

2N

# 2N<sup>®</sup> PICard

Manage secured RFID cards  
using our user-friendly solution

2N.com

# Why do we need secured cards?

## To keep up with technological advancements & outmatch modern security threats

Despite the rise of modern access technologies, RFID cards remain the most widely used authentication method: however, a vast number of organizations are still relying on **outdated 125 kHz technology from the 1990s**. Given the frequency of security breaches nowadays, that's worrying: **these old cards are not secured and are very easy to clone**.

Why? These old cards have only a UID (CSN) identifier, which can be read by any reader. Think of it as having your passwords stored in a plaintext document: anyone who reads it can see everything!

**The solution?** Choose a **truly secure RFID standard designed to eliminate these threats**. The most widespread one with the perfect balance of speed, performance, and cost-efficiency is **MIFARE® DESFire®**, a technology developed by NXP.

This high-security RFID standard provides **128-bit encryption** and is a **“multi-application product”**: meaning that different entities can upload their needed applications securely to the MIFARE® DESFire® card's chip without impairing/touching the other data.

# Provide safety and flexibility with 2N<sup>®</sup> PICard

2N<sup>®</sup> PICard is 2N's unique cryptographic solution, providing Protected Identity Credentials (PIC) built on the multi-application MIFARE<sup>®</sup> DESFire<sup>®</sup> technology. 2N<sup>®</sup> PICard:

1.



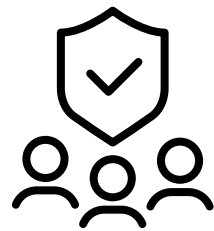
Delivers a completely **secure access control** solution

2.



Combines a **high level of security** with a **simple workflow**: you don't need to be a card format expert to manage/create keys

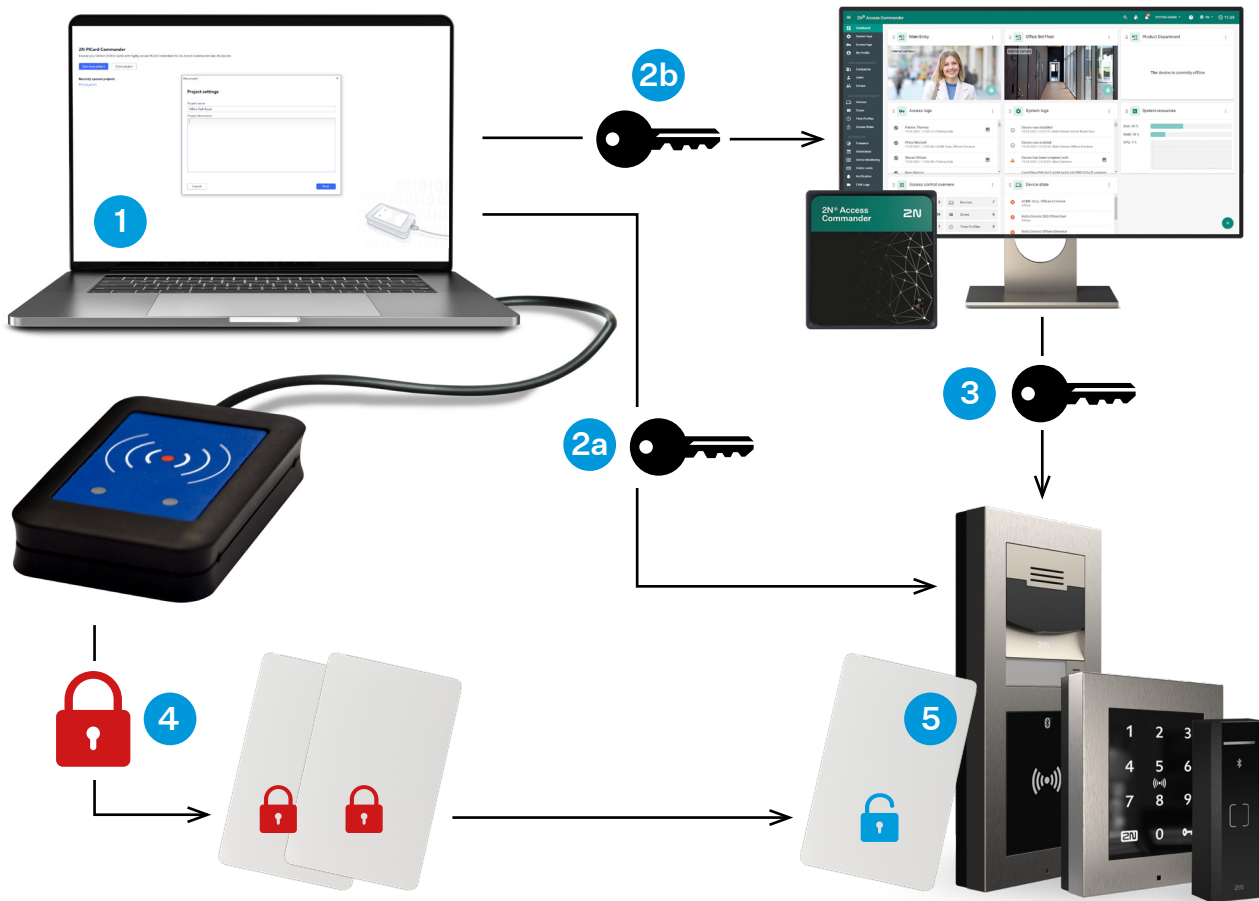
3.



Offers flexibility for both **facility managers** and **system integrators**



# How does 2N<sup>®</sup> PICard work?



The heart of the entire solution is **2N<sup>®</sup> PICard Commander** – a software application that allows administrators to create a unique cryptographic keyset for every site **1**. Keysets are based on the **main encryption key (MEK)**: from which encryption keys for encoding credentials and reading keys are derived.

- **Reading keys** are exported and uploaded either directly to the 2N devices installed onsite **2a** or to **2N<sup>®</sup> Access Commander** **2b** that subsequently distributes them to connected 2N IP intercoms and Access Units **3**. **Only 2N readers with the right reading keyset can read the encoded cards** **5**.
- **Encryption keys** are used to encrypt new credentials on cards via a **2N USB reader** **4**. The encryption process looks like this:
  - 2N<sup>®</sup> PICard Commander first generates a unique credential for every card
  - This credential is then tied to a specific MIFARE<sup>®</sup> DESFire<sup>®</sup> card via a digital signature to provide authenticity
  - It then gets encrypted to provide confidentiality
  - The credential is consequently stored securely on the card

# Choose the settings that best fit your needs

The **2N® PICard solution** brings flexibility to everyone using it: end user, facility manager or system integrator

2N® PICard Commander supports **three ways of card encryption**. Encoded credentials can be written both on blank cards intended only for the access system, and on cards already used in the company for other applications.



**High compatibility:** card may be used not **only for 2N access control, but also for other things** such as the cafeteria, coffee machines or printers. The access credentials are encrypted by 2N® PICard, but the original unencrypted card's UID stays unchanged and will be readable by third party applications.

**High security:** card is used **exclusively as an access credential for 2N devices**. The original unencrypted card's UID is then randomized and is always different when read by a reader. It is then impossible to trace the user to whom the card belongs.



**Customisability:** the customer already has and uses their own MIFARE® DESFire® cards with other third-party applications and they need to write access credentials encrypted by 2N® PICard on them. With this mode, it is possible.

# Why should you choose the **2N® PICard solution** for your next project?

## **Multi-level security**

Eliminate the possibility of access card copying or access credentials eavesdropping. Possible thanks to the **many security measures** including symmetric (AES-128) and asymmetric (ECDSA) encryption, the master encryption key being in the hands of the customer, the entire project protected by an additional password, and more.

## **Flexibility**

The solution is suitable for both **facility managers** managing single buildings and **system integrators** managing multiple sites. Integrators can also offer secure card management as a service: the **2N® PICard Commander software supports three options for encrypting cards** according to their use.

## **Capability without complexity**

The entire solution is designed so that **the user doesn't need to know anything about MIFARE® DESFire® technology** and is still able to upload secure credentials onto the cards. The solution is compatible with EV2/EV3 cards purchased both directly from 2N and from another supplier.



# Technical specifications & compatibility

<b>Ordering number</b>	91379601				
<b>Operating system</b>	MS Windows 10 or newer				
<b>License</b>	One-off license per connected external USB reader (device key of the connected USB reader is needed in order to generate a new license)				
<b>Compatible external USB readers</b>	<table border="0"> <tr> <td>9137421E</td> <td>External RFID Card Reader 125 kHz + 13,56 MHz with NFC (USB)</td> </tr> <tr> <td>9137424E</td> <td>External Secured RFID Card Reader 125 kHz + 13,56 MHz with NFC (USB)</td> </tr> </table>	9137421E	External RFID Card Reader 125 kHz + 13,56 MHz with NFC (USB)	9137424E	External Secured RFID Card Reader 125 kHz + 13,56 MHz with NFC (USB)
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<b>Security standards and mechanisms</b>	MIFARE® DESFire® EV2 Secure messaging AES-128 encryption ECDSA digital signature				

<b>Compatible RFID cards and keyfobs</b>	MIFARE® DESFire® EV2/EV3 11202601 2N Card 11202602 2N Keyfob
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Note: If an existing card (i.e. a card that is already being used by users in a facility) is supposed to be used with the 2N® PICard Commander, a PICC master key of the respective card must be known. The card must be also set in a way that it requires the PICC master key to be entered to write a 2N® PICard application on it.

<b>Minimum free card capacity</b>	512B
<b>Minimum supported SW &amp; FW</b>	2N® Access Commander 2.4 2N devices with 2N OS 2.37

## Compatible 2N devices

### PICard credentials can be read by following 2N devices:

<b>2N Access Unit 2.0</b>	<table border="0"> <tr> <td>9160347 (-S)</td> <td>2N® Access Unit 2.0 - Touch keypad, Bluetooth &amp; (secured) RFID</td> </tr> <tr> <td>9160346 (-S)</td> <td>2N® Access Unit 2.0 – Touch keypad &amp; (secured) RFID</td> </tr> <tr> <td>9160345 (-S)</td> <td>2N® Access Unit 2.0 – Bluetooth &amp; (secured) RFID</td> </tr> <tr> <td>9160342 (-S)</td> <td>2N® Access Unit 2.0 - RFID (secured) 13,56 MHz, NFC</td> </tr> <tr> <td>9160344 (-S)</td> <td>2N® Access Unit 2.0 RFID - 125 kHz, (secured) 13,56 MHz, NFC</td> </tr> </table>	9160347 (-S)	2N® Access Unit 2.0 - Touch keypad, Bluetooth & (secured) RFID	9160346 (-S)	2N® Access Unit 2.0 – Touch keypad & (secured) RFID	9160345 (-S)	2N® Access Unit 2.0 – Bluetooth & (secured) RFID	9160342 (-S)	2N® Access Unit 2.0 - RFID (secured) 13,56 MHz, NFC	9160344 (-S)	2N® Access Unit 2.0 RFID - 125 kHz, (secured) 13,56 MHz, NFC
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<b>2N Access Unit M</b>	<table border="0"> <tr> <td>916112</td> <td>2N® Access Unit M 13,56 MHz, NFC</td> </tr> <tr> <td>916114</td> <td>2N® Access Unit M 125 kHz, 13,56 MHz, NFC</td> </tr> <tr> <td>916115</td> <td>2N® Access Unit M Bluetooth &amp; RFID - 125 kHz, 13,56 MHz, NFC</td> </tr> <tr> <td>916116</td> <td>2N® Access Unit M Touch keypad &amp; RFID - 125 kHz, 13,56 MHz, NFC</td> </tr> </table>	916112	2N® Access Unit M 13,56 MHz, NFC	916114	2N® Access Unit M 125 kHz, 13,56 MHz, NFC	916115	2N® Access Unit M Bluetooth & RFID - 125 kHz, 13,56 MHz, NFC	916116	2N® Access Unit M Touch keypad & RFID - 125 kHz, 13,56 MHz, NFC
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