



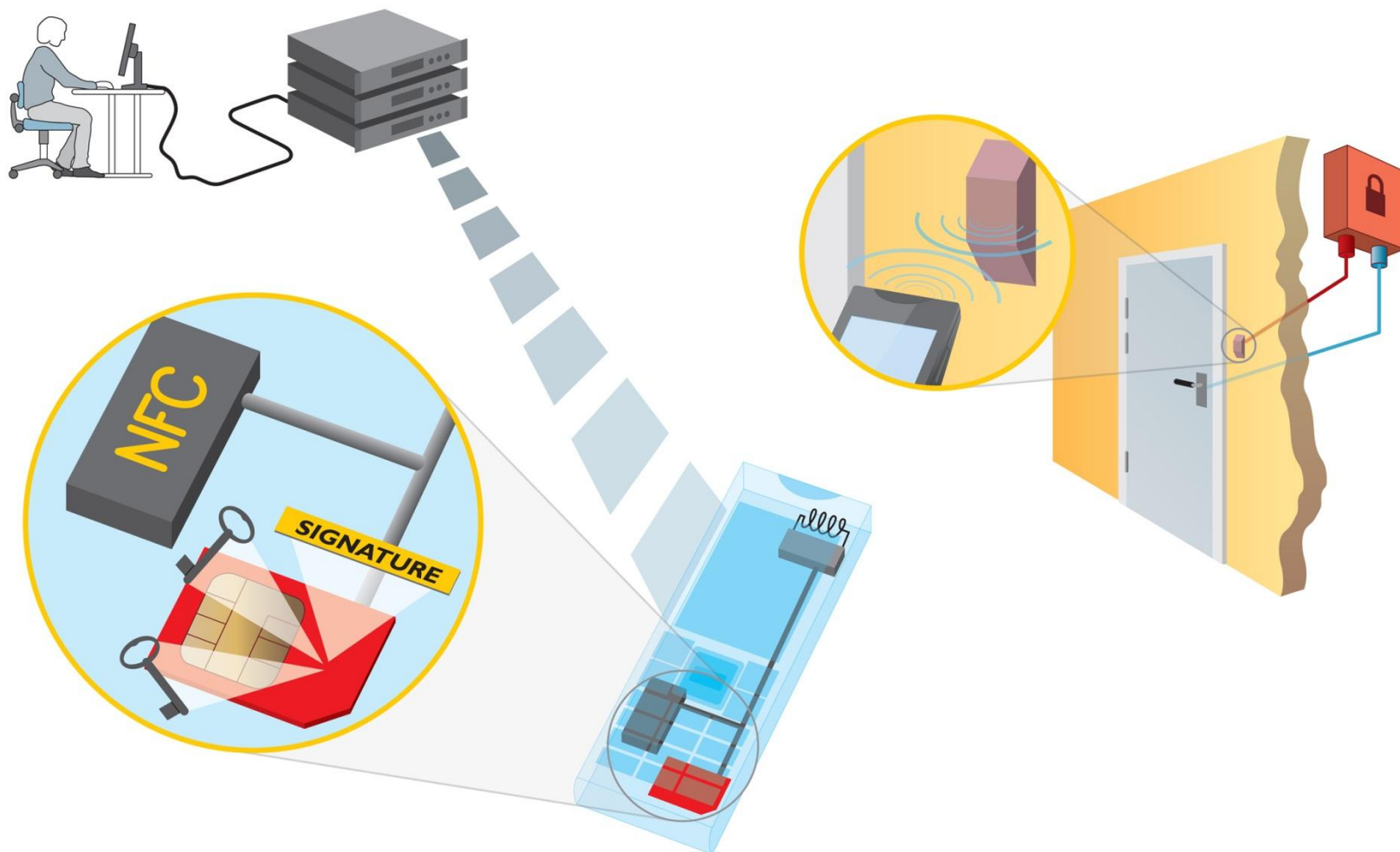
Secure NFC services with JavaCard

- and a new approach to physical access control

by

Carlo Pompili, CEO at Telcred

Telcred – offline physical access control based on NFC



NFC = Near Field Communication

- A new radio communication interface for mobile phones
- Range 2 – 4 cm
- 13.56 MHz
- Approx. 100 million devices shipped in 2012
(30 million in 2011)



Three communication modes

Tag read/write



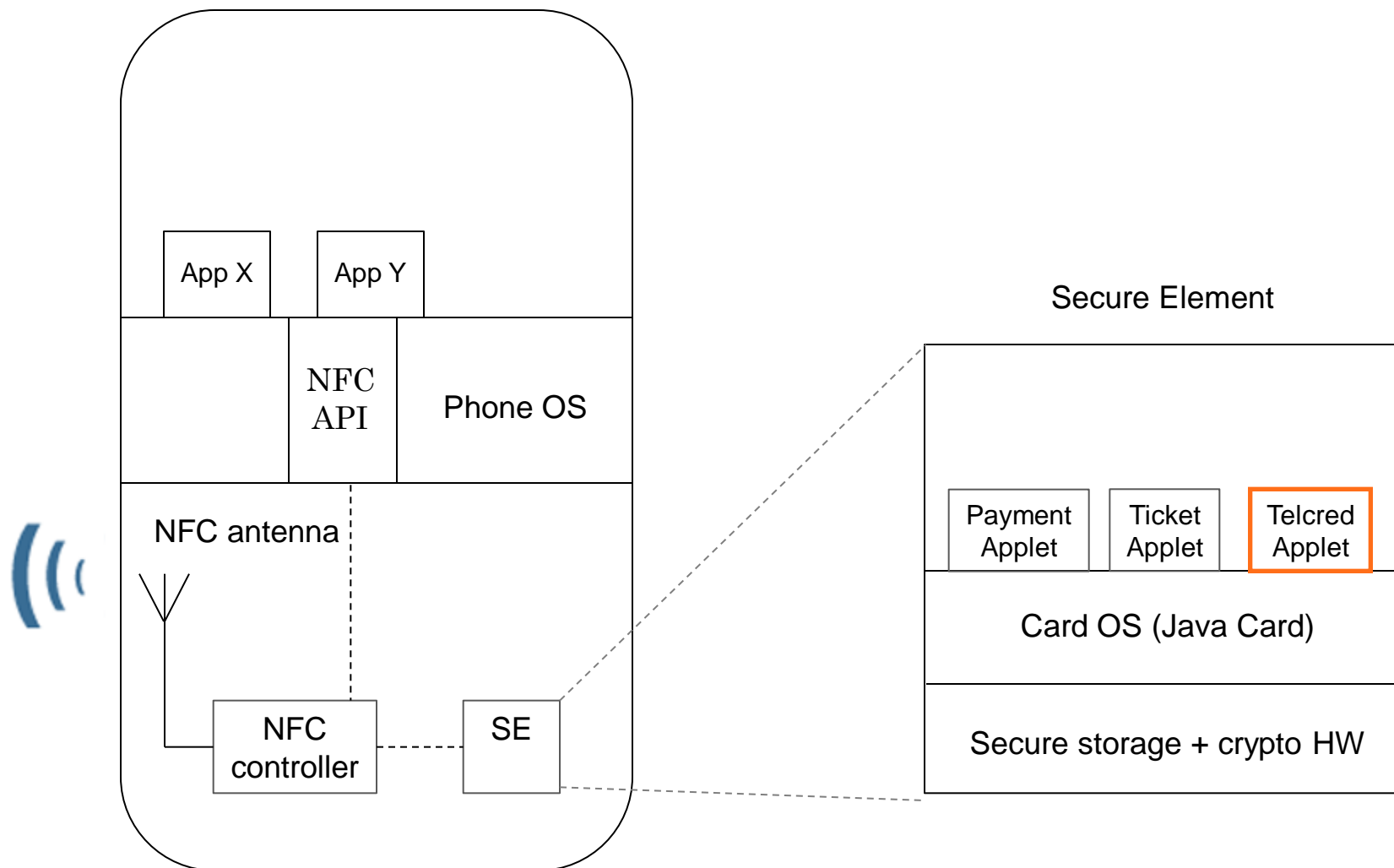
P2P



Card emulation ("secure NFC")



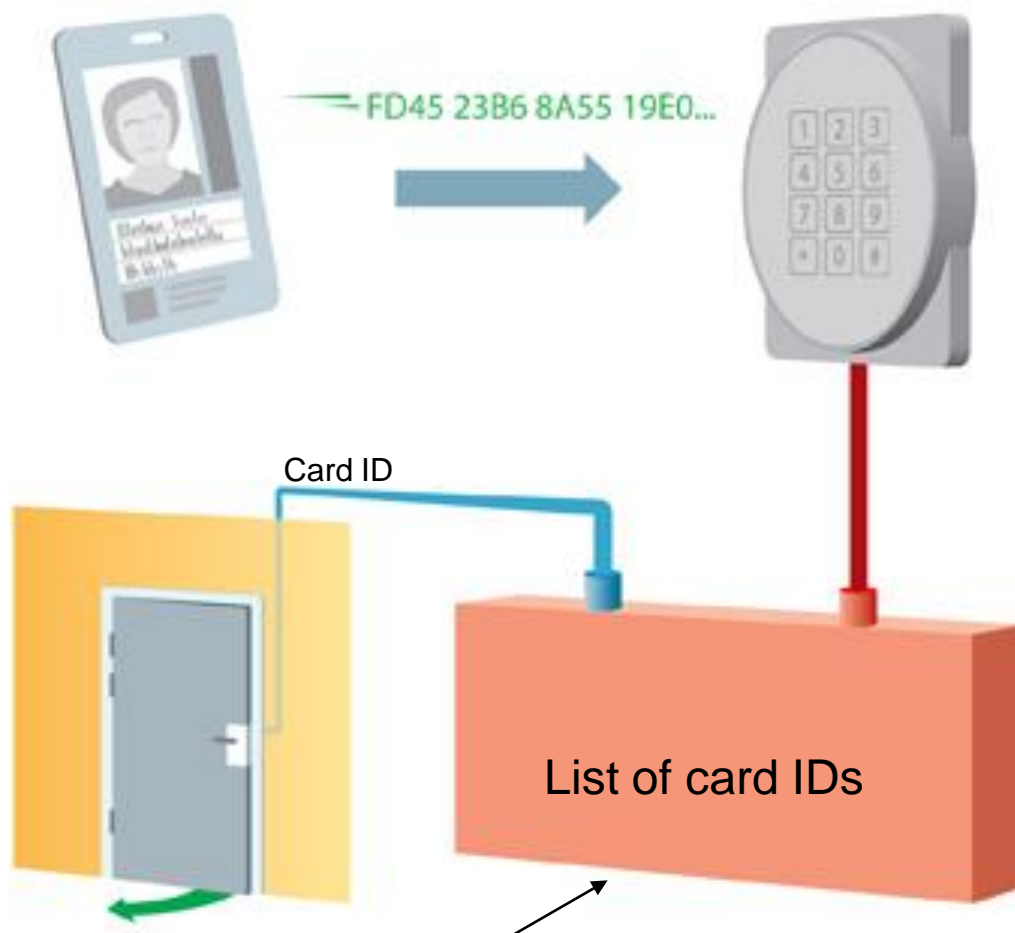
Card emulation with Secure Element



JavaCard

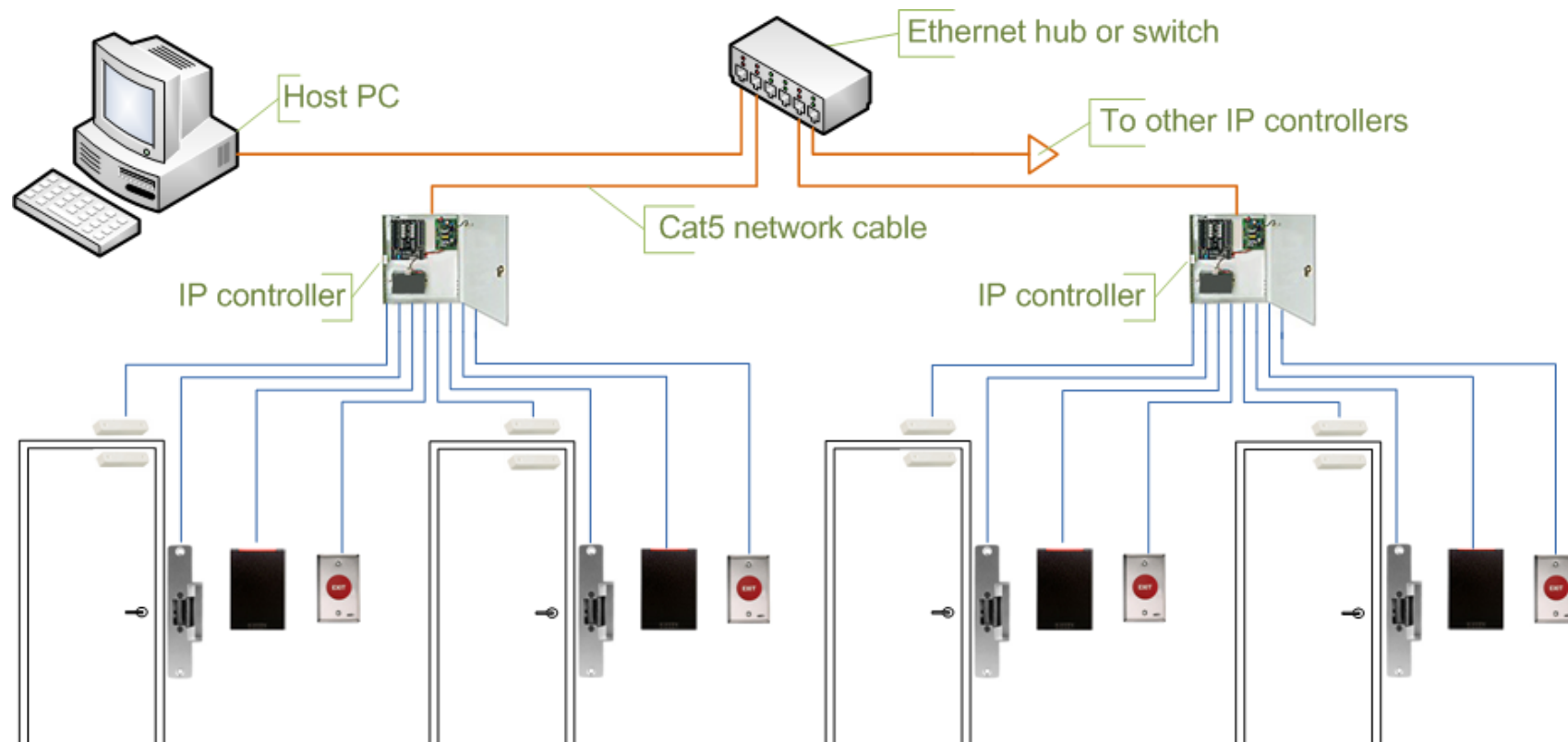
- Well standardized platform
- Applets are portable between NFC phones and smart cards
- A Secure Element typically has 80 KB of memory
- A frame ("APDU") is < 256 Bytes
- Data sent over the NFC interface should be max 1-2 KB
- Native functions for high performance cryptography (incl. PKC)

Traditional access control system



Requires updating when users
or their access rights change

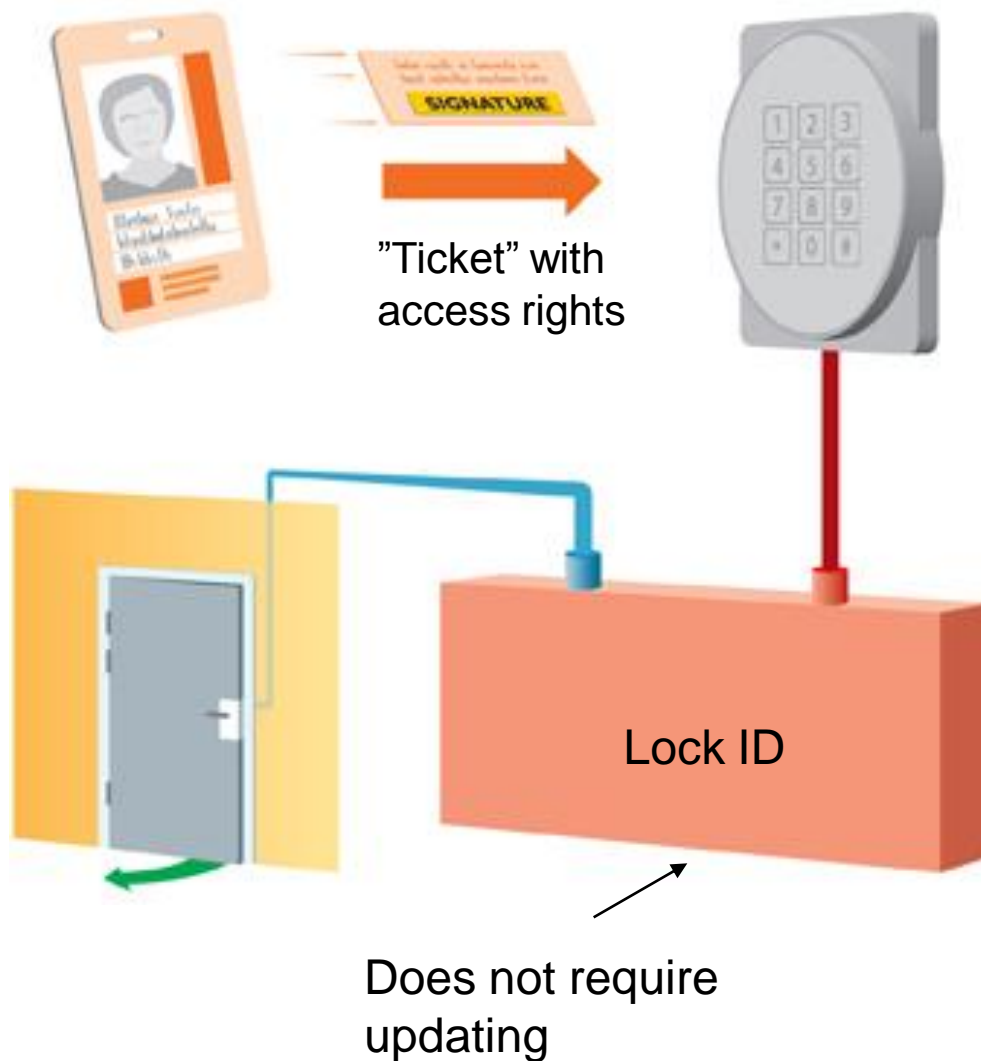
Online access control



Online not suitable for infrastructure



The solution to offline: "tickets" instead of card-IDs



Public Key Cryptography in an embedded system

- ✓ Add-on for mechanical lock
- ✓ Runs on 4 AA batteries
- ✓ JavaCard as crypto co-processor
- ✓ Approx. 0.5 secs to authenticate card and verify ticket



More information

Carlo Pompili, CEO

Mail: carlo.pompili@telcred.com

Tel: +46 708 704 929

www.telcred.com