

Card_Lab

3rd June 2011 Torsten Nordentoft CTO Cardlab

The NFC technology bridge.

What is NFC?

Near field communication, or NFC, is a set of short-range wireless technologies, typically requiring a distance of 4 cm or less. NFC operates at 13.56 [MHz](#) and at rates ranging from 106 kbit/s to 848 kbit/s. NFC always involves an initiator and a target; the initiator actively generates an [RF](#) field that can power a passive target. This enables NFC targets to take very simple form factors such as tags, stickers, key fobs, or cards that do not require batteries.

The challenge:

The NFC enabled phones:

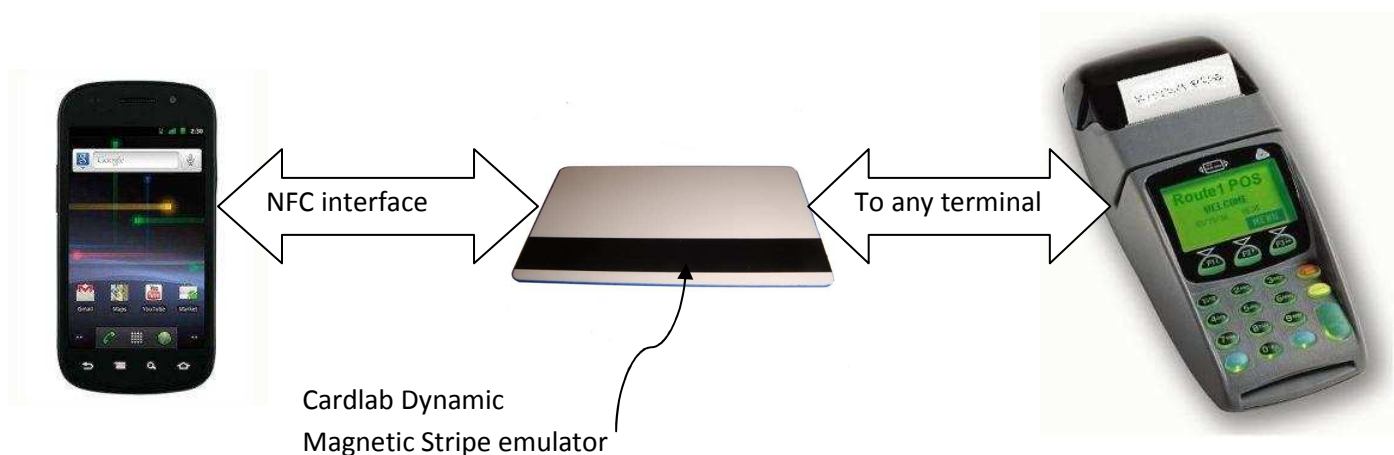
Samsung launched the Nexus S 4G NFC enabled phone 14th May 2011. Nokia has announced that by 2012 all their smart phones will be NFC enabled. Same message is received from most major smart phone manufacturers. Thus we can expect most smart phones to be NFC enabled within near future!

The Point Of Sales (POS) terminal:

In order to accept NFC payments, you have to have a [POS \(point of sale\) system](#) capable of processing a contactless payment transaction. That means either purchasing and implementing an NFC-compatible peripheral that connects to your existing POS system--like the [OTI Saturn 5000](#) which retails for about \$170, or the [ViVOPay 4500](#) terminal which costs around \$150--or replacing your entire POS system with a new one that has the NFC compatibility built in. Depending on the size of the business, the upfront investment to support NFC can be significant and possibly cost-prohibitive.

With less than 2% of POS in the US being NFC enabled, this is a major constraint for NFC deployment.

The solution:



An ISO 7810 form card (credit card) with on board NFC interface and dynamic magnetic stripe emulator. This card can bridge the NFC enabled smart phone to any existing Point Of Sales terminal.

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Technical details

- ISO 7810 form factor card (credit card format)
- The card follows ISO 7816 protocols and uses smartmx technology from NXP
- Inside the card is a track one and two magnetic stripe emulator
- The card can have contact (EMV) and classic RFID interface (Mifair)
- Inside the card the card is a NFC interface, controller and memory
- The card is self powered
- The card has green light indicating when ready for transaction
- The card can be programmed to become anything (Id-card, medical card, credit card, driver license)
- The card can be programmed to self erase after use.
- The card can be programmed to self erase after a pre-determined period of time (programmable)
- The card can be paired to a specific phone.
- The card could be used as general interface for any phone. (for retailers)
- The card is hot laminated and can be manufactured in high volume with short notice.
- Cardlab has extensive IP for the card and manufacturing processes.

For additional information please contact Cardlab CTO Torsten Nordentoft at tn@cardlab.com