The webinar will begin shortly
Communication & Education Working Committee
Dual-Interface Card Personalization

Webinar 1 - Issuing Dual-Interface Cards 101

10/13/2020
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
• COVID-era changes impacting the payments experience for consumers and merchants
• 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
• Identity and authentication in payments: use of biometrics, mobile data elements, digital ID
• EMV 3-D Secure, Secure Remote Commerce, PAR and other online fraud mitigation 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
Today’s Speakers

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Dual-Interface Card Hardware

Mansour Karimzadeh, SCIL
Market Considerations

Dual-interface cards have been successful globally, with the UK, Canada and Australia leaders in contactless adoption. Experience in countries that have moved to contactless has shown the contactless-capable cards displace cash and drive increased transactions (i.e., “top of wallet” behavior)
Visual Difference from a Contact Card
Manufacturing Difference from a Contact Card

- Chip module cavity
- Chip module
- Front protective transparent overlay
- Front core material and face print layer (may be color or white)
- Antenna layer (may be color or transparent or white)
- Reverse core and print layer (may be color or white)
- Holding magnetic stripe
- Reverse protective transparent overlay
Manufacturing Difference from a Contact Card

Inductive / Magnetic Coupling

- Chip module with antenna at the rear-side of the module
- Chip card antenna
- Radio communication between chip card antenna and chip module antenna

Direct Antenna Connect

- Physical electrical connection between module and antenna in card

OR

- Antenna connection pad on module
- Antenna inlay
Antenna
Antenna
DI Card - Software

Operating System (OS)

Proximity Payment System Environment (PPSE)

Payment Application
PAYMENT APPLICATION

Same Application Transaction Counter (ATC)

No access to cardholder data

Different Cardholder Verification Method (CVM)

ODA may be supported on both or one of interfaces
## Card Personalization Profile

<table>
<thead>
<tr>
<th>STANDARD PROFILES (Y/N)</th>
<th>ODA REQUIRED (Y/N)</th>
<th>Online Authorization Only (Y/N)</th>
<th>EMV Contactless Support</th>
<th>MSD Support</th>
<th>US Debit Contactless</th>
<th>ODA Support on US Common AID</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>American Express</strong></td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Required for all dual-interface cards</td>
<td>Required for all dual-interface cards</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Discover</strong></td>
<td>Y</td>
<td>Required for contactless; optional for contact interface</td>
<td>N</td>
<td>Required</td>
<td>MSD with dCVV only</td>
<td>US Common AID required on contactless interface</td>
</tr>
<tr>
<td><strong>Mastercard</strong></td>
<td>Y</td>
<td>Y</td>
<td>N (online required, but offline supported)</td>
<td>Required</td>
<td>MSD</td>
<td>US Common AID required on contactless interface</td>
</tr>
<tr>
<td><strong>UnionPay</strong></td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Required</td>
<td>N/A</td>
<td>US Common AID required on contactless interface</td>
</tr>
<tr>
<td><strong>Visa</strong></td>
<td>Y-Processor Express</td>
<td>ODA on contactless interface only</td>
<td>Y</td>
<td>Required</td>
<td>MSD with dCVV only</td>
<td>US Common AID required on contactless interface</td>
</tr>
</tbody>
</table>

*Technically possible, but separate contactless certificate must be created and provisioned. Please contact the debit payment networks for more information.
Issuer Considerations in Implementing Dual-Interface Cards

- Additional cryptographic keys
- Processor readiness
- Card issuance planning
- Instant issuance
- Education
Use case: Transit Vertical

Contactless payment cards create an opportunity to optimize operations and improve the customer proposition for transit.

Transit agencies simply deploy a system that can accept the cards customers already have.

This can help reduce barriers to system entry, and can improve the customer experience by allowing them to take transit as soon as they arrive in a city.
ODA for Transit

1. Card tapped at reader
   - Open Gate
2. ODA Successful
   - Real-time authorisation
3. Deferred online authorisation
   - Acquirer
   - Issuer
   - Approved
   - Reauthorisation
   - Settlement

The card and reader use asymmetric cryptography to authenticate the card. This ensures that the card is genuine and allows the transit gate to open.

The online authorization message is sent later using the same online transaction data and cryptogram.

CAM service or issuer validates cryptogram and sends response.

* If original transaction was a deferred on-line authorization
ODA – Testing & Certification

Berke Baydu, Mastercard
Testing of ODA DI Cards

- Personalization validation processes
- Personalization validation required/recommended
- BIN Level Validation

Note: Payment networks may have simplified validation options.
Note: Consult your payment network or technology partners for further details.
Contactless Testing and Certification

- The same set of testing is currently done for both contact and contactless interfaces on EMV chip cards.
- Different types of transactions may be included in test cases, including declined transactions.
- If Magnetic Stripe Mode (MSD) contactless is supported, it may need to be separately tested.
Issuer host system testing for transit-specific transaction types, such as new transit data fields and reauthorization attempts
Q&A
Additional Resources from the U.S. Payments Forum

• Dual-Interface Card Personalization White Paper
  – https://www.uspaymentsforum.org/dual-interface-card-personalization/

• EMV Connection
  – https://www.emv-connection.com

• Get Contactless
  – https://www.getcontactless.com

• mDLConnection
  – https://www.mdlconnection.com
The November meeting will feature sessions on:

- A cross-industry update on the impact of COVID-19 on payments
- EMV 3DS data element implementation and the impact on customer experience
- Mobile driver’s license implementation in the U.S.
- Use of QR codes in physical retail
- Stakeholder considerations for Payment Account Reference (PAR) implementation
- Mobile pay-at-the-pump trends and technology
- Discussion/birds-of-a-feather session on the stakeholder impact of eight-digit BINs
- Education session on contactless limits and the impact on consumer experience
- Merchant, issuer, acquirer and payment network stakeholder reports
Contact Information

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Thank You