NFC with mobile “App” at Securitas Direct AB

Master Thesis in Computer Science - LTH

Background:
Securitas Direct AB provides a full range of products and services based on ease of use, functionality and secure alarm transmission for wireless home alarms that meet basic needs to wired business alarms for people with advanced security requirements.

This master thesis offers the possibility to familiarize with the new extended RFID standard Near Field Communication (NFC) in association with “Apps” and Smartphones. Securitas Direct AB is interested in using Smartphone’s with NFC and “Apps” as a way for secure identification for the newly launched wireless security platform Verisure™.

Tasks:
- Familiarize with the new RFID extended standard NFC and its different levels of communication such as Reader/Writer mode, Peer-to-Peer mode and Card Emulation mode.
- Investigate NFC trends for Android-, iPhone- and Windows 7 smartphones.
- Study the “Open NFC” project (www.open-nfc.org/) that aims creating a portable and hardware independent NFC software stack.
- Implement and demonstrate if a NFC Smartphone can be used as a passive RFID tag in the Verisure™ system.
- Investigate different security risk scenarios with RFID/NFC tags and smartphones for identification and key distribution in the Verisure™ system.
- Develop a functional demo system for secure Identification using a NFC smartphone with an “App” together with a Verisure™ System adapted with NFC HW from Texas Instrument.

Required background and skills:
- Civ.ing student in the D or C program.
- Interest in communication protocols etc.
- Android and/or iPhone programming knowledge is an advantage.
- Interest in HW design
- Report to be written in English.

Note: Student(s) will be compensated, Preferable 2 students and most of work at Securitas Direct in Malmö

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