Tyfone – First Data Partnership Announcement

FAQ

Q. What is Tyfone?

ANS. Tyfone is a neutral infrastructure enabler for cloud computing based mobile services. Tyfone enables the next wave of secure-element-neutral mobile apps that are secure enough to store your Driver's License, Health Records, Passport, Debit, Pre-paid and Credit Cards.

Tyfone's u4ia® (pronounced euphoria) platform and its companion SideTap™ card is the world's first patented memory card-based mobile payments solution with integrated secure element, OTA controller and miniature contactless coil for mobile Near-Field Communications (NFC) payments. The technology operates in any standard memory card slot and is rapidly gaining market acceptance as a single-strategy approach to mobile contactless payments for any mobile phone. Tyfone and its partners enable a suite of services including Mobile Banking, Mobile Identity Management, Mobile Remote Payments, Mobile Retail Services and Mobile Contactless Payments. To discover why Tyfone is becoming the partner of choice for secure mobile apps to many of the world's leading organizations, please visit www.tyfone.com.

Q. What is First Data?

ANS. First Data powers the global economy by making it easy, fast and secure for people and businesses to buy goods and services using virtually any form of electronic payment. Whether the choice of payment is a gift card, a credit or debit card or a check, First Data securely processes the transaction and harnesses the power of the data to deliver intelligence and insight for millions of merchant locations and thousands of card issuers in 36 countries. For more information, visit www.firstdata.com.

Q. What is NXP?

ANS. NXP Semiconductors provides High Performance Mixed Signal and Standard Product solutions that leverage its leading RF, Analog, Power, Digital Processing and manufacturing expertise. These innovations are used in a wide range of automotive, industrial, consumer, lighting, medical, computing and identification applications. Headquartered in Europe, the company has about 28,000 employees working in more than 25 countries and posted sales of USD 3.8 billion in 2009. News from NXP is located at www.nxp.com.

Q. What is the nature of the Tyfone - First Data partnership? Why is it important?

ANS. First Data and Tyfone have partnered to offer MicroSD Based Contactless Payment Services. This is a significant partnership as First Data is committed to mobile commerce and is a leader in the payment industry serving more than 5 million merchant locations, 2000 card issuers and millions of consumers worldwide. Tyfone is a technology leader in mobility solutions and offers add-on hardware and software to enable mobile commerce, including mobile contactless payments. The partnership enables a neutral mobile commerce solution to be deployed to millions of consumers. Tyfone's technology will support First Data's provisioning role, of a trusted service manager (TSM) using SideTap cards as a neutral secure element.

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Q. What are SideTap MicroSD memory cards? Where is the secure information stored?

ANS. SideTap is the trademark name of the Tyfone's add-on memory card technology – it enables near-field communications (NFC) contactless card payment and secure element capabilities in a commonly used mobile phone accessory, a MicroSD memory card.

It is the world's first standard MicroSD card to fully integrate (a) onboard controller that manages over-the-air (OTA) access of a secure element, (b) NXP's SmartMX SmartCard controller secure element, (c) miniature 13.56MHz contactless antenna connected to the secure element, and (d) still includes space for virtually any memory capacity for consumers to store documents, photos, videos, music or other files.

All secure information is stored inside the smartcard chip and not in the memory of the memory card.

Q. What is u4ia?

ANS. u4ia is pronounced euphoria, and indicates the 4 U's of the mobile channel – universal, ubiquitous, unique, and unison.

u4ia is the registered trademark of the Tyfone, Inc. and is the name Tyfone's mobility platform that (a) mobilizes any data securely (b) is part of and resides inside a TSM's own backend infrastructure transparent to the user or issuer and (c) exposes free API for APP/Web developers on the client side to build secure use cases on any client device.

Tyfone's u4ia mobility platform, when it comes to contactless payments, is necessary for OTA services only and not for contactless payment transaction processing.

Q. What is a Trusted Service Manager (TSM)?

ANS. A TSM in the world of mobile commerce, is an independent intermediary enabling consumers of any mobile network services to download virtually any payment (or other) identity into their mobile handset securely. Key attributes of a TSM are neutrality, security, connectivity, database management and the ability to operate in scale with integrity.

A secure element (such as a SIM card or a neutral SideTap Memory Card) attached to a mobile handset is used to store information securely. A TSM will provision, personalize, and manage the life cycle of appropriate accounts and payment information into the secure element, similar to how plastic credit or debit cards are provisioned today.

Q. What are mobile contactless payments? Why are they important?

ANS. Contactless payments are important to both consumers and issuers. Consumers will have the benefit from the security and convenience of tapping their secure smartcard based plastic to authorized point-of-sale readers to pay for said good or service. The issuers will be able to offer a new payment channel to their consumers while increasing their revenue stream. Javelin Strategy and Research found that 37 percent of card users interested in contactless would switch issuers to get it.

Mobile contactless payments are the ability to pay for goods and services by tapping a mobile device instead of a plastic card. A mobile device adds additional convenience and security through the intelligence and network connectivity of a mobile phone.

US Census data shows online retail amounts to only 4% of total retail in 2009. Mobile commerce technology that includes contactless payments has the ability to address both online and offline retail in a convenient and secure manner.

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Q. What is Near-Field Communications or NFC? How is it different from other wireless technologies?

ANS. Near-Field Communication (NFC) is the ability for devices to exchange information over a short range. In the context of mobile payments, NFC is the ability for a mobile device to "speak" to a contactless POS reader and exchange payment information, sometimes referred to as the card emulation mode.

Tyfone's SideTap add-on memory cards enable this card emulation mode, so consumers can tap their phone to a reader to buy or to identify themselves for other applications including infrastructure access. Inside handset NFC enablement typically uses SIM cards for information storage. The SideTap cards include an onboard smartcard chip to store information securely instead of a SIM card.

Q. How many mobile phones can use MicroSD cards?

ANS. Approximately 60% of the phones sold in the market place today have memory card slots. According to a September 2009 forecast by Strategy Analytics approximately 900+ million phones will be enabled with memory card slots by 2013. In contrast, NFC-enabled handsets will grow to only 80.8 million by 2013, according to Yankee Group's June 2009 forecast. Tyfone's add-on SideTap MicroSD cards with onboard smartcard chip enables contactless payments in majority of the handsets without the need for inside handset NFC enablement that requires SIM access.

Q. Is the SideTap payment technology available today?

ANS. The Tyfone SideTap memory card in collaboration with partners including First Data will be available for market deployment in the second half of 2010.

Q. Where can contactless payment technology be used?

ANS. A consumer is able to make contactless payments at thousands of locations across the globe today, using contactless cards. As of September 2009, in the U.S. market, about 350,000 out of about 7 million merchant locations are contactless enabled. While this is a small number, almost all QSRs (quick service restaurants), virtually every drug store and convenience store chain have installed contactless readers.

Retailers such as Best Buy and Home Depot accept contactless cards. In addition, according to an ITIF report from Sep 2009, mass transit operators in 13 major U.S. cities serving 20 million commuters daily, have installed or in the process of installing contactless terminals.

First Data and Tyfone will soon begin the process of working with issuers to enable them to offer mobile contactless payments to their customers. Trials will begin as early as mid 2010.

Q. What are the forecasts for contactless NFC payments?

ANS. According to a September 2009 forecast by Juniper Research near-field communications (NFC) contactless payment global gross transaction value is expected to exceed $30 billion by 2012.

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Q. How will putting contactless NFC technology on SideTap MicroSD cards change the forecasts?

ANS. Contactless NFC market forecasts assume availability of NFC-enabled handsets which will grow to only 80.8 million by 2013, according to Yankee Group's June 2009 forecast. In contrast, according to a September 2009 forecast by Strategy Analytics approximately 900+ million phones will be enabled with memory card slots by 2013. SideTap MicroSD cards enable NFC contactless payments with over-the-air access in majority of handsets without the need for inside handset NFC enablement; and therefore will accelerate the market adoption and revenue forecasts.

Q. What is Over-The-Air (OTA) access?

ANS. OTA is the ability to remotely and securely provision new security applications, personalize an application, and in general manage the life cycle of identity information. SideTap MicroSD cards enable such capabilities with industry standard end-to-end cryptography methods using smartcard chips that are employed by institutions such as the US Department of Defense.

Q. Can Over-The-Air (OTA) provisioning be used on the SideTap MicroSD cards?

ANS. The SideTap MicroSD card contains an onboard controller that manages over-the-air (OTA) capabilities allowing consumers to add multiple payment and identification options, creating a true mobile wallet. SideTap MicroSD cards enable such capabilities with industry standard end-to-end cryptography methods using smartcard chips that are employed by institutions such as the US Department of Defense.

Q. What standards and compliance are followed in SideTap MicroSD cards?

ANS. SideTap memory cards follow ISO14443 smartcard standards for its contactless interface. It allows MIFARE as well as any Global Platform compliant payment/identity applet to reside inside the secure element. ISO7816 smartcard standards are followed for over-the-air (OTA) access as well personalization production machines through the onboard memory card controller. For storing files SideTap follows Secure Digital (SD) protocol.

Q. Can SideTap cards still function as memory cards? What are *lite* and *ultralite* versions?

ANS. The SideTap MicroSD cards retains all its memory card functions, consumers can also use them to store documents, photos, videos, music or other files. In addition to the SideTap memory card, a SideTap *lite* MicroSD card with OTA wallet functions but no storage memory is available for partners. A SideTap *ultralite* MicroSD card is also available without storage memory or OTA wallet capabilities, for a single-payment provider scenario, much like a contactless plastic card or sticker from a single issuer.

SideTap and SideTap *lite* cards are supported by Tyfone's u4ia mobility platform. The platform transforms the MicroSD memory card into a mobile wallet capable of performing OTA life cycle management and contactless transactions at NFC equipped point-of-sale readers. Tyfone's u4ia mobility platform, that will be used by Trusted Service Manager (TSM) partners, is necessary for OTA services only and not for contactless payment transaction processing.

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Q. What kinds of financial or payment information can you put in a SideTap MicroSD card?

ANS. MIFARE and any Global Platform compliant smartcard applications are also supported. Therefore with appropriate collaborations any closed loop (such as merchant specific pre-paid or gift cards) or open loop (such as Visa, MasterCard) can be "loaded" to the SideTap MicroSD card.

Q. Are SideTap MicroSD cards secure?

ANS. The Tyfone SideTap MicroSD card uses NXP's SmartMX smartcard chip as the secure element. All secure information is stored in the secure element and OTA access is encrypted end-to-end. The smartcard chip used has a CC EAL5+ Security Certification; a PKI co-processor (up to 4096-bit RSA key); High speed triple DES on hardware; Enables SSL data transport; and has the ability to support NIST Level 4 Data Security Compliance. Such smartcard chips are employed by institutions including the US Department of Defense to store information securely.

Q. How will personal information be protected if a phone or SideTap MicroSD card is lost or stolen?

ANS. Unlike your lost wallet, all of the information in SideTap MicroSD card is stored inside a smartcard chip, therefore protecting the information from unauthorized access. In addition, the SideTap MicroSD card can be "turned off" remotely or can be deactivated similar to a lost credit or debit card today. Secure re-loading of personal account information on a newly activated SideTap MicroSD card can be done with a click of a button.

Q. When can people expect to start buying SideTap MicroSD cards?

ANS. The SideTap cards will be available to the public in the 2nd half of 2010, with trials starting in Q3'10.

Q. How much will it cost to buy one?

ANS. For a consumer a SideTap MicroSD card is expected to cost about the same as that of a standard MicroSD card of the same capacity.

Q. Where might these cards be sold?

ANS. Stay tuned for exact locations where SideTap MicroSD cards will be available. We expect that these cards will be sold places where consumers buy memory cards today including retail merchants and major network operators as well as new locations such as mass transit kiosks and financial institution branch locations. SideTap MicroSD cards may also come pre-bundled in handsets.

Q. How will consumers use them?

ANS. Consumers will simply insert the card into the memory slot of their phone, activate the card with an app or a web interface, and tap the side of their phone on a contactless reader when making a purchase.

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Q. What can people do with a SideTap MicroSD card that they cannot do with other NFC technologies?

ANS. A SideTap MicroSD card enables a consumer to have a true mobile wallet, no longer needing to carry numerous plastic cards in their traditional wallet. Because the card also offers memory functionality, the mobile wallet is now also able to contain coupons, pictures, songs and other content.

Q. How will consumers benefit from SideTap?

ANS. *Security* through information storage in an industry standard smartcard chip ; *Convenience* through enabling secure wallet functions for online and offline mobile payment purchase with one device; *Comprehensive budget management* through the use of pre-paid cards and other cards accessible through a single click on your mobile handset.

Q. How will retailers benefit from SideTap?

ANS. Analysis shows that merchants will benefit increased transactions as there will be a quicker turnaround time for each purchase made. Charge-offs could also be decreased as the SideTap MicroSD card offers substantial security, better than or similar to that of plastic PIN debit transactions today.

Q. How will financial institutions benefit from SideTap?

ANS. Contactless Payments with its ability to replace cash transactions will bring in additional revenue for financial institutions. Mobile contactless payments through SideTap memory cards provide top-of-wallet advantage, thereby enabling larger share of spend. In addition, by leveraging memory cards that consumers already buy, it will allow financial institutions to replace cost of plastic cards and become greener over time.

Q. How will mobile operators benefit from SideTap?

ANS. SideTap technology adds value to one of their largest revenue accessory, a microSD memory card. Thus enabling potential for increased accessory revenue, new value added services and reduced churn rate through the value added services.

Q. Is this a patented technology?

ANS. Tyfone's enabling patent portfolio includes US patent 7,581,678 filed February 22, 2005 for "Electronic Transaction Cards", issued September 1, 2009, and other patents pending.

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