

Inside Contactless Releases Open-Source NFC Middleware for Phones

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The product would allow applications developers to build solutions collaboratively or alone at less expense, and mobile phone companies to use technology from a variety of vendors.

By Claire Swedberg

Feb. 4, 2010—Contactless chip technology firm [Inside Contactless](#) has released an open-standard Near-Field Communication (NFC) software suite known as Open NFC 3.4 (based on previous versions of its proprietary MicroRead software), that mobile phone and handheld device manufacturers, as well as NFC application providers, can download and use at no cost. Open NFC 3.4 acts as middleware for NFC RFID-enabled phones, and the applications written for them. In offering open-source NFC software, the company says it intends to drive the adoption of NFC RFID technology for mobile phones, by allowing interoperability between various types of NFC hardware and software, and by making it possible for developers to create applications at little cost, as well as share ideas and develop solutions that any phone manufacturer could utilize.

The Open NFC software, which became available this week, operates with the Windows Mobile 7 operating system, for use in smart phones and mobile devices, in addition to Linux 2.6 (on which the mobile-device platform Android was built). Another version, Open NFC 3.5, is expected to be made available at the end of March 2009, and will include support for Android. The software stack can be used for a variety of cell phone applications, including those involving peer-to-peer communications, Bluetooth and Wi-Fi, as well as with single-wire protocol subscriber identity module (SIM) cards used in certain phones, and in FeliCa, Mifare and ISO 14443 RFID tags. The software package was developed for Inside Contactless' MicroRead NFC chip, the company reports, but can operate with any NFC-compliant chip, such as those made by [NXP Semiconductors](#).

With the open-source software, mobile phone and handset manufacturers could use any make or model of NFC module or chip to operate in their products. Software developers, on the other hand, could employ the free software to begin developing an application for NFC-enabled phones, or build on technology developed by others in order to create new applications. Examples of NFC-based applications include those that would allow NFC-enabled phones to be used to make contactless payment systems or function as key cards for access control. Developers or manufacturers could also utilize the software to develop their own proprietary systems. Those employing the software to develop an application programming interface (API) that could be used across the market, the company indicates, will have greater flexibility and faster time to market.

"We want to continue adoption and reduce the fragmentation of systems," says Loic Hamon, VP of marketing for Inside Contactless' NFC business line. "We see this as being very important for the acceleration of NFC adoption." That move, while opening the market to more players—such as application developers—will likely lead to increased sales of NFC hardware, the company hopes, including Inside Contactless' chips. Among the firm's investors are a number of potential users of the open-source software, including such mobile phone hardware companies as [Motorola](#), [Nokia](#) (through its investment arm, [Nokia Growth Partners](#)), [Qualcomm](#) and [Samsung](#).

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"While software-development cost alone hasn't held back wide-scale NFC adoption," says Jonathan Collins, a senior analyst at [ABI Research](#), "by making its NFC stack—one which is already used by its NFC controller customers—available separately, Inside [Contactless] is lowering one barrier to NFC product development for potential new vendors."

Until now, Hamon says, cell phone manufacturers and application developers had their choice of NFC technology providers, but the NFC hardware or software provided by one vendor did not interoperate with those provided by others. However, middleware to allow the interoperation of NFC hardware and software has been available from other vendors, for a fee. For example, [Stollman](#) offers an NFC protocol stack that also amounts to a middleware solution for NFC chips and related embedded products compatible with the FeliCa, Mifare and ISO 14443 protocols, though its solution is not free. French mobile technology development company [Mobile Distillery](#) offers a software conversion system known as Celsius NFC, that converts existing NFC applications so they can run on multiple NFC devices.

On the other hand, says Sarah Clark, an NFC industry analyst with British research firm [SJB Research](#), and the author of a report entitled "NFC: The Road to Commercial Deployment," this open-source solution is designed to make it easier and more cost-effective for handset suppliers to add NFC functionality to their mobile phones and other devices. "Most handset manufacturers now have NFC-enabled mobile phones in development," she explains. "By making it simpler for manufacturers to dual-source their NFC components, Open NFC could be the catalyst for getting NFC phones out of the R&D lab and into mass production."

If applications developers use an open-source solution, such as Open NFC 3.4, to design an application for transportation, payment or smart posters, for instance, they could share that application with other companies, which could then use that open-source solution to modify or build on that application. The result, Hamon indicates, is that developers will be able to create systems at a lower cost, and move them more quickly into the market.