

# NFC Research Lab Rolls Out Smart Posters

The Austrian lab has deployed posters embedded with RFID tags so passersby in the town of Hagenberg can use RFID-enabled mobile phones to download information about local tourist sites.

By Rhea Wessel

Aug. 13, 2008—The [NFC Research Lab](#) at the [Hagenberg campus of Upper Austria University of Applied Sciences](#) has rolled out a smart-poster application utilizing NFC technology that provides tourists with information about the town of Hagenberg. The application is the first of its kind in that country, according to the project's partners.

The project, launched last January, includes 20 informational signs and maps embedded with Near Field Communication (NFC) RFID tags that have been erected around the city in scenic outlooks and other areas. NFC employs short-range 13.56 MHz RFID technology to transmit information securely from one NFC device to another. Each poster features an RFID tag embedded beneath an NFC logo. Using an NFC-enabled mobile phone, a passerby can scan the tagged poster by holding the phone close to that logo and download text and pictures on the phone's display regarding tourist sites around town, such as the local castle.

The phone downloads that data from an Internet server provided by [Nexperts](#), a spin-off of the lab and a partner in the project. Nexperts manages the tags' content via its Content Management System, which can be used for other NFC-based tourist information systems as well. Additional sponsors in the project include mobile operator [Mobilkom](#) and [NXP Semiconductors](#). Mobilkom, NXP and other companies support the lab, which conducts a variety of NFC-related trials and research. The lab's work is also supported by Austria's [Federal Ministry of Transport, Innovation and Technology](#).

"The smart-poster project is a full application with the servers running in the background and information available in real time," says Josef Langer, a professor at the university who runs the lab and is also a shareholder of Nexperts. "It's a model project for other cities and tourism regions. Anyone could use it—they only need to buy the tags." Currently, Langer acknowledges, the smart posters are not used that frequently, since few people have NFC-enabled mobile phones. But visitors to the city can borrow a [Nokia 6131](#) phone from the NFC Research Lab to test the smart posters.

In another project at the lab, researchers have developed a robot capable of moving on three axes so it can test, from all angles, the electromagnetic fields of NFC devices. The robot can measure read ranges between NFC devices and NFC tags, test how well the devices interoperate, and analyze how well they transfer large volumes of data. "The robot allows us to do the tests automatically to get the most objective results possible," Langer explains.

According to Langer, the devices tested by the robot can be moved in various positions, allowing the measurement results of the connection status to be displayed in two or three dimensions, in order to show how well the NFC device communicates in those positions. A computer controls the robot, calculates the

measurements related to the device and renders an illustration of the measurements. What's more, an oscilloscope can measure the field amplitude—that is, the devices' range—and help determine which NFC devices cannot be used with other such devices.

**RELATED\_ARTICLES** In 2006, the NFC Research Lab conducted some of its first trials on campus (see [Austrian University Begins NFC Trial](#)). Since then, the lab has studied how to expand the functionality of NFC chips, integrate NFC hardware and software, and develop energy-efficient NFC chips.

The lab is currently planning its third NFC conference, to be held Feb. 23 to 26, 2009. On the first day of that event, developers will work together directly with Mobikom, Nokia and other companies. On the second day, attendees will discuss business issues related to NFC. Finally, on day three, participants will be able to join a scientific workshop sponsored by the [Institute of Electrical and Electronics Engineers](#) (IEEE).

Copyright ©2005 RFID Journal, Inc. All Rights Reserved