How NFC is Unlocking the
Future of Secure Access Control

Unlocking the Future of Secure Access Control

Tap and go solutions based on NFC Forum technologies allow you to lock or unlock any door with your phone or wearable without having to carry your keys.

Access control systems using NFC Forum technologies offer a secure and convenient solution for managing entry to buildings, rooms, or secured areas. Leveraging the biometric security on a device, NFC Forum Access Control reduces the risk of unauthorized access by also using an extremely short-range, encrypted connection between a device and a lock.

NFC technologies also deliver ultimate convenience by utilizing the Digital Wallet of the mobile device most consumers already own. And most digital key frameworks make sharing keys with others a snap – and then just a tap.

This adaptability and ease of use make NFC an ideal choice for modern access control solutions.

"As smartphone penetration continues to grow, so too does consumer demand for seamless digital functionality. NFC allows providers to create access control solutions that take advantage of the rapid rise of digital wallets.

These integrated tap-for-entry contactless solutions work perfectly with native software and remain functional even if the device itself is in power reserve mode. They are quick, secure, and easy to use for all."

- Spokesperson,
  Mobility, Identity, & Transport Special Interest Group

One tap; unlimited benefits

Access control is fundamentally about security. Having the ability to control who can enter your home or place of work is a key priority, as is restricting who can enter ticketed events or access certain services. User trust in access control solutions is therefore make or break for widespread adoption.

Not only does NFC deliver this level of user trust, it also enriches the overall user experience.

User familiarity
From bank cards to smart watches, NFC technology is already prevalent in nearly every facet of our digital lives. Users are already comfortable with using NFC technology and familiar with its functionality, making deployment quick and easy.

Flexible Key Options
NFC can be implemented in a range of form factors. Many users will want to use their mobile's NFC functionality, but for those that either can't or don't want to, fobs or plastic cards provide an accessible, affordable alternative.

Reinforces Physical Security
NFC Forum technologies are predicated on user intent. The short range of the connections means the lock is only activated when a device is deliberately tapped, preventing unintended activation while also increasing security and reliability.

Battery-less Operation
Thanks to the power sharing capabilities of NFC, the key stored on your mobile can still be used even if your device is in power reserve mode. Open and lock the door with your unpowered device just like you would with a contactless card.

Easily Share Keys
Digital NFC keys can be issued or revoked quickly and easily. This brings a higher level of control to who can access a vehicle, room or building. The process of granting time-restricted access through NFC is also far more time and cost efficient than physical key handling.

Past, Present and Future
Door locks that implement NFC Forum technologies can work with the newest mobile handsets and other standards-based older contactless cards. And given the ubiquitous adoption of contactless for payment, NFC technologies are expected to be mainstream long into the future.

Work, Home and when you Travel

Almost every door we need to open requires a different key. This has led to widespread fragmentation throughout the physical access control ecosystem as different use cases have adopted a variety of legacy solution. Options currently available include metal keys, key fobs, card readers, keypads, and single-purpose RFID cards.

Our aim is to provide the interoperable technology that can be adapted to meet the needs of each unique use case it serves, meaning that each of these legacy solutions could be replaced with digital keys which can all be stored and used from a persons' mobile phone or wearable.

Commercial property owners have long relied on issuing and provisioning proprietary ID Badge keycards to enable access to a workplace and record who is entering and leaving the building. However, as more and more organizations look to reduce costs, improve security, and streamline onboarding, the demand for digital keys grows. These can be issued and stored in the employee's own phone via their digital wallet or through an app, meaning one less thing for them to remember each day. And in the event the employee leaves the business, the key can be revoked just as quickly as it was issued.

Hotels and Cruise Liners were an early adopters of proprietary RFID card solutions. However, issuing such a large number of key cards is not just a logistical challenge, it also creates a large amount of plastic waste; especially given that some of these cards will only be used for a few days. NFC Forum based-systems can provide the many benefits of RFID, while also giving guests the ability to store their key in their Digital Wallet or an app. This allows for seamless tap-and-go access without installing special software as certain other mobile solutions mandate.

Homeowners are increasingly installing NFC Forum technology enabled door locks as an innovative and reliable way to use, store, and share keys with their families – all accessible with a tap from a mobile phone or wearable. This allows for far greater access control as unlike with a physical key, if a digital key is lost or stolen it the key can be disabled without needing to replace the lock itself. And as a digital solution, it can log who enters the property and at what time, giving users full visibility over who is in their home.

Transit providers can further enhance the services a user has available through their smartcard or NFC-enabled device. Interoperable transit ticketing solutions are already setting the stage for innovative Mobility-as-a-Service (MaaS) and expanding beyond traditional rail transportation and retail deployments. Increasingly, access control is being added to the multiple use cases for existing transit cards, enabling access to commercial, residential and hospitality spaces. This is helping to create a fully integrated contactless service offer – be that using a physical smartcard or one hosted in the user's digital wallet.

No Compromise on Security

Access control solutions are based on user trust. To achieve the required level of trust, the security provisions in place must be proportional to the perceived risk faced by a location. With decades of evolution and use in the payment sector, the security of NFC is long established and enshrined in popular public opinion.

NFC technologies are ultra-short range with low latency, meaning that only the device placed against the reader can be read. This eliminates the possibility reading the wrong device, as the reduced activation range of NFC means only one device can be within range at any one time. This both ensures only the correct person gains access, while also making it far harder for credentials to be stolen.

NFC also enables enhanced traceability and accountability thanks to its ability to record real-time access information. A centralized server can automatically record the exact time of arrival and departure of a particular user as well as the door used. This means that in the event of a breech, all authorized movements in and out of a location can be quickly accounted for.

Device first future of contactless

For the first time ever, the 2024 Contactless Usage and Adoption Study found that the majority of contactless users prefer to use their mobile phone or wearable to pay over a contactless card. With an increasing ubiquity of digital contactless solutions in payments, access control providers must keep up.

73%
of consumers now regard themselves as 'familiar' or 'very familiar' with NFC contactless technology

71%
said they are either confident or very confident in the safety and security of mobile wallets

95%
of people have left their physical wallet or purse at home on at least one occasion, relying solely on digital contactless

Proven technology with secure standards

NFC technology has long established itself as an enduring and trusted solution for access control. Consensus-based technological standards have created a common tap-and-go user experience that delivers seamless functionality with security.

NFC Forum is working to ensure that as the number and complexity of different use cases continue to develop, so too do the standards that they rely on. Through close collaboration, our members make sure that NFC Forum Standards meet evolving market needs. Conformance to the specifications and testing against the NFC Forum Certification Program ensures consistency of behavior across NFC implementations. This sets the foundation for interoperability and empowers solution providers to create innovative next generation access control solutions.

Contact us to find out how you can get involved.