Are you ready for Oct 1, 2020?

Part 1: EMV fundamentals and the Risk of Not Upgrading

December 5, 2019
Agenda

• Housekeeping
• Presenters
• About Conexxus
• Presentation
• Q & A
Housekeeping

This webinar is being recorded and will be made available in approximately 15 days.

- YouTube (youtube.com/conexxusonline)
- Website Link (conexxus.org)

Slide Deck
- Survey Link – Presentation provided at end

Participants
- Ask questions via webinar interface
- Please, no vendor specific questions
- Our webinars may be used toward PCI continuing education credits. Please contact arussell@conexxus.org for questions regarding a certificate of webinar attendance.

Email: info@conexxus.org
Presenters

Conexxus Host & Moderator
Linda Toth, Director of Standards, Conexxus
ltoth@conexxus.org

Speakers
Robert Alandt, Senior Director, Merchant Solutions, Visa Inc.
ralandt@visa.com

Brian Russell, Lead EMV Business Analyst, Verifone
brian_r1@verifone.com
About Conexxus

• We are an independent, non-profit, member driven technology organization
• We set standards…
  – Data exchange
  – Security
  – Mobile commerce
• We provide vision
  – Identify emerging tech/trends
• We advocate for our industry
  – Technology is policy
## 2019-2020 Conexxus Webinar Schedule

<table>
<thead>
<tr>
<th>Month/Date</th>
<th>Webinar Title</th>
<th>Speaker</th>
<th>Company</th>
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<tbody>
<tr>
<td>August 29, 2019</td>
<td>Don’t Get Phished!! Train Your Employees To Avoid Ransomware</td>
<td>Geoffrey Vaughan</td>
<td>Security Innovation</td>
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<td>Ed Adams</td>
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<td>September 26, 2019</td>
<td>Using Data Science to Proactively Manage the Connected C-Store</td>
<td>Ashwin Swamy</td>
<td>Omega ATC</td>
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<td>Thomas Duncan</td>
<td>Omega ATC</td>
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<td>October 24, 2019</td>
<td>Easy PCI—How to Make PCI &amp; Attestation Easier</td>
<td>Ajith Edakandi</td>
<td>Hughes</td>
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<td>November 14, 2019</td>
<td>Impending Consumer Privacy Laws</td>
<td>Alan Thiemann</td>
<td>Conexxus</td>
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<td>Paige Anderson</td>
<td>NACS</td>
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<tr>
<td>November 21, 2019</td>
<td>Applicability of PCI DSS requirements for Merchants and MNSP’s</td>
<td>Sam Pfanstiel</td>
<td>ControlScan</td>
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<tr>
<td>December 5, 2019</td>
<td>EMV: Part 1</td>
<td>Brian Russell</td>
<td>Verifone</td>
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<td>Linda Toth</td>
<td>Conexxus</td>
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<td>Robert Alandt</td>
<td>Visa</td>
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<tr>
<td>December 12, 2019</td>
<td>EMV: Part 2</td>
<td>Gray Taylor</td>
<td>Conexxus</td>
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<td>Dispenser Manufacturers</td>
<td>TBD</td>
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2020 Conexxus Annual Conference

April 26 – April 30, 2020
Loews Ventana Canyon
Tucson, AZ

More about Sponsorship Opportunities & Registration: www.Conexxus.org

Conexxus thanks our 2019 Annual Diamond Sponsors!
EMV

Europay
MasterCard
Visa

EMVCo maintains specification
Liability Shift* Dates

Oct 1 2015
Payment Terminals (except AFDs)

Oct 1 2020 (3 yr. deferment)
Outdoor AFDs

*Not a card brand mandate, but may be required by oil brands & is a common-sense mandate
Liability Shift

*Liability shifts to the party in the payment chain with the least secure payment technology*

Retailers are covered by implementing EMV
EMV Preparedness

Conexxus EMV Preparedness Survey
June 10 – July 8, 2019
1100+ Merchants Invited
88 Responses representing 26,284 Sites

Outdoor (Contact) EMV
EMV Preparedness - Outdoor

70% have ZERO sites deployed

80% Plan to deploy

17% Undecided

42% expect to have EMV outdoor by Oct 1, 2020

Cost of Upgrades (43%)*

Risk vs. the expense (43%)*

*Respondents could choose more than one reason
Card Fraud

• Lost/Stolen:  10%
• Counterfeit:  90%
Counterfeit AFD Fraud

3 Major Card Brands Reporting as of 9/19

- $299 MM (actual) in 2018
- 23% average YOY increase
- Projected $367 MM in 2019
- Projected $451 MM in 2020
Counterfeit AFD Fraud Pool

Projected $451 MM in 2020

Fraud will seek non EMV enabled sites!
Visa AFD EMV Review

November 2019

Robert Alandt
Senior Business Leader
Merchant Sales and Solutions, Visa Inc.
Fuel Segment Fraud and Chargeback Trends
Service Station 5541 EMV Terminal Enablement Trends

% of Total Chip Terminal Authorizations (Count)

Source: VisaNet for the period Jan 2016 through Aug 2019
Service Station 5541 Reported Fraud & Fraud Chargeback Trends

Source: VisaNet for the period Jan 2016 through Aug 2019
AFD 5542 Reported Fraud & Fraud Chargeback Trends

Source: VisaNet for the period Jan 2016 through Aug 2019
AFD 5542 Counterfeit Fraud By State

Top 10 States for AFD Counterfeit Fraud ($)

Source: VisaNet for the period Q3 2018 through Q2 2019
EMV Update
U.S. EMV chip migration status as of September 2019

- **99%** of overall US payment volume was on EMV cards

**Adoption**
- **99.8%** of US credit payment volume on EMV cards
- **98%** of US debit payment volume on EMV cards

**Usage**
- **66%** of US credit transactions were chip-on-chip
- **62%** of US debit transactions were chip-on-chip

- **3.7 M** merchant locations accepted chip cards

Sources: GBI data for the month of September 2019

*Card counts are estimates based on the number of active cards during the reporting month

*Visa branded transactions processed as chip transactions

*Magstripe transactions using a Visa branded chip card in a chip terminal
<table>
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<tr>
<th>U.S.</th>
<th>Card</th>
<th>Terminal</th>
<th>Liability</th>
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<tbody>
<tr>
<td></td>
<td>Mag stripe only</td>
<td>Mag stripe only</td>
<td>Issuer</td>
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<tr>
<td></td>
<td>Mag stripe only</td>
<td>EMV chip</td>
<td>Issuer</td>
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<tr>
<td>EMV chip</td>
<td>Mag stripe only</td>
<td>Acquirer</td>
<td></td>
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<tr>
<td></td>
<td>EMV chip</td>
<td>EMV chip</td>
<td>Issuer</td>
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## Liability shift for lost/stolen fraud at AFDs

<table>
<thead>
<tr>
<th>Global</th>
<th>Card</th>
<th>Terminal</th>
<th>Card Read</th>
<th>Liability</th>
</tr>
</thead>
<tbody>
<tr>
<td>As of April 15, 2014</td>
<td>Mag stripe only</td>
<td>Mag stripe only</td>
<td>Mag stripe</td>
<td>Acquirer</td>
</tr>
<tr>
<td></td>
<td>Mag stripe only</td>
<td>EMV chip</td>
<td>Mag stripe</td>
<td>Acquirer</td>
</tr>
<tr>
<td><strong>EMV chip</strong></td>
<td><strong>EMV chip</strong></td>
<td><strong>EMV chip or qVSDC Contactless</strong></td>
<td><strong>Issuer</strong></td>
<td></td>
</tr>
<tr>
<td><strong>EMV chip</strong></td>
<td><strong>EMV chip</strong></td>
<td>Mag stripe</td>
<td>“fallback” transaction or MSD Contactless</td>
<td>Acquirer</td>
</tr>
</tbody>
</table>

**Consider not allowing fallback at the AFD to avoid lost/stolen fraud liability**
Additional Information

Visa Payment Acceptance Best Practices for U.S. Retail Petroleum Merchants

Visa.com location
Thank You

ralandt@visa.com
Brian Russell, Verifone
EMV – What is it?

• EMV – is a set of standards for payment cards designed to reduce counterfeit fraud

• EMV cards contain a “chip” that performs cryptographic functions making counterfeit fraud almost impossible.

• EMV transactions work as Contactless too - either from a card or a mobile device
EMV is NOT…

• Very important for a merchant to understand what EMV is not!
• EMV is not a data encryption standard!
  – Data read from an EMV chip is in the clear just like a mag-stripe would be.
  – **Card data must still be protected.**
  – Point 2 Point Encryption or End 2 End encryption is still required to secure a transaction.
Card Fraud – Where Does EMV Help?

• Counterfeit – largest category
  – EMV’s biggest impact for merchants
  – Contact & Contactless
  – All EMV transactions

• Lost and Stolen
  – Depends on Cardholder Verification Method (CVM)
Counterfeit Fraud – How EMV Helps

- Offline Data Authentication (ODA)
  - Cryptographic data exchange between card (chip) and terminal
  - Not always performed, but may be done even when “online”
- Online Cryptogram (ARQC)
  - Digital signature created by the card and validated by the issuer
- Both help assure a genuine card!
EMV Sounds Terrific!
It’s working great for retail and indoors

Let do it outside at the AFDs!

Err, not so fast 😞

• Why is this taking so long?
• More importantly, what are we doing about it?
Petro AFD EMV Challenges

• Diversity
  – Mom & Pop’s to Mega centers

• Scale
  – 124,000+ fueling locations, 1M+ EMV terminals

• Hardware
  – Multiple EMV devices/kernels

• New capabilities, i.e. Contactless
Petro AFD EMV Challenges

- Card readers interact differently
- Multiple MSR Fallback strategies
  - Integrated chip/MSR terminals
- Loyalty/AVS prompting
- Fleet Processing
- Additional AIDs
Petro AFD EMV Challenges

• Resources
  – Financial – significant investment, especially for smaller sites/chains
  – Shortage of qualified Technicians
  – Software availability

• Large number of EMV certifications
Petro AFD EMV Solutions

• Industry collaboration
  – Conexxus
  – U.S. Payment Forum
  – Card Brand Support
  – Vendors
One Example: EMV Certifications

• Types
  – L1 – Hardware
  – L2 – Kernel
  – L3 – Payment application

• When are certifications required?
  – Expirations
  – Changes in payment applications
EMV Software (L3) Certifications

• EMV software solutions must be certified
  – Vendor, Acquirer, Brand/Issuer involvement
  – Currently required for every EMV kernel
  – Currently required with each Acquirer

• Reducing certification time has been a priority
  – Acquirer self certifications
  – Past efforts focused on reducing test cases

• Still – it is typically weeks for each device
Why Focus on Certifications?

What do all These Certs Look Like?
EMV Certifications – The Old Way

EMV Devices
6-8 Kernels

EPS (Verifone Viper)

Acquirer

Results in approx. 100 end-to-end certifications

Global Payment Networks

Acquirers may Self-Cert

Brands have reduced end to end test cases in an attempt to “streamline” testing

6-8 Repetitive messages sets, one from each Kernel

All of this repeats for each of our 7 acquirers and for Contact & Contactless
Innovation - an Industry Solution

Leverage an Architecture Where the EMV Device is Just a Data Source
EMV Processing Logic is independent
Innovation - an Industry Solution

• Vendor, Merchant, Acquirer, Card Brand participation

• Result: U.S. Payment Forum Testing and Certification Committee White Paper
  – Available Now! Options for Reducing Level 3 EMV Certification Time for Retailer Systems using an EPS.

EMV Certifications – A New, Better Way

**One host message certification**

**One EMV Device**

Certify with ONE EMV device using all EMV capabilities

Certify Acquirer message set ONCE, using a “Superset” of EMV capabilities

Self-Certify This Interface

Robustly test all capabilities of each EMV Device

Commander OR Automation Driver

Acquirers may Self-Cert

Global Payment Networks

Not 100!

Results in 7 end-to-end certifications

Significantly improved EMV Device Testing
Moving to EMV

- Liability Shift October 2020
- Fraud will migrate to non-EMV enabled sites
- Chargebacks are wasted money
- Hardware and Technician availability favor early adopters
- Take advantage of industry resources
- Work with your Vendors
Resources

Conexxus.org

• Resources/EMV Resources (Resource Guide, Survey Results)

  Coming soon:  Risk vs Reward Tool

• Webinars (webinars@conexxus.org)

Secure Technology Alliance/US Payments Forum

https://www.emv-connection.com/emv-resources/

Visa.com

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