



## Contactless Open Payments for Transit

May 1, 2019

# U.S. Payments Forum Mission

- *... the cross-industry body focused on supporting the **introduction and implementation of EMV and other new and emerging technologies** that protect the security of, and enhance opportunities for payment transactions within the U.S.*

## Current EMV-related Topics and Issues

- Petro, Transit and Hospitality merchants EMV-enablement issues
- EMV contactless/mobile acceptance testing & certification
- Issuer considerations for contactless EMV (dual interface, offline data authentication)

## Beyond EMV – Advanced Payments Topics and Issues

- Mobile payment and tokenization
- Authentication: biometrics, future of CVM, new signature requirements
- 3-D Secure 2.0, Secure Remote Commerce and other CNP fraud tools

# Forum Activities & Resources

- **Collaboration on projects to develop resources to assist with U.S. EMV migration and implementation of other new and emerging payments technologies**
  - White papers, educational resources
  - Best practices and technical recommendations
- **Education programs for members and the industry**
  - Webinars, workshops, Forum member meeting tutorials, published resources
- **Communications**
  - Market outreach with recommended best practices and industry positions
- **Networking**
  - Forum for industry stakeholders to interact with all payments industry stakeholders

Information and resources available at [www.uspaymentsforum.org](http://www.uspaymentsforum.org)

# Today's Speakers



- Randy Vanderhoof, U.S. Payments Forum



- Steve Cole, Worldpay



- Itai Sela, B2 Payment Solutions Inc.



## Contactless Open Payments for Transit

Communications and Education Working Committee

May 1, 2019

# CONTENTS

- Purpose and Scope
- Introduction: Transit and Payments Today – Closed Loop
- U.S. Transit Markets
- Transit Open Payments – What it is, Benefits, Challenges
- Transit Specific Network Rules – Common Use Cases
- The U.S. Payments Forum Transit Contactless Open Payments Working Committee (TWC) Approach to Developing a Solution and What's Next in Transit Open Payments

# PURPOSE & SCOPE

The purpose of this presentation is to educate stakeholders on “transit open payments.”

This presentation is focused on EMV-based contactless payments made at transit “gated” points of entry to gain entry to travel.

Open payments, as discussed in this presentation, address only EMV contactless card form factor.

This presentation covers a “tap in only” environment. It does not cover all use cases or considerations that should be made in planning for transit open payments.

# U.S. TRANSIT MARKET

**Annual Number of Trips:**

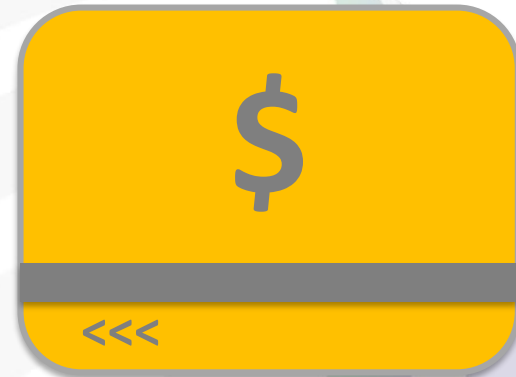
**10.59 Billion**



**Annual Fare Revenue:**

*(Cash & Cards)*

**\$15.86 Billion**



Source: American Public Transportation Association, 2017 PUBLIC TRANSPORTATION FACT BOOK, March 2018; reporting 2015 data



# TRANSIT PAYMENTS TODAY – CLOSED LOOP

1. Customer obtains required transit card



2. Customer adds transit value or pass



3. Customer pays for transit value or pass



6. Fare is calculated and deducted from card or updated in transit account



5. Customer presents transit card at POE reader



4. Customer's transit card/account updated



# TRANSIT OPEN PAYMENTS – WHAT IT IS

- Bank-issued cards (open loop) accepted at Point of Entry (POE), such as fare gates, for access
  - Contactless acceptance only at turnstiles or fare gates
  - Ability to make a financial transaction at POE
  - Account-based (value paid and/or purchased in advance stored electronically in back end associated with card number)
  - Back end, not front end, processing
  - Customer and Merchant have real time access to transaction information



# TRANSIT OPEN PAYMENTS – BENEFITS

- Improves Customer Experience
  - Global EMV standard allows seamless card acceptance experience
  - Eliminates need to buy separate transit fare media before riding
  - Consumer can choose how, when and where to pay
  - Online and mobile become new self-service sales channels



# TRANSIT OPEN PAYMENTS – BENEFITS (CONT.)

- Improves Merchant Operations
  - Terminal and merchant system hardware and software are ideally off the shelf as they use the global EMV standard
  - System can be more effectively updated as payment technologies evolve
  - Supports additional granularity of data for analysis to enhance customer experience
  - Supports flexibility in managing pricing and establishing partnerships among entities
  - Can retain ability to accept and process closed loop payments



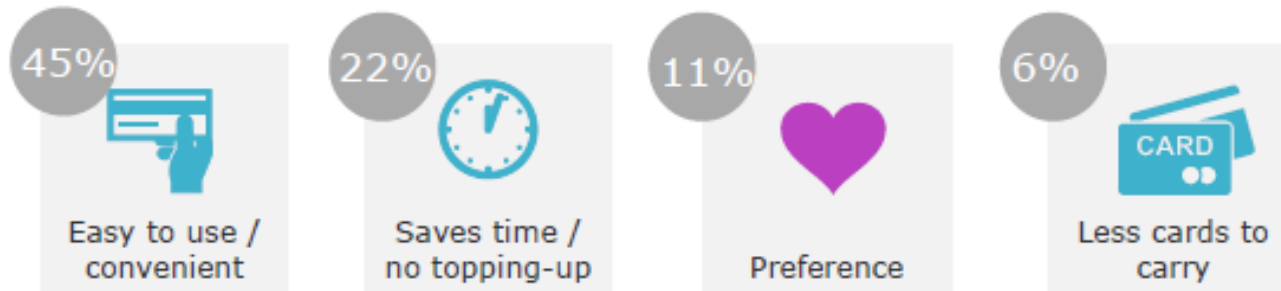
# TRANSIT OPEN PAYMENTS – BENEFITS (CONT.)

- Improves Merchant Operations
  - May see benefits due to simplified fare payment process
  - Increase customer throughput which improves customer satisfaction
  - Using contactless cards prepares customers for contactless payments using a mobile device
  - Increases the range of payment options for customers to use



# CONTACTLESS ON TfL – CUSTOMER EXPERIENCE

- TFL research - satisfaction with contactless remains high and stable at 77%.  
Reasons:



- Their research in 2014 – 69% of commuting rail passengers without a season ticket travelling into London said they would be interested/very interested in contactless payments on transit
- Other customer benefits:
  - Secure and transparent payment
  - Ease of traveling between transit operators
  - Usability on different form factors, including card, mobile and wearables

# TRANSIT OPEN PAYMENTS – CHALLENGES

Need to provide consistent customer experience



- Terminal not always online
- No authorization response prior to go/no customer prompt
  - New financial risk for transit merchant

# TRANSIT OPEN PAYMENTS – CHALLENGES (CONT.)

## Need to mitigate fraud risks

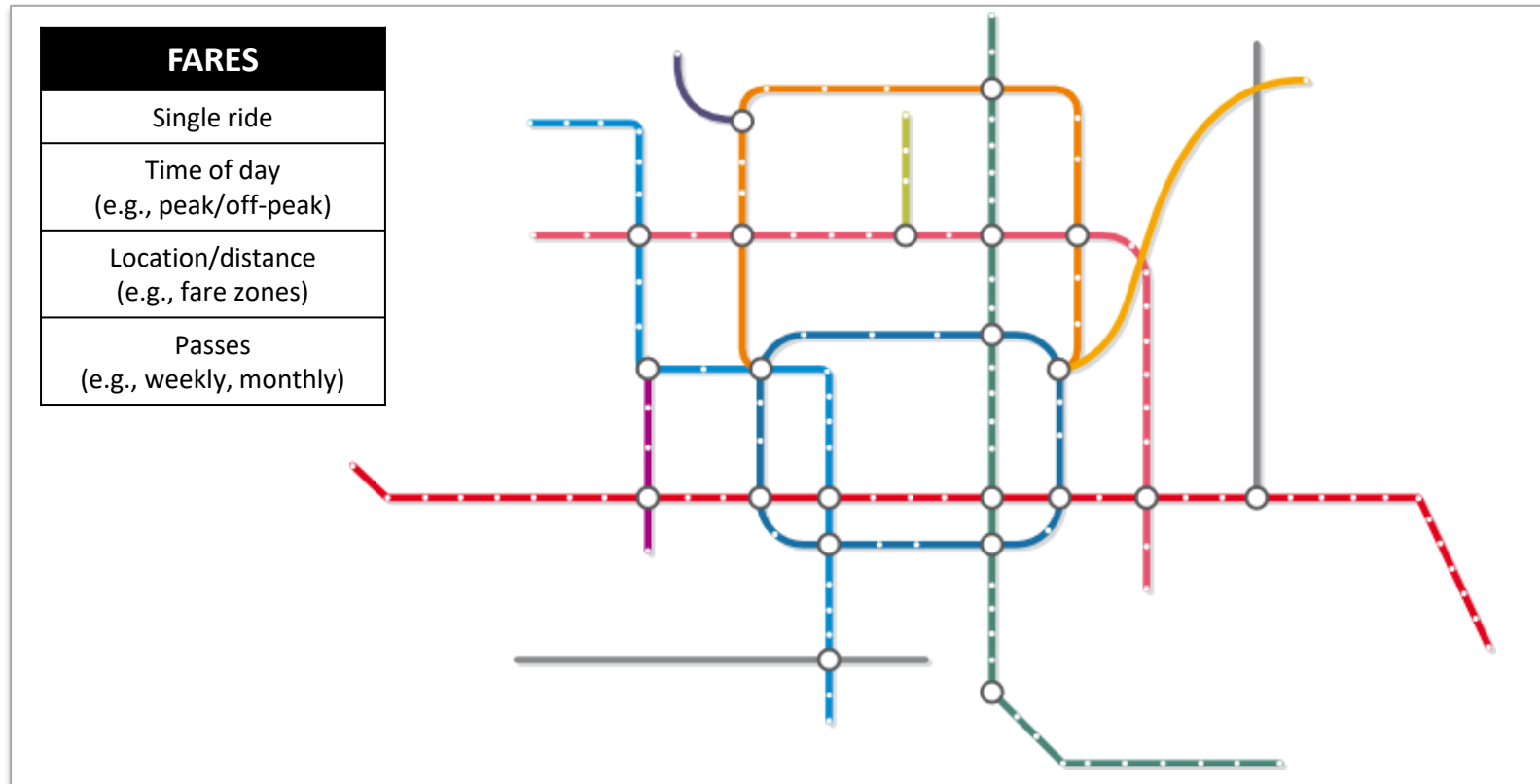


- No cardholder verification (e.g., PIN / signature) at POE terminals
- Dynamic Offline Data Authentication (ODA) at POE terminals
- Need ability to “hot list” cards quickly to prevent recurring fraud



# TRANSIT OPEN PAYMENTS – CHALLENGES (CONT.)

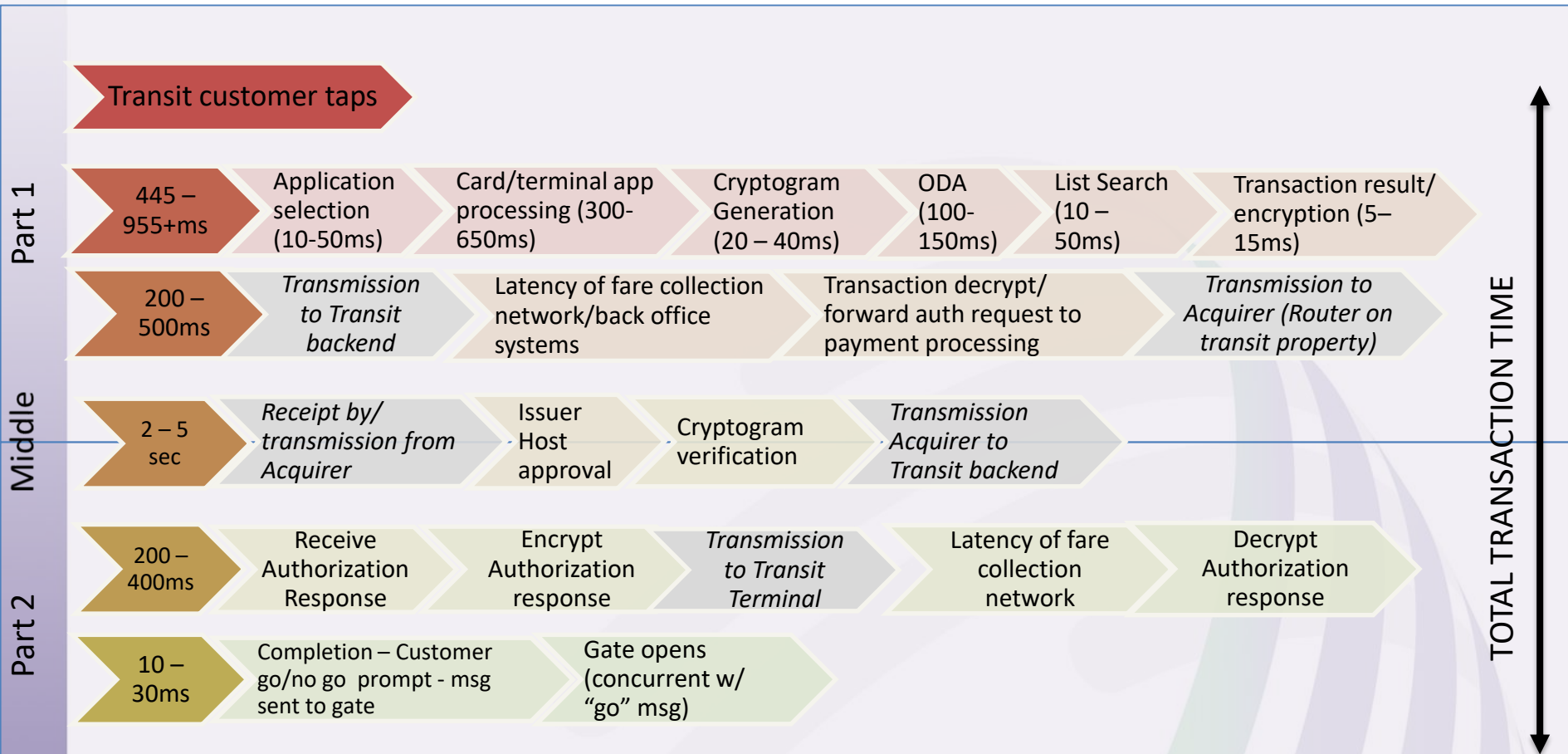
## Need to accommodate diverse fare structures



- Variable fare – exact value unknown at tap; \$0 transfer policies
- Predominantly low value transactions (e.g., single fare ride)

# TRANSIT OPEN PAYMENTS – CHALLENGES (CONT.)

Need sub-second transaction; unlike a typical retail transaction

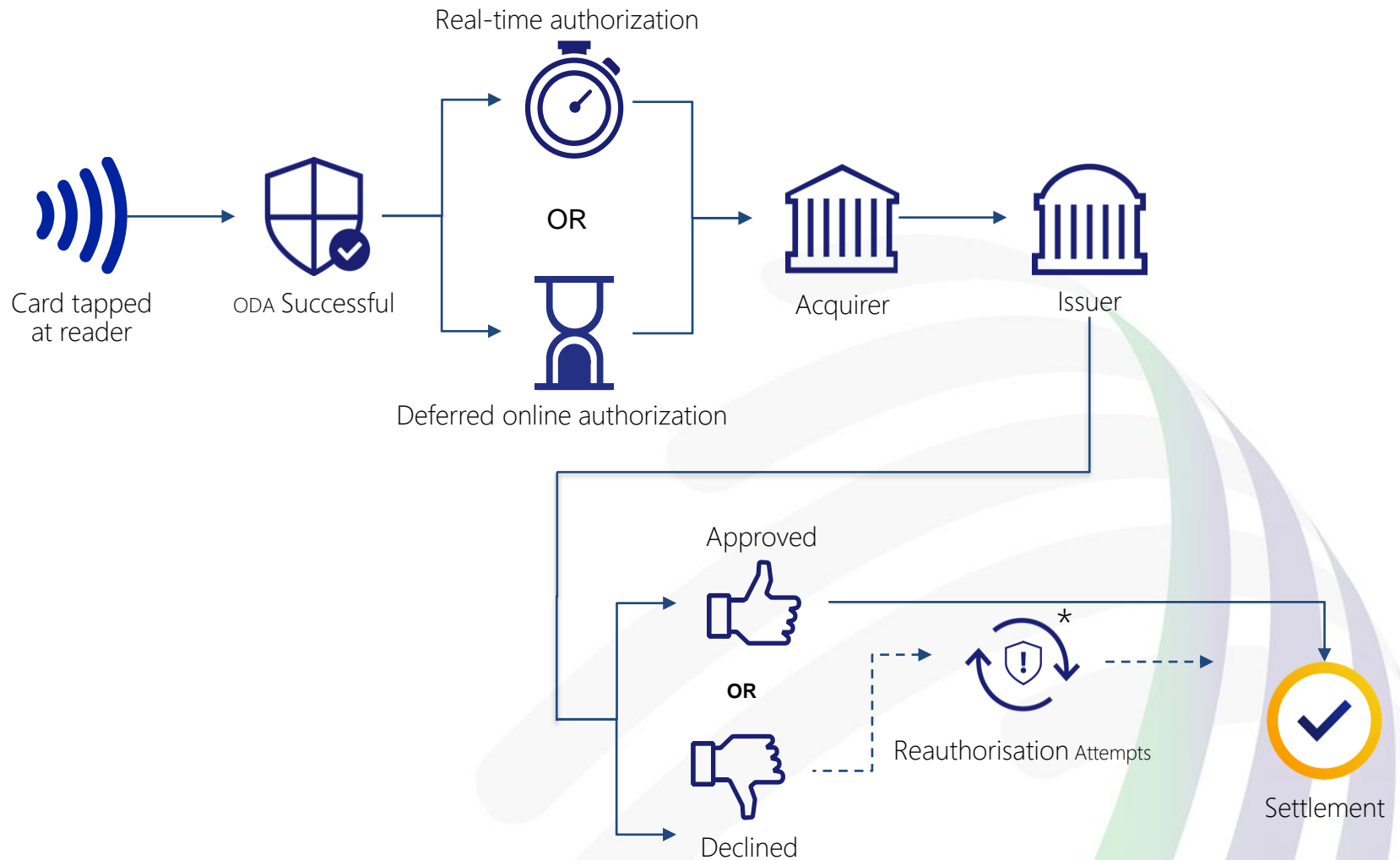


**Total transaction time: 2.855 seconds – 6.885+ seconds**

# FORUM TWC SOLUTION APPROACH

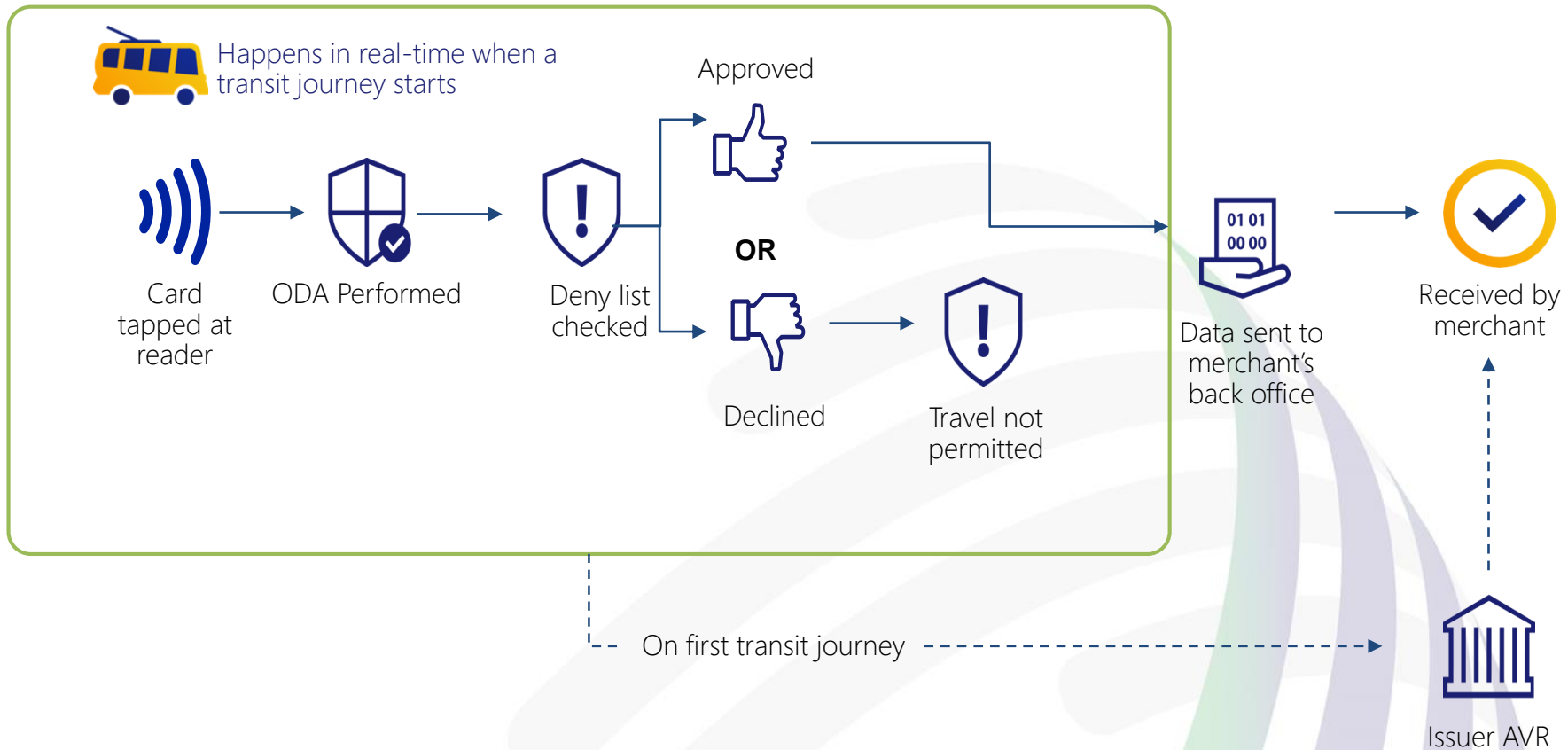
- Bring transit contactless transaction to same level of security as a contact transaction
- Solution based on three pillars of a secure transaction
  - Card Authentication
  - Cardholder Verification
  - Financial Authorization
- Key assumptions > assumed conditions
  - Offline element
  - Existing standard EMV solutions for the three pillars

# KNOWN FARE PAYMENT TRANSACTION FLOW



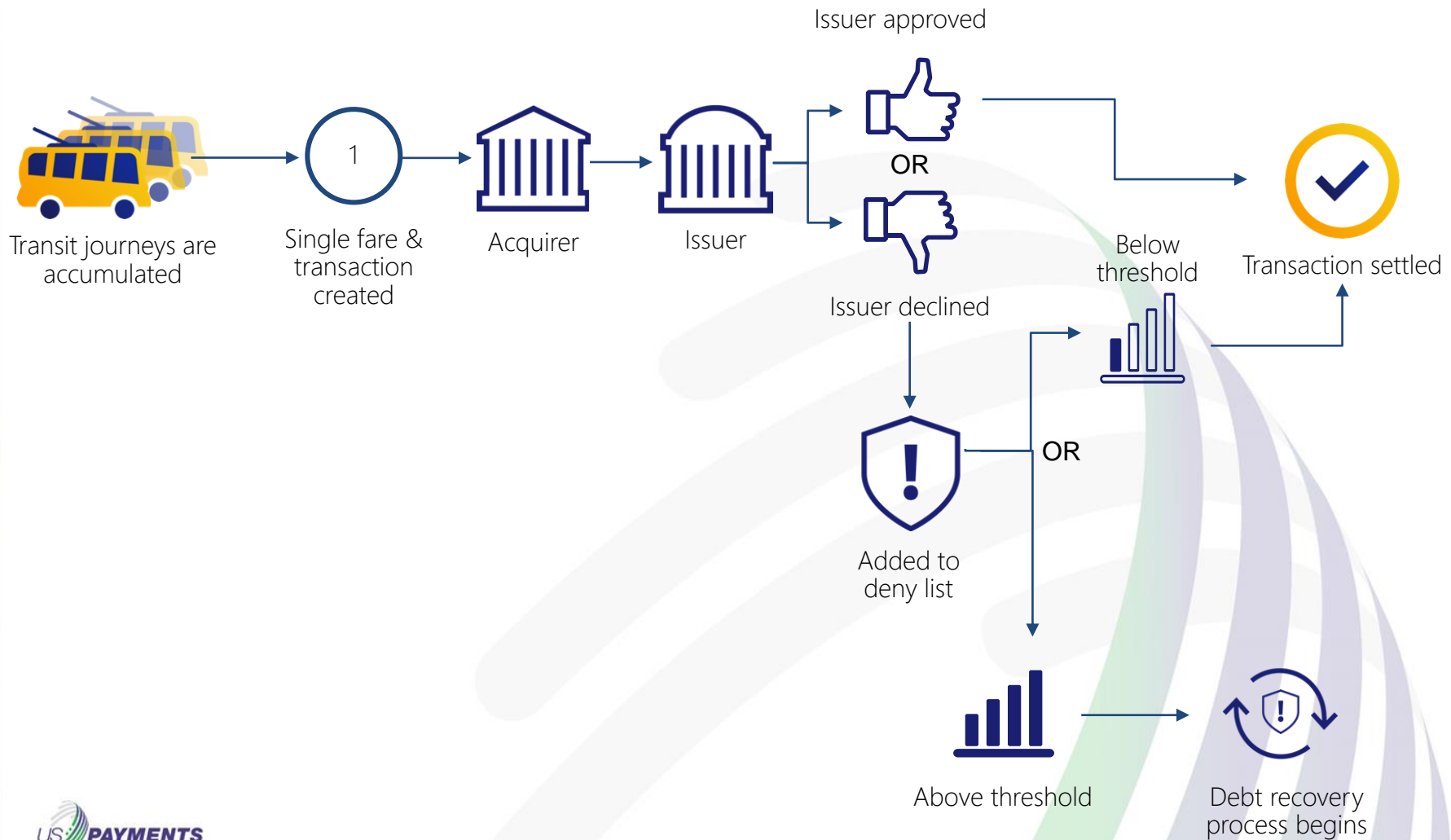
# TRANSIT AGGREGATION/DISTANCE BASED PAYMENT TRANSACTION FLOW

Intra-day process:



# TRANSIT AGGREGATION/DISTANCE BASED PAYMENT TRANSACTION FLOW

End-of-day process:



# WHAT'S NEXT FOR TRANSIT OPEN PAYMENTS

- Networks are finalizing their transit solutions and rules
- The Forum established the Transit Contactless Open Payments Working Committee (TWC) to address the considerations of transit open-loop payments
- CTA (Chicago), TRI-MET (Portland, OR) and Translink (Vancouver, BC) are live with open payments, but are not based on TWC solution, as they were deployed prior to creation of TWC
- TWC White Paper – Technical solutions addressed to date:
  - Use Case 1 = Pay As You Go/Card (published)
  - Use Case 2 = Pay As You Go/Mobile (published)
  - Use Case 3 = Pay As You Go/Aggregation (in progress)
- Transit Open Payments Implementation Guide for Customer-Facing Terminology (in progress)
- TWC – Additional Use Cases and documents may be considered in future

# CONTRIBUTORS

The U.S. Payments Forum is made up of members who work on a voluntary basis. Those who took part in this project are:

- Mansour Karimzadeh, SCIL/Secure Payments Academy – Project co-lead
- Steve Cole, WorldPay – Project co-lead
- Itai Sela, B2 Payments
- Amy Linden, MTA
- Elisa Tavilla, Federal Reserve Bank of Boston
- Chris Brummer, Visa
- Peter Rock, Discover
- Burt Wilhelm, Discover
- Shannan Meehan, Discover
- Breann Pridgen, Discover



# Q&A



[www.uspaymentsforum.org](http://www.uspaymentsforum.org)



# Additional Resources

- **U.S. Payments Forum Member Meetings:** education, roundtables, SIGs, working committee and birds-of-a-feather sessions
  - **July 17-18, 2019** – Atlanta Airport Marriott, Atlanta, GA
  - **November 20-21, 2019** – Westin St. Louis, St. Louis, MO
- **Transit Contactless Open Payments: Technical Solution for Pay As You Go** white paper
  - <https://www.uspaymentsforum.org/transit-contactless-open-payments-technical-solution-for-pay-as-you-go/>
- Other resources available at: [www.uspaymentsforum.org](http://www.uspaymentsforum.org)

**Randy Vanderhoof, [rvanderhoof@uspaymentsforum.org](mailto:rvanderhoof@uspaymentsforum.org)**  
**Steve Cole, [Steven.Cole@worldpay.com](mailto:Steven.Cole@worldpay.com)**  
**Itai Sela, [itai.sela@b2ps.com](mailto:itai.sela@b2ps.com)**



[www.uspaymentsforum.org](http://www.uspaymentsforum.org)

