EMV Masterclass

Duration- 5 Days , 14 Hrs (Each day 2-3 Hour session)

Course Contents:

1. Payments Industry Basics
2. EMV in a Nutshell
3. EMV Security Framework
4. EMV Functional Architecture
5. EMV Business Considerations
6. EMV Transaction flow (Contact)
7. EMV Contactless flow
8. Introduction to Cryptography
9. Cryptography in EMV
10. EMV Project Implementation
11. Issuer Online Authorization
12. Trends in Card Payments

Day 1 (3 Hrs)

• Payments Industry Basics

This module provides the basics on card payments. Terms like 3 and 4 corner schemes, processor, authorization, settlement, single message and others are given a place in this easy-to-understand frame of reference.

• EMV in a Nutshell

In this module we see the driving forces behind EMV, how it evolved and what the standard describes. Covers the question – What is EMV, EMV Adoption, Contact standards, Contactless standards and introduce some terminology.

• EMV Security Framework

In this module we look at the security mechanisms provided by EMV, specifically, the security impact of EMV migration and fraud protection. Also covered is the Side effects of EMV implementation.

Day 2 (2 Hrs)

• EMV Functional Architecture

This more content-specific training module covers the functional aspects of an EMV transaction, giving insights to whole architecture covering both acceptance terminals and payment applications. This module also introduces the ISO 7816 & ISO 14443 standards and different levels of EMV Architecture (L1, L2 & L3)

• EMV Business Considerations

This module focuses on the business decisions that both Issuers and acquirers are required to make for their EMV products. Topics such as card personalization, card issuance and terminal configuration will be explained.

Day 3 (3 Hrs)

• EMV Transaction flow (Contact)

In this module, we will dive deep into the EMV transaction flow (Contact). The attendees will learn how the card and terminal interact, what is TLV and APDU, and how they are used. After this module, attendees will be able to understand and interpret the conversation between smart cards and terminals.

• **EMV Contactless flow**

In this module, we will provide overviews about the most prominent highlights and various contactless transaction flows. Contactless Kernel C2-C7 (and new C8) is discussed and implementation of Tron transactions, Relay Resistance Protocols, Data storage and Exchange are covered for each Kernel.

Day 4 (3 Hrs)

• **Introduction to Cryptography**

This training module familiarizes the attendees with all relevant cryptographic concepts required for understanding the EMV security architecture (covered in next module). Relevant cryptography methods, their related algorithms, and standard terminology are covered. Symmetric and Asymmetric cryptography is covered as well as concepts of key management.

• **Cryptography in EMV**

The purpose of this module is to understand the use of cryptography in EMV. Effective explanations will be given for the type of keys and algorithms used in EMV transactions and for how they are managed in the wider EMV environment.

Day 5 (3 Hrs)

• **EMV Project Implementation**

Impacts on operational setup for issuers and acquirers. High-level work breakdown structure for project planning and EMV certification requirements.

• **Issuer Online Authorization**

This module describes briefly ISO 8583 inter-banking message specifications used in the card payment ecosystem. The audience will learn how the ISO 8583-based protocols are impacted by EMV transactions, and how the EMV data is transmitted and validated by the Issuer.

• **Trends in Card Payments**

We will now have a closer look at the latest developments and market trends in card related payments and other payment methods. Card digitization/tokenization, trends in CVM and alternative payment methods are explored.

Note :

Requirement for hands – on: Students must arrange their own working FIME BTT/PVT tool and POS device for any practical hands-on.