The Future is Calling: NFC Technology Turns Smartphones into Secure Credentials

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About HID Global

ASSA ABLOY

- Global leader in door opening solutions
- Dedicated to satisfying end-user needs for security, safety and convenience
- Operations in more than 60 countries
- More than 10 percent of the world market
- Approximately 42,000 employees
- Sales of more than $6 billion USD

HID Global

- Part of ASSA ABLOY's Global Technologies Division
- Global leader in secure identity solutions
- Top recognized brand in the access control industry worldwide
- More than 2,100 employees
- Over 1.5 Billion RFID products sold

Access Control Goes Mobile!

Video

Innovation in Access Control

Digital Keys
NFC Mobile Access

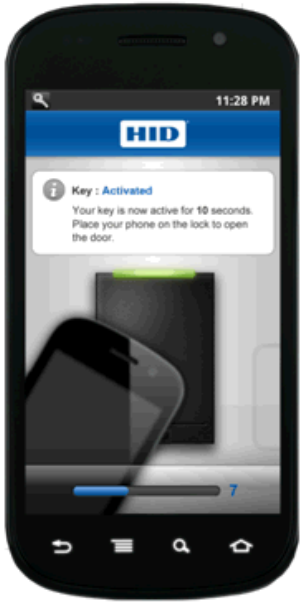
Credentials

Mechanical
Keys & Locks

CREATE USE MANAGE
SECURE IDENTITIES

Mobile Access Model

Keys and access cards in your daily life



Converged in your NFC-enabled smartphone

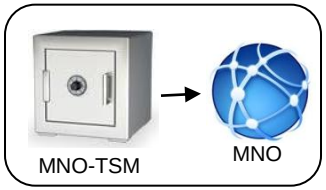
Used to open different types of doors and Windows

Mobile Access Basics

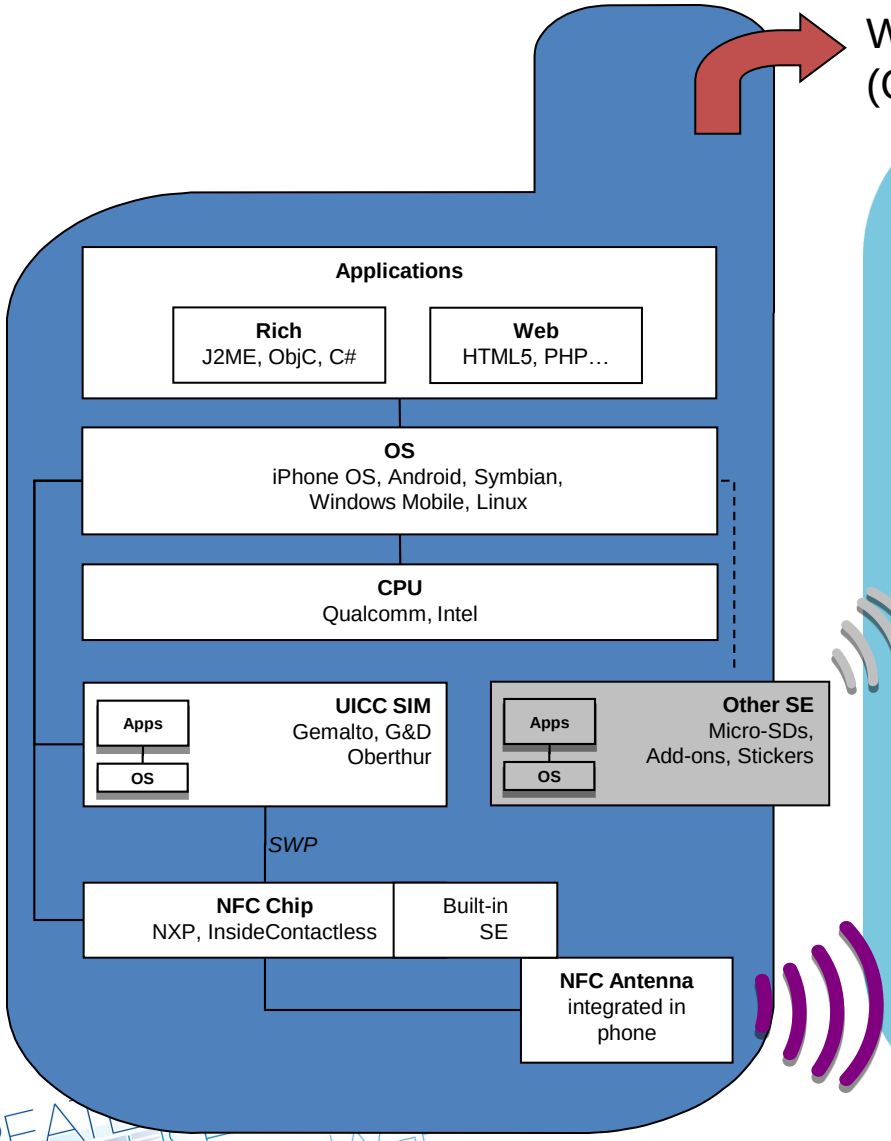
- The “nuts and bolts” required to facilitate mobile access include:
  - NFC-enabled handsets

  - NFC-enabled readers, electromechanical locks and a wide ecosystem of third-party hardware.

  - An ecosystem to include mobile network operators, TSMs, and others to deliver and manage mobile credentials.



NFC Phone Architecture



NFC Phone Architecture

Main NFC components:

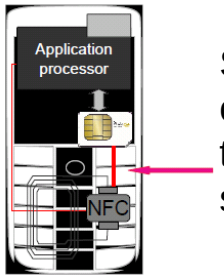
- NFC Chip
- NFC Antenna
- Secure element (Can be embedded with the NFC chip, in the SIM or on a microSD)

Card emulation does not require support from the processor/OS and will, if enabled, work when the phone is shut off.

- Two components are required on a smartphone for functionality:
  - An application on the phone (App)
  - A Java applet on the SE:
    - Card edge, SIO, and access logic
    - A mechanism to provision / manage the data (Trusted Identity Platform or TIP)

NFC-Enabled Handsets

- Three approaches to enabling handsets:
  - SIM centric
    - Need to integrate with the MNOs



SIM-NFC connection through single wired interface

  - Embedded SE
    - No need to integrate with the MNOs; must integrate with the handset manufacturer

  - Alternative form factors:
    - microSD cards or add-ons such as sleeves / cases
      - No need to integrate with MNO or handset manufacturer

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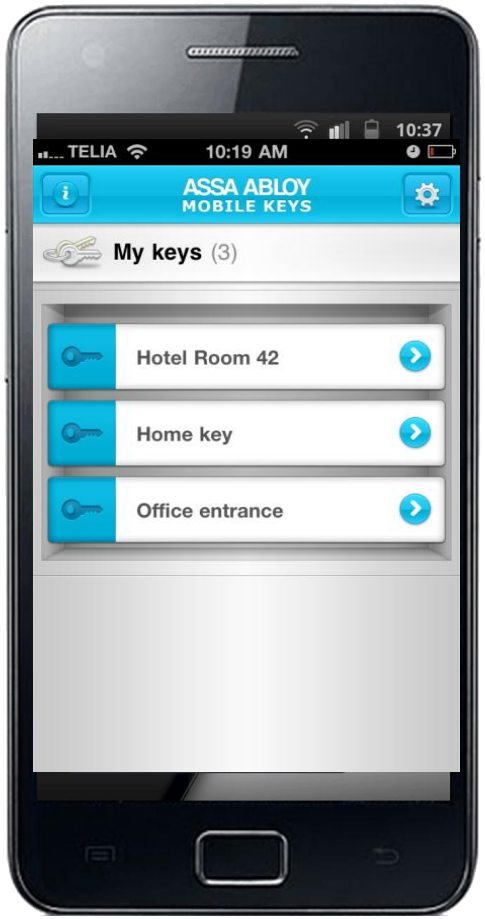
NFC Form Factor Comparison

NFC Form factor	SIM Centric	Embedded SE	Alternative Form Factors
Pros	• NFC functionality and antenna integrated with phone • OTA provisioning standardized and supported by handsets out-of-the-box • Card functionality can be updated by replacing the SIM • Works with phone off • User can change phone without losing data on the card	• NFC functionality and antenna integrated with phone • No need to integrate with MNOs; must integrate with phone manufacturers • Works with phone off • User can change subscription / SIM without losing data on the card • One integration with phone OEM can reach many phones • Best NFC performance	• Self-contained ecosystem; no need to integrate with MNO or handset manufacturers • Can be used with standard phones • Access is through the internet
Cons	• Need to integrate with MNOs • User cannot change subscription/SIM without losing data on the card	• OTA provisioning not standardized and will use propriety solutions for each use case • Card / secure element native functionality cannot be changed without changing handset • User cannot change phone without losing data on the card	microSD Cards • RFID performance is dependent on position of the microSD slot • Needs to be powered up by the phone • Less space for data storage on the microSD Add-ons • Add size to the

Designed for NFC-Enabled Mobile Access Control



- Offers an easy-to-install and use application.
- Supports multiple digital keys (home, hotel, office) with globally unique identifiers.
- Uses standards-based architecture designed for access control.
- Allows for interoperability with other NFC applications on the mobile phone.
- Is SIM card, Secure Element, and microSD agnostic.
- Offers a high level of security and privacy protection.

NFC-Enabled Hardware

- NFC-enabled hardware for physical access control and third-party applications is being developed.
  - Residential market

Yale Real Living Locks

  - Hospitality / hotel market

VingCard Signature RFID

  - Commercial market
    - On-line readers
    - Electromechanical locks

iCLASS SE
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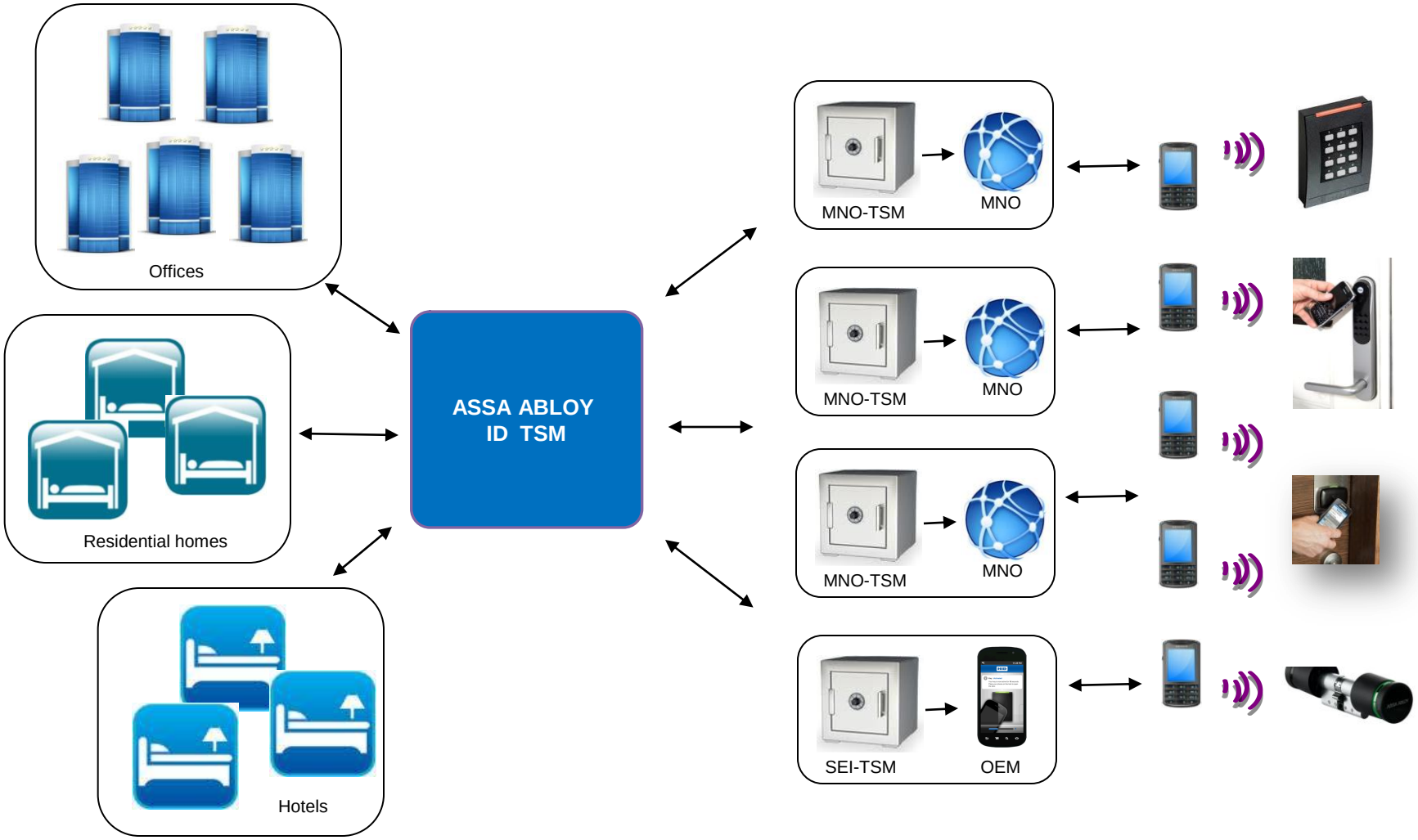
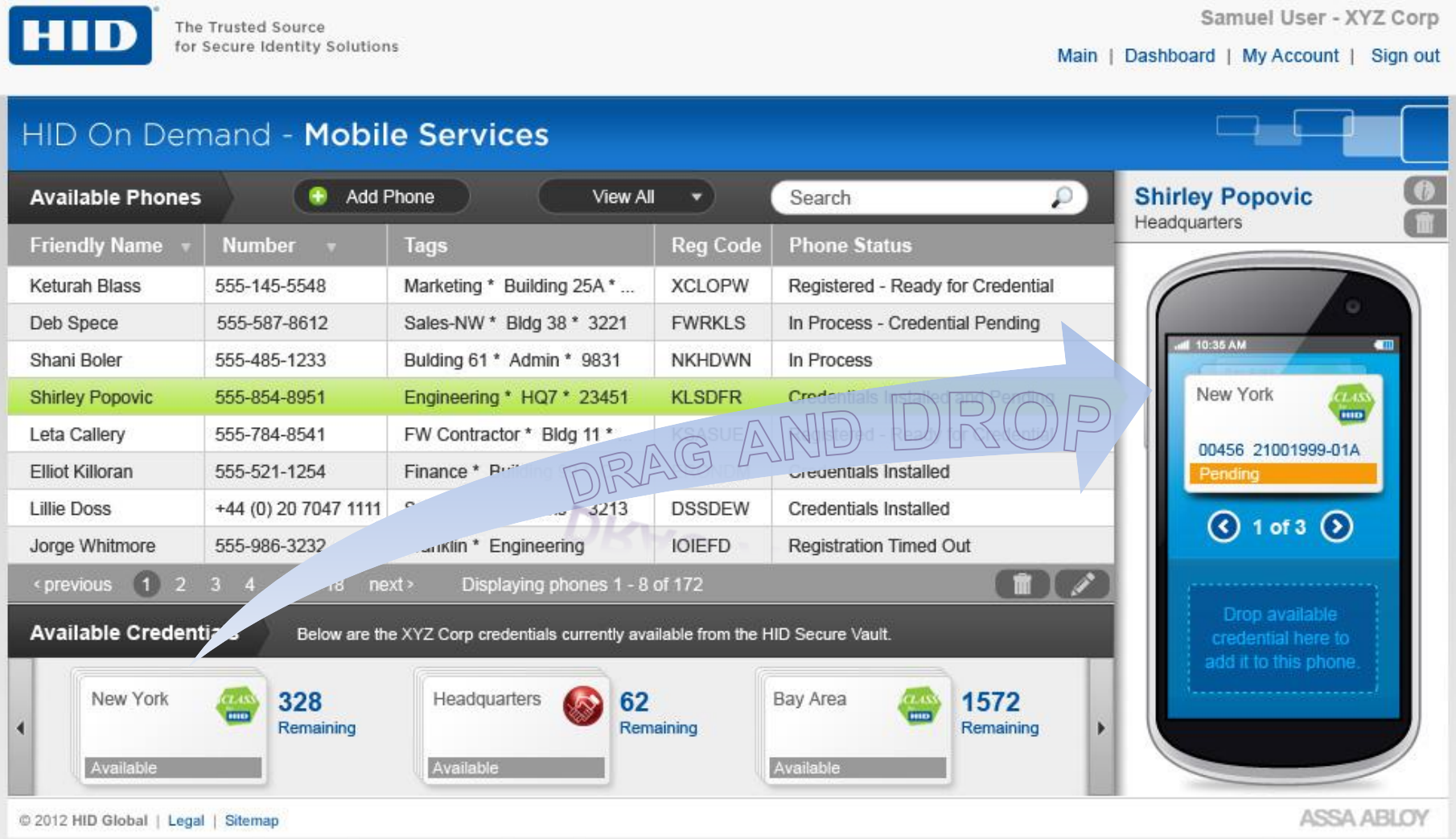
  - Third-party hardware

Iris ID iCAM7000

Connecting the Access and Mobile Worlds




The Trusted Source
for Secure Identity Solutions
Samuel User - XYZ Corp
Main | Dashboard | My Account | Sign out
HID On Demand - Mobile Services
Available Phones
Add Phone
View All
Search
Friendly Name
Number
Tags
Reg Code
Phone Status
Keturah Blass 555-145-5548 Marketing * Building 25A * ... XCLOPW Registered - Ready for Credential
Deb Spece 555-587-8612 Sales-NW * Bldg 38 * 3221 FWRKLS In Process - Credential Pending
Shani Boler 555-485-1233 Bulding 61 * Admin * 9831 NKHDWN In Process
Shirley Popovic 555-854-8951 Engineering * HQ7 * 23451 KLSDFR
Leta Callery 555-784-8541 FW Contractor * Bldg 11 *
Elliot Killoran 555-521-1254 Finance *
Lillie Doss +44 (0) 20 7047 1111 DSSDEW Credentials Installed
Jorge Whitmore 555-986-3232 IOIEFD Registration Timed Out
‹ previous 1 2 3 4 next › Displaying phones 1 - 8 of 172
DRAG AND DROP
Available Credentials
Below are the XYZ Corp credentials currently available from the HID Secure Vault.
New York 328 Remaining Available
Headquarters 62 Remaining Available
Bay Area 1572 Remaining Available
Shirley Popovic
Headquarters
10:35 AM
New York
00456 21001999-01A
Pending
1 of 3
Drop available credential here to add it to this phone.
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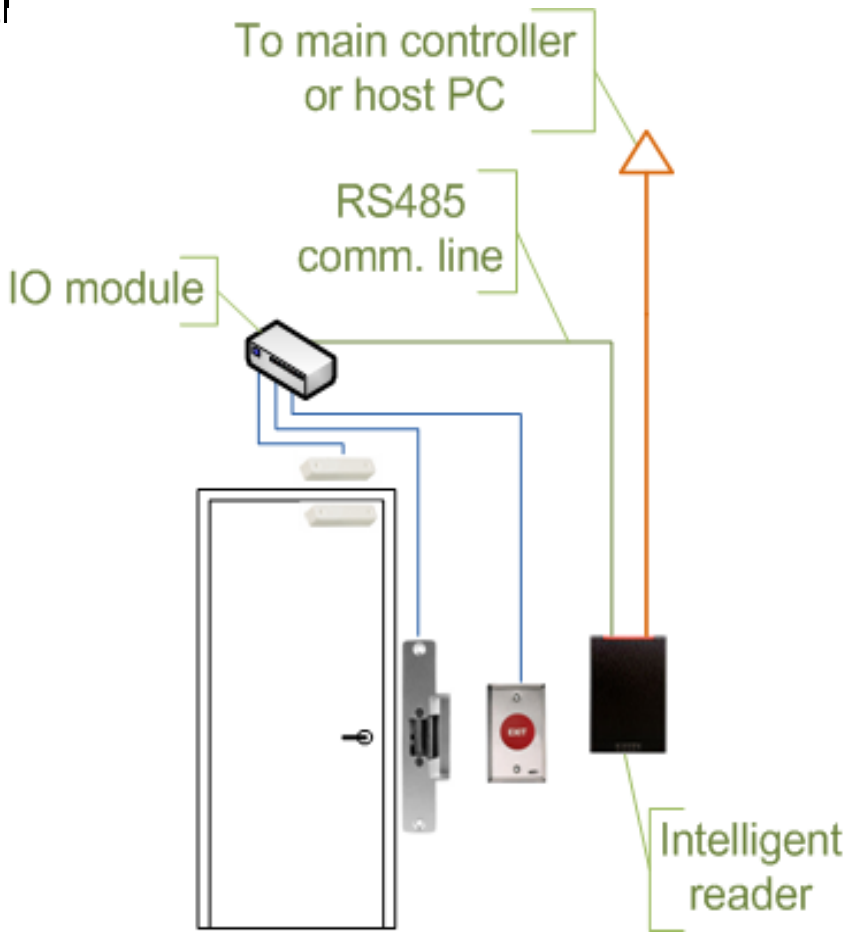
The Cloud, The Mobile and Physical Access Control

- The cloud and mobile computing will ultimately revolutionize the physical access control industry.
- A mobile device with its' wireless connection could be both the key and the processor.
- With cloud-based access control, the phone will be the rules engine.
- Physical access control systems will not need to be wired.

Today



Summary

- Mobile access is going to change the access control industry in years to come.
- An ecosystem of “reader devices” used to read NFC-enabled smartphones is being built.
- Technology-enabled cards are not going away any time soon.
- It will be a long-time before everyone is carrying an NFC-enabled smartphone.

Thank You

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