

# EMV: Next Steps in the Journey



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# Agenda

- EMV Review
- The Road Ahead
- EMV Certification
- Certification Scope
- Certification Roles
- Terminal Options



**vantiv™**

# Brief History of Chip Cards

- Chip-based payment cards introduced in the 1980's
  - › High communications costs and unreliable service
  - › Offline processing susceptible to fraud
- Specifications developed country by country
  - › Interoperability issues
- Europay, MasterCard and Visa
  - › Joint effort to develop common specification
  - › EMVCo formed in 1999
    - Now includes Amex, Discover, JCB and CUP



# 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
  - › Effecting U.S. multi-national retailers
- Enabler of future payments types
  - › Contactless, Mobile
- Chip & PIN ≠ EMV

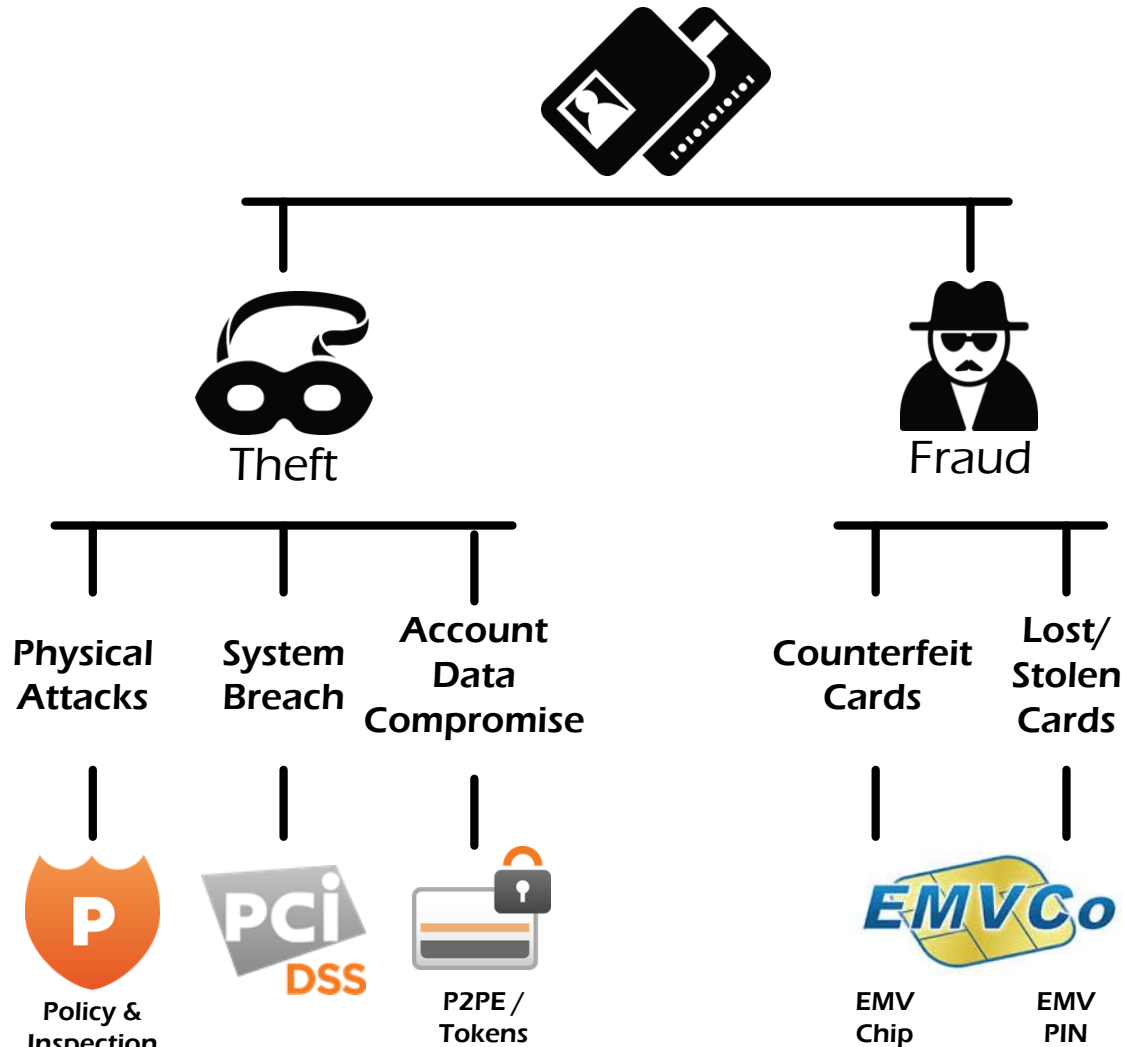


# What is EMV?



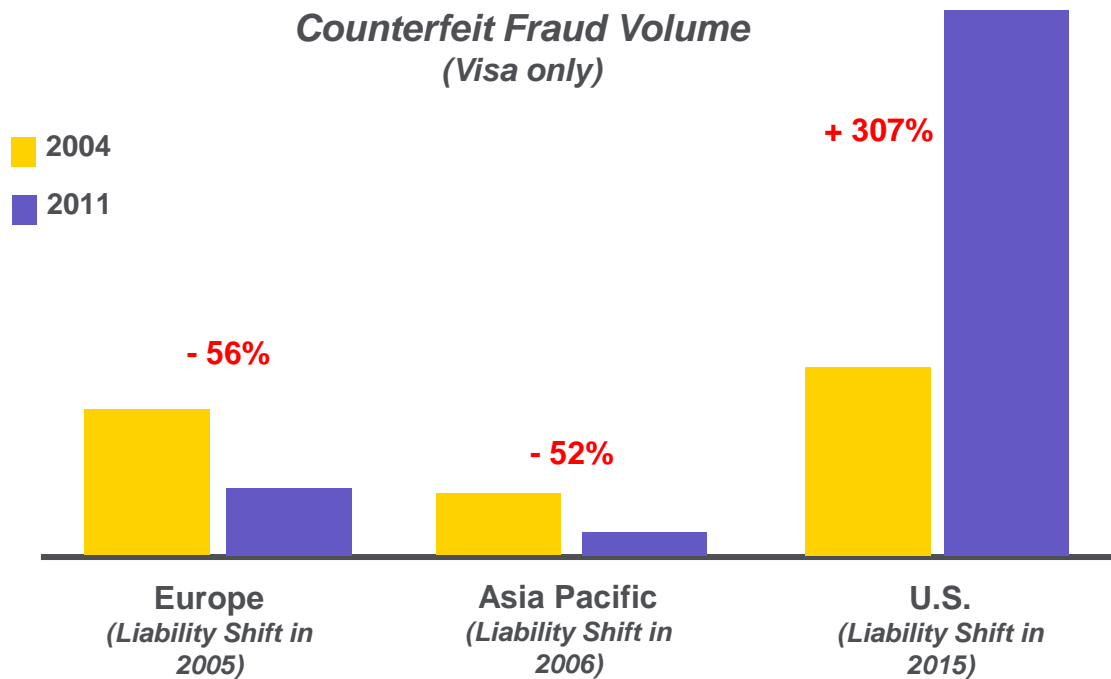
- Chip on card uses cryptography to provide security
- Utilizes 2 forms of cryptography
  - › Digital signatures – ensures data is **authentic**
  - › Encryption – ensures data is kept **confidential**
- Digital signature devalues the data
  - › Even if data is intercepted, signature cannot be replicated
- Encryption is only used to protect the PIN
  - › EMV does **not** encrypt all transaction data

# EMV in the Security Equation

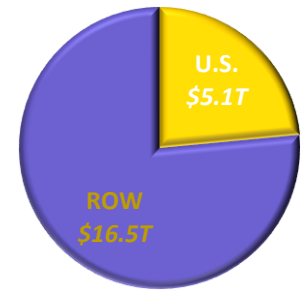




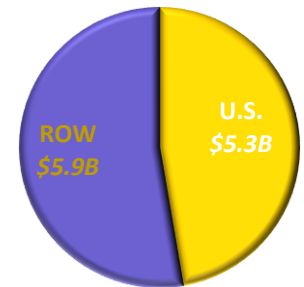
# Why EMV – Global Fraud Trends



**U.S. and Rest of World Sales Volume 2012**

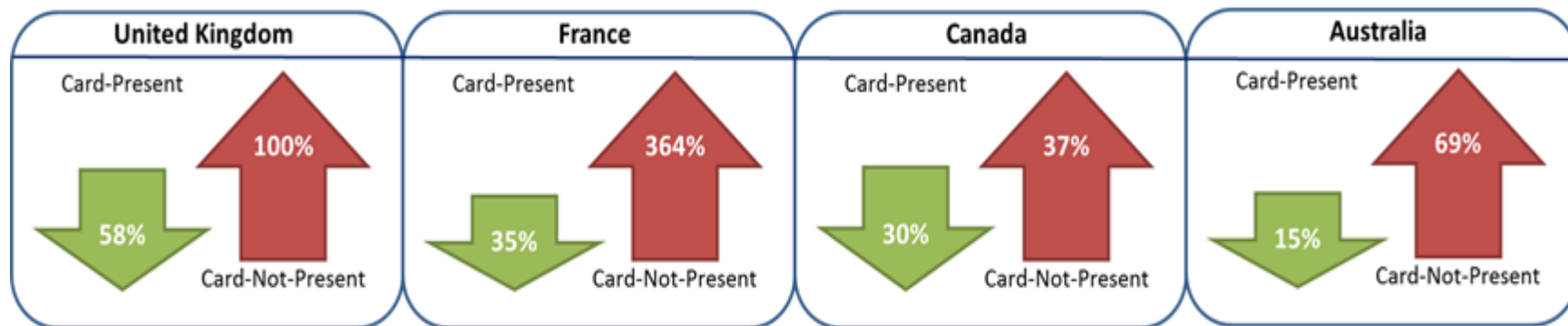


**U.S. and Rest of World Fraud Volume 2012**



# Impact on Card Not Present

## Incidence of Fraud by Channel Following EMV Adoption\*



- Increase in CNP fraud is driving other solutions
  - › 3-D Secure
  - › Tokenization
  - › Chip authentication devices

\* Retail Payments Risk Forum Working Paper  
Federal Reserve Bank of Atlanta  
January 2012

# The Road Ahead



# Brand Roadmaps



**April 2013**

Processors must support EMV

**April 2015**

3rd party ATM must support EMV

**October 2015**

Liability shift of counterfeit transactions

**October 2017**

Liability shift for AFD  
Liability shift for ATM



**April 2013**

Processors must support EMV  
International ATM liability shift

**October 2015**

Liability shift of counterfeit transactions

**October 2016**

Liability shift for ATM

**October 2017**

Liability shift for AFD



**April 2013**

Processors must support EMV

**October 2015**

Liability shift of counterfeit transactions

**October 2017**

Liability shift for AFD



**April 2013**

Processors must support EMV

**October 2015**

Liability shift of counterfeit transactions

**October 2017**

Fuel liability shift

**A Regional Debit Network solution proposal has been released by the EMV Migration Forum**

# The EMV Implementation Journey

- EMV is ultimately about a Merchant's brand
  - › Delivery is ultimately about managing what can be a complex cross-functional project





# The Road Ahead



# The EMV Implementation Journey

- Awareness
  - › Merchant has limited or base understanding of EMV
  - › Merchant does not have any formal projects in flight
- Gaps to bridge
  - › Organizational education and engagement
  - › High-level scope of effort to implement EMV

# The EMV Implementation Journey

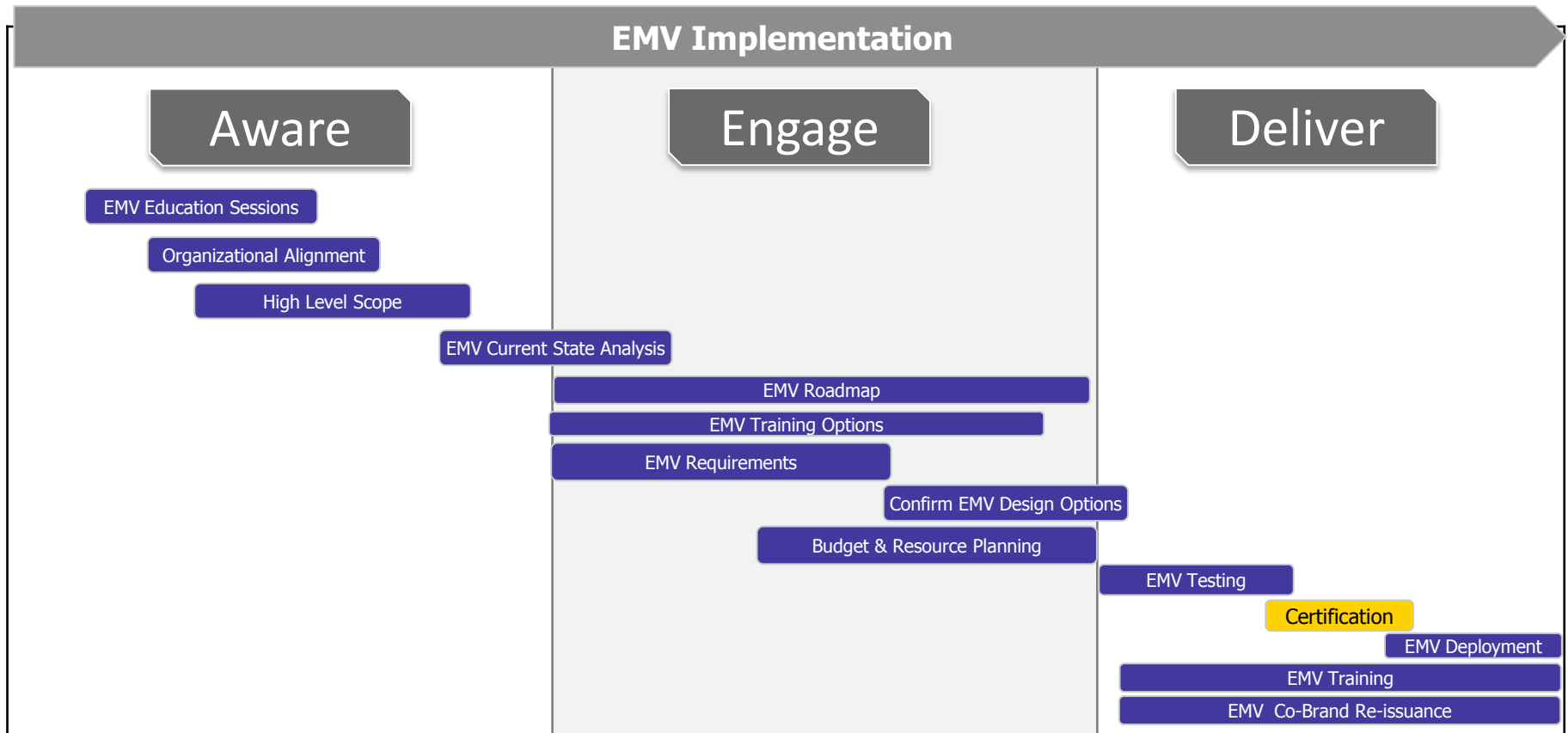
- Engagement
  - › Merchant approves effort to move forward with EMV
  - › Merchant prioritizes EMV versus other projects
  - › Merchant defining scope/plan and allocating budget and resources
- Gaps to bridge
  - › Defining and approving plans
  - › Roadmap definition
  - › Approval of budgets
  - › Staffing of team



# The EMV Implementation Journey

- Delivery
  - › Merchant in process of enabling EMV
  - › Merchant making scope decisions
  - › Suppliers engaged and actively working project
- Gaps to bridge
  - › Contracts with suppliers
  - › Teams actively working plan
  - › Updates to software
  - › Certification planning and deployment strategy definition

# Where are You on the Map?



Note: You can start your EMV journey without a Certification strategy, but you cannot set an end date until it is defined

# EMV Certification



# EMV requires certification and validation

## Terminal



- EMVCo terminal type approval – hardware and logic testing
- Payment network brand testing for each brand supported

## Acquirer



- Processor Network Host Certification
- Host certification already completed by Vantiv

## Chip



- EMV Chip application certification (Before they can be sold)
- Card Personalization validation (For each product issued)

# What is a “Terminal”?

- A “terminal”, in the context of the brand terminal testing, consists of:
  - › The Level 1 hardware (contact IFM and/or contactless PCD)
  - › Level 2 kernel application
  - › Brand payment application
    - Includes particular terminal-to-acquirer messaging specification
  - › Environment (ATM, attended POS, unattended CAT, etc.)

# All in the (Terminal) Family

- Different terminals models can be part of same family:
  - › Same Payment Application
  - › Same EMV kernel
  - › Same Chip Transaction Flows
- Terminals models in same family do NOT require separate certifications

# Scope of EMV Certification

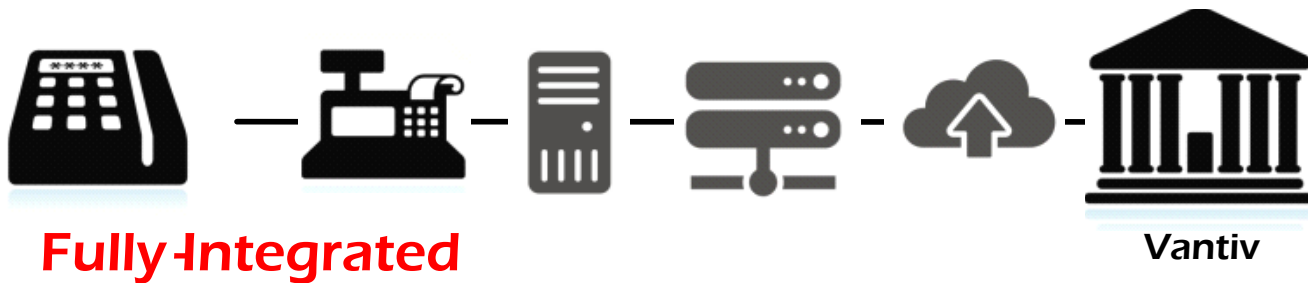
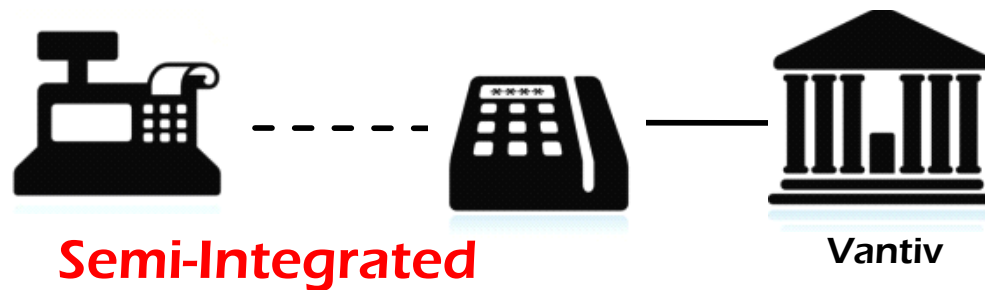
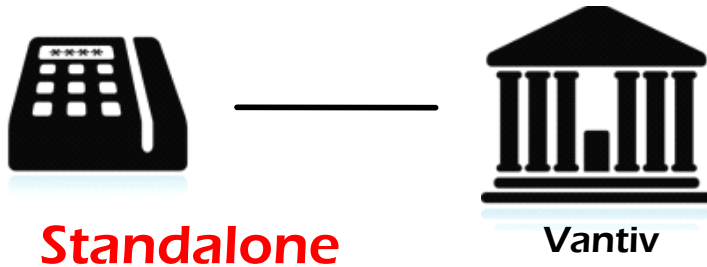


# Card Acceptance Device Integration

- Integration Models
  - › Fully Integrated
  - › Semi-Integrated
  - › Stand-Alone
- Abstracting the payment process
- Impacts Certification...and Recertification

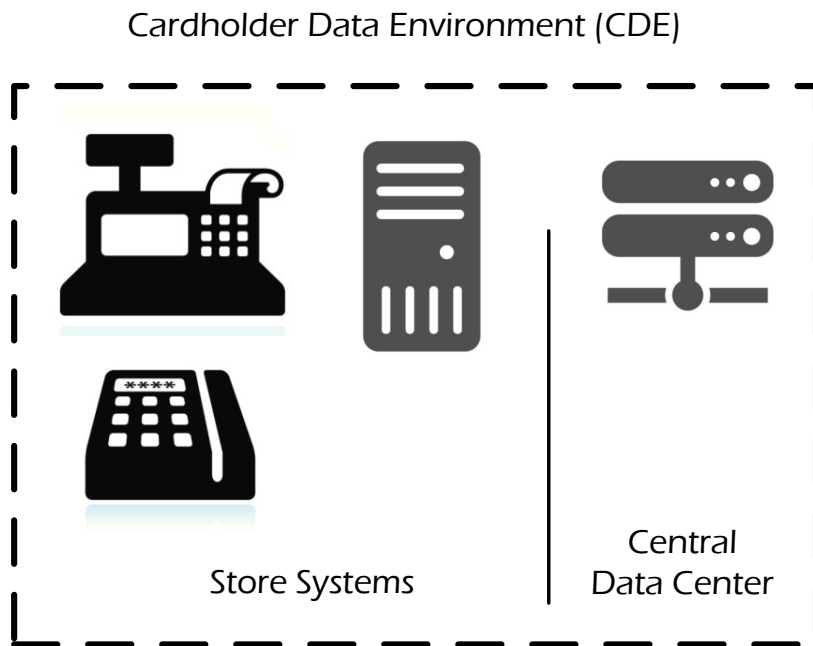


# Card Present Deployments

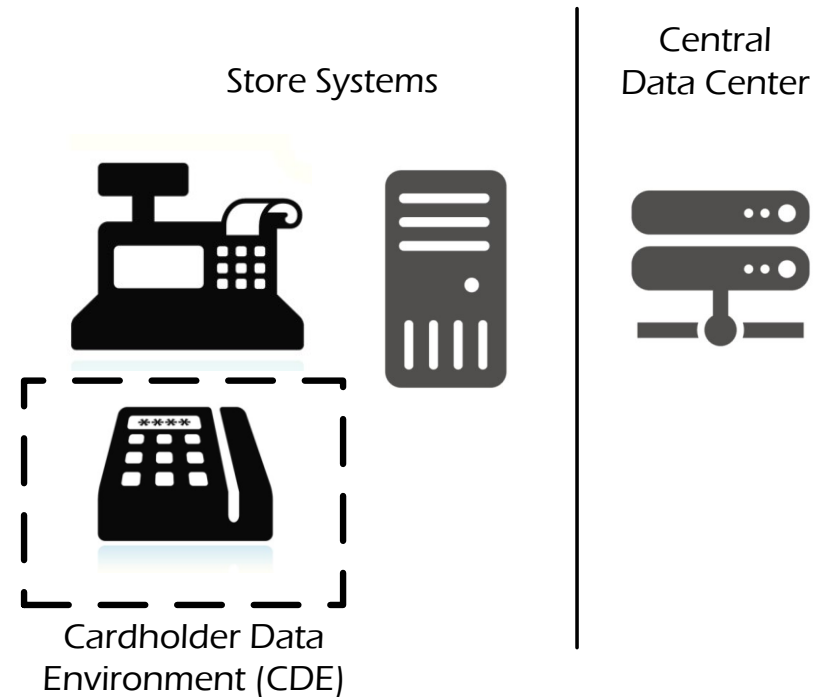


# Scope of Certification Range

## Fully Integrated Scope



## Stand-Alone Scope



# Roles in EMV Certification



# Merchant

- Purchases payment equipment
- Owns design of processing environment
  - › Fully Integrated, Semi-Integrated, Stand-Alone
- May guide design and development processes
- Makes decision on some terminal parameters
  - › Offline floor limit
- Conducts User acceptance testing
  - › Internal and with Acquirer/Gateway
- Responsible for successful EMV validation

# Acquirer

- Provides EMV education
- Delivers host message specifications
- Assists merchant/ISV with host message enhancement
- Provides some terminal parameters
  - › TACs
- Validates merchant payment solution is EMV-ready
- Responsible for acquirer message certification

# ISV

- Offers payment equipment options
  - › May include semi-integrated environment
- Offers technology merchant uses to complete EMV enablement
- Develops detailed application design
- Makes logical changes support EMV
  - › API updates
- Conducts unit testing with merchant and acquirer
- Responsible to certify with acquirer so merchant can complete EMV validation

# Terminal Vendor

- Develops terminal kernel
- Performs EMVCo Level-1 and Level-2 certifications
- Develops terminal payment application
- Provides some terminal parameters
  - › Terminal Capabilities
  - › Terminal Type
- Supports testing and certification efforts
- Responsible for ISV API Integration

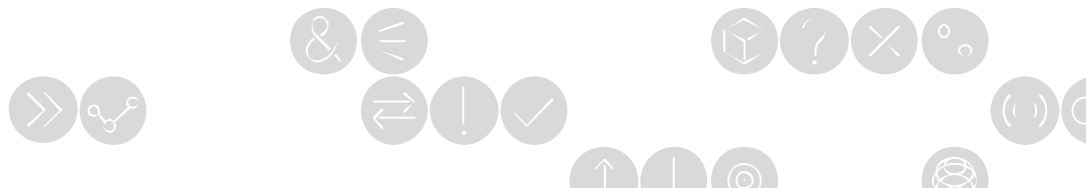
# Stand-Alone Terminal Options





# What are the terminal options?

- Terminal Deployment Options
  - › Single device (All options built in)
  - › Combination of Merchant Facing Device (MFD) and Customer Facing Device (CFD)
- Vantiv recommends the MFD/CFD option. Why?
  - › Ease of PIN entry when required
  - › Studies show that merchants are not willing to hand terminal over the counter to customers
  - › Smaller merchants get big retailer customer experience with MFD/CFD combination



# Ingenico Single Device Options

## Ingenico iCT250

- EMV Reader
- Mag Stripe Reader
- Contactless Reader
- Color Screen



## Ingenico iWL222, iWL252, iWL255

- EMV Reader
- Mag Stripe Reader
- Contactless Reader
- Color Screen (252/255)
- Wireless connectivity
  - Bluetooth (222/252)
  - GPRS (255)



# Ingenico MFD/CFD Options

## Ingenico iCT220 with iPP320

- EMV Reader
- Mag Stripe Reader
- Black/White Screen
- Contactless reader in PIN Pad



## Ingenico iCT250 with iPP320

- EMV Reader
- Contactless Reader
- Mag Stripe Reader
- Color Screen
- Contactless reader in PIN Pad



# VeriFone Single Device Option

## VeriFone Vx520DC-Contactless

- Terminal includes:
  - EMV Reader
  - Mag Stripe Reader
  - Contactless Reader
  - Dual-Comm connectivity

<b>NFC enabled</b>	Supports contactless payments, including Apple Pay
<b>EMV capable</b>	Requires full download in 2015
<b>P2PE capable</b>	Requires full download in 2015
<b>PIN Debit</b>	Integrated PIN Pad in terminal
<b>Gift Card</b>	Vantiv Gift Card program is supported
<b>PCI</b>	PCI PED 3.0 certified
<b>3<sup>rd</sup> Party Apps</b>	UTA Check Guarantee, other apps are TBD



# VeriFone MFD/CFD Options

## VeriFone Vx520DC – Contactless with Vx820

- EMV Reader in Vx520 CTLS & Vx820
- Mag Stripe reader in Vx520 CTLS & Vx820
- Contactless reader in Vx520 CTLS & Vx820
- Touch/Color screen on Vx820



## VeriFone Vx520DC - Contactless with Vx805

- EMV Reader in Vx520 CTLS & Vx820
- Mag Stripe reader in Vx520 CTLS & Vx820
- Contactless reader in Vx520 CTLS & Vx820
- White Backlit screen on Vx805

# EMV Reference Information

- [Vantiv.com/emv](http://Vantiv.com/emv)
- [www.emvco.com](http://www.emvco.com)
- <http://www.emv-connection.com/>
- <http://www.smartcardalliance.org/>



# Questions

