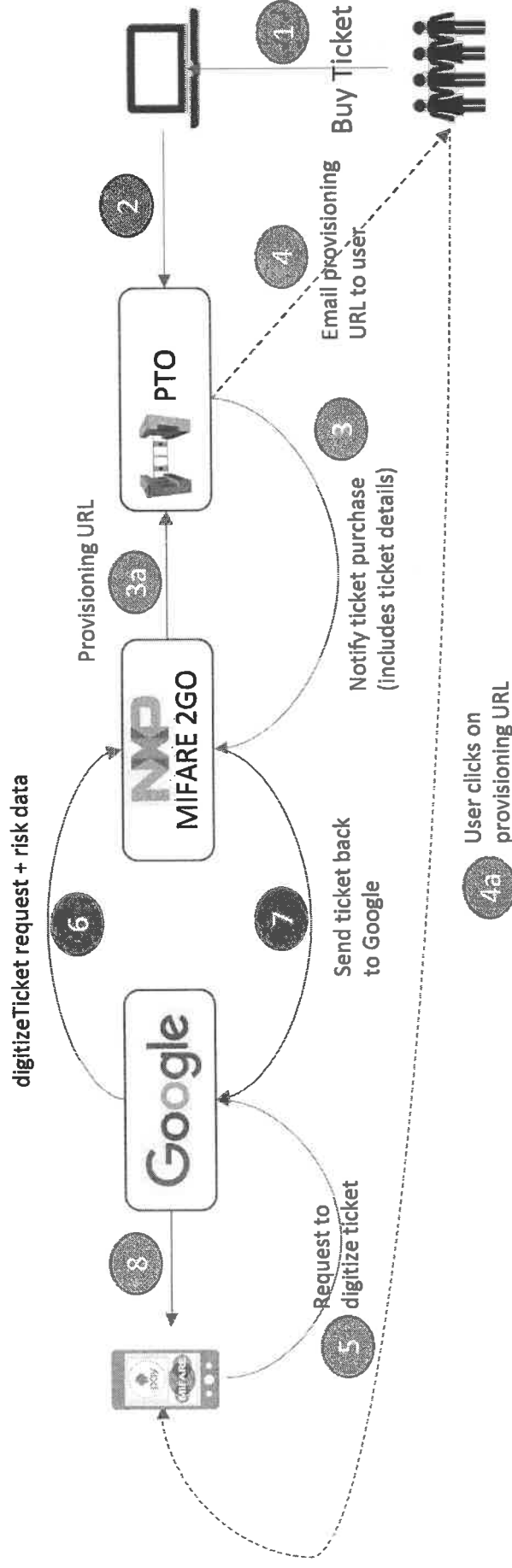


Purchase and Provisioning Flow Overview





NXP® MIFARE 2GO

Mobile transit ticketing for operational efficiency and better passenger experiences

MIFARE 2GO is a complete end-to-end cloud solution that manages digitized MIFARE product-based credentials onto mobile and wearable devices. It brings public transport into a new era, enhancing passenger experiences while making transit operations more efficient.

KEY BENEFITS FOR SERVICE PROVIDERS

Convenience

Less queuing at ticket machines and entry points leads to higher customer satisfaction, and easy access to real-time information makes it easier to plan trips, update friends, and avoid delays.

Efficiency

Crowds move faster because ticket validation is quick and easy, and passengers resolve issues in less time with app-driven services like personal assistance and easier refunds.

Savings

Reduced cash handling means fewer ticket windows to staff and fewer ticketing machines to maintain. Error reports and over-the-air updates make the system easier to debug and maintain, and the significant reduction in fraud, with easy detection of fake tickets, lowers costs, too.

Mobility

MIFARE 2GO supports new business models, so transit agencies stay competitive, and provides additional sales channels with the potential for increased revenue and interactive content. Easy expansion lets transit agencies extend their services quickly.

Availability

MIFARE products offer widest customer reach, so they can be used by everyone, including the unbanked. By leveraging the extensive infrastructure that already operates with MIFARE products, MIFARE 2GO will expand rapidly on a global scale.

Flexibility

Public transport operators retain full system end-to-end ownership, allowing them to stay in control of their needs when it comes to updating fare structures or policies. In addition, MIFARE 2GO makes integration of third party services easy and straightforward.

Scalability

Optimized for working with existing infrastructures, and designed to support all mobile and wearable platforms globally, MIFARE 2GO is an extension of NXP's latest MIFARE product portfolio, which offers a unique combination of security and scalability.



KEY FEATURES

- ▶ Complete end-to-end cloud solution
- ▶ Secure platform for digital credential issuance and risk management
- ▶ Supports NXP's MIFARE® DESFire® and MIFARE Plus® in security layer 3
- ▶ Designed to work with existing infrastructures
- ▶ Supporting all NFC-enabled devices
- ▶ Helping operators to execute on their "Bring Your Own Device" strategy

TARGET APPLICATIONS

- ▶ Automated Fare Collection
- ▶ Access Management
- ▶ Micropayments & Loyalty



MORE CONNECTED. MORE INTUITIVE.

By offering leading technology, deep expertise, and a comprehensive ecosystem for mobile transactions, NXP's mobile solutions offer everything needed to make the user experience more convenient and more connected. And that, in turn, will help rapidly expanding cities be more livable and more sustainable.

Mobile transactions based on NFC-enabled devices make public transport more attractive to consumers, increases engagement for those who value their mobile lifestyles, and demonstrates support for environmentally-friendly Smart City concepts.

As a key player in the global transit ecosystem, NXP identified the need for a scalable platform that can provision and manage MIFARE product-based credentials on **all NFC-enabled devices**.

By leveraging the widespread use of MIFARE contactless ICs, tomorrow's travel experience will be managed on mobile phones that serve as navigators for a rich set of Smart City services.

MOBILITY AS A STARTING POINT

- MIFARE 2GO is a back-end solution offering a digitized MIFARE product-based credential issuance and risk management platform to transit agencies across the globe.
- NXP is leveraging its expertise and relationships with transit agencies and system integrators to integrate MIFARE 2GO into OEM wallets.

- MIFARE 2GO benefits transit agencies by significantly reducing cash handling, decreasing card lifecycle management and infrastructure costs, and offering time savings for passengers.
- MIFARE 2GO places public transit on a par with alternative, increasingly popular travel options, like ride sharing, which are already managed on mobile devices.

MIFARE IS #1 IN TRANSPORTATION

NXP's MIFARE products have been improving the way how people access city services since 1994. Now that MIFARE products can be a digital credential, too, people can enjoy more convenient, more connected lifestyles, independent of location and time, by using their mobile phones or wearables to interact with city services.

NXP is #1 in transport ticketing globally, in large part because MIFARE product-based solutions help city agencies develop efficient transportation systems that are more integrated, simpler to maintain, and easier to use. With more than 77% market share and an established infrastructure in 750+ cities worldwide, MIFARE serves 1.2 billion people daily, and continues to grow.



Want to know more about MIFARE 2GO?

Contact your local sales representative or email us at mifare@nxp.com.



AN4973

AppXplorer Quick Start Guide for Card Issuers

Rev. 1.0 — 16 January 2019
4973

Preliminary application note
COMPANY CONFIDENTIAL

Document information

Info	Content
Keywords	AppXplorer, Web Interface, Card Issuer, MIFARE DESFire EV2
Abstract	This document summarizes all the information required by a card issuer who wants to publish his MIFARE DESFire EV2 cards and get in contact with service providers on AppXplorer.



1 Revision History

Table 1. Revision history

Rev	Date	Description
1.0	20190116	Initial version

2 Introduction

2.1 NXP AppXplorer

The NXP AppXplorer is a common platform for card issuers also called device issuers and service providers to publish their cards and applications to collaborate and offer the end customer the possibility to install multiple applications on one smart device. This web-based application is interacting with a MIFARE DESFire EV2 IC by using the so-called MIsmart App feature of the card or also called Delegated Application Management (DAM) in technical terms. This feature facilitates a post-issuance installation of applications on AppXplorer enabled MIFARE DESFire EV2 cards, please see [6].

For the end customer, AppXplorer is a big applications store of available MIFARE DESFire applications, that he can browse and then easily download onto his MIFARE DESFire EV2 card, which fit his needs. This way, the end customer gets the opportunity to experience several applications by using one smart device and installing and changing them can be done securely over the air with an Android NFC smart phone connected to the AppXplorer backend. The secure channel gets established by the NXP AppXplorer Android Application and thus enables a secure connection between the MIFARE DESFire EV2 IC and the AppXplorer backend.

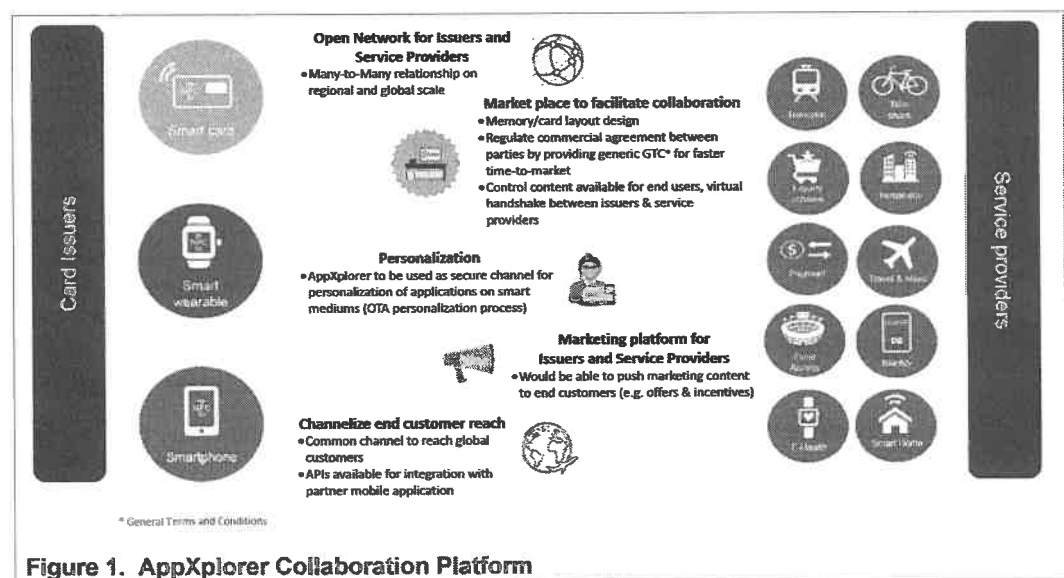


Figure 1. AppXplorer Collaboration Platform

2.2 Document Purpose

This document introduces the AppXplorer and focuses on the usage by the card issuer. AppXplorer offers card issuers the possibility to partition the memory by creating memory slots within the unused card user memory in order to onboard multiple MIFARE DESFire applications on their MIFARE DESFire EV2 cards.

In this document all the information that is needed by the card issuer to work with the NXP AppXplorer is provided. This bundle of information and support material which is provided to the card issuer is called "Product Support Package".

The Product Support Package is a full set of documentation and software deliverables, enabling card issuers to define cards within the AppXplorer web platform, pre-personalize cards for the usage with AppXplorer and use our Android Application or Software Development Kit (SDK) for installing applications on a MIFARE DESFire EV2 device.

2.3 Document Audience

This document is dedicated to card issuers who want to collaborate with different service providers and offer a card which can be equipped with applications based on the needs of the end customer.

It addresses developers and project leaders who want to make use of the NXP AppXplorer service. The document gives a first summary of the solution but more in-depth details can be found in the complimentary application notes which are mentioned within this introductory document.

2.4 Structure of this Document

Chapter [3.1](#) of this document explains the NXP AppXplorer platform in general and explains the main components as well as the main players of the AppXplorer ecosystem. Further also the advantages for the different involved players are listed.

The next chapter [3.2](#) highlights the advantages and special features of AppXplorer.

In the following, chapter [3.3](#) describes in detail how the AppXplorer works including the information exchange between the different components.

Afterwards, chapter [3.4](#) gives a brief summary of all the steps which are required for a card issuer to onboard on the AppXplorer platform, negotiate with the service provider and get his cards ready for the usage with AppXplorer.

Last but not least, chapter [3.5](#) provides the content of the PSP and lists all relevant documentation.

3 AppXplorer Platform

3.1 AppXplorer Platform Introduction

At the moment, end customers have a lot of cards in their wallet because one card contains only one application. Card issuer and service providers have been limited to one card until now because they don't know all the other card issuers and service providers which would complement their own applications. Therefore, most of the cards contain only one application up to now which results in cards with a lot of unused memory.

The AppXplorer platform provides the card issuer and service provider a platform to publish their cards and applications to collaborate with each other. The end customer can use the AppXplorer mobile application via his smart phone and install a number of applications, he is interested in. This is possible because of the Delegated Application Management and enables the card issuer to sell or rent the unused space of his card to other service providers and earn additional money. Further his cards become more popular as they host more applications and therefore become more attractive for end customers. The advantage for the service provider is, that he does not need to care about an own card. Additionally, he can reach a broader audience as his applications will be installed on many different cards around the world. The end customer benefits because he can configure his card in a way that his most relevant applications are available and he can use the same card at multiple locations and for multiple services.

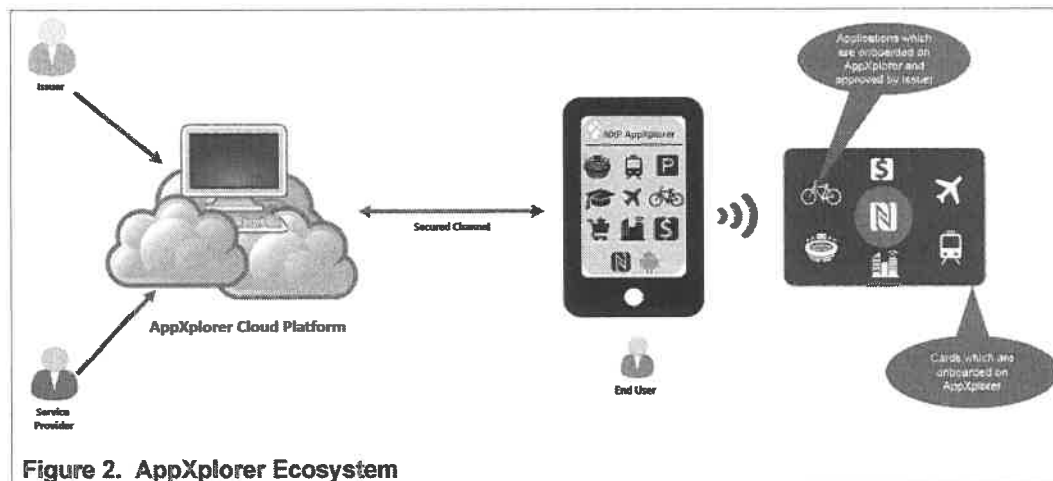


Figure 2. AppXplorer Ecosystem

Figure 2 shows the main components and players:

- **Card Issuer:** The card issuer has the possibility to enter all the details of existing or new cards within the AppXplorer web application and sell unused space to different service providers. This enables the card issuer to provide his customers more applications on one card. More applications on one card means more potential customers and so the card issuer can extend the market reach. For a detailed description of registering at AppXplorer and creating cards and requests on AppXplorer, please see Ref. [1].
- **Service Provider:** The service provider has the possibility to digitize existing or new applications and populate his applications on different cards around the world. This enables the service provider to offer his applications to much more end customers and

- therefore he can extend the market reach. For a detailed description of registering at AppXplorer and creating applications and requests on AppXplorer, please see Ref. [2].
- **End Customer:** The big advantage for the customer is that he only needs one card and gets access to many different applications and services. Further he can easily customize this card with his NFC capable mobile phone using the AppXplorer mobile application.
 - **Smartcard:** The supported smartcard type is the MIFARE DESFire EV2. The smartcard has to be pre-personalized with the AppXplorer Identifier (also called AX Identifier) and the three Delegated Application Management keys by the card issuer. For further details please see Ref. [4]
 - **AppXplorer Backend:** The AppXplorer backend can be accessed via the AppXplorer web application, Ref. [3]. Within this web application card issuers and service providers can register, upload their card and application details and negotiate the terms of a specific memory slot on a card.

The AppXplorer is not only a collaboration platform, it also guides service providers and card issuers through the process of creating a card or application and takes over the key management for these cards and applications. Further the AppXplorer mobile application provides the end user the possibility to install applications on a card as you can see in Figure 2. The mobile application communicates with the card via NFC and is connected to the AppXplorer backend where card issuers and service providers published their cards and applications. If the card issuer has already such a mobile application or if he wants to implement one, this mobile application can also be used for installing and uninstalling applications by calling the relevant APIs from NXP.

3.2 Advantages and Extended Features

With the AppXplorer cloud platform card issuers and service providers can manage their MIFARE DESFire EV2 cards and applications online. These cards can be configured individually on the AppXplorer platform in a way that they perfectly suit specific regions or industries which does not mean that transnation or cross-industry cards are not possible. The applications can also be configured individually on the AppXplorer in order to perfectly suit specific business units which can be spread all over the world. The online management of the card memory enables card issuers to sell slots to different service providers. This way the AppXplorer provides card issuers and service providers a possibility to get in contact with complementary partners and therefore reach much more customers. Different card memory slot types and sizes as well as different pricing tiers for renting / selling card memory space, allow card issuers and service providers to develop very individual arrangements between each other.

Some technical features of the MIFARE DESFire EV2 enables this whole concept of having many different applications on one card. The Delegated Application Management allows to install and uninstall applications from different service providers on a card without giving away the PICC Master Key. The card issuer only needs to write three keys which are related to the Delegated Application Management onto the DESFire EV2 IC in order to enable Delegated Application Management. This feature automatically allows over-the-air installation and deletion of applications via the AppXplorer. Additionally, AppXplorer supports you with the key diversification which adds additional security as the DAM keys will differ from card to card with this feature.

The increased usage and a more diverse customer base will give card issuers and service providers more customer insights and details about the customer daily journey.

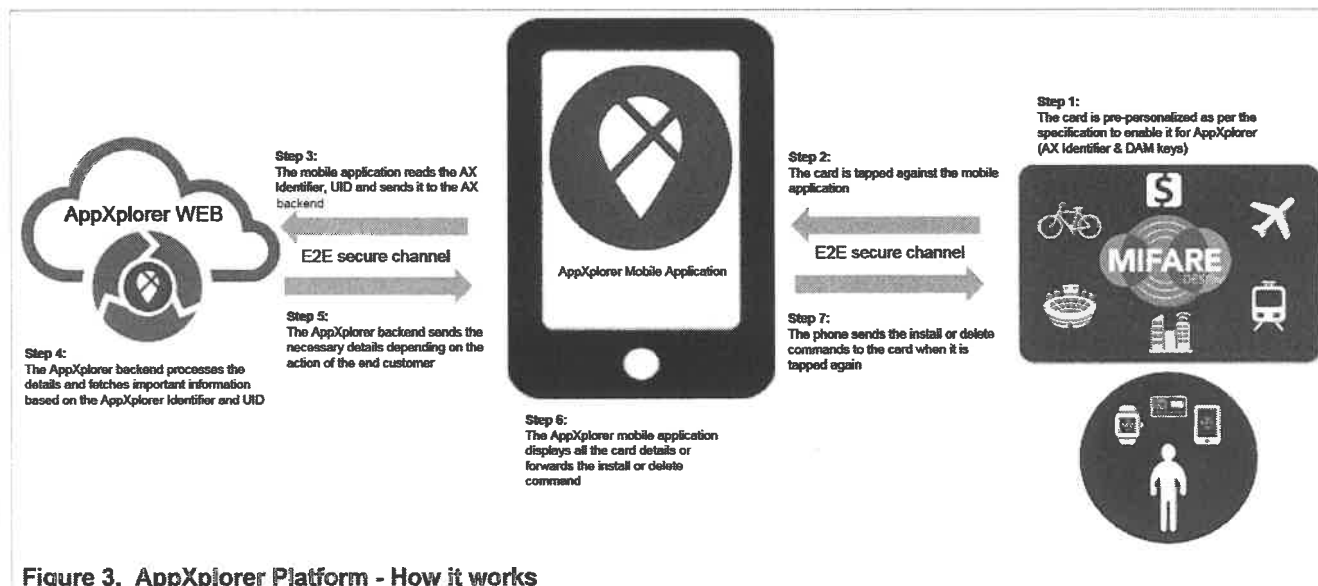
The AppXplorer provides an "Analytics" section which gives card issuers a detailed overview about their cards and which applications are the most popular ones on them. Service providers can analyse the popularity of their applications and on which cards they are best placed. With this information you gain deeper insights in your customers journey and can easily replace applications and cards or add other applications respectively move to other cards which would complement your existing portfolio.

3.3 How it works

The whole procedure from preparing the card until installing the first application is illustrated in [Figure 3](#) and will be described in the seven following steps:

The creation of the card and the application within the AppXplorer web application including the negotiation process needs to be done before.

1. Within the first step the card issuer needs to pre-personalize every IC by enabling and writing the DAM keys as well as the AppXplorer Identifier on the card. This is done in the card pre-personalization, before handing the cards out to the end customer. A detailed explanation about this step can be found in Ref. [\[4\]](#).
2. After the end customer received his card, he can now tap the card to his NFC capable mobile phone using the AppXplorer mobile application. A secure channel via NFC gets established to exchange information between the card and the mobile application, such as the AppXplorer Identifier (AX Identifier).
3. The AX Identifier and the UID of the MIFARE DESFire EV2 card are then send to the AppXplorer backend and used to retrieve card related information, like the card issuer, already installed applications and available applications which could be installed on the card.
4. The backend knows now all the details of the tapped card and sends all the information, like the available applications back to the phone.
5. In step five, depending on the chosen action the name of the card and card issuer as well as the available and installed applications or the details to install or remove an application from the card are send back to the phone.
6. The end customer can now choose to browse through the applications or install or delete an application on the card. If he chooses to install or delete an application the Android Application sends again a request to the backend to retrieve the commands for performing the chosen action of the end customer.
7. As a last step the mobile application sends the commands to install or delete an application to the card. Now the newly added application is sitting directly on the smartcard and the end customer can use his card in the infrastructure of the service provider who is offering the application or the application gets directly removed from the card and the end customer can not use his card in the infrastructure of the service provider who was offering the application.



3.4 Steps to take

As a card issuer you need to run through the following steps to hand out AppXplorer enabled cards with different applications to the customer:

1. In step one you need to register at the AppXplorer web application, Ref. [5]. After the registration you can start adding your cards and create requests for applications, which you would like to host on your card. In order to come to a final agreement, a few details need to be discussed with the service provider. All the steps that need to be taken within this platform are explained in Ref. [1].
2. After adding your card to the AppXplorer platform, you need to pre-personalize your cards. To guarantee that the MIFARE DESFire EV2 IC can be used with AppXplorer which implies allowing easy and secure installation of applications from multiple service providers after the cards have been issued, two mandatory pre-personalization steps need to be taken for each individual IC:
 - a. Enabling and writing of the DAM Keys
 - b. Writing of the AppXplorer Identifier
 A detailed explanation about these two steps can be found in Ref. [4].
3. As a third step you need to decide, how your end customers should download MIFARE DESFire applications to your card. Either you can choose to provide the NXP AppXplorer Android application or you develop your own Android application. If you use the NXP AppXplorer Android application, this means that the Android application including the full functionality is provided by NXP. If you decide to implement your own Android application, NXP offers an SDK, which eases the development of NFC based mobile applications for Android. With this SDK, developers can access all hardware features of MIFARE by using simple JAVA based commands.
4. In case the end customer does not possess an Android smart phone or does not want to use an Android application for interacting with his smart devices, you and the service providers need to decide, who is going to provide kiosk or encoding readers.

You could place those readers at central points such as service centers or card selling points, where all the available applications can be loaded or provide self-serving kiosk machines at many different places. The advantages would be that the end customer can load all delegated applications at one point and the service provider does not need to care about delegated application creation. The disadvantage is that the end customer always needs to go back to you for installing applications. If the service provider takes over the pre-personalization and personalization of the delegated application, it would mean additional work for him but the end customer has the advantage that he can load the application directly at the service provider's facility.

3.5 AppXplorer for Card Issuers - Product Support Package

The Product Support Package (PSP) for card issuers using the AppXplorer is composed of the following deliverables:

- **Application Note** - Onboarding Guide for Card Issuer, document number 4972xx, available in NXP Docstore
- **Application Note** - Enabling the usage of MIFARE DESFire EV2 ICs within the AppXplorer Platform, document number 4240xx, available in NXP Docstore

4 References

- [1] **Application Note** - Onboarding Guide for Card Issuer, document number 4972xx, available in NXP Docstore
- [2] **Application Note** - Onboarding Guide for Service Provider, document number 4971xx, available in NXP Docstore
- [3] **Weblink** - NXP AppXplorer Marketing Website
<https://appxplorer.nxp.com/>
- [4] **Application Note** - Enabling the usage of MIFARE DESFire EV2 ICs within the AppXplorer Platform, document number 4240xx, available in NXP Docstore
- [5] **Weblink** - NXP AppXplorer web application
<https://appxplorer.nxp.com/>
- [6] **Product Data Sheet** - MIFARE DESFire EV2 Contactless Multi-Application IC, document number 2260xx, available in NXP Docstore

Tables

Tab. 1. Revision history2

Figures

Fig. 1.	AppXplorer Collaboration Platform	3	Fig. 3.	AppXplorer Platform - How it works	8
Fig. 2.	AppXplorer Ecosystem	5			

Contents

1	Revision History	2
2	Introduction	3
2.1	NXP AppXplorer	3
2.2	Document Purpose	4
2.3	Document Audience	4
2.4	Structure of this Document	4
3	AppXplorer Platform	5
3.1	AppXplorer Platform Introduction	5
3.2	Advantages and Extended Features	6
3.3	How it works	7
3.4	Steps to take	8
3.5	AppXplorer for Card Issuers - Product Support Package	10
4	References	11

Introducing **MIFARE® DESFire® EV2**

The Next Evolution Contactless Smartcard IC



Phil Jaucian-Oswald
Marketing Manager
MIFARE DESFire

Joo Ming Chua
Senior Product Manager
MIFARE DESFire



**SECURE CONNECTION
FOR A SMARTER WORLD**

NDA

- Introduction to the world of MIFARE and MIFARE DESFire
- The evolution to MIFARE DESFire
- Target applications
- Key innovative Features and Benefits
- Next Steps

1994

MIFARE was born

starting a contactless revolution



2016



MIFARE is the world leading

contactless smart card IC platform



MIFARE® DESFire® by the numbers

More than

100M pcs
produced

Also available in

banking
& mobile
convergence
platform

from multiple vendors

65%
annual
growth

Average for
last 10 years

NFC
TagType4
compliant

Preferred platform
by leading
system integrators for

AFC,
access,
micro
payment
& loyalty

Licensed to

> 10
companies

Powering eTicketing in

> 90 cities
including

> 10
schemes
regional & countrywide

Compliant to

> 10
standards
and industry best
practices

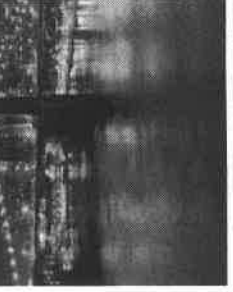
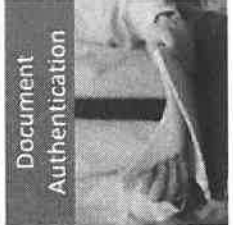
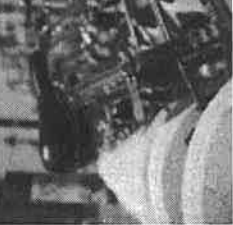
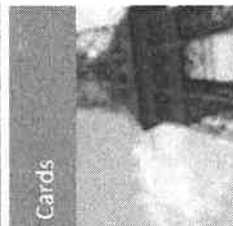
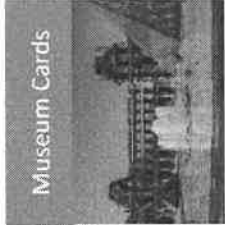
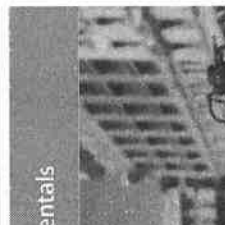
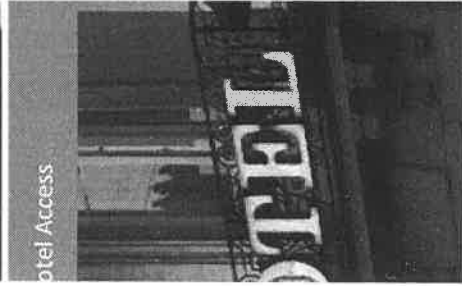
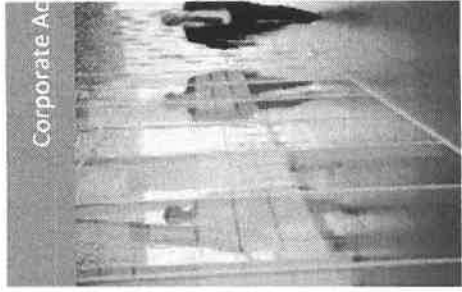
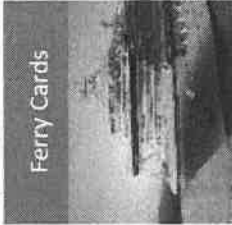
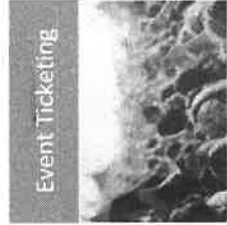
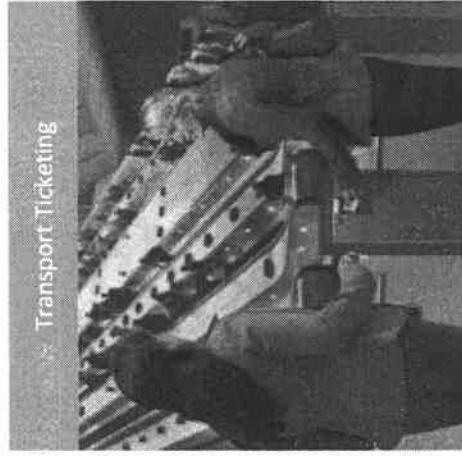
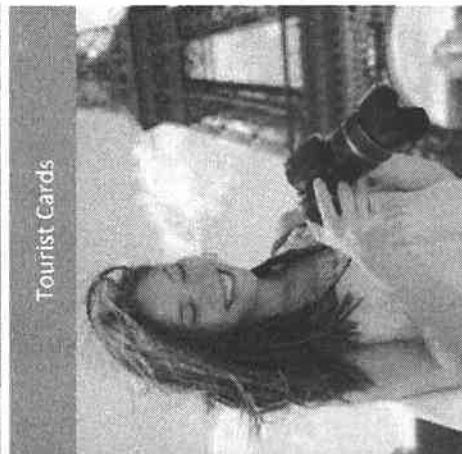
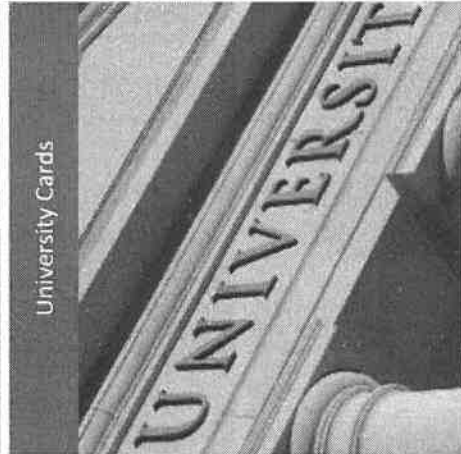
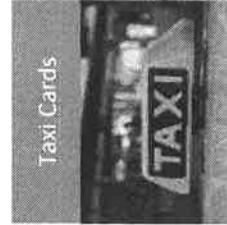
Evolving platform
MIFARE DESFire EV2
- staying ahead in

security,
privacy,
performance
& multi-
application

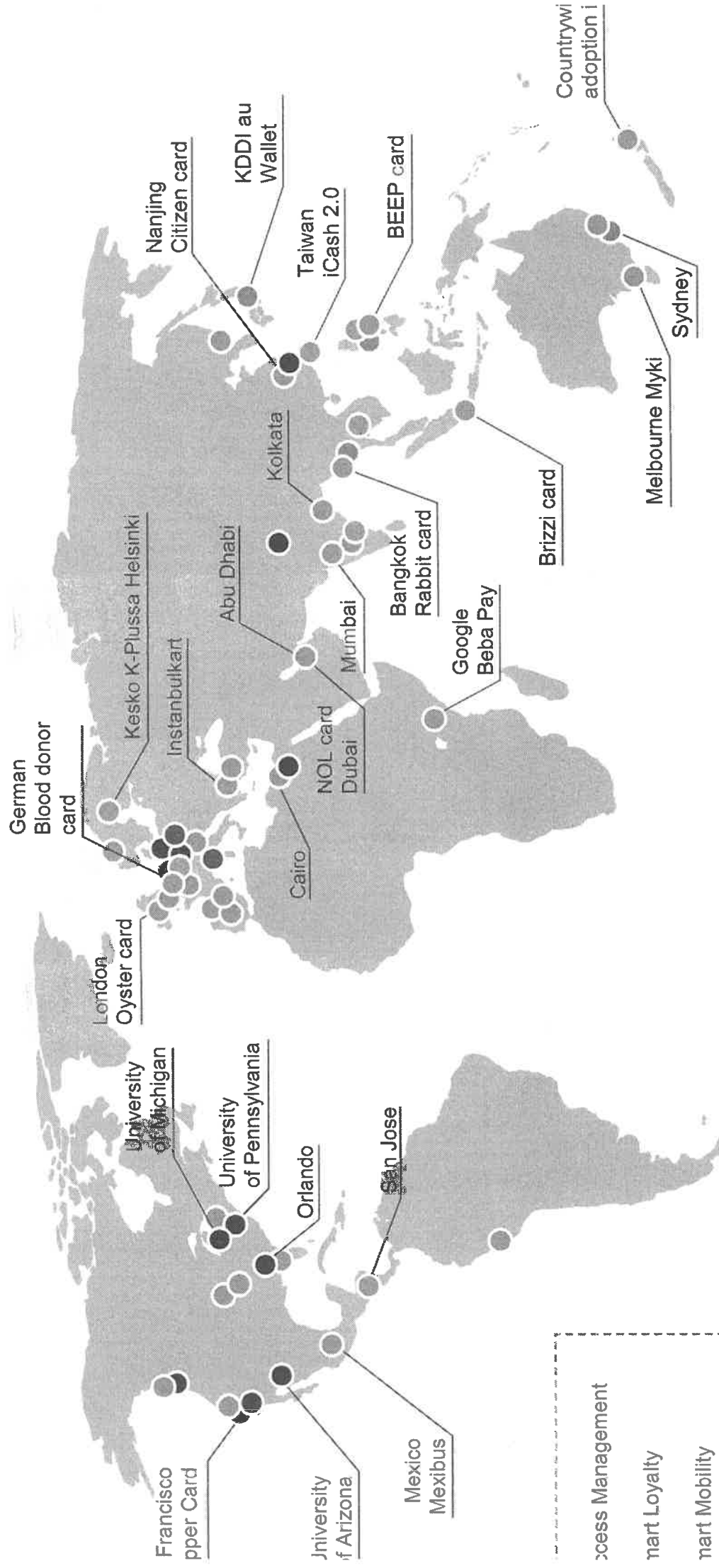
Extendable to

- banking
- eGov
- mobile NFC

ARE® DESFire® serves many different applications



ARE® DESFire® Projects Worldwide



Access Management
 Smart Loyalty
 Smart Mobility
 Micropayment
 Others

EVOLUTION TO MIFARE® DESFire® EV2

MIFARE DESFire EV2



MIFARE DESFire EV1



2016

MIFARE DESFire



2008

2002

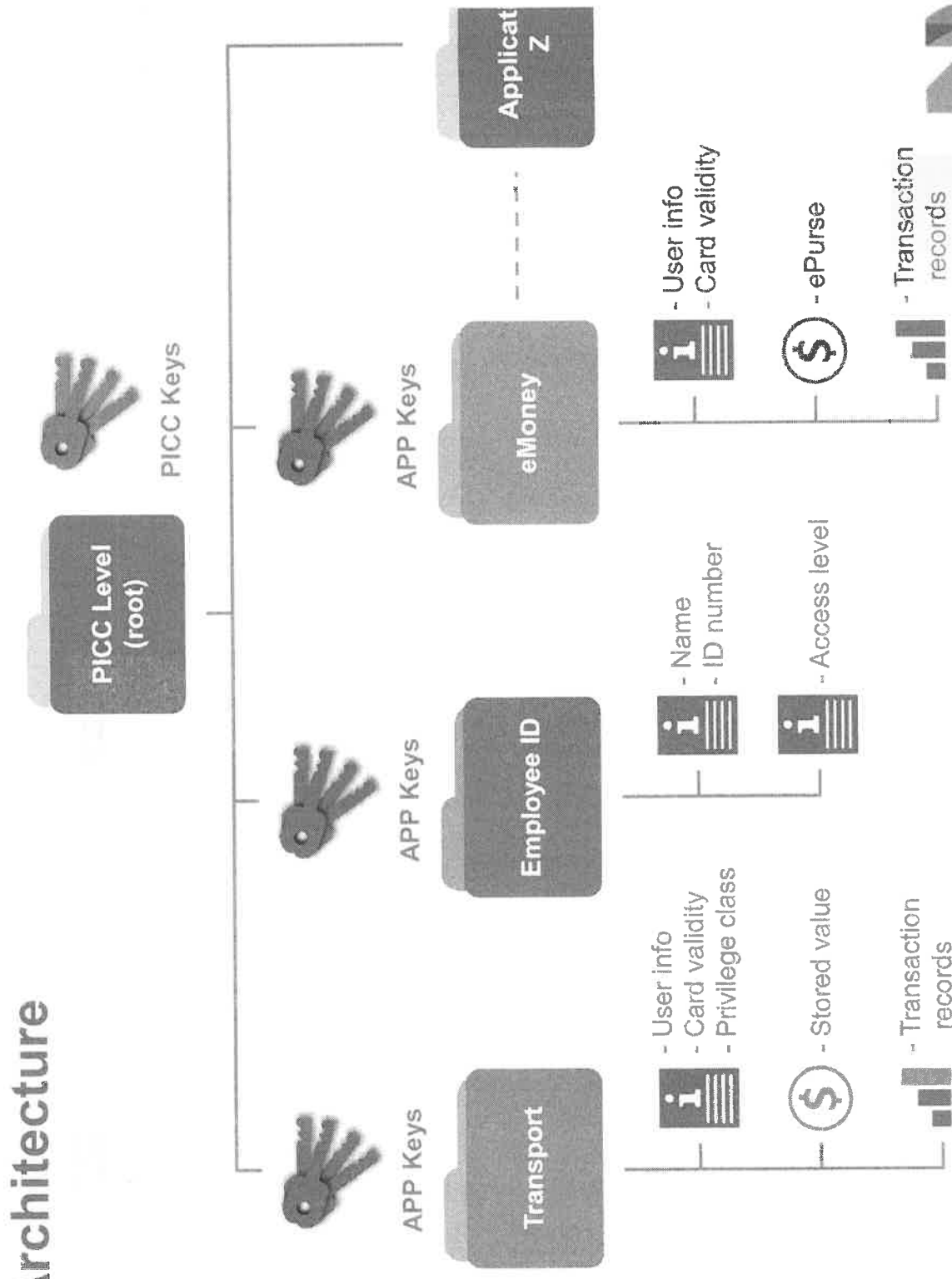
Production: MIFARE DESFire EV2

	MIFARE DESFire EV1	MIFARE DESFire EV2
ISO/IEC 14443 A1-4	✓	
ISO/IEC 7816-4 support	extended	ext
EEPROM data memory	2/4/8K8	2/4
Flexible file structure	✓	
NFC Forum Tag Type 4	✓	
Secure, high-speed cmd	✓	
Unique ID	7BUID or 48 RID	7BUID
Number of applications	28	unl
Number of files per app	32	
High data rates support	up to 848 Kbit/s	up to 8
Crypto algorithms support	DES/2K3DES/ 3K3DES/AES	DES/ 3K3DES
CC certification (HW + SW)	EAL 4+	EAL
Mismanagement feature	-	
Transaction MAC per app	-	
Multiple keysets per app	-	Up to 7
Multiple file access rights	-	Up to 7
Inter-app files sharing	-	
Virtual Card Architecture	-	
Proximity Check	-	
Delivery types	Wafer, MOA4 & MOA8	Wafer, MOA4, MOA8

MIFARE® DESFire® are Multi-Application Architecture



flexible application and file system
each application is like a folder
under a Windows root directory
applications and files are defined
during its creation
each application manages its own
keys
card owner hold PICC keys for
card management



INTRODUCING MIFARE® DESFire® EV2

MIFARE
DESFire EV2 – 2k

MIFARE
DESFire EV2 – 4k

MIFARE
DESFire EV2 – 8k



3rd generation of MIFARE DESFire family

Functional backward compatible to MIFARE DESFire EV1 and the older DESFire D40

Bringing multi-application supports to the next level with innovative features

Improved end user experience with superior operating distance and performance

Benchmark security design with Common Criteria EAL 5+ certified HW & SW

Standard
17pF versions

Small form factor
70pF versions

MIFARE® DESFire® EV2 – target applications

1 MULTI-APPLICATION

- Functional backward compatible to DESFire EV1
 - Drop-In Replacement
- MifareApp supporting post-issuance applications
 - Multi-Application
- Secure inter-applications files sharing
 - Inter-Applications Transaction

2 SECURITY

- Multiple rolling keysets per application
 - Update Keys in the Field
- Transaction MAC
 - Proof of Transaction
- State-of-the-art HW & SW security design
 - Security Assurance

3 PERFORMANCE

- Optimum transaction speed vs security
 - Fast & Secure
- Improved RF performance
 - More Operating Range
- Improved transaction tearing handling
 - Reliable Transactions



TURES & BENEFITS

Op-In Replacement

Easy migration through backward compatibility with MIFARE DESFire infrastructure

System integrators will enjoy the performance enhancement and smart feature extensions

Improved Operating Range

- *Convenient touch n' go experience through increased operating distance*
- *Improving the user experience of existing MIFARE DESFire installations*
- *Fast and Reliable transactions*

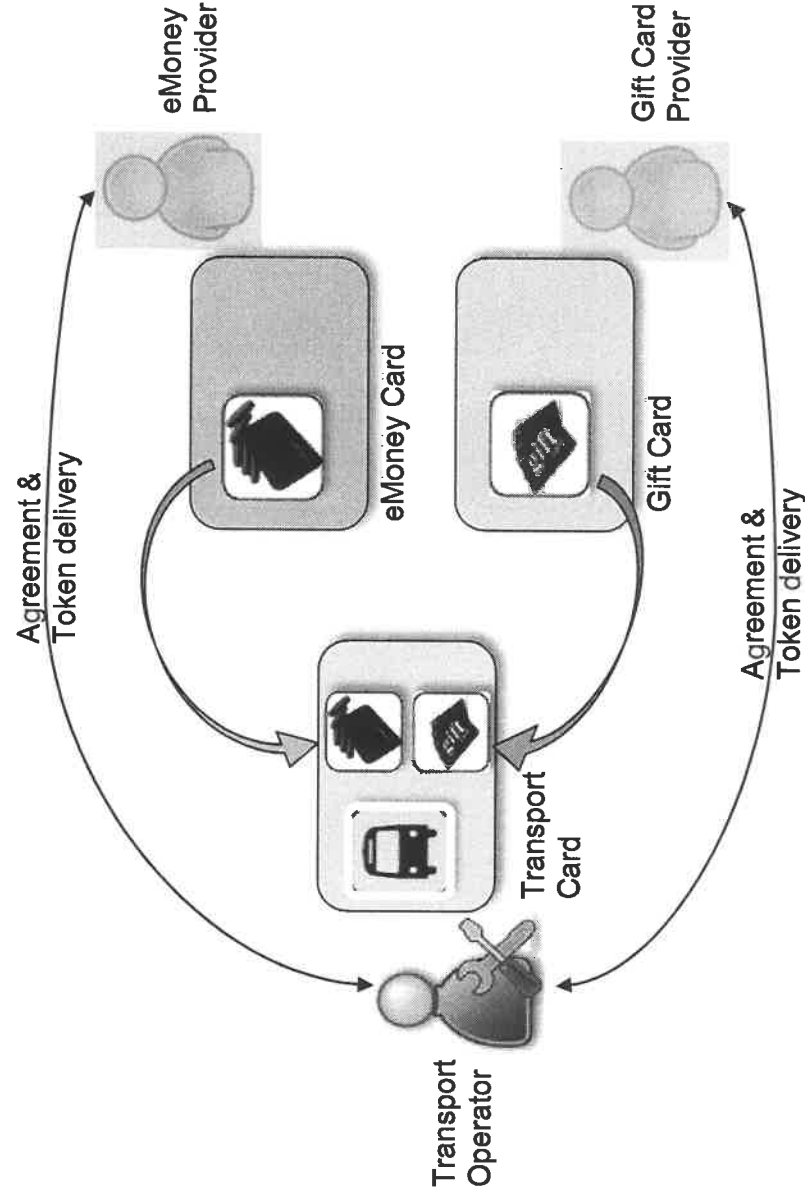
Common Criteria EAL 5+

- *Enhanced security level with Common Criteria EAL5+ certification, same level as products used in Banking and ePassport application*
- *Solution providers and system integrators have a "trusted independent" certified 3rd party certificate with regard to security aspects*

TURES & BENEFITS

martApp

- MsmartApp enabling new business models through seamless integration of additional services in the field
- Allowing secure application creation in already deployed cards – facilitating sharing of a card for multi-application
- Interoperability with one card in many separate system environments



TURES & BENEFITS

- Card generated Transaction MAC ensuring the authenticity of each transaction
- TMAC securely sign a transaction which provides a proof of valid transaction to the back
- Ideal for multi-operators or multi-merchants environment where cards are interoperable
- Transaction MAC allows the backend system to detect:
 - Forged transactions
 - Replay of valid transactions
 - Unreported transactions
- Enable online validation with no keys stored in readers

All stored TMACs
read and sent to backend

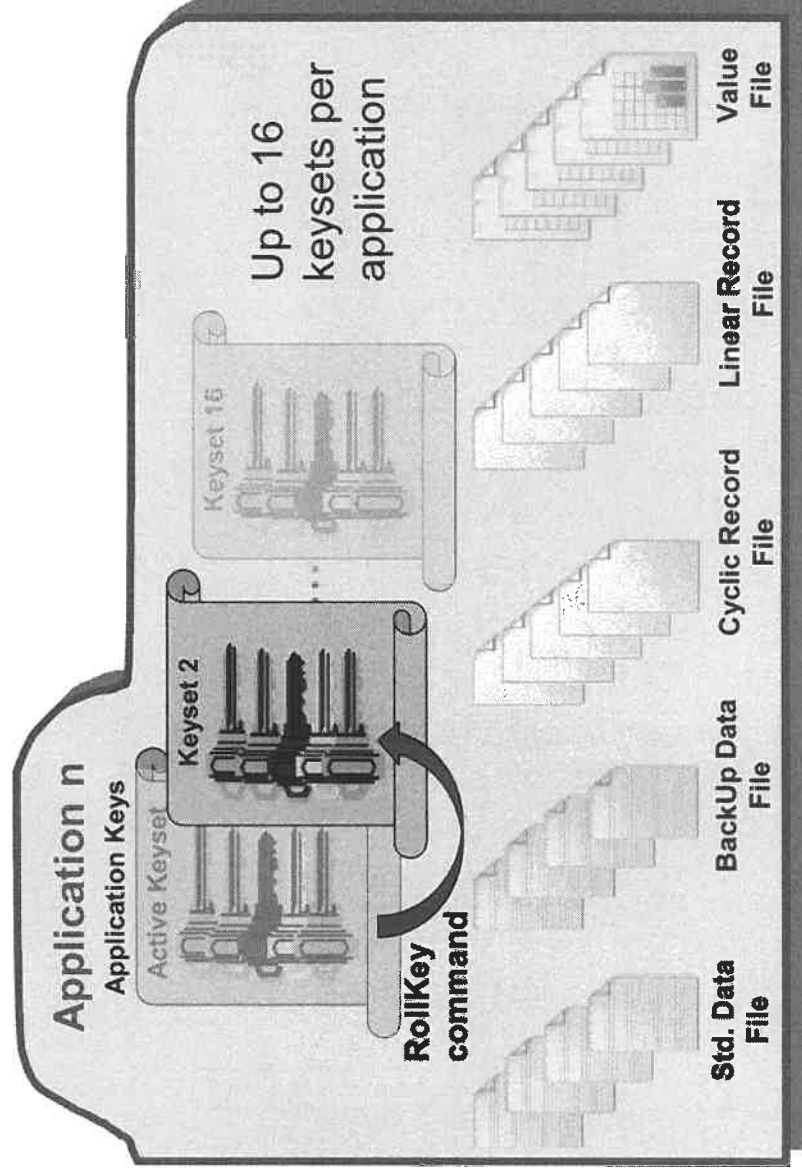


Valid offline transaction

TMAC with transaction
data stored in reader

TURES & BENEFITS

- Simplified key changing procedure for deployed cards
- Rolling to the next keyset can be done in a secure and reliable way in the field
- Increase system security by rolling keyset regularly to limit its exposure in the field
- A self-healing mechanism in the event of current keyset being compromised
- Enabling current MIFARE DESFire installations to migrate to AES or 3K3DES crypto progressive

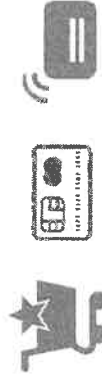


ARE DESFire EV2 – target applications



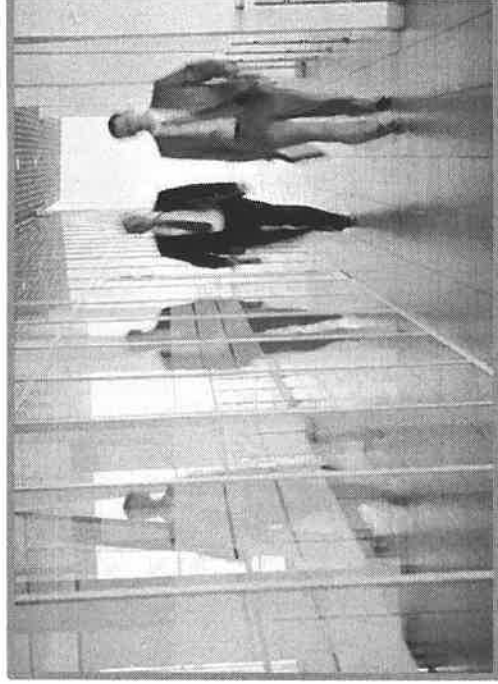
cro-Payment

- MlsmartApp
- Transaction MAC



Smart Mobility

- MlsmartApp
- Drop-In Replacement
- Transaction MAC
- Multiple Rolling Keysets



Access Management

- MlsmartApp
- Drop-In Replacement
- Multiple Rolling Keysets
- Transaction MAC

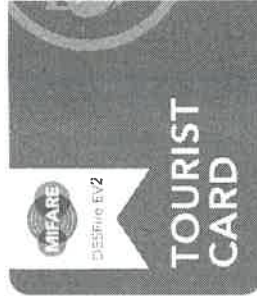
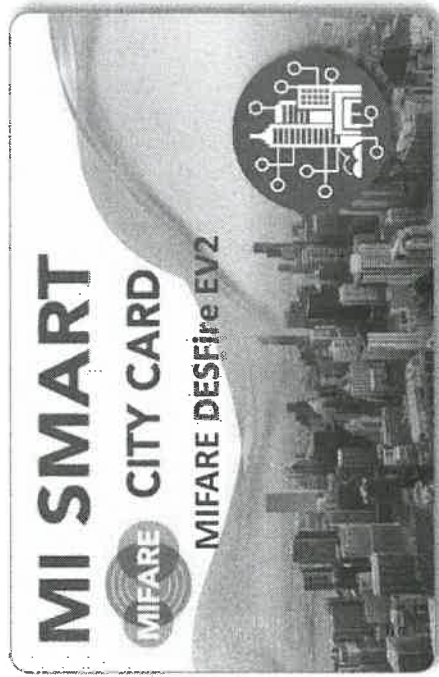


TI-USE SCENARIOS



existing

pick the applications you want
and add them to your card



toll



Parking



Bike sharing



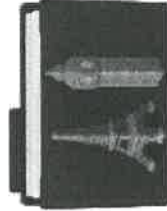
Theater



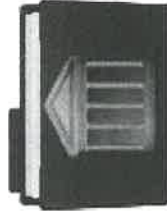
Sporting facilities



Large Venues



City attractions



Museums & Galleries



Healthcare



toll



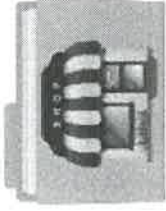
Taxi payment



Fuel card



Pet store



Retail shops



Coffee shops



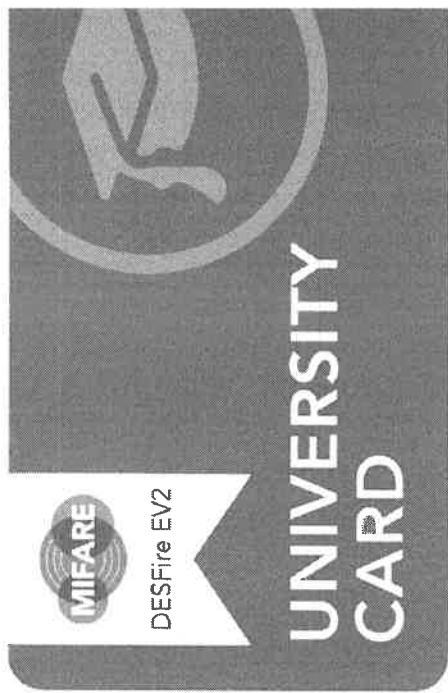
Restaurants



Pharmacies



TI-USE SCENARIOS – example Campus Card



✓ pick the applications you want and add them to your card

- | | | | |
|--|--------------|--|--------------|
| | Taxi payment | | Bike sharing |
| | Gym | | Concerts |
| | Retail shops | | Coffee shops |

- | | | | |
|--|-----------------|--|-------------|
| | Cinemas | | Theater |
| | Restaurants | | Book stores |
| | Sporting events | | 2 |

MIFARE® DESFire® EV2 Eco-system Roadmap

APP Store

Hosting and provisioning applications using MIsmartApp feature

MIFARE DESFire EV2 Applet

For easy integration into mobile environments

MIFARE Implementation on SmartMX smartcard

microcontrollers

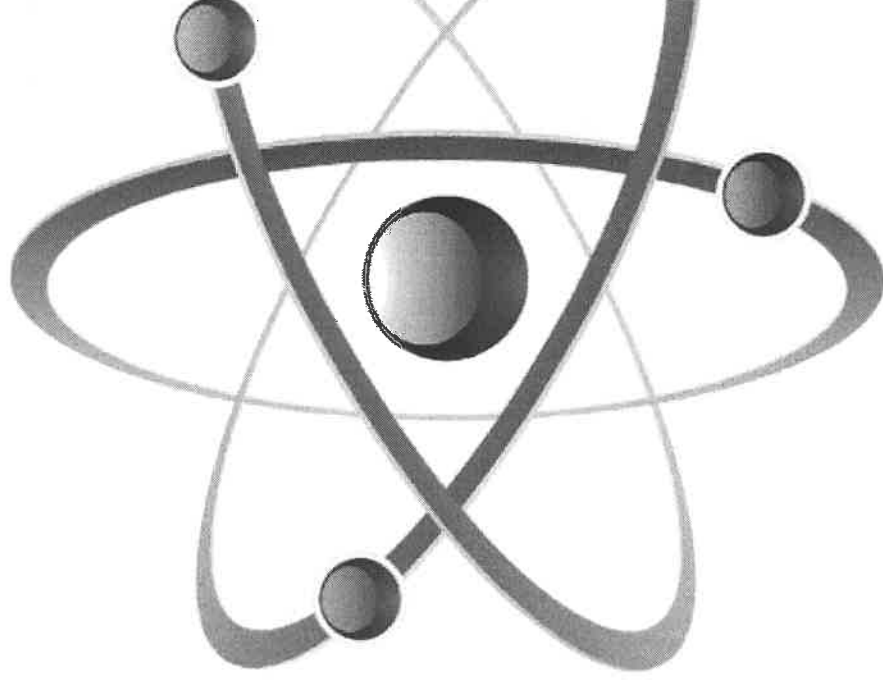
MIFARE DESFire EV2 on convergence platforms (Banking, eID, eSE, UICC)

SDK for Android

Simplified MIFARE DESFire EV2 app development on Android devices

UL MIFARE Certification

Certifying MIFARE DESFire EV2 products from our licensees



MIFARE® DESFire® EV2 Product Availability & Sampling



PRODUCT AVAILABILITY:

All MIFARE DESFire EV2 types are now available for order

SAMPLING:

Samples can be ordered from your NXP Sales person

PRODUCT SUPPORT PACKAGE:

Datasheets, Application Notes, Software Tool and Reader Sample Code

AVAILABLE AT:

<https://www.docstore.nxp.com/flex/DocStoreApp.html>

FOLLOW US:



https://twitter.com/nxp_mifare



<http://blog.nxp.com/>



www.youtube.com/user/nxpsemiconductors



<https://at.linkedin.com/in/nxpmifare>



<https://www.facebook.com/nxpsemi>

VISIT US AT:

<http://MIFARE.net>



THANK YOU

Q&A