

Alan Pierce

piercej@techtoday.us

Advances in Remote Keyless Entry

When it comes to consumer electronics, the place to learn about evolutionary, revolutionary, and/or incremental technology advances is the Consumer Electronics Show (CES), held each January in Las Vegas. Over the years, my experiences at CES have been the incubator for many of the columns and online product reviews that you read here each month.

This year's CES was the largest in the show's history; according to the Consumer Electronics Association there were over 20,000 new products at the show. Obviously, I didn't get to see them all—even though my feet felt like I walked a hundred miles trying to see as many of them as possible.

Automotive remote keyless entry has been around since 1982. The Car Connectivity Consortium (founding members: GM, Honda, Hyundai, Mercedes, Nokia, Samsung, Toyota, and Volkswagen) is developing standards for the full integration of near field communications (NFC) to become the new standard for remote wireless keyless systems. Smartphones with an NFC chip can securely transfer data wirelessly when a phone touches a NFC receiver. The NFC chip is also the enabling technology behind the Google smartphone wallet, a new technology people seem reluctant to adopt.

The goal is to allow car owners to transfer all the functionality of their keyless entry key fob to their smartphones. Imagine walking up to your car and watching your vehicle adjust everything inside to match your individual settings. When released, the new automobile NFC standard is expected to allow full communication between your car and your smartphone when they are in close physical proximity—as if the car has read your mind and you want it to get ready to take you somewhere.

At this year's CES, I discovered

that residential and commercial lock manufacturers are also adopting remote keyless entry for door locks. If society accepts remote keyless entry on all locks as whole heartedly as they have accepted it in their cars, the metal key could become a museum artifact. Imagine a future where you open all the doors in your life with your smartphone instead of a physical key.

Wireless keyless commercial and residential door entry is rather limited at this moment, but three companies I visited were quick to share their new technology offerings. A SimpliKey deadlock can be opened with a key, built-in touch pad, wirelessly with its key fob, or, by the end of this year, with a smartphone. (See Photo 1.) The SimpliKey press release indicates that its Apple and Android Apps, not available until at least September 2013, will be able to lock and unlock a house from anywhere in the world. Company representatives indicated that their apps will also notify you when someone locks or unlocks your door, even if they use a key.

It wasn't until after CES that I learned that the company's KeyCloud is not yet available. When I emailed Alyshia Kisor-Madlem, a spokesperson for SimpliKey, she informed me the lock shown in Photo 1, the only lock the company currently manufactures, will need to be "retrofitted to work with KeyCloud." If this lock sounds enticing, I suggest you wait until KeyCloud is a reality and the SimpliKey locks on sale work with the cloud apps right out of the box. A KeyCloud notification system is critical because it would inform you if you or another person to whom you gave keyless access to your home accidentally unlocked your door from a distance.

The question becomes: Are you sacrificing security for convenience if you adopt this keyless entry lock for your home? To allow convenience without sacrificing security, the SimpliKey key fobs and cloud apps (when they become available) use 128-bit AES encryption. This AES (advanced encryption standard) was established by the U.S. National Institute of Standards & Technology in 2001. It is an open standard that manufacturers can adopt to send and receive secured information over a wireless network. It is used by the federal government's National Security Agency and other government agencies to encrypt, send, and receive secure information. However, without KeyCloud notification, it doesn't prevent you from being unaware that you accidentally pressed the button on your key fob while



Photo 1—You can open this lock with a key, built-in touch pad, wirelessly with its key fob, or, by the end of this year, with your smartphone.

you are still in range of your door, thereby leaving your door unlocked in your absence.

SimpliKey is sending me a loaner lock unit so I can test all of its features. You will find a review of this lock and many other products that I explored at this year's CES online at www.technologytoday.us/page14.html.

Jeff Sebek, an account manager at Coprometrousa, presented me with a totally different approach to wireless

Alan Pierce, Ed.D., CSIT, is a technology education consultant. Visit www.technologytoday.us for past columns and teacher resources.

residential and commercial keyless entry. His company has developed Stone Lock, a facial biometric authentication system that maps the facial features of the people you authorize



Coprometrousa

Photo 2—Stone Lock uses a facial biometric authentication system to unlock your door. The system can't be fooled by someone holding up a picture of an approved face.

to unlock your door. (See Photo 2.) To open a door, a person simply looks at the panel in a way that they see their face clearly on its viewing screen. The Stone Lock sensors will quickly map the person's face with infrared light and determine if he or she is in the system. At CES, Sebek and his staff were looking for lock manufacturing partners to adopt and adapt the Coprometrousa Stone Lock technology into their own electronic locking systems.

When I approached a Kwikset lock representative and asked him about the company's latest move into wireless remote locking systems, he went right over to the Control 4 Home Smart Connect wireless keyless entry lock system to give me a hint on what Kwikset has on their drawing boards. He said Kwikset was using CES to hold private meetings to discuss a new keyless system not ready for release to the press. He answered my request for information by saying that he "cannot confirm or deny that a new line of Kwikset locks will use near field communication." This would give Kwikset's new line of locks the same close proximity opening function as the next-generation vehicle system.

What was most interesting about

my conversation with the Kwikset representative was the fact that he confirmed that consumer lock manufacturers were going to jump into all kinds of wireless keyless entry systems during 2013. Imagine you approach the door to your home or dorm room and the locks automatically unlock, your music center starts playing your favorite music, and the temperature in the room starts to adjust from saving mode to your own comfort mode!

Will the public adopt wireless

keyless entry for their homes? You can view related videos for the wireless keyless entry systems discussed in this column online at www.technologytoday.us/page13.html. ©

Recalling the Facts

1. Do you think people will be quick to adopt wireless keyless entry systems for their homes? Why?

2. Summarize the different systems mentioned in this column. What do you see as their strong points and their weak points? Be specific.



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