Benefits of Contactless Smart Cards

Whether you are installing a new access-control system, expanding an existing system, or undertaking a major upgrade, there are several considerations for using contactless smart cards. Following are some of the most important benefits of contactless smart cards.

Contactless smart cards achieve a higher security level of the credential [a coded employee card] and the overall access-control system. Contactless smart-card technology is optimized to provide highly secure devices by using cryptography, encryption, and the internal computing power of the smart chip. Since the *ISO/IEC* standards do not address security and authentication, this capability must be examined specific to each supplier. By using diversified unique keys and industry-standard encryption techniques (i.e. a secure algorithm between cards and readers for RF data transmission), the risk of compromised data or duplicated cards is reduced. Even if an unauthorized person obtains a reader, without the keys, the reader will not authenticate with the card and data will not be transmitted. These security measures are not implemented in proximity cards, giving contactless smart cards a security advantage.

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Contactless physical access-control credentials can carry secure IT applications such as secure log-on to networks, digital signature, and encryption. Every day there is news of some new incident involving breaches of information-systems security, and smart cards are rapidly becoming the de facto choice for securing IT infrastructures. While still in the early stages, this trend is being established by two influential groups who know this subject well: the computer industry and the U.S. government.

Contactless smart cards provide more storage and the secure reading and writing of data. Contactless smart-card memory capacity ranges from 64 to 64k bytes; standard proximity-card memory ranges from eight to 256 bytes (2k bit).

The capability to add other applications to the card is one of the most important advantages of contactless smart cards over proximity technology. Depending on the amount of memory available and the number of memory areas, contactless smart cards can serve as multi-application credentials that are used for many purposes. Since the memory can securely store any kind of information, physical access-control credentials based on contactless technology can be used for just about anything (time and attendance, equipment and material check-out, lighting and HVAC control and billing, etc.).

Organizations considering biometrics for either physical access or IT security applications can use contactless smart cards as a secure carrier of the biometric template. Smart cards are an ideal complement to a biometrics implementation and are particularly well-suited for installations spanning multiple sites. Storing the template on the card simplifies system start-up and enables the support of unlimited populations, while also eliminating the redundant wiring requirement for biometric template management.

Other benefits:

- Users can define and control their access keys.
- Contactless smart-card technology offers flexibility for future-proofing.
- Affordability.

This information was excerpted and edited from Irvine, CA-based HID Corp.'s **(www.hidcorp.com)** *"Smart Cards for Access Control Advantages and Technology Choices" white paper.*

Contactless vs. Contact Smart Cards

- A contactless presentation of the card is much more user-friendly and convenient for physical access control.
- Contactless smart cards and readers are much more durable in harsh, dirty, or outdoor environments, such as those typically found in access-control applications.
- Contactless-card transactions are designed to be faster. Contact smart cards were not optimized for fast transactions, but for very high-security applications (such as financial services and debit-card PIN protection). Since contactless cards were first targeted to high-throughput applications (like transit-fare collection and ticketing), fast transactions were mandatory while still maintaining high levels of security. As contactless technology developed, it was optimized for fast reading and authentication.