



Part of the  **CRYPTOMATHiC** Group

PAYMENT APPLICATION MANAGER

Product White Paper

WHAT IS PAM?



Aconite's Payment Application Manager (PAM) is an enterprise solution that manages smartcard lifecycles, from data preparation for personalization, through post-issuance updates, to renewal and replacement.

PAM is built for single issuer or multi-tenant bureau deployment and works in tandem with an existing card management or card production system to deliver full card issuing capability for EMV® or other types of smart cards.

PAM is different to other smartcard data preparation systems:

- Application, brand and chip neutral – multiple EMV and other card products such as e-ID and transit can be supported concurrently
- Operates in real time supporting both batch central issuance and on-demand instant issuance
- Maintains a record of the application data, initial and updated parameter settings and chip lifecycle information for each card issued.



PAM is performant, resilient and scalable and is fully PCI-compliant.

Advanced techniques for key handling and workflow management allow throughput in excess of 150,000 cards per hour even for the most demanding EMV crypto schemes.

Hundreds of millions of smartcards around the world have been issued and are managed by PAM. Leading players in the cards industry rely on PAM to manage their portfolios, including Navy Federal Credit Union, NETS (Scandinavia's largest processor), ABN Amro's International Card Systems, Diners Club and Discovery Bank in South Africa. In nonpayment applications, PAM performs data preparation for all the ticketing of smartcards in the Dutch national transit system and manages cards in the Nigerian national e-ID system.

SMART CARD MANAGEMENT



An organization whose business relies on smartcards or other smart devices – including mobiles and wearables – needs to control their issuance and manage their lifecycles. This can range in complexity from issuing batches of simple, identical products to managing a varied set of applications per device, each with unique requirements for business, personal and cryptographic information.

EMV, the global standard for face-to-face payments, is one example of a Smart Product – a business application that resides on a smart device, such as a card or a mobile phone. Other examples of business applications that can be issued as smart products include e-ID, smart ticketing, and loyalty programs.

The use of smart products and the applications they run creates the need for a Smart Product Management solution. Where smart products can be issued with one or more applications installed, where the stored information that controls their behavior can be modified, where applications can be added, upgraded or deleted, and where those smart products will eventually be re-issued or replaced, a Smart Product Management system provides the control. This includes generating or collating the business and security information needed for the product to be issued or subsequently modified, preparing that data for injection into the chip, and tracking changes to the applications and their data stored in the chip.

PAYMENT APPLICATION MANAGER

Aconite Technology's solution for Smart Product Management is Aconite Payment Application Manager.

PAM can manage a portfolio of smart products smartcards and other devices – and can also import and manage legacy products such as magnetic stripe cards, providing a single view of an entire cardbase.

PAM supports any type of smart application in any business vertical. These can include EMV payments, mobile payments, transit and ticketing, secure ID and authentication, physical and logical access control, loyalty and coupons, education, healthcare or any combinations of these and other applications.

PAM's features and benefits include:

- Complete issuer control over devices and apps issued to consumers
- Industrial-strength performance, scalability and availability
- Simple, automated operational management with highly configurable set-up
- Easy integration with existing systems
- Integration with other Aconite products for transaction processing, EMV scripting and PIN Management.

HOW PAM WORKS



PAM is a powerful, proven system that simplifies the development, Introduction and management of smart products, from basic single function, single app implementations to a sophisticated, multi-function, multi-app, multi-institution portfolio. PAM frees issuers to develop their smart product business without the constraints and maintenance overheads of trying to shoehorn smart card issuing capability into a conventional card management system (CMS), but PAM can integrate with a CMS to enable seamless migration to chip-enabled products – from magnetic stripe payment cards to EMV smart cards, for example.

Real Time, On-Demand and Batch

PAM operates in real time and processes card personalization requests on receipt from input queues. Requests can therefore be processed singly, on demand for dispatch to, for example, an Instant Issuance system or can be processed in batches, where PAM will read input files and queue each request for processing. Batches of personalization records are then grouped and output in files for transmission to a card bureau. PAM is driven by a scheduler and processes to match the deadlines of the one or more card bureaus that it feeds, ensuring that the optimum numbers of completed card requests are transmitted at the required times.

Deployment

PAM slots into the card production flow between the existing CMS and the bureau and/or Instant Issuance system. PAM's integration is noninvasive and generally requires no change to existing processes. PAM has a file translation layer that can accept many formats of magnetic stripe card order files, or PAM can take simple request records or messages and from them create complete card personalization records.

Product Profiles

PAM's configuration maintains any number of user-defined Product Profiles that control its workflow when processing requests. Each profile defines the map of data that is required for the application or applications that reside on the card, and from where it is sourced. Data can be supplied in the request, generated on demand, copied from an earlier version of this card or pulled from external servers. Cryptographic data such as keys and certificates can be generated on the fly, or where intensive crypto-processing is needed, retrieved from pre-generated caches to improve efficiency. Creating new product profiles is usually achieved by copying, pasting and modifying an existing profile, for which full training is provided. Code changes are rarely required.

Data Retained

PAM is unique in retaining a record of each card or device issued and the data used to personalize its applications. PAM also collects chip lifecycle information returned by the bureau where available. If a process such as EMV Scripting changes any data held in the card, PAM can update its records to reflect those changes. When that card is renewed or re-issued, its latest settings can be used rather than reverting to the original profile used for its first issuance. And of course, this data provides a rich source of information for problem resolution and management reporting.

Post-Issuance Management

Specialized products may require management of their applications after the card or device has been issued. This includes adding or deleting, and re-personalizing applications to install, for example, new keys. PAM can directly update a card that it has previously issued when that card is presented at a suitable endpoint device, such as an ATM, kiosk or counter terminal.

ACONITE INTEGRATION



PAM can be integrated with Aconite's other card products, so that details of new cards issued are pre-populated into Aconite's Transaction Manager (ETM) and changes made by ETM through EMV Scripting such as PIN Change and risk parameter settings are recorded in PAM's database. PINs captured by Aconite PIN Manager before or during the card issuance process can be retrieved by PAM and included in the personalization data for EMV offline PIN cards.

COMMERCIAL

Aconite PAM is licensed either for a renewable five-year term with license fees tiered according to the card volume supported, or on a transaction count basis more applicable to service providers. Aconite provides worldwide 24/7 support through a dedicated helpdesk, and regular maintenance updates.

TECHNICAL

Aconite PAM is a suite of Java applications that run in an application server (IBM WebSphere or Open Liberty). PAM will run on either Unix or Windows and requires a database (Oracle or PostgreSQL), one or more HSMs (Thales PayShield or Utimaco AT1000) and a Java Message Service (IBM MQ).



SUMMARY



We're the guys that enable you to receive a ready-to-use payment card from your bank, or to securely change your PIN in your mobile app. For over two decades we've helped stakeholders fulfil compliance obligations and preserve reputations for issuers, acquirers, card personalisation bureaus, payment service providers, processors and payment schemes.

Contact us to find out more about Payment Application Manager and our other smart product solutions.

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