



ARGOTECHNO

## EMV FOR ISSUERS



**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 Issuer's point of view; guide the card profile choice and explain how they affect the issuing and authorization systems. Describe the options for the implementing of authorization systems, processing of transaction and key management. Present the relation between the generic EMVCo specifications and the specific scheme's requirements.

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

**SCHEDULE** **EMV FOR ISSUERS – TECHNICAL TEAMS**

**PART 1: INTRODUCTION TO THE EMV PAYMENT SYSTEM**

- 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

**MÓDULO 1: EMV – STEP BY STEP (FOCUS ON ISSUING)**

The following steps provide understanding of the characteristics and needs of card issuing:

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

**PART 3: EMV – STEP BY STEP (FOCUS ON ISSUING)**

The following steps provide understanding of the characteristics and needs of the card's issuing:

- 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 (FOCUS ON ISSUING)**

- a. EMV transaction authorization process
- b. SDA, DDA e CDA
- c. PIN cryptography
- d. Cryptograms of issuer's authentication
- e. Secure messaging
- f. Full Grade authorization
- g. Issuing profile choices
- h. Combo cards / Dual interface
- i. MasterCard CPV process
- j. Overview on new Technologies [Contactless (*PayPass* e *PayWave*) and Mobile payments].

#### **CASE STUDY**

The goal of this case study is to give the participants the basis to solve complex matters of the EMV transactions on their day by day. The participants will go through log samples using the learned concepts; identify the sequence of a transaction (online and off-line) in a test-card.

*Ps: We are also able to provide personalizes 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.

#### **Argotekno 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.

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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 1<sup>st</sup>, 2012** for delivery of Formal Approval services.

As of January 1<sup>st</sup>, 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 '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 15<sup>th</sup>, 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 1<sup>st</sup>, 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 3<sup>rd</sup>, 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