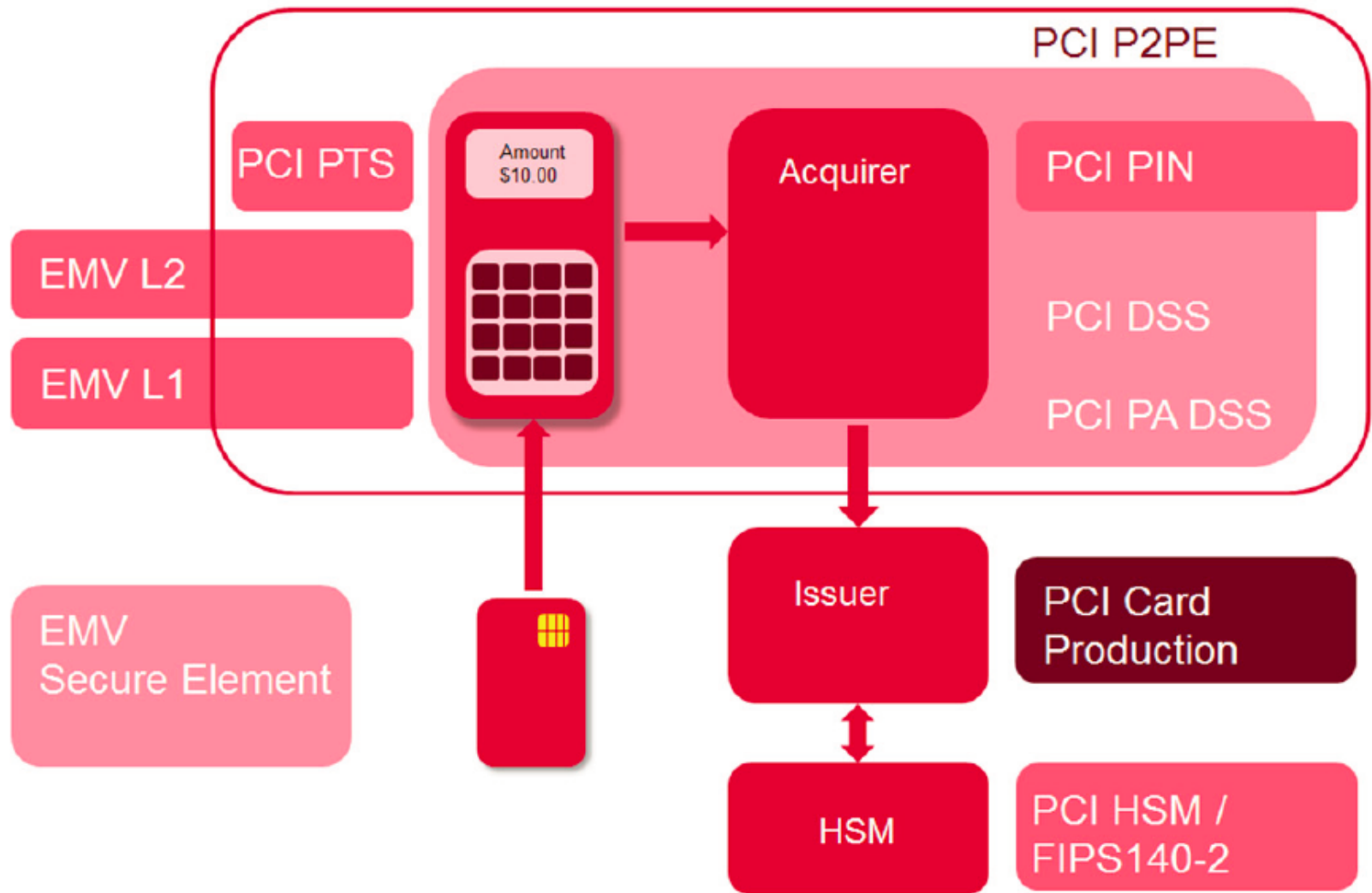




Meet the Family – Payment Security Standards

UL – Russell Wolfe (Principal Advisor)
Transaction Security Division

PAYMENT PROCESSING



PAYMENT SECURITY STANDARDS – Enabling Trust

- Cardholder and Merchant
- Merchant and Accepted Payment Method
- Issuing Institution and Merchant

STANDARDS BODIES – International Payments

- PCI SSC
 - Payment Card Industry Security Standards Council
- EMV
 - Europay, MasterCard and Visa (Founding Brands) - Now also includes JCB, American Express, Discover and UnionPay
- ISO
 - International Standards Organization
- ANSI
 - American National Standards Institute
- FIPS
 - Federal Information Processing Standards

PAYMENT CARD SECURITY - Magstripe

Merchant



Signature



Cardholder



CVV / CVC / CSC

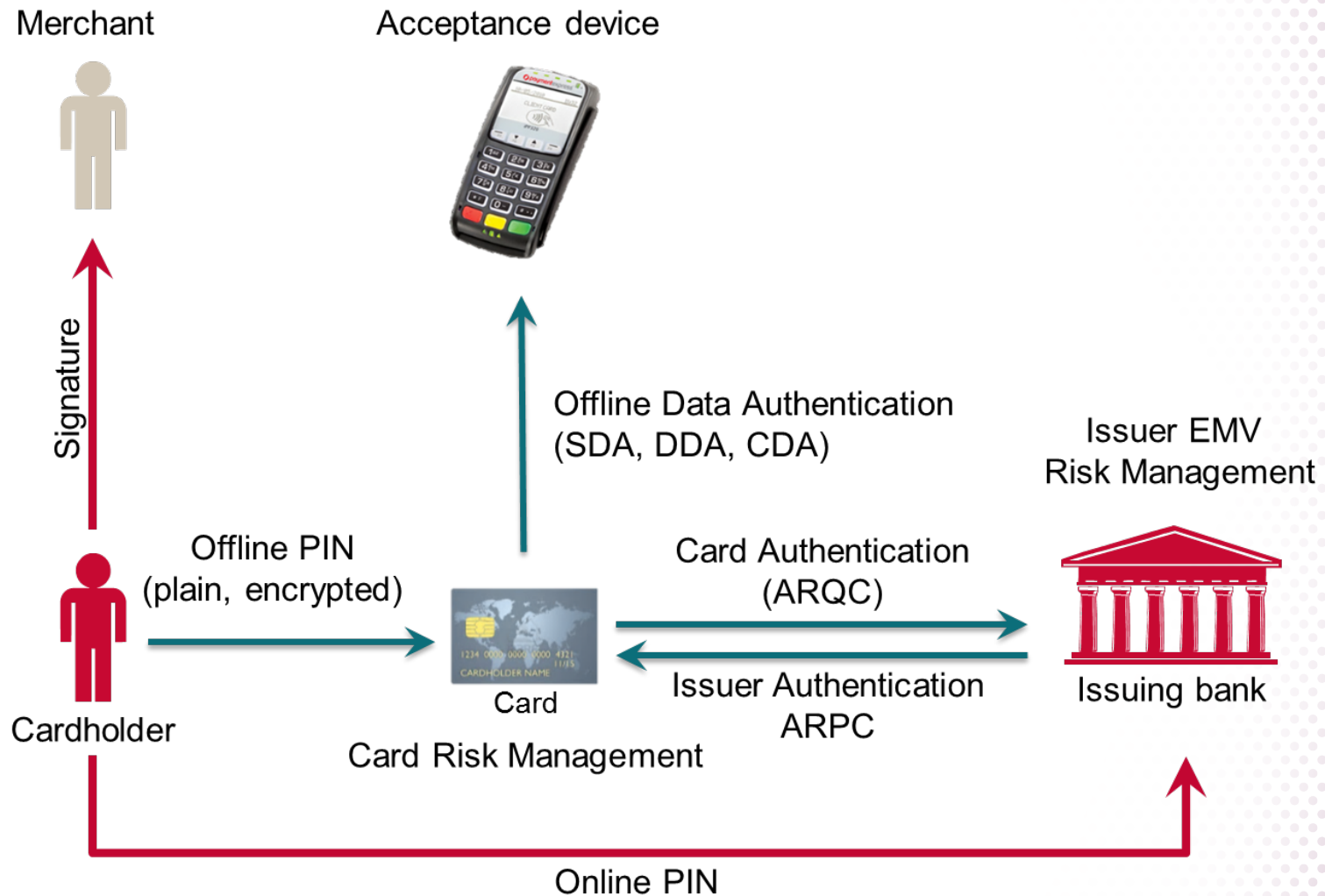
Issuer Magstripe
Risk Management



Issuing bank

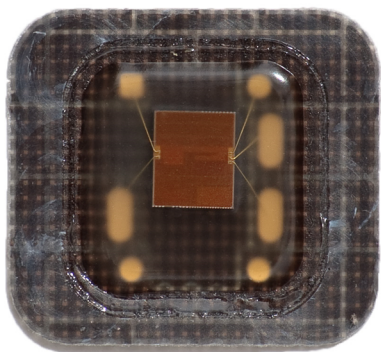
Online PIN

PAYMENT CARD SECURITY – EMV (the how)



PAYMENT CARD SECURITY – EMV (the what)

- EMV standard is a particular implementation of ISO 7816:
 - Specific file structure
 - Proprietary commands
 - Application logic



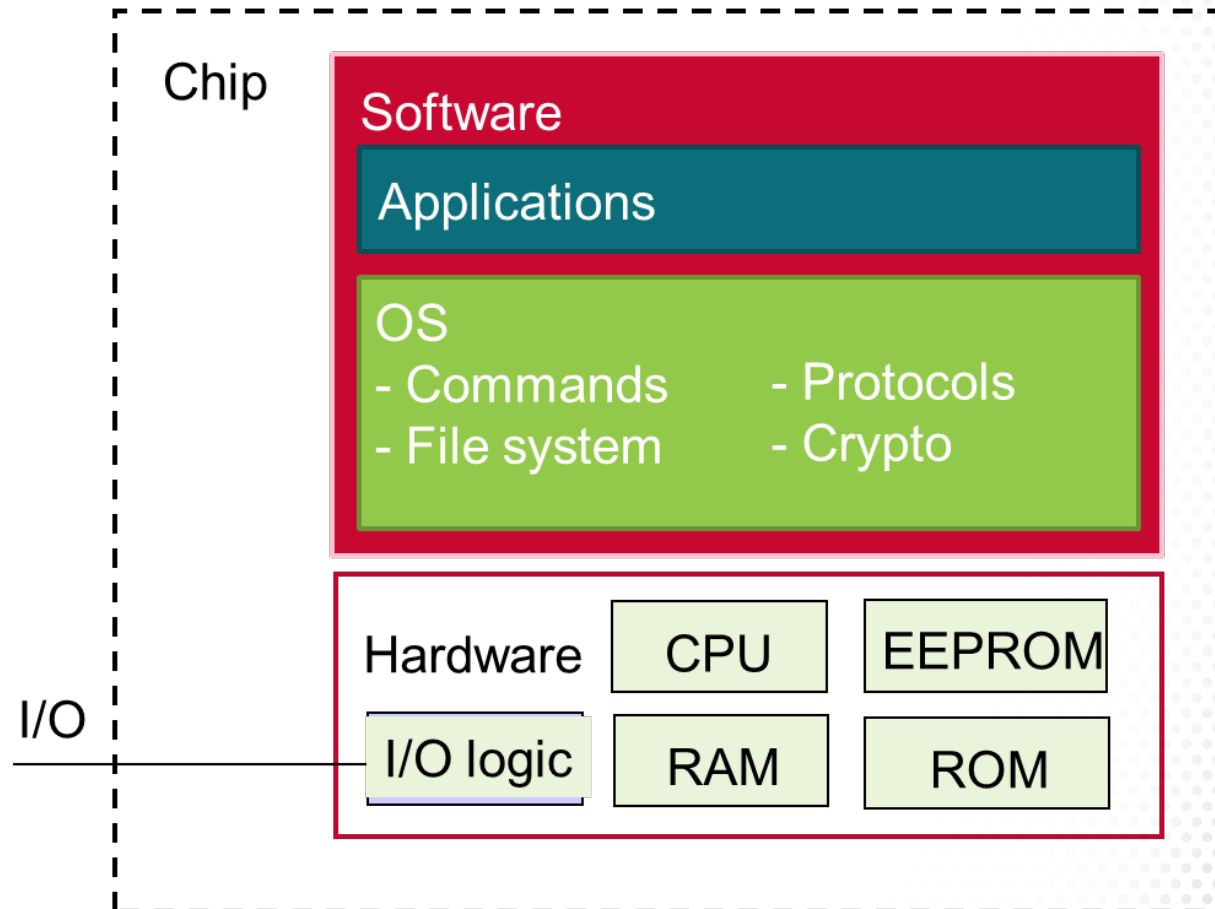
Payment
Brand app.

EMV

ISO 7816

PAYMENT CARD SECURITY - PCI

PCI Card Production (Perso)



PAYMENT DEVICE SECURITY – ISO13491 HW Security

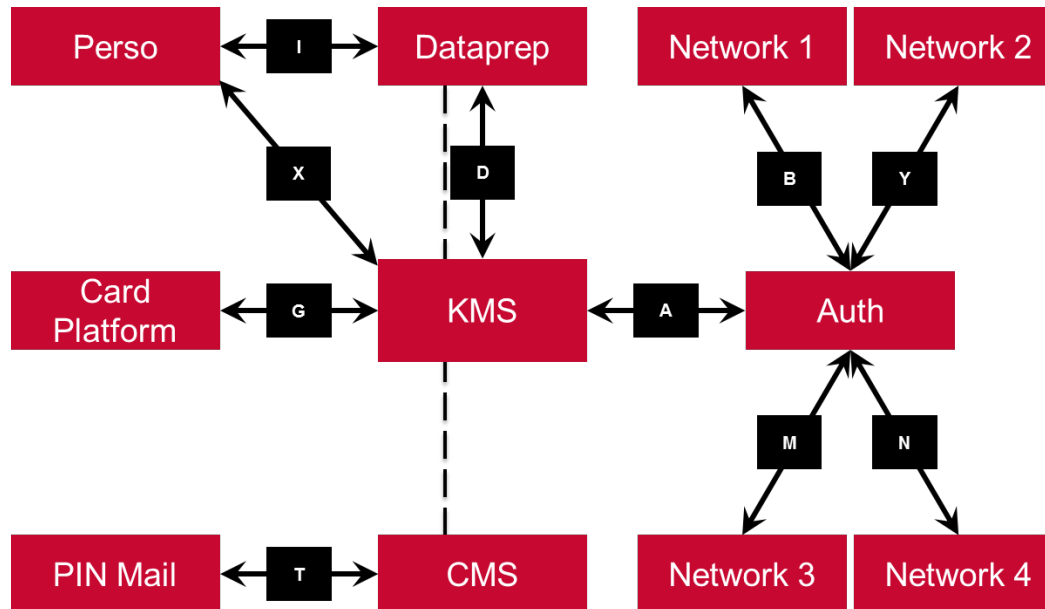
- Secure Cryptographic Modules
 - PIN Entry Devices
 - Hardware Security Modules (HSM)
 - Automatic Teller Machines (ATM)
 - Others

PAYMENT DEVICE SECURITY – PCI PTS

- PIN Transaction Security (PTS)
 - Security of Card Present Devices
 - HSM Generation/Validation of PIN
 - Crypto key management from Point of Interaction (POI) to Financial Institution (FI)
- * Originally inspired by ISO13491 and FIPS 140-2

KEY MANAGEMENT

- ISO11568
- ANSI X9.24
- PCI PIN
- PCI P2PE (Point to Point Encryption)
- ANSI TR 39
- PCI DSS



APPLICATION, SYSTEM and E2E SECURITY

- Application Security
 - PCI PA-DSS (Payment Application)
- System Security
 - PCI DSS (Data Security Standard)
- End-to-End Security
 - PCI Point to Point Encryption (P2PE aka E2E)

UL - Transaction Security Division

47173 Benicia Street

Fremont, CA 94538

480 519 3686

Russell.Wolfe@ul.com



WWW.EMV-CONNECTION.COM

191 CLARKSVILLE ROAD PRINCETON JUNCTION, NJ 08550

