CRYPTOMATHIC
www.cryptomathic.com

Cryptomathic CardInk

DATA PREPARATION SYSTEM

EMV Migration

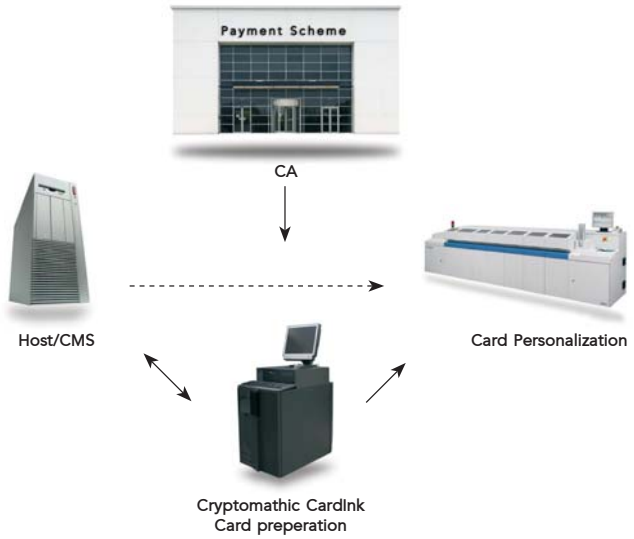
The move from magnetic stripe to EMV is well underway with migration deadlines, i.e. liability shifts, set for most parts of the world. Card issuers are faced with large investments, increased competition and complicated technology. Therefore, they need solution partners with flexible offerings that support individual EMV migration strategies.

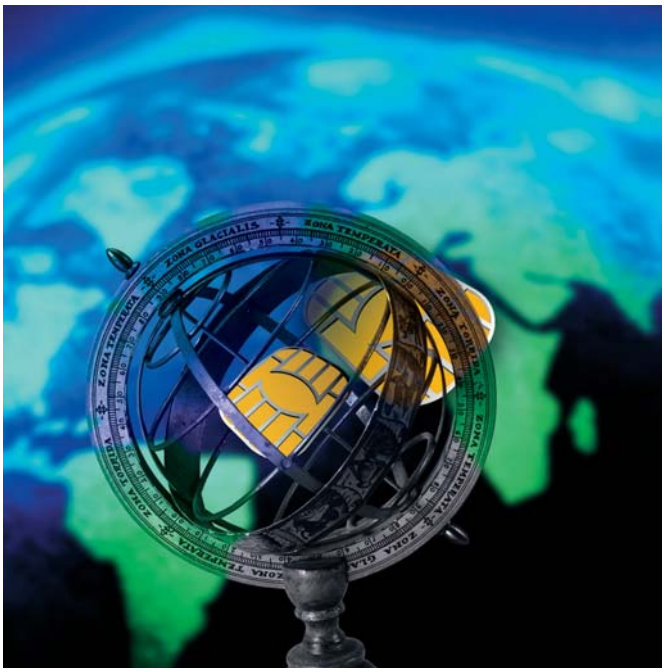
CardInk is a data preparation system for single- and multi-application EMV cards, designed to smooth the migration path and meet future business requirements. CardInk ensures secure data generation and key management based on banks' record files. CardInk complies with the EMV standard and supports applications from major payment schemes, including MasterCard and Visa.

System Architecture

CardInk is the second-generation EMV data preparation system from Cryptomathic. It has been developed in close cooperation with major international financial institutions and service suppliers to meet various market demands.

CardInk can be used with the bank host system or in the card production bureau. The bank host, or a card management system, will feed data to CardInk, which will output EMV data in standard formats, i.e. P3™ file1 and Common Personalization. CardInk output files are used on a variety of personalization systems, including Mühlbauer, Atlantic Zeiser, Datacard, CIM, and Matica.





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Card Issuer Flexibility – CardInk is suitable for in-house card production. The system offers: security, stability, and low maintenance and will suit almost any card strategy. CardInk interfaces with card management systems and is fully automated (using an API). This results in fast production, making data preparation an easy in-house task. CardInk works with a wide range of HSMs (Hardware Security Modules), integrating with card issuers' existing production environments.

Card Bureau Flexibility – CardInk is the most versatile data preparation solution available imposing no limitation on the number of cards issued or issuers supported, hence a high return of investment. The system is easy to set up, which means that bureaus can instantly issue cards across a number of different issuers and payment brands. CardInk integrates with all major personalisation systems and supports a wide range of HSMs including the market's most cost-efficient.

Key Management – The core objective of CardInk is the management of cryptographic keys related to data preparation. All keys are handled in HSMs and CardInk provides secure import/export facilities. This applies to 3DES and RSA keys and includes end-to-end certificate management. CardInk sup-ports certificate requests for application provider certificate authorities (e.g. MasterCard CA and Visa CA). The high level of security means that CardInk is the most secure data preparation system available. Security features include a secure audit log and secure remote client/server communication using AES encryption.

TECHNICAL SPECIFICATIONS

Applications Supported

- MasterCard
  M/Chip
  Mag stripe & PIN,
  CAP
  PayPass
  Advance
- Visa VSDC,
  VSDC SDA & DDA (VIS)
  MSD / qVSDC
  DPA
  Mag stripe & PIN
- AmEx
  AEIPS,
  Mag stripe & PIN
  Expresspay
- EMV Common Payment Application
- BMS Monéo
- Discover D-PAS
- Diners
- Interac Interac
- SAMA SPAN2
- SIA Bancomat
- China UnionPay

Platforms

- EMV
- GlobalPlatform
- MULTOS / MULTOS step one
- Native cards

Formats Supported

- Common Personalization
- P3™ file1

System Architecture

- Multiple servers
- Multiple HSMs
- System integration API for automated production
- XML interface to external key management systems

Security Architecture

- AES protected network communication
- Access control via smart cards
- Secure environment using HSMs
- HSM programming for key and certificate management
- Secure audit log of all events (in HSM)

Operating Environment

- Microsoft Windows

Database

- Oracle version
- Microsoft SQL Server

Hardware Security Modules

- Bull
- HPE Atalla
- IBM
- Safenet
- Thales / nShield
- Utimaco

Other HSMs

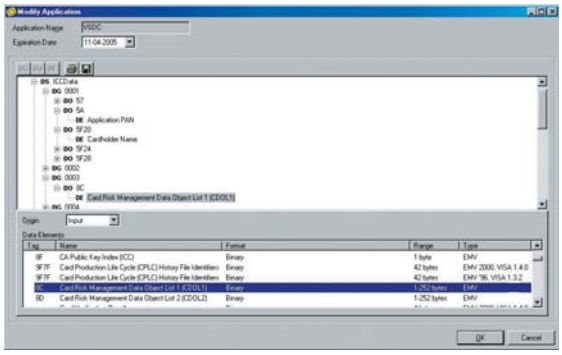
- PKCS #11 interface
- HSM specific firmware

Performance Monitoring

- Customisable integration into Microsoft Windows Performance Monitor

CardInk comes with a user-friendly graphical application editor. With this, an operator can configure the TLV-structure of the data for individual applications based on built-in application templates. This feature makes it possible to design customised applications within the frameworks of the supported international standards, e.g. M/Chip Pre-Authorized Debit and Visa V PAY.

Parameterisation of single- and multi-application smart cards is easily done through the concept of card profiling. It is possible to graphically design the data structure of a multi-application smart card by determining which applications and default operational parameters to use. Default production parameters can optionally be overridden by input file specifiers, allowing flexible control of daily production.



ABOUT CRYPTOMATHIC

Cryptomathic is one of the world's leading providers of security solutions to businesses across a wide range of industry sectors, including finance, smart card, digital rights management and government. Since 1986, Cryptomathic has assisted customers by providing systems for e-banking, PKI initiatives, card personalisation, ePassport, card issuing, and advanced key management through best-of-breed security software and services. Cryptomathic prides itself on its strong technical expertise and unique market knowledge. Together with its established network of partners, Cryptomathic assists companies around the world with building security from requirement specification to implementation and delivery.

Learn more at cryptomathic.com