Fiscal Service EMV Education Series

EMV-Compliant Point-of-Sale
Card Acceptance for Federal Agencies

Fiscal Service / Vantiv

April 21, 2015

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Agenda

1. Executive Order 13681

2. What Is EMV?

3. Federal Agency Payment Card Acceptance Environment

4. Fiscal Service EMV Terminal Deployment Initiative

   – Standalone Terminal Migration

   – EMV and Agencies with Third-Party Integrated POS Systems

5. How Does EMV Work at the Point of Sale

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Executive Order 13681

Executive Order & POS Card Acceptance

- Applies to Executive Departments and Agencies
- Point of sale (POS) card acceptance provisions apply to covered agencies directly and to the Treasury through the Fiscal Service's Card Acquiring Service (CAS)
- All new terminals acquired by agencies through Treasury *or through alternative means authorized by Treasury* after December 31, 2014 must include hardware necessary to support EMV chip and pin
  - "Standalone terminals" acquired through CAS
    - CAS deploying EMV-compliant replacement terminals by 9/30/2015
  - Third-party, integrated agency POS systems
    - Agencies should make plans and ensure all new POS card hardware/software is EMV-compliant
- EMV card issuance provisions of EO are out of scope

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What is EMV?

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What is EMV?

- International standard defining interoperability of secure transactions
  - › Introduces **dynamic data** specific to the transaction
  - › **Devalues** transaction data; reducing risk of counterfeit fraud
- World-wide adoption including U.S. neighbors, Canada and Mexico
  - › Affecting U.S. multi-national retailers
- Enabler of future payments types
  - › Contactless (NFC), Mobile
- Chip & PIN ≠ EMV

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What is EMV?

- Chip on card uses cryptography to provide security

- Utilizes 2 forms of cryptography

  › Digital signatures – ensures data is **authentic**

  › Encryption – ensures data is kept **confidential**

- Digital signature devalues the data

  › Even if data is intercepted, signature cannot be replicated

- Encryption is only used to protect the PIN

  › EMV does ***not*** encrypt all transaction data

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Liability Shift

- Counterfeit fraud liability is assigned to least secure party

- Standard rules apply when both are equal
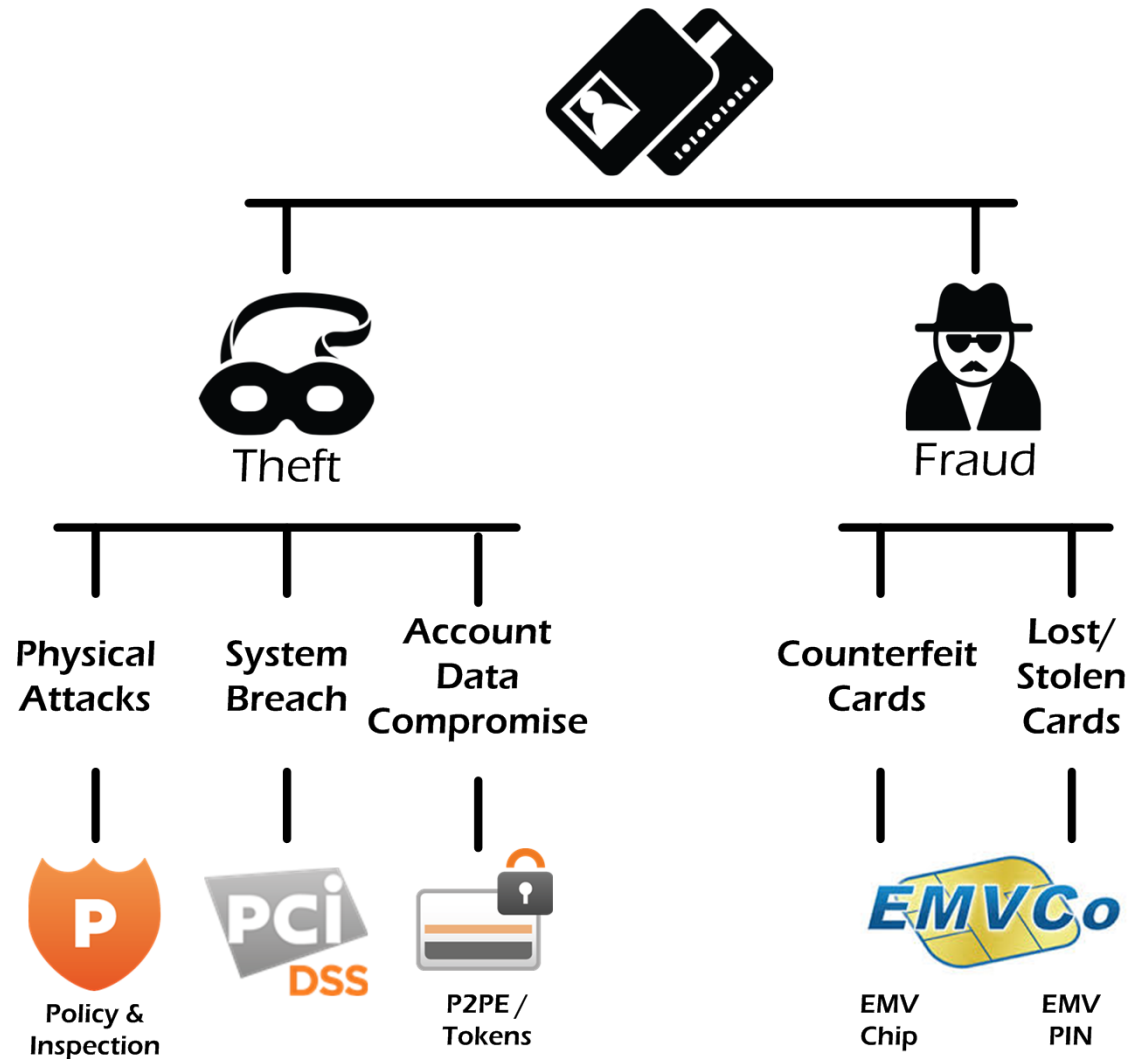
- Inclusion of PIN adds Lost/Stolen shift

  EMV w/PIN > EMV w/Sig > Mag stripe

- Visa only states that the party not using EMV technology is liable

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EMV in the Security Equation

Theft

- Physical Attacks → Policy & Inspection
- System Breach → PCi DSS
- Account Data Compromise → P2PE / Tokens

Fraud

- Counterfeit Cards → EMVCo / EMV Chip
- Lost/Stolen Cards → EMV PIN

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Federal Agency Payment Card Acceptance Environment

CARD ACQUIRING SERVICE (CAS)

- Processes credit & debit card transactions
  - VISA, Mastercard, AmEx, Discover and PIN debit networks through POS terminals and Pay.Gov

- Used to be called the Plastic Card Network (PCN)

- CAS receives and processes card transactions initiated through Pay.gov, and point-of-sale (POS) transactions:
  - POS transactions flow from standalone terminals and integrated POS systems directly to our card acquirer

- Program has grown steadily over the past decade with new agencies, agency expansion, and native growth with convenience of cards

- FY14 Volumes: 121 mil. transactions, $11.5 billion
  - Avg. Transaction: $95

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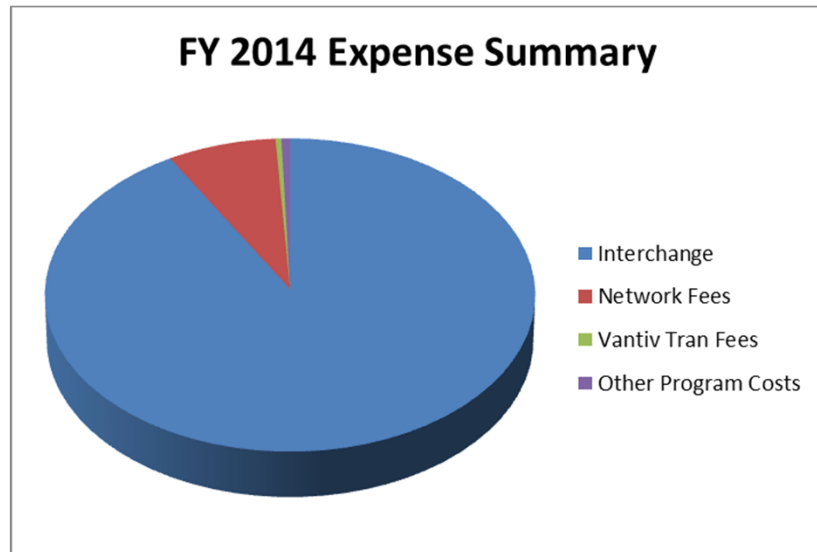U.S. DEPARTMENT OF THE TREASURY

CAS Program Metrics*

Agency Accounts

731 agency accounts

6,801 Physical Locations

9,462 Acceptance points

- 38% Standalone terminals
- 40% ISV/VAR
- 21% Pay.gov

FY 2014 Expense Summary

- Interchange
- Network Fees
- Vantiv Tran Fees
- Other Program Costs

How much is collected?

Transaction Volume (dollars):

- Over $11.5 billion collected on cards in FY2014
  - POS: ISV/VAR/Terminals collects 49%
  - Pay.gov collects 51%

Transaction Count:
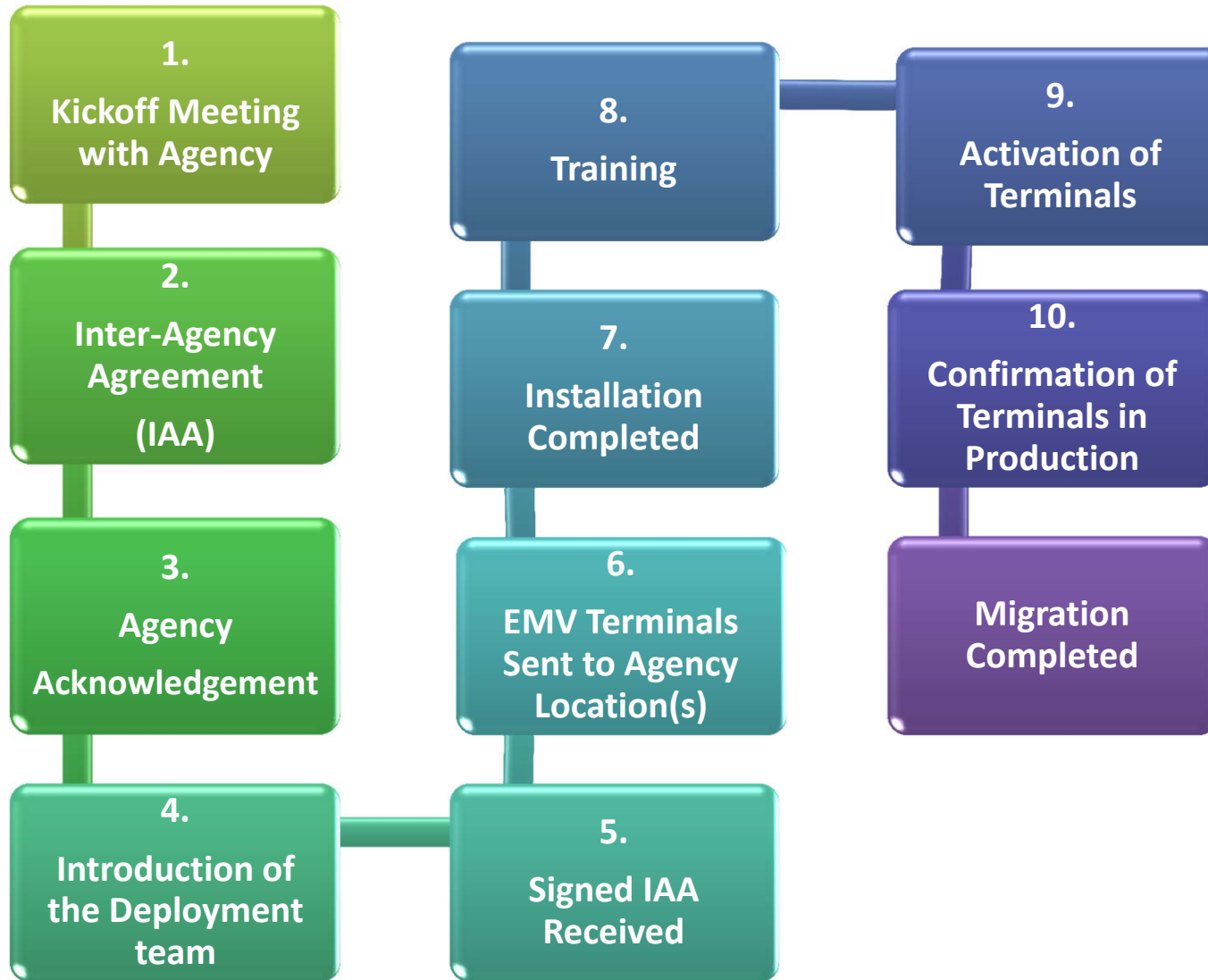
- Over 121 million transactions in FY2014
  - POS: ISV/VAR/Terminals collects 74%
  - Pay.gov collects 26%
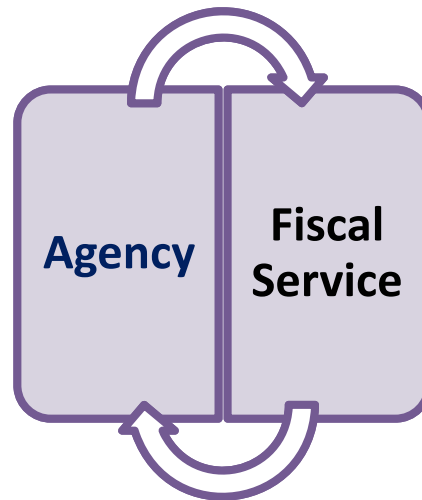
*NOTE: As of Fiscal Yearend 2014

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Fiscal Service EMV Terminal Deployment Initiative

Standalone EMV Terminal Migration

1. Kickoff Meeting with Agency

2. Inter-Agency Agreement (IAA)

3. Agency Acknowledgement

4. Introduction of the Deployment team

5. Signed IAA Received

6. EMV Terminals Sent to Agency Location(s)

7. Installation Completed

8. Training

9. Activation of Terminals

10. Confirmation of Terminals in Production

Migration Completed

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Agreement & Acknowledgement

Agency | **Fiscal Service**

Inter-Agency Agreement	• The Bureau of the Fiscal Service is requesting that Federal agencies reimburse the Treasury for the bulk purchase of replacement standalone terminals.
Agency Acknowledgement	• An *agency acknowledgement* is a communication between the agency's primary POC and the Fiscal Service acknowledging that the parties understand the requirements of Executive Order 13681

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Agencies with Integrated POS Systems

- Known by several terms: ISVs, VARs, electronic cash registers, integrated card solutions
  - Common denominator: these applications are built and operated by agencies and process through to the CAS program acquirer Vantiv, but these are not supported directly by CAS
- These POS card acceptance points are <u>not</u> subject to the "Treasury Plan" through which CAS is replacing standalone terminals with EMV-compliant terminals
  - CAS still wants to understand agency planning around EMV for these solutions
- If subject to the EO, agencies with integrated POS solutions need to be mindful of the following:
  - EO requirement that any card acceptance upgrades post-12/31/2014 must be EMV-compliant
  - 10/1/2015 liability shift under card rules to agency for counterfeit card use if chip card used at non-EMV-compliant POS
    - Liability realized through chargeback for amount of transaction

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How Does EMV Work at the Point of Sale?

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Contact EMV, Part 1

- An EMV card is **inserted** into a terminal
  - › Application Selection

- The chip in the card contains the **account data**
  - › Initiate Application Processing

- Chip data is **accessed** by the terminal
  - › Read Application Data

- Chip creates a unique code, or "**cryptogram**", and sends to the issuer (or not)
  - › Offline Authentication

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Contact EMV, Part 2

- Cardholder is **verified** by the card (or not)
  › Cardholder Verification

- Terminal determines need to **process online**
  › Terminal Risk Mgmt & Terminal Action Analysis

- Card **decides** to approve or go online
  › Card Action Analysis

- If card approves, **complete** transaction
  › Completion

Contact EMV, Part 3

- If online, issuer **validates** the cryptogram and PIN

  › Issuer Authentication

- Transaction is approved by the issuer and sends **response cryptogram**

  › Completion

- Issuer **scripts** processed by card

  › Script Processing

  › Tags 71 and 72, <= 128 bytes

- The card is **removed** when the transaction is completed

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And now a word on Fallback

- Technical Fallback
  - › Terminal cannot read chip
  - › Terminal prompts cardholder to swipe card
- CVM Fallback
  - › PIN Try Counter on card is exceeded
  - › PIN Entry Bypass is used
  - › Issuer personalizes the card to decide:
    - Decline
    - Fallback to Signature
    - No CVM

Contactless and Mobile

- A chip can be on a **contactless card**

- A chip can be in a **smart phone**

- Device is **tapped or held** near the terminal

- Cardholder **experience** similar to today

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