

RFID for Everyone

If EPCglobal and the Near Field Communication Forum join forces, consumers could use mobile phones to access the Internet of Things.

As RFID becomes ubiquitous in various industries, the efficiencies it brings to supply chains will extend to other business processes. But companies will not be able to unleash RFID's myriad benefits if the technology continues to exclude consumers. At the same time, if consumers could experience immediate benefits from RFID, it would lower or even dissolve their resistance to the technology.

One foreseeable way to invite consumers into the world of RFID is to give them access to the Internet of Things, so they could easily get information about RFID-tagged products and related services. We have the architecture for the [EPCglobal Network](#)—the infrastructure that allows companies to track goods in the global supply chain and find information about products associated with Electronic Product Codes. The missing link is how to put this in the hands of consumers.

At the [St. Gallen/ETH Zurich Auto-ID Lab](#), we believe that mobile phones enabled with near-field communications (NFC) technology could be one answer. The [Near Field Communication \(NFC\) Forum](#), established in 2004 by Nokia, Philips and Sony, includes providers of payment systems, smart-card developers and other mobile handset manufacturers. Their goal is to develop secure and easy-to-use connections among consumer electronics devices mainly for payment, ticketing and service-initiation applications.

NFC-enabled mobile phones could give consumers access to the EPCglobal Network. But NFC technology, which operates in the high-frequency band, and EPC technology, which operates in the ultrahigh-frequency band, are incompatible. Another problem is the lack of communication between members of EPCglobal and the NFC Forum.

We are seeking to bridge these two worlds. We've joined the NFC Forum to participate in shaping their vision and share EPCglobal standards and other achievements, to prevent reinventing the wheel. We're also promoting the importance of consumer applications to EPCglobal. And we've just kicked off a one-year research project with Nokia to investigate applications for EPC readers integrated into mobile phones, as well as ways consumers could use the EPCglobal Network.

It's possible that UHF EPC readers will be integrated into mobile phones, though it's technically challenging because the readers drain a lot of energy from the phone's battery. It's more likely that NFC readers will be integrated into mobile phones because the driving application for NFC is payment and it needs to be compatible with HF smart cards. EPCglobal is working on a standard for HF EPC tags, but it will take time until this standard is deployed, if it is adopted at all.

RELATED_ARTICLES Until the issue is resolved, we will develop solutions that work with either HF or UHF applications, so we can bring the benefits of RFID to some 3 billion mobile phone users.

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