



ARGOTECHNO

EMV FOR ACQUIRERS



Argotechno brings to the market the best on professional education to improve knowledge and usage of EMV rules. We have trainings and workshops on the practices most commonly used all over the world, with a practical approach of their application.

Trainings are specially formulated for financial business managers, developers of new financial products or IT professionals, promoting learning and autonomous development after courses

MasterCard.
Vendor Program
2014 Participant

VISA
Technology Partner

OBJECTIVE Provide the student the concepts of EMV technology from the acquirer's point of view; present the flow of EMV transactions and how they affect acquiring systems through the different phases of the transaction.
Describe the options for implementing acquiring systems, the processing of transactions and key management.
Expose the relation between generic EMVCo specifications and the specific scheme's requirements.

METHODOLOGY A program developed with technical and practical components, promoting application of the concepts. The instructor presents the concepts and practical cases and, then, stimulates participation.

SCHEDULE **EMV FOR ACQUIRERS (ACQUIRER CONCEPT) – TECHNICAL TEAMS**

PART 1: INTRODUCTION TO EMV PAYMENTS SYSTEMS

- a. EMV and EMVco architecture
- a. Actors
- b. Credit and debit payments
- c. National and International payments
- d. EMV payments (online and offline)
- e. History and future of EMV specifications
- f. Terminals and certifications architecture
- g. ISO7816
- h. Commands (APDUs)
 - i. How to intercept transactions with smartcards (spies)
 - ii. How to simulate a card
- i. Symmetrical and asymmetrical algorithms
- j. Hash and signature algorithms

PART 2: EMV – STEP BY STEP (FOCUS ON CAPTURE)

The following steps describe the behavior of a transaction from the point of view of the communication between card and terminal:

- a. Application Selection
- b. Initiate
- c. Read application data
 - i. Main data of an EMV application
 - ii. TAGs BER-TLV concept
- d. Processing restrictions
- e. Data authentication
- f. Card holder authentication

PART 3: EMV – STEP BY STEP (CAPTURE FOCUS)

The following steps describe the behavior of a transaction from the communication between the card and the terminal:

- a. Terminal Risk Management
- b. Terminal Action Analysis

- c. Card Action Analysis
- d. Issuer Authentication
- e. Script Processing
- f. Completion
- g. Messaging ISO 8583 (DE55 details and other Data Elements)

PART 4: PROCESS, SECURITY AND CERTIFICATION (CAPTURE FOCUS)

- a. EMV development process
- b. Kernel EMV
- c. SDA, DDA e CDA
- d. PIN cryptography
- e. Issuer authentication
- f. Secure messaging
- g. Partial Grade mode and Full Grade mode
- h. Certification process (Level 1, Level 2 and schemes)
- i. Terminal certification
- i. New Technologies overview [Contactless payments (PayPass e PayWave) and Mobile].

CASE STUDY

The goal of this case study is to provide basis, so that the participants are able to deal complex matters of the EMV transactions in their day by day. The participants will go through log examples using the concepts acquired during the training. They will identify the sequence of a transaction in a test card (online and offline transaction). This practice will happen during the trainings.

Ps: We are also able to provide personalized trainings to fulfill special needs that your company may have. Contact us if you need something specific.

ABOUT ARGOTECHNO

Company that provides products and services for clients that demand productivity, security and innovation in IT solutions. With relevant experience on technologies for secure transactions, smartcards and electronic payments, including mobile. Bringing together business strategies, IT and systems architectures, governance practices, technologies and software engineering to provide customer oriented value added services. We apply state of the art technologies, methods and standards ensuring excellent productivity, reduced operational risks and delivering effective competitive advantages.

Argotechno provides consulting and services on methods and technologies such as:

- Projects for Issuers: EMV chip, Contactless and Mobile/NFC (MasterCard, Visa, Amex, Discover, others)
- Projects for Acquirers: Transaction authorization, Full Grade, EMV chip, Contactless and Mobile/NFC (Mastercard, Visa, Amex, Discover, others).
- Organizational and IT process adjustments. (Cobit, ITL, CMMi, etc.)

**COURSE
COORDINATION****Course coordinators:**

Alex Gama dos Santos, Graduated in Electronic Engineering at Instituto Tecnológico da Aeronáutica (ITA); post-graduated at Fundação Getúlio Vargas; certified as Project Management Professional (PMP) by the Project Management Institute (PMI). Has great experience in the development of payment implementation and Contactless and mobile payments, as well as EFT solutions specifications and implementations.

Eduardo Marcio de Barros Franco, Graduated in Electrical Engineering at Universidade de São Paulo; has great experience as project manager and is certified as Project Management Professional (PM) by the Project Management Institute (PMI). Senior consultant and system architect with great knowledge in smartcard Technologies, EMV migration and implementation and contactless and mobile payments, as well as public transportation automation.

All the instructors are professionals with high knowledge and experience in projects and are able to transmit, not only the concepts, but also optimize the comprehension of best practices in applying concepts.

**CONDITIONS,
OPTIONS,
SCHEDULES**

IN-COMPANY course, using the contractor's structure. Classes up to 12 students. Dates to be arranged between contractor and provider.

ARGOTECHNO NA

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EMV FOR ACQUIRERS

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Argotechno
To the attention of: Mr. Eduardo Márcio de Barros Franco
Rua Orissanga, 26 conj. 101
04052-030 Sao Paulo SP
Brazil

December 22, 2011

Object: Letter of Accreditation for Formal Approval Services

Agreement reference number: 2010090099

Dear Mr. de Barros Franco,

We are pleased to announce that Argotechno has successfully implemented the MasterCard® Worldwide Accreditation Requirements for Formal Approval Services.

Herewith MasterCard Worldwide notifies that Argotechno is accredited as from **January 1st, 2012** for delivery of Formal Approval services.

As of January 1st, 2012 MasterCard allows Argotechno to deliver the following Formal Approval services:

1. **Card Personalization Validation (CPV) for contact and contactless technologies**, except for CPA, *PayPass* CPA and Maestro UK applications.
2. **MasterCard Terminal Integration Process (M-TIP), *PayPass* TIP, and *PayPass* M-TIP**, except for dual-capability CAT1–CAT2 terminals and for *PayPass* readers implementing specification versions lower than *PayPass* 2.0.

This letter of accreditation is issued subject to the "Agreement for Formal Approval Services" (Effective Date of November 22nd, 2010).

Sincerely yours,

A handwritten signature in blue ink, appearing to read 'C. Delporte', with a long horizontal line underneath.

Christian Delporte
Head of Chip Engineering
MasterCard Worldwide

MasterCard Europe SPRL is a subsidiary of MasterCard Incorporated
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Argotechno Engenharia Ltda.
Mr. Alex Gama dos Santos, Director
R. Orissanga, 26 cj. 101,
04052-030 São Paulo Brasil

Thursday November 15th, 2010

Object: Letter of Accreditation - Agreement ref. nb. : 2010030090

Dear Sir,

MasterCard confirms that Argotechno has successfully passed the MasterCard Chip accreditation process.

The accreditation process was based on the "CCoE Accreditation Requirements v2.0".

MasterCard has accredited Argotechno in the following categories:

Guidance
Technical Support Issuer
Technical Support Acquirer

MasterCard requires Argotechno to proceed with an Accreditation Renewal prior to July 1st, 2011.

The most recent "CCoE Accreditation Requirements" apply at the moment of renewal.

This letter is established in conformity with the "Accreditation Agreement for MasterCard Chip-related services" signed by both parties on March 3rd, 2010. As stated in clause 6.2 of the agreement, the Service Provider shall send the activity report at the end of each quarter. The Service Provider shall also provide, as soon as a service has been delivered, the required contact details allowing MasterCard to perform the quality evaluation stated in clause 7.2.

Sincerely yours,



Alfred Poell
Head of Inter-operability Services
Chip Solutions and Engineering