WHITE PAPER

atm marketplace

Preparing Payments Devices for EMV Implementation

ATM operators in the U.S. face a tight deadline to upgrade machines for smart cards to comply with the new rules.

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EMV implementation

In an effort to combat fraud, as well as prepare for contactless payments, the card associations have announced timelines for implementation of EMV for the payments infrastructure in the U.S.

EMV chip-based payment cards, also known as smart cards, contain an embedded microprocessor. The microprocessor chip contains the information needed to use the card for payment, and is protected by various security features. The chip provides increased protection against counterfeit and lost and stolen card fraud by validating the card and the cardholder.

Deadline for implementation around the world

Region	Deadline
Africa	Current
Asia-Pacific	April 19, 2013
Australia/New Zealand	Dec. 31, 2015
Canada	Current
Europe	Current
Latin America	October 2012
Middle East	Current
U.S.	April 19, 2013

Visa and MasterCard are implementing requirements for U.S. acquirer processors to support merchant acceptance of chip-and-pin transactions, increasing security for cardholders.

Visa will require U.S. acquirer processors and sub-processor service providers to support merchant acceptance of chip transactions no later than April 1, 2013. Visa's current initiative does not mention ATMs, although the liability shift does exist for ATMs in Europe.

However, on Sept. 1, 2011, MasterCard announced that it would extend its existing EMV liability shift program for inter-regional Maestro ATM transactions to ATMs in the U.S. effective April 19, 2013. MasterCard's liability shift will cover both the U.S. and Asia-Pacific regions, with the exception of Australia and New Zealand, where the liability shift will become effective on Dec. 31, 2015. The liability shift already

applies for Europe, Canada and the Middle East and Africa and will be completed for Latin America by the end of October 2012.

Fortunately for those in the ATM ecosystem in the U.S., EMV capability has been introduced in more than 80 countries, according to EMVCo, the company that oversees the implementation of EMV technology. Worldwide, about 18.7 million point-of-sale terminals accept chip-and-PIN cards, accounting for more than 71 percent of terminals. Therefore, ATM manufacturers, software providers and others who service the industry globally already have experienced the transition to a chip-and-pin payments infrastructure.

Implications of EMV for the ATM ecosystem

The race is on for the U.S. ATM industry to comply with the MasterCard liability shift. With a deadline of April 2013 looming, ATM deployers don't have much time to plan and implement any necessary upgrades. By contrast, it took Europe five years to move from 52 percent EMV compliance to 97 percent, according to Lachlan Gunn, coordinator of the European ATM Security Team.

"The European experience indicates that those that do not succeed in meeting the deadline will be heavily penalized as fraud migrates to their machines (compliant ATMs will not dispense cash if counterfeit EMV cards are used), and demands start arriving from EMV card issuers for loss reimbursement," Gunn wrote in his blog on ATMmarketplace.com.

Cardholder verification methods

EMV supports four cardholder verification methods for each transaction:

- Offline PIN
- Online PIN
- Signature verification
- No card cardholder verification

To fully implement EMV, the three main constituents of the payment system — the cards, the electronic funds transfer terminals and the systems — must be upgraded to permit EMV transactions. Also, national bodies, such as Interac in Canada, may promulgate specific requirements for each market.

The implementation brings added complexity. Ian Kerr, CEO of Dunfermline, U.K.-based Level Four, an ATM testing company, noted that there are significantly more types of card conditions and transaction permutations with EMV cards, rather than with magnetic stripe cards, which require the ATM application and host system to process a much wider range of scenarios.

"As a result, EMV-compliant ATMs are about 10 times more labor intensive to test than traditional ATMs," Kerr wrote in his blog.

Depending on the age and type of ATM, ATM owners can expect to pay between $2,000 to $4,000 to upgrade hardware to accept chip-and-pin cards, according to Aite Group, a Boston-based financial services advisory firm.

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EPP requirements for EMV implementation

VISA and Mastercard have defined all EMV specifications, which are now overseen by EMVCo. They stipulate the characteristics of an EMV smart card and an EMV-compliant terminal. In addition, EMVCo has published a comprehensive set of tests that ensures complete interoperability. Device approval is conferred on two levels:

Level 1. The test verifies that the terminal does not damage the EMV cards. The test examines physical characteristics of the card reader, such as voltages, timing, dimensions, contact location, etc.

Level 2. This test verifies that a terminal can process all types of transactions and transaction variations with an EMV card. All terminals for EMV cards must pass an EMV Level-2 test.

Fortunately, most major manufacturers and after-market suppliers are developing upgrade paths for their installed base. Units that are not eligible to be upgraded to EMV standards may not meet other requirements, such as Triple DES or Americans with Disability Act provisions.

For instance, Cryptera, the Denmark-based maker of keypads and payment terminals, offers a range of encrypting PIN pads for ATMs and unattended payment terminals that meet EMV Level-1 and Level-2 requirements, as well as PCI, Triple DES and ADA standards. Based on its experience serving other markets, Cryptera is well-equipped to help U.S. ATM deployers transition to EMV capability.

"As the leading provider of encrypting PIN pads, with more than 25 years of experience, our products currently address the future EMV and payment requirements as these standards have been imposed in Europe for some time," said Brian Schleisner, senior manager for Cryptera.

Also, ATM Gurus, the Long Beach, Miss.-based subsidiary of Triton Systems of Delaware LLC, offers upgrade kits for popular Triton ATM models that include an approved card reader, key pad and other hardware to allow an installed model to meet both EMV and PCI regulations with one upgrade. Similar kits are available for units from Nautilus Hyosung, Diebold Inc., NCR and other manufacturers.

About the sponsor: *Cryptera, based in Denmark, is one of the world's leading providers of high-security payment solutions. The company specializes in encrypting PIN pads for ATMs and kiosks as well as unattended payment solutions for self-service applications.*