



Executive Summary

The Infrared Financial Messaging (IrFM™) “Point & Pay” Specification v1.0

In October 1999 a Special Interest Group (SIG) was formed by the IrDA (www.irda.org) to develop a global wireless proximity payment standard for the purposes of enabling a true electronic wallet application. I am pleased to report that the IrFM™ “Point and Pay” version 1.0 was officially approved by the IrDA General Membership and the Board of Directors on December 20, 2002. Infrared is the ideal technology for confidential wireless communications with consumer electronic appliances due to its low cost, superior security and one-to-one, short-range, very high speed directional connection.

The guiding principles for the development of the IrFM™ Specification were as follows:

1. Utilize existing financial services infrastructures to process wireless payment transactions (credit, debit and smart cards, checks, and loyalty cards) at the point of sale (POS).
2. Easily and inexpensively enable existing POS devices (card readers, ATMs, kiosks, gas pumps, turnstiles, toll booths, etc.) to receive and send consumer payment information and approvals wirelessly between POS and handheld devices.
3. Build upon proven infrared technology and standards for cell phones, PDAs and terminal adapters.
4. Include important stakeholders in the process from the very beginning.
5. Establish and field test Application Use Cases that mimic consumer and merchant behavior.
6. Provide a compatibility path for RF technologies; e.g. Bluetooth, WAP, 3GPP.
7. Require IrFM™ implementers to submit products for approval, through official IrDA test laboratories, in order to qualify for global interoperability compliance.

The first step was a simple proof of concept effort. This consisted of:

1. Loading a Palm PDA with payment transaction information.
2. Beaming the data to either a Verifone or Ingenico standard credit card reader via an Extended Systems infrared adapter.
3. Processing the transaction through the normal CrossCheck transaction approval system.
4. Returning approval data through the reverse path, and providing a transaction approval notice to the POS and to the Palm.

No functional changes were necessary at the financial or the merchant processing levels. The first three principles were thus validated.

The top priority then became bringing important stakeholders into the project. The Financial Services Technology Consortium (FSTC, www.fstc.org), a developer of international banking projects and standards, established a working relationship with the IrFM™ Work Group. The Association of Retail Technology Standards (ARTS, www.nrf-arts.org), developers of a legal digital receipt, began a coordinated effort with IrDA. PayCircle (www.paycircle.org), an association of major technology manufacturers developing processing standards, established a liaison relationship with IrDA. These, and other partnering endeavors, are crucial to successful IrFM™ implementation.

The Technical Work Group developed the generic merchant use cases for normal POS transactions; i.e. restaurants and stores. They also use the Object Exchange (OBEX™) Standard with IrFM™ in order to provide compatibility with existing RF technology.

The first public draft version of the IrFM™ Specification was posted for public review on the IrDA website in January 2002. Concurrently Visa International publicly announced the “VISA Proximity Payment Messaging Specification” built upon the Point and Pay Protocol developed by the Infrared Financial Messaging Group. Over 1,000 business enterprises downloaded the IrFM™ draft over the ensuing months.

In April 2002 Harex InfoTech launched a pre-IrFM™ field implementation in Seoul, Korea. Consumer and merchant experience from this effort served to provide validation for the first use-case models. It also demonstrated the certain need for changes in existing IrDA Standards in order to provide much faster connect time capability for express payment environments such as mass transit turnstiles, toll booths and vending machines (less than 0.2 seconds). These modifications have now been incorporated into the recently released IrFM™ v1.0 Standard, an improvement that will provide significant overall IrDA user benefits. At the same time, requirements for vouchers, loyalty programs and coupons were also being added.

Finally, version 1.0 of the Specification supports known and open POS-initiated legacy solutions - specifically the Harex InfoTech ZOOP™, NTT DoCoMo IrMC and VivoTech ViVOPay™ solutions, which are proximity payment solutions created prior to IrFM™ v1.0 release. IrDA is committed to work with any association, or any other member company’s legacy implementation, as long as the implementing group or company supports early migration to pure IrFM™, meets IrDA authorized testing requirements, and is willing to work openly within the framework of the IrDA IrFM™ Specification.

IrDA is dedicated to creating global, interoperable, proximity payments technology specifications. IrFM™ “Point and Pay” is a critical step in ensuring success.

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