

Contactless & Mobile Payments Training



Cutting Edge Course

Contactless payments are hot! With contactless payments, consumers simply tap a plastic card or mobile phone in order to pay for their purchases. Fast, convenient, and fun to use! Contactless payments, sometimes also referred to as proximity payments, are gaining increasing momentum in countries all over the world.

The Collis Training Academy is offering a two-day training course specifically targeted at those wanting to know more about Contactless and Mobile payments, corresponding product features, business models, underlying technology, and deployment and operation of Contactless payment services in relation to EMV and magnetic stripe infrastructures.

Knowledge is the key to success. With Collis' Contactless and Mobile Payments course, you will get to learn all relevant information through an attractive and interactive two-day training program.

Added Value

This training is designed to add value to a broad audience from the payments and mobile industry and is beneficial for employees of financial institutions (Issuers, Acquirers), terminal vendors and handset manufacturers as well as those who are interested in learning all that is relevant to know about Contactless & Mobile Payments in just two days.

After completing this training, the attendees will be able to accurately assess the value of Contactless & Mobile Payments for their own organisation, to drive decisions based on facts and lessons learned, and to autonomously participate in internal projects.

- You will be familiar with all relevant principles, standards, and technologies regarding mobile and contactless proximity payments
- Have valuable hands-on experience with contactless payment technology
- Are familiar with the main contactless payment and NFC initiatives & roll-outs world wide
- You are able to apply this knowledge directly in IT or business-related contexts.



Mobile Payment

Key Benefits

- ◆ Become familiar with all relevant principles, standards and technologies
- ◆ Gain hands-on Contactless payment experience
- ◆ Become aware of main global roll-outs
- ◆ Apply your knowledge, and benefit from it, straight away!

Course Outline



The Contactless & Mobile Payments Training courses are offered both as open training as well as in-company and are held several times each year in The Netherlands, Singapore, Minneapolis, Edinburgh and Canada.

These Open Training Courses are open to anyone who wants to learn more about Contactless & Mobile Payments. Participants receive a certificate upon completion.

The Contactless & Mobile Payments Open Training Course is of 2 days duration.

For more information visit: www.collis.nl/academy

Executive Summary (Day 1)

The **first day of training** is beneficial for all parties involved in the retail payments industry. This Executive Summary gives a non-technical introduction to Contactless & Mobile Payments covering the following topics:

- Overview contactless technology (what it is & what it is NOT)
- Retail payment environments and the role of contactless technology
- Impact of replacing magstripe or EMV with contactless technology
- Contact payments using mobile phones (NFC)
- Current Contactless & NFC initiatives and rollouts

(Reference code: CLMP-EXE)



Expert Course (Day 2)

The **second day of training** views Contactless and Mobile payments from a more technical angle. More technical-oriented attendees will find it particularly interesting to learn at a practical level how the different standards and protocols work in POS devices, cards, and mobile phones. Topics to be covered during the Expert Course include:

- Contactless Technology Standards
- Contactless Payment Standards
- OTA Provisioning / Personalisation
- NFC: contactless payments in a handset

(Reference code: CLMP-EXP)



In-company Training

If you would like to be trained with several colleagues at the same time, Collis can deliver the Contactless and Mobile Payments training as an in-company training programme at your own premises. Collis can even deliver training on your behalf to a much wider audience with dedicated seminars or road shows. This can be especially interesting for scheme owners or other (member-based) organisations such as acquirer associations or service providers.



Trainer Profiles

Experienced Trainers

The Contactless & Mobile Payments training courses are hosted by one of Collis' experienced trainers. The Trainers bring with them a wealth of experience, case studies and best practises. They possess the skills to address Contactless and Mobile Payments from both a business as well as a technical perspective. Collis training courses are not a broadcast of information to the attendees. Rather, they are interactive, fun to attend and above all, useful!

Maarten Bron

Vice President / Manager Payment Competence Centre

Maarten manages the Payment Competence Centre and founded the Collis Training Academy in 2002. A highly experienced payments professional, Maarten has been leading turn-key Payment & EMV consultancy projects world wide. Maarten's extensive qualifications and experience include a double degree majoring in Bachelor of Computer Engineering and Business Administration.



Iain Maxwell

Technical Consultant

Iain has more than 10 years experience in the smart card industry, focusing on the testing of handsets and U/SIM cards. He has extensive experience in providing training on telecommunication specification and Aspects' products. He has also been responsible for the management and development of several consultancy projects for key 3G and GSM network operators. Recently, Iain has focused on the testing of NFC, SWP & HCI handsets and cards. Iain's qualifications include a degree in Bachelor of Information Management & Technology.

Steve Lincoln

Chief Technical Officer

Since joining Aspects in 2000, Steve has worked on the development of test tools for the telecoms industry. Steve is now responsible for the future direction of Aspects' products and brings to this role an extensive knowledge of the latest industry specifications (including emerging technologies such as NFC) and customer requirements gathered from regular contact with the telecoms industry. Steve joined Aspects Tools from BAE Systems where he worked as a radar system engineer after graduating from the University of Manchester with a first class degree in Physics with Astrophysics.



Trainer Profiles



Itai Sela
Principal Consultant

Itai has been working in the Payment industry both in business and technical areas for over 10 years. He has assisted and managed complex cross-functional smartcard programmes across business, operational and technological areas for major Israeli, Canadian, and British credit card companies and international banks. Itai has extensive experience in providing business, operational and technical consultancy and training. Recently, he has been focusing on the Canadian market, where he gives many training courses to major stakeholders in the Canadian payments business (issuers, acquirers, and scheme operators).

Rick Hsu
Managing Director Collis Asia

Primarily focusing on APAC market, Rick is responsible for the development and execution of strategic initiatives that will open up new business opportunities for Collis Asia. With extensive EMV and contactless experience gained from numerous Collis projects in Korea, Japan, Taiwan, China and Singapore, Rick provides real-life experiences and insights in both technical and commercial aspects. Rick's qualifications include a degree in Bachelor of Applied Mathematics & Computing.



Course Programme Guide

The Contactless & Mobile Payments Open Training Course is a two-day course and is organised on two consecutive weekdays, following the programme detailed below. In-Company courses include the same content, but may follow a different time schedule to allow for Company Specific Modules.

Executive Summary (Day 1)

9.00 – 9.15	Introduction The goal of this presentation is to set the expectations of the attendees in terms of learning goals, scope, program and content. The attendees will hear how the training is structured and why.
9.15 - 10.15	Retrospect: contactless technology The goal of this presentation is to explain on a high level what contactless technology is, where it came from, and how it is applied in daily life. Generic terms and definitions such as RFID, tags, passive and active mode, range, transfer of information etc.) are introduced.
10.15 - 10.30	Coffee break
10.30 - 11.30	Contactless technology in retail payment environments The goal of this presentation will be to give the attendees an overview of the 'ecosystem' of payments (issuers, acquirers, processor, clearing & settlement, schemes etc.) and the role that Contactless technology plays in it. Is contactless technology really 'disruptive technology', or was it just the logical next step waiting to happen?
11.30 - 12.00	Upgrade: from strip or chip to contactless payments Contactless technology is very well fit-for-purpose to complement or replace existing magnetic strip or EMV implementations. Likewise, the major payment schemes each have developed 'contactless' equivalents of their existing payment brands. In this presentation, the attendees will learn about the main characteristics of each of these products, including features like security, PIN handling, and low value payments.
12.00 – 13.00	Lunch
13.00 – 13.15	Demonstration A Contactless transaction will be demonstrated and dissected, analysed using the Collis SmartWave Box. Special attention will be paid to transaction timing.
13.15 – 14.30	Upgrade: from strip or chip to contactless payments (continued)
14.30 – 14.45	Coffee break
14.45 – 15.45	From Contactless payments to NFC NFC (Near Field Communication) is often referred to as 'contactless-payments-using-your-mobile'. The fact that NFC is much more than that will be explained during day 2 of the course. This module however sticks to the definition mentioned above and explains topics like Secure Elements and OTA (Over The Air) Personalisation.

Course Programme Guide

15.45 – 16.45 **Contactless in the real world: business case and case studies**
Like the title suggests, the last presentation of the first day provides an overview of some of the business case challenges as well as an examination of some interesting pilots, trials, or live implementations of contactless and NFC. The goal of this presentation is to make the attendees understand that Collis is not just technology-focused, but that we can also build business cases, studies etc.

16.45 – 17.00 **Wrap up and closure day 1**

Required skills & expertise

To attend day 1, no special skills or expertise are required. (Basic) knowledge of financial transaction systems is an advantage.

Expert Course (Day 2)

9.00 - 9.15 **Recap Day 1**
A short recap of day 1. The goal of this presentation is to set the expectations and goals for the 2nd day of training, to answer questions the attendees might have, and to check if the attendees really understood what they have learnt during the first day.

9.15 - 10.30 **The standards that define Contactless technology**
The goal of this presentation is to make the attendees more aware of the 'technical backbone' behind contactless and mobile payment technology. Standards such as ISO 14443 A – B, Felica, ISO 18092, NFC-IP1, ISO 21481, Mifare, and the T=CL protocol are all given a place. What might seem to be spaghetti for those who work with contactless technology for the first time will be revealed as a carefully defined coherent set of (legacy) standards and technologies.

10.30 - 10.45 **Coffee break**

10.45 - 12.00 **The standards that define Contactless technology (continued)**

12.00 - 13.00 **Lunch**

13.00 - 13.15 **Demonstration**
With this demonstration the attendees will see immediately the things they've just learned. Using Collis' Conclusion Test Platform and Collis' SmartWave Box, the concept of Anti-collision is explained and applied to real-life use cases!

13.15 - 14.30 **500 milliseconds, what's taking so long?!?**
A Contactless Payment at the Point of Sale might take up to half a second to complete. The payment schemes have come up with clever ways to carefully balance 'consumer convenience' on one side, and 'transaction security' on the other. This module will give in-depth coverage of the technical transaction flows between contactless cards and readers for different payment brands and also addresses topics such as EMVCo Entry Point Specifications and the certification of cards and devices.

Course Program Guide

14.30 - 14.45

Coffee break

14.45 - 15.45

OTA provisioning and personalization

With this presentation, the attendees will learn more about the key management and personalisation process of contactless cards and NFC handsets. Whereas the personalisation process and key management of contactless cards is quite similar to what we know about EMV, personalizing an NFC handset is relatively complex. Not only do we have to introduce more roles to the ecosystem (such as Secure Element issuer, Trusted Service Manager etc.), there is also the need to somehow 'bootstrap' a mobile phone in order to perform secure application lifecycle management. This last module explains the details of these concepts, such that the attendees have relevant knowledge of what it takes to deploy and provision contactless and mobile payment products.

15.45 - 16.45

Exercises

The training will end with a couple of exercises to be completed by the attendees. The goal of these exercises is to specify what additional information needs to be personalized on a MasterCard PayPass card in order to make it compliant to a NFC-Forum Tag type 4. In other words, how do you store your personal electronic business card on a PayPass card?

The following will be background information to the Exercises NFC Forum: TAGs, NDEF's, and RTD's. The goal of this presentation is help the attendees understand what the role of the NFC forum is and how their specifications complement the specifications that were presented earlier. Specifically, the four different tag-types are explained (characteristics, usage environments, capabilities etc.) as well all the NDEF data exchange format and different RTD's (for example the smart poster Record Type Definition).

16.45 - 17.00

Questions - round up - closure day 2

Required skills & expertise

To attend the Expert Training a technical background / view is required. The expert training will give a good impression on what happens 'under the hood' with Contactless and Mobile Payments.

Quote from Previous Attendee of the Collis Training Academy

"Collis provided us with up-to-date EMV knowledge within two days!"

Jean Marchand, Senior Manager, National Bank of Canada