

Keys to EMV Card Issuance and Management

Europay, MasterCard and Visa heavily promote the use of EMV-based smart (chip) cards to reduce fraud. These cards provide higher levels of security than traditional magnetic stripe cards. They also can increase customer convenience by expanding both the functionality of the card and the distribution channels in which the card can be used.

There are several ways to make the transition from magnetic stripe (magstripe) to EMV smart cards. The ultimate goal of the migration determines which route is taken.

EMV Migration in a Nutshell

Basically, migration to EMV is about issuing smart cards and ensuring that the acquiring systems are compliant. On the issuing side, there are three possible ways to roll out EMV cards:

- Outsource the issuance of cards completely.
- Keep the encryption key management activity in-house and outsource other activities.
- Build a complete in-house card issuance environment.



Outsourcing is the easiest way, although organizations will have limited control over their card bases and encryption keys.

By keeping the key management (data preparation) in-house, it is possible to control keys and certificates. This addresses the fraud risk of issuing smart cards, but overlooks a major business opportunity surrounding an EMV migration — an institution's control in delivering additional value-added services to its customers.

Today, banks often issue their own cards using in-house card management systems. A logical migration strategy to EMV is to keep the issuance process in-house. To migrate to EMV, current card management systems need to be upgraded to handle additional functions in general data preparation, including the generation, distribution and management of keys; workflow management; life-cycle management on the smart card level (which includes much more data than stored in the current card management systems); and smart card personalization.

Personalization can be outsourced, as it does not limit control of the card base or the possibilities to add value at any time after issuance. However, in order to add customer value with EMV smart cards, it is important to keep control over these cards, maintain flexibility toward any card platform (whether it is Multos, Java™ or proprietary) and add value to these cards when required.

Note that in some cases processors offer EMV card issuance as a service to banks. This can be a satisfactory solution when the processor or application service provider (ASP) uses the right components; the bank can outsource this activity and still add value when required if the right agreements are in place.

Additional Factors To Consider

The expensive parts of EMV migration are the actual smart cards. By increasing the lifespan of these cards, organizations can reduce costs. Although in some cases replacement may be necessary, for example, after a security breach, card loss, etc., the lifespan generally can be increased dramatically when any necessary change to the card can be done in the field. To manage such situations, organizations need the ability to track all issued cards, their content, which master key was used, and other details.

For EMV cards that will be used in offline situations, the offline risk parameters can be updated regularly during online EMV transactions. EMV offers a set of risk parameters, and these can be changed using EMV scripts. However, in time, a mixture of different card platforms will be issued, including different card products and different brands, such as Visa or MasterCard. An EMV script needs to be specific and requires information about that card. The combination of smart card life-cycle management and EMV script management is therefore inextricably connected.

Adding Customer Value With EMV Smart Cards

Although implementing EMV will reduce fraud figures, migrations can be costly. Consequently, it can be difficult to justify an EMV project based on fraud savings alone. However, EMV smart cards offer opportunities to add value in terms of better service levels and additional services such as offline payments and offline risk management, secure Internet payments, electronic banking, loyalty programs, and e-ticketing. Other factors to consider are shifts in liability and the increased use of cards because of these additional services.

The business case for EMV can be significantly improved by increasing an organization's profit per cardholder and the ability to attract and retain customers. In order to add services at any time and be able to offer a truly personal service to each cardholder, flexibility in the operation of the card scheme is essential.

- ▶ Provides a complete (EMV) smart card issuance system
- ▶ Supports Thales P3 Server or Advanced and Cryptomathic CardInk data preparation systems
- ▶ Complies with Global Platform standards
- ▶ Supports mixed card populations (i.e. different cards with different platforms in one system)
- ▶ Supports different combinations of card types (e.g., Visa and MasterCard) and applications like Gold and Platinum
- ▶ Supports full card reconstruction with inheritance from the card's predecessor upon re-issuance
- ▶ Offers a remote HTML-based helpdesk functionality
- ▶ Interfaces to existing card management systems
- ▶ Interfaces to external card personalization bureaus
- ▶ Interfaces to the terminal infrastructure to update card status and change EMV risk parameters
- ▶ Offers complete card, application and workflow management
- ▶ Automates the issuance process autonomously, 24/7
- ▶ Provides extensive reporting functions, presenting detailed information about the card portfolio
- ▶ Tracks important card information, such as the master keys used, creation and expiration dates, status, versions, card platform used, card type and personalized profiles
- ▶ Interfaces to ACI Card Management System™, BASE24-es™ and third-party systems

features
at a glance



Stand-alone data preparation systems do not offer sufficient control over an organization's card portfolio since they cannot manage the card after issuance. They also cannot control the complex workflow necessary when different card products, each having its own set of risk parameters or additional applications, will be issued. Since stand-alone data preparation systems are manually controlled tools, they also will not automate the issuance process in a 24/7 environment. Even worse, they require an operator to control the system.

ACI Smart Chip Manager™

ACI's solution for EMV card issuance is based on the ACI Smart Chip Manager family of products. It includes ACI Smart Chip Manager for Card and Application Management, ACI Smart Chip Manager for Application Parameter Management and ACI Smart Chip Manager for Card Personalization Management.

ACI Smart Chip Manager for Card and Application Management

ACI Smart Chip Manager for Card and Application Management combines workflow management with data preparation and life-cycle management. It handles the issuance process for any type of EMV smart card by managing each card and its applications and tracking its status. The system helps organizations control their card schemes and provides the tools and information that are crucial to improving customer service while keeping running costs low.

ACI Smart Chip Manager for Application Parameter Management

ACI Smart Chip Manager for Application Parameter Management defines risk profiles per card product, facilitates loading cardholder financial risk profiles during card issuance and changes these profiles in the field. Once a card has been issued, the cardholder, card issuer, application issuer or risk management center may need to change parameters for individual, a certain group or all of the cards.

The system generates the appropriate scripts based on each request from a relevant, authorized party in a 24/7 environment. In addition, it can maintain all new and waiting requests, prioritize them, prevent duplication of changes and ensure that changes are downloaded. Smart Chip Manager stores all

parameter values in its database together with card and application data, so it can verify new change requests, and load the latest parameter settings on cards in the field or during re-issuance.

ACI Smart Chip Manager for Card Personalization Management

In a smart card personalization environment, ACI Smart Chip Manager for Card Personalization Management handles two main processes: The first is the pre-processing or concatenation process, which merges static data that is identical for each chip with dynamic, cardholder-specific data. The second process is the actual personalization of the smart card in a personalization machine.

Smart Chip Manager has two components, each related to one of these processes. Consequently, the solution enables operators to separate the concatenation process from the actual production process of personalization.

Experience, Expertise

ACI has been helping customers migrating to EMV since 1996, building extensive experience in both the acquiring and issuance of EMV smart cards. Successful EMV migrations demand more than just implementing the right product solutions. To this end, ACI offers a comprehensive program of guidance, education and support to help our organizations through their migrations.

Every second, every day, more than 500 organizations around the world rely on ACI solutions. ACI offers a wide set of solutions to power online payment systems in both the emerging and traditional markets and to guide the complete issuance of smart cards in financial and non-financial market areas.

We welcome the opportunity to do the same for you.

All product names are trademarks or registered trademarks of their respective companies.



