Expert EMV & Contactless Course Outline

The B2 Expert EMV & Contactless Course is a world-leading, knowledge-packed seminar. The course will give the attendees in-depth expertise on EMV and contactless form factors, acceptance devices, transaction processing, card and terminal architectures, do's and don'ts, industry insight, best practices and global trends. Knowledge gained can be applied immediately to any EMV & Contactless project.

DAY 1

Required skills & expertise

To attend Day 1, EMV expertise is required. Basic knowledge of financial transaction systems is an advantage.

EMV Functional Architecture

This module explains in clear, non-technical terms the 'EMV transaction flow'. Many aspects of EMV payment schemes will be put in perspective, such as:

- How does EMV handle offline and online transactions?
- What are the advantages and disadvantages?
- Does EMV really protect us against skimming fraud?
- What security measures can be taken?

Contactless Functional Architecture

This module explains in clear, non-technical terms the 'Contactless Transaction Flow'. During this presentation, many aspects of Contactless payment schemes will be put in perspective, such as:

- Magstripe vs. EMV-grade contactless
- Functional differences between payWave, PayPass, D-PAS and Expresspay

Compliance

This module looks at the topic 'EMV compliance' from a regulatory, PCI and payment scheme point of view. After completing this module, the attendees will be familiar with the concept of being 'EMV compliant' from a regulatory and payment scheme point of view and how to get there (i.e. certification). Other topics relevant to compliance are also discussed.

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Cryptography and Key Management (EMV & Contactless)

Cryptography, EMV and Contactless are topics that are often associated with one another. In important topic because it is the cryptography that makes EMV-based and Contactless-based payment transactions secure. This module explains what cryptography is and how it is applied within EMV contact and contactless, Magstripe Contactless (key management, asymmetrical/ symmetrical cryptography, key distribution, do's and don'ts, Offline and Online Cryptography such as ARQC/ARPC, SDA/DDA/CDA, etc.).

DAY 2

Required skills & expertise

To attend Day 2, a technical background / view is required. This day will provide a good understanding of what happens 'under the hood' in an EMV infrastructure. It is suitable for people with a technical oriented focus and will focus on the technical matters of EMV via presentations, discussions and practical experiments.

All attendees must have attended the first day.

EMV SmartCard Basics

Before the technical aspects of an EMV transaction flow are explained, it is important to understand the basics of EMV SmartCard technology. This module explains the basics of EMV SmartCard technology by looking at the card topology, file structure and other aspects relevant to EMV.

EMV Technical Transaction Flow

This module covers in technical detail the EMV transaction flow between card, terminal (POS and/or ATM), acquirer host, payment network and the issuer host. All relevant techniques (SDA, DDA, CDA, Issuer Scripting, etc.), data-elements and terminology (CDOL, Issuer Action Codes etc.) are explained. Special attention is paid to the EMV commands, the card file structure, risk management and the different card features between Visa and Mastercard. Best practices, insights and do's and don'ts are covered throughout the various steps of an EMV transaction.

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Kernel ICS/LOA

This presentation covers in detail the various parameters of the Implementation Conformance Statement (ICS) that are required in order to define the EMV behavior of an acceptance device. The ICS is used in conjunction with the EMVCo. Letter of Approval (LOA), which is used by the acquirer to select the relevant ICS from the various ICS' that get approved with each of the vendor's LOAs.

DAY 3

Required skills & expertise

To attend Day 3, a technical background / view is required. The day will provide a good understanding of what happens 'under the hood' in an EMV & Contactless infrastructure. It is suitable for people with with a technical oriented focus. It will focus on the technical matters of Contact and Contactless EMV via presentations, discussions, exercises and practical experiments.

All attendees must have attended Days 1 & 2.

Implementing EMV for U.S. Debit

EMV can be used for all payment products including credit and debit products. EMV doesn't distinguish between payment products as the security architecture it delivers allows all products to have the same level of security. Regulation surrounding Durbin Amendment has required additional complexity in the EMV environment, which must be implemented by merchants to ensure least cost debit routing.

This module will cover the following areas:

- Pre-EMV Debit Routing solutions
- Post-EMV Debit Routing solution
- Implementation considerations for merchants

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EMV Impacts Across Various Payment Verticals

This module will explain some of the EMV implementation options and impacts on the following merchant types:

- Gratuity (Tip environments)
- Dynamic Currency Conversion (DCC)
- Lodging
- Refund
- Cashback
- Quick Payment Services (QPS)
- Quick Chip/MChip Fast
- Merchant Stand-in

EMV Contactless Basics

Before the technical aspects of the various EMV contactless transaction flows are explained, it is important to understand the basics of EMV contactless technology. In this module we will:

- Learn the basics of EMV contactless technology.
- Understand the EMV technical standards for contactless payments.

Contactless Technical Transaction Flow

This presentation covers in technical detail the various contactless transaction flows (Visa, Mastercard, Amex and Discover) between card, terminal, acquirer host, payment network and issuer host. All relevant techniques (CDA, fDDA, Issuer Scripting, etc.), data-elements and terminology (CDOL, Issuer Action Codes, etc.) are explained. Special attention is made to the differences between Magstripe and EMV grade Contactless. The differences between Visa payWave, Mastercard PayPass, Amex Expresspay and Discover DPAS are described in detail.