

# Dutch Agency Employs RFID to Track Social Services

Werk aan de Wijk is using NFC-enabled cell phones and 13.56 MHz RFID cards to dispense aid and receive payment for it.

By Rhea Wessel

Sept. 7, 2007—Dutch social services provider Werk aan de Wijk is employing NFC-enabled cell phones as mobile point-of-sale (POS) terminals. Based in the city of Breda, Werk aan de Wijk provides a variety of social services, such as cooking for the elderly or helping people with small repairs. The organization's workers use the NFC-enabled phones to check in and out at customers' homes, as well as to allow customers to pay for services rendered in their homes, and to enable workers to sell additional credit vouchers to clients on the spot.

The companies behind the project say this is the first commercial installation of an NFC-enabled cell phone as a mobile POS terminal. The system has wide implications for the wireless payment market since it can significantly lower the price of a mobile POS device, says Michael Letterer, head of Hamburg, Germany-based Michael Letterer Project Management and Consulting, which initiated and managed the project.

U.S. software company RFCyber developed the NFC mobile phone Java application and the over-the-air (OTA) provisioning software that converts a Nokia 3220 NFC-enabled phone into a mobile POS device. That same software will eventually be used with the Nokia 6131 NFC phone. These phones typically cost less than €200 (\$275) apiece, Letterer says, while NFC-enabled PDAs and other mobile POS devices can sell for nearly €1,000 (\$1,376). The worker-administration system used by Werk aan de Wijk was developed by Adaptive Planet, a company based in Ijsselstein, Netherlands. Adaptive Planet also performed some systems integration for the project.

"If you think of the economics, the NFC mobile POS terminal opens up a whole new range of applications," Letterer explains. "We made the phone into a bidirectional communication device that even allows the deduction and sales of e-tokens [credit vouchers] between the end user and the service technician who uses the mobile POS."

According to Letterer, current NFC-enabled phone-based payment systems debit funds from the credit balance preloaded on the phone. This, he says, is the first commercial NFC implementation using bidirectional communication.

In Breda, a person requiring special social services is issued a contactless card embedded with a passive 13.56 MHz RFID tag containing a Mifare chip from NXP Semiconductors. The individual's ID number and e-token balance are stored on the card's RFID chip. Each social care technician carries an NFC-enabled phone and uses it to track the amount of time spent on each job. The worker touches the card to the phone, creating a timestamp that is saved along with information describing the service being provided.

After the work has been completed, the same procedure is performed to mark the end of the job. The prepaid e-tokens stored on the card are then debited by the appropriate amount. A customer looking to purchase more e-tokens can present cash to the employee, who uses the NFC-enabled cell phone to increase the value on the customer's card.

In the future, the company plans to upgrade the system to allow for on-the-spot purchases, which will be deducted from a client's bank account without the need for cash. Transaction records stored in the mobile POS can be uploaded in batch via the OTA software and a GPRS connection. For Werk aan de Wijk, the application does away with paper vouchers and simplifies the process of managing accounts. It also makes records more accurate and easier to maintain.

**RELATED\_ARTICLES** The project partners developed the product specifications during the first quarter of this year, then tested the software in the second quarter. "They wanted a digital solution that makes the process of organizing the services and vouchers more efficient," Letterer explains, adding that it is too early to calculate a return of investment for the project since it started this summer.

At present, 20 service technicians use the NFC mobile POS phones, with 200 clients utilizing the cards and e-tokens. By the end of the year, organizers expect 100 phones and 1,000 cards to be in use.

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