EMV Specifications

Mastering the complexity of EMV and its implementations
by Payment Systems

Presentation

This educational seminar describes the functional, technical and cryptographic content of the EMV specifications for both cards and terminals. Transaction mechanisms and card-device exchanges are explained in detail

Key points

- Trainers having an EMV operational and implementation experience
- Progressive learning approach suited for complex projects
- Concrete illustrations using specific software: simulated payment using a test card and a reading tool detailing the transaction steps
- Practical exercises using concrete transaction contexts

Target

Targeted audience includes any staff member involved in EMV projects: Managers, Developers, Testers… Issuers, Acquirers and Merchants will benefit from this seminar

Duration

- 2 days
- Optional third day with hands-on exercises using software tools

Pre-requisite

The seminar requires participants to have basic knowledge of card systems

Customization upon request

The content of this seminar can be modified and enhanced to meet customer-specific requirements. Please contact us for customization requests and availability of trainers

Trainers

Experts in payment systems, having a concrete experience of EMV implementations

Language

This seminar is given in English or French

Price

Contact us

Documentation

Slide deck & exercises handouts
Card & Payment Acronyms & EMV Glossary

About Galitt

Over 20 years of chip card and EMV related payment experience
Galitt is recognized for delivering innovative projects using advanced smart card technology & defining flexible payment architectural solutions

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EMV Specifications

Program

1. EMV Essentials

- **Scenery**
  Ecosystem, background, actors, goals and incentives, technological move
- **Specifications**
  Functional scope, EMV documentation, EMV toolbox
- **Impacts Overview**
  Issuer, Acquirer, Cardholder, Merchant
- **Certification**
  Contact (terminal, card), contactless (terminal)

2. EMV Transaction (Part 1)

- **Card Structure**
  File mapping, record storage, transaction structuring data, templates
- **Data Elements**
  Data encoding, primitive and constructed data objects, data element types, Data Object Lists…
- **EMV Commands**
  Command/Response structure, EMV choices
- **Card profiles**
  Card structure illustration, EMV card profiles examples
- **EMV Transaction Flow**
  Application selection, initiate application, read application data, offline data authentication

3. EMV Transaction (Part 2)

- **EMV Transaction Flow (cont.)**
  Processing restrictions, cardholder verification, terminal risk management, terminal & card action analysis, online processing, completion
- **Practical Exercises**
- **Real Transaction Execution**
  (using a real card and a reading tool)

4. Card Applications

- **Normative References**
  EMVCo, Visa, MasterCard, American Express, Discover, JCB, others
- **Risk Management Approaches**
  VIS, M/Chip, CPA
- **Proprietary Functions**
  VIS extensions, M/Chip Advance, D-PAS
- **Contactless Approaches**
  "Mag-stripe" vs. "EMV", Visa payWave™, MasterCard Contactless, others

The 2-day EMV training could be efficiently complemented by a set of hands-on exercises using the KaNest®-ICC simulator. This test tool by Galitt uses:

- A Card Test Suite qualified by a Payment Network
- The EMV Level 2 Terminal Test Suite qualified by EMVCo
- A probe
- A set of test cards
- A POS

Due to the continuous changes, the content of the seminar is updated regularly

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