

# Nokia Unveils RFID Phone Reader

The world's largest provider of cell phones is offering a kit that will enable workers to scan tags remotely and transmit data via their cell phones.

March 17, 2004—Nokia, the Finnish cell phone maker, today unveiled the world's first RFID-enabled GSM cell phone at the CeBIT2004 trade show in Germany. The Nokia Mobile RFID Kit features two RFID reader shells—plastic housings that fit over a cell phone—20 13.56 MHz tags and software to enable mobile workers to scan tags and access information remotely.

Nokia expects the kit to appeal to companies such as Halliburton and Schlumberger, which provide field services for the oil and gas industry, as well to utilities and companies providing security for buildings.

"About two and a half years ago, we started looking at RFID as a way of empowering people to do things," says Gerhard Romen, head of global market development at Nokia New Growth Business, the product development unit that created the RFID kit. "Today, RFID tags tend to be mobile and readers are stationary, but things get really interesting when you turn that around and make the tags stationary and the readers mobile."

The RFID phone might be used by a engineer in the field checking a meter on a gas pipeline or other industrial equipment. The engineer would scan the tag attached to a meter to identify which meter was being read. The phone-reader would record the time of the read, and then the engineer could key in the meter reading into the phone using the buttons on the phone. The data could be stored in the phone and downloaded to a PC via an infrared connection.

Data can also be transferred via the GSM system. For example, a security guard walking a building could read a tag at each door whenever the guard checks the door to confirm it is locked. That information could be sent to a control center via the cell phone, and someone in the control center could monitor the guard's progress in real time.

In another application, a telecommunications repair technician could read a tag on a malfunctioning switching station or other remote asset. The phone would be programmed to go to a specific Web site to download a service history and a schematic diagram of that switching station to the cell phone. The engineer could then learn what previous problems that site had and which cables are carrying electric current.

Another feature triggers the phone to call a predefined number when a particular tag is read. So for instance, a security guard might scan a tag on his belt when in trouble and the cell phone would automatically call for help.

The software for the reader is written in the Java programming language. Nokia has a community of developers who create software for the phones, and Romen says he expects these developers to create new applications for customers.

The new RFID reader works with the Nokia 5140, a GSM phone that is water resistant and more rugged than

a typical cell phone. Users simply slide off their existing Xpress-on cover and slide on the RFID reader. The software needed to run the reader is automatically loaded into the phone and the reader becomes operational.

The readers, which are made by third-party manufacturers that Nokia is not identifying, use the ISO 14443A communication protocol, so companies that purchase the kit can buy additional tags from [Philips Semiconductor](#) and other vendors. The read range is typically 2 to 3 centimeters (0.8 to 1.2 inches).

Nokia has been working with several companies over the past year to test how convenient and easy to use the device is. This is an important issue, according to Romen. "We've been testing it in the energy, gas supply and security industries," he says. "One of the key things with a new technology is understanding the requirements of end users who are not IT experts. Can they read the screen without glasses? What happens if I drop it? How long does the battery last?"

Romen says that the battery in the cell phone will last several days when reading 50 to 80 tags per day. The company believes there is a significant business market for the device, but also expects consumers will eventually discover the benefits of using their cell phone to control RFID applications. While it will be several years before consumer applications are common, he envisions consumers one day scanning items in stores and automatically downloading information on the product from the Web, or scanning the tag on a product to register it with the manufacturer.

Pricing for the RFID kit, which will be available at midyear, will be set by Nokia resellers. Several companies, including [Minec](#) and [Magnatec Technologie](#), sell a handheld, GSM-enabled computer that can be equipped with an RFID reader. These sell typically sell for \$1,200 to \$1,500. The Nokia kit should be significantly less than that, since the GSM-enabled phone is sold separately and it doesn't have all the capabilities of a handheld computer.

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