

Current Payment Methods



Cash

- 85% of all transactions
- Cash handling is very costly

Cheques

High cost per transaction (x2)

Magnetic Stripe Cards

- Subject to fraud
- On-line communication costs
- No multi-application capability

Benefits of Smart Cards





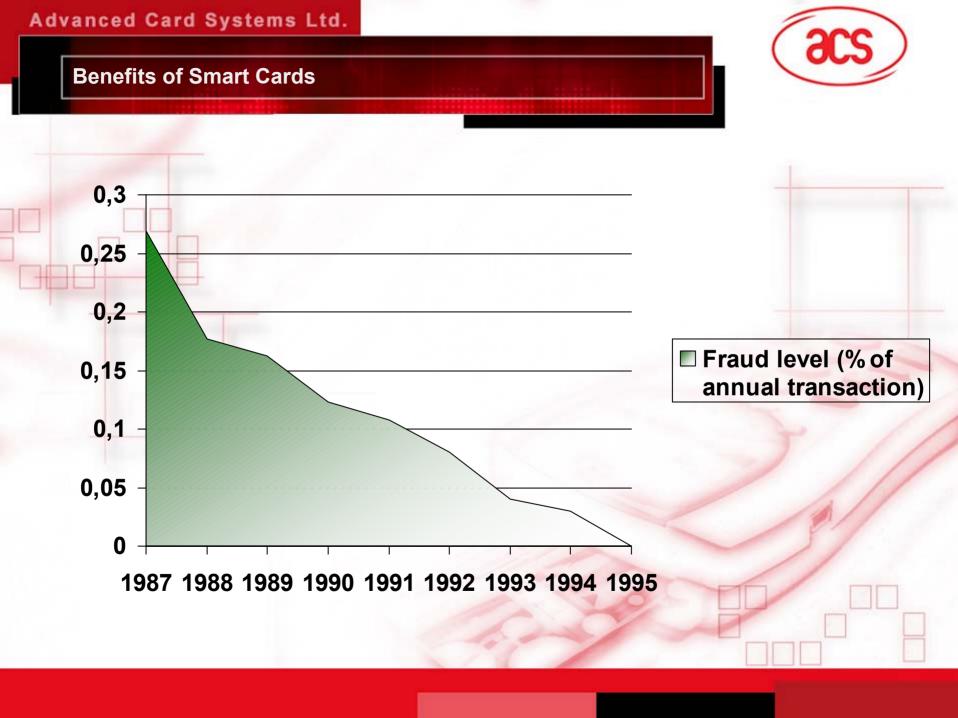
- New market opportunities
- Multi-application capability New services
- Merchant/Cardholder Relationship Programs

More Security

- Offline PIN cardholder verification
- Improved Risk Management
- Reduced Fraud

Less Costs

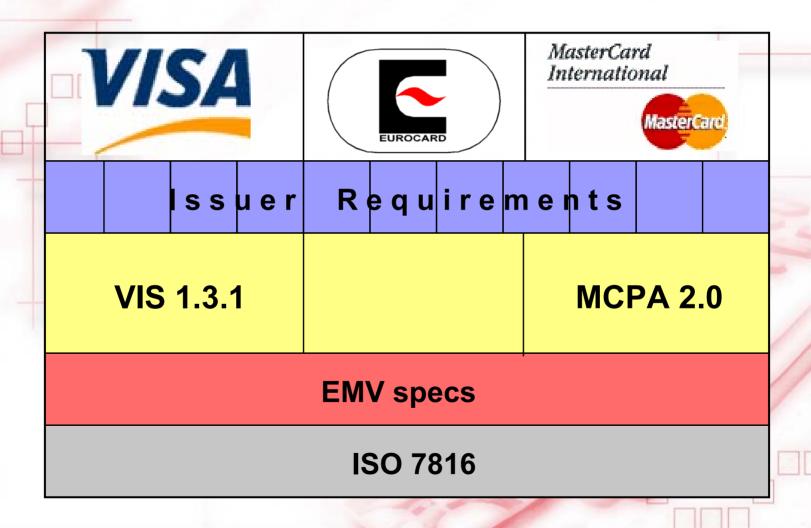
- Reduced Online Authorization Costs
- Reduced Number of Cards



Advanced Card Systems Ltd. **Banking Standards Issuer specific** requirements **System Operator specs EMV** specs **ISO 7816 norms**

Banking Standards





EMV Specifications



- Defined by Europay / Mastercard / VISA
- To guarantee interoperability of smart cards for Debit and Credit applications
- EMV is NOT sufficient to develop an application







EMV Specifications



EMV ver. 3 + Errata (June 98)

Defines

- Electromechanical characteristics
- Logical interface and Transmission protocols
- Data Elements & commands
- Application selection
- Security aspects

Does not define

- Physical data structure
- Operating system
- Personalization procedure

VIS



Visa Integrated circuit card Specifications

- Defines VISA options of EMV specifications
- VIS is sufficient to develop a Chip Card application



VIS



VIS 1.3.1

Defines

- Data elements and functions (from EMV)
- Card Risk Management processing
- Calculation of cryptograms
- Additional VISA specific commands and data elements

Does not define

- Proprietary processes, data & commands
- Operating system
- Personalization procedure

MCPA

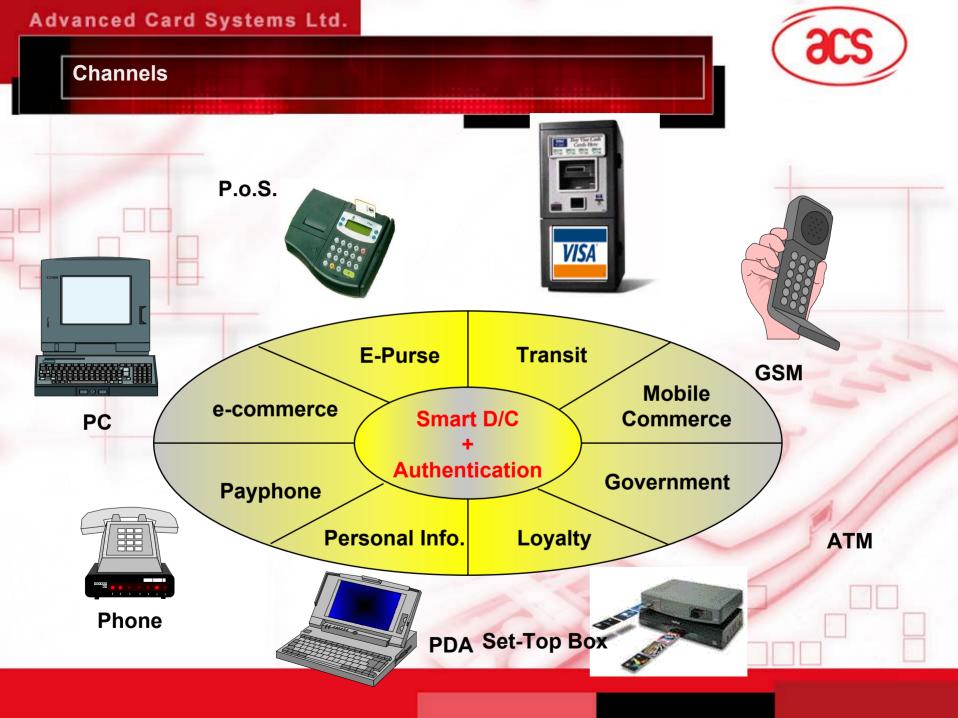


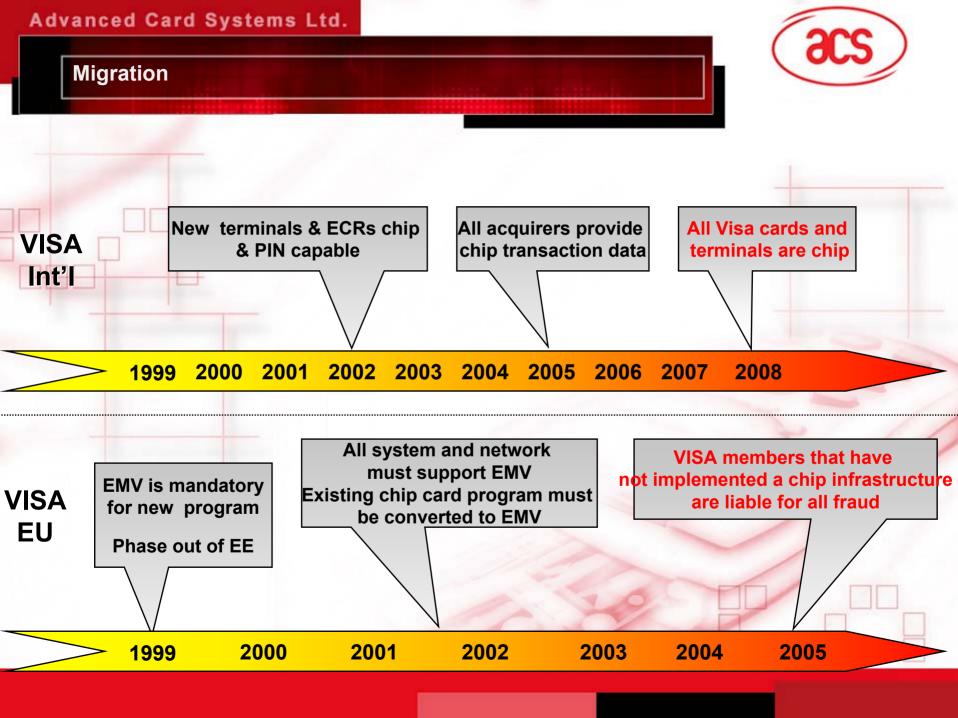
Visa Integrated circuit card Specifications

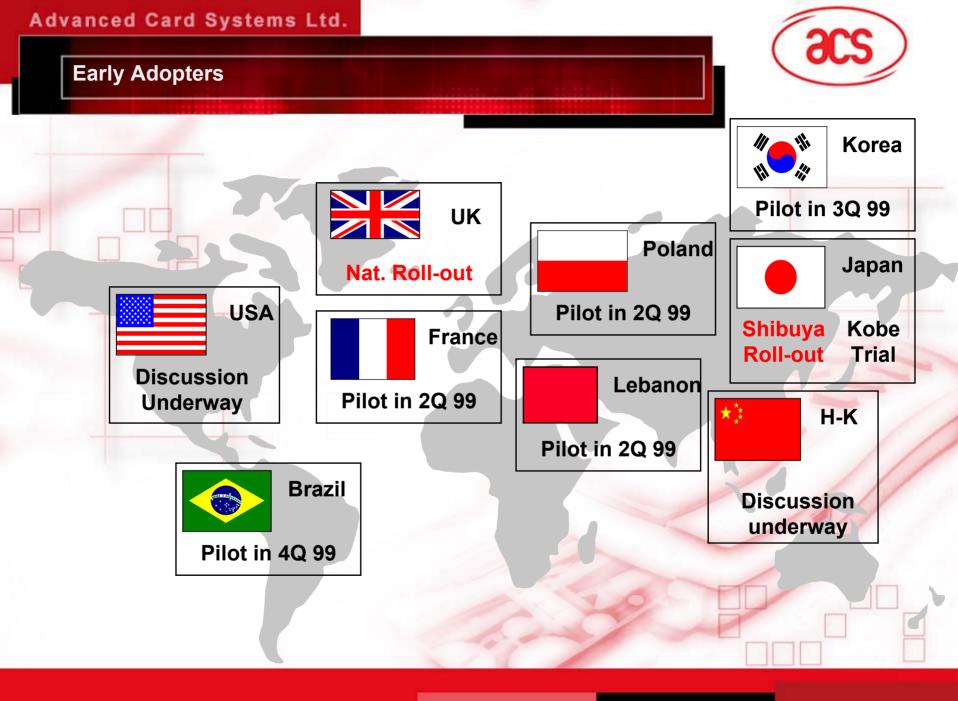
- Defines Mastercard options of EMV specifications
- MCPA2.0 is sufficient to develop a Chip Card application



Advanced Card Systems Ltd. **Smart Debit-Credit as Core Application** ADVANCED CARD SYSTEMS LTD **Transit Purse** Mobile e-commerce **Smart Debit-**Commerce **Credit** Card Government **Pay Phone** Personal Info. Loyalty







Smart Debit-Credit Features



- Off-line Data Authentication
- Off-line Authorization Controls
- Off-line Cardholder Verification
- On-line Card/Issuer Authentication
- Ability to update card parameters
- Transaction certificate audit trail

Advanced Card Systems Ltd. **Key Management** Issuer Certifying CA PK Authority PSKroot-issuer ssuer Cer suer Cer Card Cert PSKroot-issuer File of Data for Personalisation Personaliser Silicon KMm PSKtarget Supplier PSKtarget Card To UDK Customer



Key Management Services



RSA keys for Static data authentication

Generation of the issuer secret and public keys

Transportation of the issuer RSA public key to the Certification Authority which will generate the issuer public key certificate Secure transportation of keys + certificate to issuer and personalizer

DES keys

Generation of the issuer DES secret keys: keys encryption keys, master personalization keys, master MAC and master payment keys secure transportation to the issuer and personalizer