Access control with mobile phones: the future with Near Field Communications

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Keys could be a thing of the past as Near Field Communication technology enables mobile phones to be used as keys

Near Field Communications (NFC) technology is a catalyst that will hasten the use of mobile phones as mobile electronic keys for access control. Though the technology already exists, the necessary infrastructure and supporting devices still have some way to go. In this article, Rachel Sa of ASSA Abloy Future Labs evaluates the benefits and applications of mobile contactless credentials for access control.

Mobile phones have steadily offered users more tools and benefits than simply making and receiving calls. Today, our phones serve as calendars, cameras, mini computers and video game consoles. Thanks to Near Field Communications (NFC) technology, another valuable tool could be loaded onto your handset in the near future - your keys.

The wonders of Near Field Communications
Mobile contactless credentials act as virtual keys or access control cards that can be stored in your mobile handset and used to lock and unlock doors. NFC (Near Field Communication) is the short-range high-frequency wireless communication technology that enables the exchange of information between electronic devices.

**Existing contactless access control solutions**

Contactless credentials already exist in various forms as relates to access control. Two common form factors are fobs or plastic access cards. These fobs and access cards can be programmed with contactless credentials that provide various levels of access to buildings, rooms and offices.

- The strongest advantage, and one that is unique to mobile contactless credentials, is that the credential can be instantly delivered to a person's handset.

But mobile contactless credentials located within a handset boast benefits over existing contactless access control systems: Mobile contactless credentials simplify things for users by letting them fewer things, like fobs and cards. For security managers, they make it easier to keep more precise track of who is entering and exiting monitored access points.

**Advantages and applications of mobile contactless credentials**

Yet the strongest advantage, and one that is unique to mobile contactless credentials, is that the credential can be instantly delivered to a person's handset - no physical hand off is required.

"The most fundamental benefit of mobile contactless credentials for access control is that you can actually deliver the keys digitally because you will have universally secure elements in the mobile phone," says Daniel Berg, vice president and general manager Mobile Keys with ASSA ABLOY. "This has never been possible before. With existing contactless access control solutions, you must physically hand out plastic cards or fobs to the users to issue access rights."
So the phone becomes more than just a holder of the credential in the way cards and fobs hold an access credential. Rather, the phone can also receive the key digitally.

For security managers mobile credentials can make it easier to monitor access points

Such mobile contactless credentials have multiple potential applications such as in private residences, in commercial buildings for employees, and in travel situations for hotel guests.

In a travel situation, many hotels have already switched from traditional keys to electronic cards. But mobile contactless credentials would have the potential to streamline a guest’s experience. With an NFC-enabled handset, mobile contactless credential and a system to deliver that contactless credential, a hotel guest could check in on their handset and receive access to their room - all without having to physically "check-in" with a hotel representative. Meanwhile, in a residential setting, a homeowner could send a mobile contactless credential to a contractor or housekeeper and specify the length of time that access credential would be active.

Enhanced trackability with centrally controlled access control

Where mobile contactless credentials are poised to have perhaps the greatest impact, however, is in commercial settings. With mobile contactless credentials, security managers could manage all users from a central access control system and instantly deliver credentials with the appropriate level of access to employees and visitors. While cards and fobs that are widely in use can also be deactivated in the event that they go missing or are stolen, the benefits of the
mobile contactless credentials in a handset enable security managers to more precisely track the activities of personnel. So, if it becomes essential to know if a particular credential was used to gain access at a particular time, the mobile contactless credentials would support real-time traceability for both online and offline doors.

Mobile contactless credentials have multiple potential applications such as in private residences

But while the benefits of access control applications for mobile contactless credentials are plentiful, the technology to support those applications is not yet up and running. For example, while the technology for NFC handsets does exist, today very few models of NFC-enabled phones are available. The infrastructure to deliver mobile contactless credentials to handsets must also be launched.

Mobile phone access control key - the future

"Mobile keys will happen sooner or later," Berg says. "That's just the trend we're seeing now with everything else that is going onto mobile phones. NFC is one catalyst for this application."

What is needed now is a full system that will deliver those contactless credentials from an access control system to an end user. "The technology is there," says Berg. "Now it is up to innovative companies to put all the pieces together."
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Mobile access control and smart phones proving convenient in hoteling...

More and more commercial buildings today are replacing mechanical keyed locks with card access systems. The basic reason...