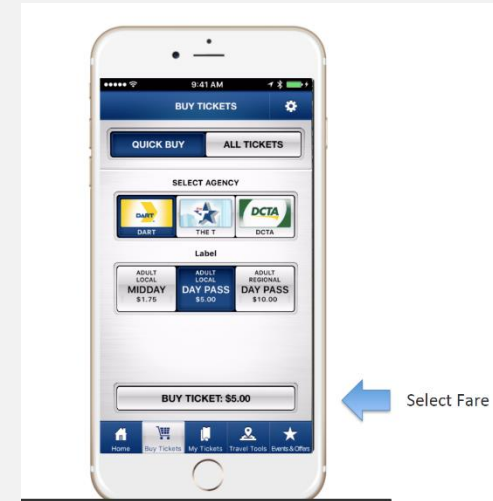
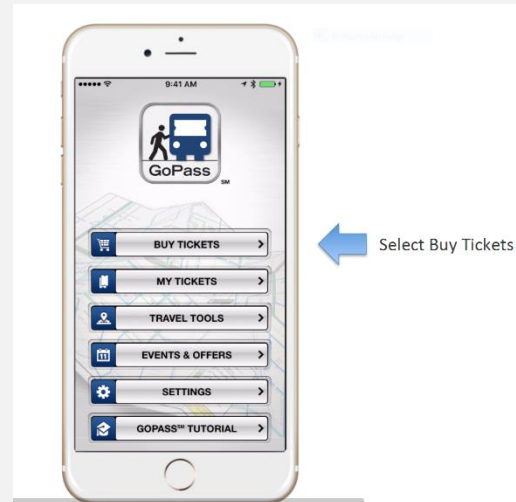
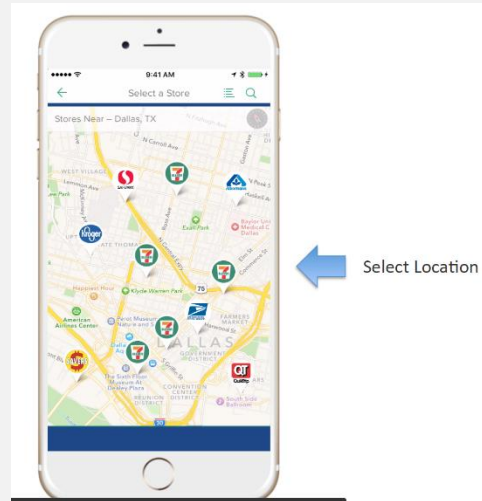


Retail Network Decisions

- DART issued a RFP for its Prepaid Payment Card and Retail Network (PPCRN) program and selected PayNearMe (PNM) as the retail network vendor.
- The Payment Card will be available at no cost but will require a minimum purchase of \$5 and there will be no reload charges
- PNM, along with its partners, will provide over 900 retail locations within the DART Service Area for purchase of the DART extended- use card.
- Partners include Blackhawk Network, which provides access to the largest grocery store retail network; and Fidelity Express, which provides access to independent and small grocery operators.
- PNM also provides the option to use cash via the mobile app to obtain passes.



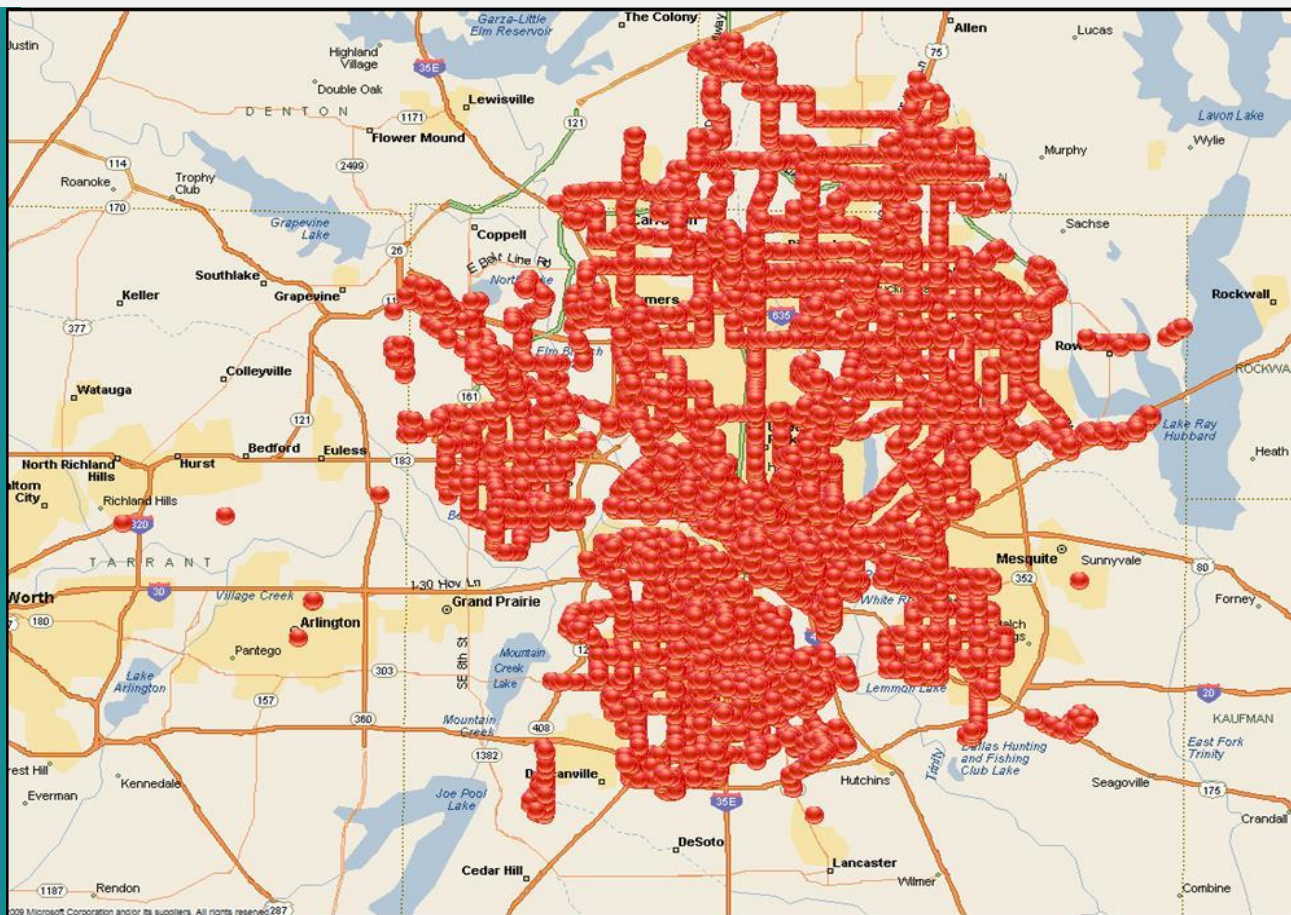
Retail Network Decisions



Retail Network Decisions

Customers can load value at:

- Various retail establishments
- Online
- DART Store
- or via Mobile



Fare Policy Decisions

- ✓ DART system will require pay-as-you-go customers with contactless closed loop cards to tap on for payment (pass policy to be continued for mobile and TVM-issued magnetic strip media). Apple Pay will be supported.
- ✓ DART CFPS will implement fare capping. These fare caps will be restricted to daily and monthly (both local and regional) caps initially in the system.
- ✓ DART has determined that users must register their DART card, payment card, or mobile account to qualify for fare capping, as well as balance protection, and other loyalty program benefits.
- ✓ DART will deploy a new farebox that will accept cash for single rides and two hour passes only

CFPS Alternative Payment Initiatives

- Emerging payment integrations pose new challenges and opportunities.
- DART has introduced a subscriber-based third-party ridesource service using a closed loop card and which links a subscriber contribution with matching funds from DART.
- The current implementation is free standing but will eventually be integrated with the backend designed by VIX.
- This type of initiative takes DART completely out of the point-of-sale fare collection process and direct service delivery process and shifts us to customer mobility fulfillment and payment support.

Proposed Implementation

Deployment in phases beginning August 2017 and extending through mid 2018

- Pilot launch will occur during **Fall 2017/Winter 2018**.
- **Additional workshops throughout** the agency will be conducted to develop additional business rules, policies, and procedures.
- Farebox and mobile ticketing updates will take precedence contactless payment rollout.
- Validator installation has begun and will extend through December of 2016
- Civil works is currently being performed at DART Rail stations.
- Fare increases and new fare structure will occur in spring 2018
- Revenue service for full deployment in spring 2018.

But...when will open loop NFC payments
be widely accepted on public transit?

A purely personal opinion : 2023-2025



What the future holds for NFC in the Public Transport sector? Progress...slowly, but certainly

- My intent in this presentation was to speak to the technology underpinnings that public transit agencies have to secure before there can be serious exploitation of NFC in this arena.
- It has taken transit agencies a fair amount of time to fully understand and appreciate the technical, operational, and financial issues associated with full deployment of an account-based system capable of accommodating modern forms of payment.
- Only Utah Transit and Chicago MTA have successfully deployed an account-based, open payment architecture and supporting backend. WMATA has dropped its efforts for the foreseeable future. SEPTA (Philadelphia) is two years behind schedule and will require another two years based upon current estimates. New York MTA has just released an RFP and acknowledge it will be 2019 or 2020 before they can deploy NFC contactless capabilities.
- Mobile ticketing platforms, an essential element of NFC deployment, have advanced more quickly but are still only available in a limited number of markets and rely largely on barcode and visual validation versus NFC.
- Developing a robust retail merchant network strategy, with open payment, contactless solutions for product purchase, account load and reload is only now being recognized as an essential element of a comprehensive payment strategy.

What the future holds for NFC in the Public Transport sector? Progress...slowly, but certainly

- The actual utilization of contactless credit cards in Chicago and Salt Lake City has been very low (and falling).
- Transit agencies have determined that the customers strongly prefer, for a variety of reasons, closed-loop contactless payment methods linked to a separate transit account.
- But the use case environment is rapidly changing in directions that will accelerate the reliance on NFC-based payment presentation solutions:
 - Virtually all smart phones being manufactured and sold today are NFC-enabled.
 - Considerable work by software developers has been done on the Android platform, and both Google Pay and Samsung Pay will become much more present in 2017.
 - Apple Pay works.
 - The major banks are getting beyond EMV conversion and say, once again, they will be deploying contactless cards in large quantities in 2017.
- In transit, a major step forward in the latter part of 2017 will be a Google Pay/five transit agency introduction of a feature which provides for the inclusion of a digital transit card within the Google wallet.

What the future holds for NFC in the Public Transport sector? Progress...slowly, but certainly...and then...suddenly!

- Major payment system deployments in public transit agencies require a minimum of five and often as many as seven years from RFP to system acceptance.
- It is likely that the top 25 transit markets in the United States will have issued RFPs for account-based payment solution, including mobile platforms, within the next three to five years.
- With New York likely to come on line by 2020 and the balance by 2022-2024, and with bank issued contactless credit and debit cards likely to be in wide circulation, NFC-based payment solutions will “suddenly” achieve critical mass around 2022.

IN SUMMARY

Major Caveat

Who knows what seven years from now will bring when new technology innovations are combined with a widespread payment infrastructure in virtually all major transit markets?!

End

