



MULTOS Product Directory

Section 6

MULTOS Applications

v7.00



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MULTOS Applications

Applied Card Technologies Ltd.
Dai Nippon Printing Co., Ltd.
Datacard Group
Ecebs
Euro-Smartict
Hitachi Software Engineering Co., Ltd.
iSmart Ltd.
Keycorp Ltd.
Logicon – Northrop Grumman Company
NTT Data Corporation
Oberthur Card Systems
Panda Tecnologia en Identificacion
SCB Solutions Inc.
Snoras Bank
Way Systems, Inc.
Welcome



MULTOS Applications

Applied Card Technologies Ltd.



ACT's **Generic Electronic Loyalty** solution is now available on the MULTOS platform, providing a proven loyalty application to co-reside with your e-purse applications, delivering added value to your MULTOS card holders.

Product details

Product version: 4
Application Size: 1kilobyte
Database: Oracle
Provider: Applied Card Technologies Ltd

GEL functionality includes:

- Microprocessor, memory, MULTOS smart card enabled
- Tailored and branded for your scheme operations
- Industry proven marketing database
- Web enabled
- Local report generation and printing from any standard Web browser
- Customized views of information
- Reporting functions
- Card and terminal management
- Local & remote terminal configuration
- Remote messaging
- Remote Software loading
- Till Connect software module
- High security architecture
- Multi-application ready
- Off-Line card holder registration facility

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MULTOS Applications



Dai Nippon Printing Co., Ltd



DNP, as one of the founding members of the MAOSCO Consortium Council, is involved in supporting and developing MULTOS as an Open Platform.

We are able to provide the following two solutions for MULTOS users:-

PKI Application

Solution: PKI application that supports ISO 7816 Commands.
PKCS#11 DLL (Windows™) for the PKI application.
As per user requirement, command module can be customised.

Version: Version 1.0 will be available in Q3, 2000.

Provider: Dai Nippon Printing Co., Ltd

Size: From 1.2 Kbytes to 5.67 Kbytes

Issuance plan: 20,000 cards are supposed to be issued this October.

Where can it be used: Any place.

Cost: To be discussed.

Multi Pockets (Loyalty application):

Solution: With value transfer between cards, value management will be simply and easily feasible. Mechanism to securely load the value for Loyalty or Voucher into Smart Cards can be provided.

Version: Version 1.0 is now available.

Provider: Dai Nippon Printing Co., Ltd & Hitachi, Ltd

Size: 5 Kbytes in standard setting (Variable as per requirement).

Issuance plan: 500K cards are planned to issue within one year.

Where can it be used: Any place.

Cost: To be discussed.

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MULTOS Applications

Ecebs Ltd



Ecebs are an advanced technology company specialising in Smartcard software development and solutions. Our Aim is to make Smartcard enabled projects technically and commercially successful for our customers and partners.

Multefile consists a suite of software components that, enable Smartcard schemes to come to market, far quicker and with lower cost than using traditional approaches.

Multefile represents a major advance in the simplification of the use of Smartcards in a similar way to how spreadsheets brought to fruition the power of PC's. It allows you to devise, implement and manage your own smartcard products by circumventing today's prolonged development processes. By automating the process of converting your business's functional requirements into running code, Multefile directly empowers Card Issuers and their System Integrators by giving them the means to create and maintain their applications for card and terminal simultaneously and in timescales unheard of until now.

Through the innovative use of best practice methods and software design, Multefile all but does away with the prolonged and laborious process of technical development. Now business owners can create and maintain their own Smartcard and Smartcard related applications as easily as building a spreadsheet, thus radically lowering the costs of development and ongoing maintenance.

By supporting multiple applications and multiple application management post issuance, Multefile provides new levels of flexibility in accommodating varying business needs. It more easily and quickly implements changes to requirements for both the existing card base and terminal infrastructure.

Multefile consists of a suite of software tools, and configurable run-time code modules whose behaviours are data-driven, in other words "programmable programmes".

The key advantage is most of the software needed for any smartcard scheme is already written leaving the biggest effort as simply the analysis of the business's requirements to be embodied in these "programmes", and then to configure accordingly.

Multefile's 'on-card' components are available, as application software running on Industry Standard MAOS's such as MULTOS. These appear as applications to the card platforms but are in fact Application Environments from which multiple applications can be created and maintained ultra rapidly.

All of Multefile's features have been designed to radically lower the cost of smartcard development and ownership and improve the flexibility of any scheme thus improving the business case for smartcard deployment.

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Euro-Smartict



S-Token



Description of Application Functionality and Benefits:

Euro-Smartict is a leading cryptographic developer and provider of Advanced Authentication Solutions. As a part of Euro-Smartict's advanced authentication products, S-Token is an innovative application running on MULTOS providing two-factor authentication for users who are willing to gain access to web portals private areas.

S-Token can be used in a standalone application or an active-X component for accessing the smart card. The cardholder simply inserts the smart card into the reader, enters the appropriate PIN and challenge/response mechanism is calculated.

S-Token is an easy-to-use, affordable and manageable solution that allows users to be authenticated securely through a non secure multi-channel platform. An ideal solution for Internet Banking and Financial Brokerage Services.

Product details

- Optimized for MULTOS 4.*
- Application size < 1.5 KB
- Cryptographic technology based on Open Standards

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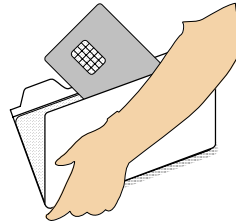
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Hitachi Software Engineering Co., Ltd.



Smart Folder



As a total solution provider responding to a wide range of IT needs, Hitachi Software will contribute to the creation of modern social systems and to a richer future.

Hitachi Software is developing its diversity in business operations, covering all fields relating to information systems.

The actual activities in these business fields bring to light the hidden potential in customer needs.

This in turn allows us to offer a truly broad range of services, ranging from consultations regarding proposals for better systems, based on a clarification of problem points, to computer management and operation services.

Based on the abundant know-how and high-level technologies that we have cultivated, we at Hitachi Software will continue to create systems that are truly useful to society and contribute to building a better future as a solution provider with the goal of solving problems for our customers.

Smart Folder is a software product. It has two separate components. One runs on Windows PCs while the other runs on MULTOS cards.

They communicate each other to perform several functions of the product.

The newest version of the product is 03-02. This version of Smart Folder can store PKI secret keys and digital certificates, which are typically used for e-mail encryption and SSL secure web communication, in MULTOS cards. The Smart Folder MULTOS application can also generate PKI key-pairs in MULTOS cards. This feature considerably improves security because PKI secret key does not exist anywhere in the world except in the specific MULTOS card. None can take the secret key out of the MULTOS card because there is no such interface as to get secret keys. You can carry your card anytime and your secret key can never be exposed to other people. It also has the issuer, administrator and user role separation feature. Even the issuer or administrator of a user's card cannot misuse the user's precious secret key.

This product can be used with both Microsoft Internet Explorer and Netscape Navigator browsers and accompanied e-mail clients.

There are also previous versions of the Smart Folder. They have completely different functions. They can store normal Windows files in MULTOS cards. These files are protected by PIN. So the files can be stored more securely than in normal floppy disks. These versions of Smart Folder are typically used with other security relevant software such as Lotus Notes and VPN software to store digital user certificates, which are in Windows file format, securely. For more detailed information of these previous versions, please contact us.

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iSmart Ltd.



Visa Credit and Debit on MULTOS VSDC EMV2000

Having a single, open, multi-application smart card platform for your products and applications is one of the keys to maximizing the Return on Investment of any EMV roll out. Yet to date dual issuers have had no choice but to select and maintain multiple open or proprietary platforms.

Now, for the first time, dual issuers can select a single, open, multi-application, platform for all their payment cards – MULTOS – offering significant potential economies of scale and thus cost saving. The development of iSmart’s VSDC EMV2000 means that Visa credit and debit applications can be issued on MULTOS cards. So, whatever the scheme, Visa or MasterCard, whatever the payment type, credit or debit or electronic purse, and whatever the other functions such as loyalty or transport, the issuer has the benefit of having only one smart card platform to manage.

This is the first implementation in the world of a VSDC application running on a MULTOS card, illustrating iSmart’s leading edge capability in the area of secure transactions.

iSmart International’s VSDC (Visa Smart Debit Credit) product is a fully EMV 2000 Version 4.0 compliant credit/debit payment application. The entire development of this product has been undertaken in compliance with the Common Criteria for Information Technology Security Evaluation framework.

Application Functionality

The VSDC application is built on the secure MULTOS v4.0.2 platform. It is the implementation of the Visa Integrated Circuit Card Specifications (VIS 1.4.2), fully supports Dynamic Data Authentication (DDA) and Combined Data Authentication (CDA).

Benefits

- ❖ VSDC on MULTOS is the ideal product for EMV migration and rollout, particularly for dual issuers who want, or need, to have only one multi-application platform providing economies of scale across card issuance. Through not having two different technology platforms, VSDC on MULTOS significantly reduces card base lifecycle costs facilitating personalisation or the addition/activation/deletion of other applications post issuance without the need for recall and replacement.
- ❖ VSDC on MULTOS is a highly cost-effective, all encompassing payments solution developed with security as its paramount feature
- ❖ VSDC on MULTOS is the first to support Combined Data Authentication which allows remote electronic transactions to be performed securely, opening up Internet, and later mobile, electronic commerce for all your consumers not just the early adopters
- ❖ VSDC on MULTOS relies on the proven dynamic application loading/deleting capabilities provided by the MULTOS platform which enables the card issuer to add new card services for their customers remotely and at minimal marginal cost significantly extending the revenue and profit potential of the card
- ❖ Customers have the flexibility of being able to add new applications such as loyalty, VCEPS, ID, or PKI on the MULTOS platform, to run alongside VSDC, during the lifetime of the card without costly and inconvenient recall/re-issue of the card, making it a significantly more attractive consumer proposition

Product details

Product:	VSDC
Type Approval / Evaluation Status:	Undergoing Visa Scheme certifications /Common criteria Certification process,
Reference sites / volumes of cards issued	Please contact us for details

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Keycorp Limited

KEYCORP LIMITED

MULTOS PKI Application

Keycorp is a leader in providing e-commerce solutions with the Nobil Internet payment gateway platform and has long recognised the need for Public Key Infrastructure (PKI) in e-commerce. Smartcards are the obvious choice for security tokens and Keycorp has an outstanding breadth of experience in developing the highly secure MULTOS smartcard platform. As a result, Keycorp is able to create a complete smartcard PKI solution.

- MULTOS Card platform ITSEC E6 classification ensures maximum privacy of private keys from other applications and external examination
- Common Criteria EAL4 evaluation of the Keycorp MULTOS PKI application enables secure use for Government authentication applications
- 512 and 1024 bit RSA key lengths
- Private storage space for two private keys
- Public storage space of 5K for certificates etc
- PIN/password access control
- On-card key generation
- RSA defended against BELL-CORE and DPA cryptographic attacks
- Standard interfaces are used throughout the design ensuring interoperability with other solution
- PS/SC for the card reader interface
- PKCS#11 V2.01 for the cryptography interface from the supplied DLL to applications such as Netscape, Baltimore Unicert etc
- PKSC#15, ISO7816-4 Filesystem for interfacing to the smartcard application
- Certificates stored in standard X.509 V 3 format

MULTOS

- Advanced chip – based on a Infineon SLE66 plus series chip with an 8051 CPU core and cryptographic coprocessor
- CRT calculation time of the crypto-coprocessor approximately 100 ms for 1024 bit keys.
- 32 up to 96 Kbytes ROM accommodates the MULTOS operating system and some industry standard codelets
- 16 or 32 Kbytes EEPROM for application code and non-volatile data
- Delegate commands to other applications
- Defragmented memory
- MULTOS Version 4 security standards

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MULTOS Applications

Logicon

LOGICON
A Northrop Grumman Company

About Logicon

"Logicon Inc., a Northrop Grumman Company, is a leader in advanced information technologies, systems and services for government and commercial customers. Headquartered in Herndon, Va., Logicon recorded 1998 sales of \$1.1 billion and has more than 11,000 employees world-wide. Among its innovative information technology solutions, Logicon has been developing SmartCard applications for government and industry for more than 10 years." Logicon also provides information technology solutions and services for a variety of state and federal government agencies, both DoD military and civilian, and scores of commercial enterprises.

Logicon Secure Access

The Logicon Secure Access for Windows NT application is a flexible tool for use by systems administrators to control access to networked or standalone NT workstations. At a minimum, an end user is required to insert their smart card into a reader and specify a password to gain access to an NT workstation. The password may be keyed in by the end user or stored on the smart card and automatically retrieved. The system administrator has the option to designate the specified method.

The system can also be configured to use RSA encryption and challenge/response user authentication. In this mode, the card is used to encrypt data using its private key.

Additionally, for an even higher level of user authentication, there is a biometric option where fingerprint information can be stored on the smart card and then retrieved and matched with the end user's fingerprint at the time of logon. Again, the systems administrator has the flexibility and choice to designate this biometric option for some or all of the users on the network.

Logicon Secure Web Access

The Logicon Secure Web Access for the MULTOS operating system allows both companies and government agencies the ability to add an additional layer of security to their electronic commerce web sites. In order to gain access to a web site, a cardholder must present their smart card in as well as a password. Additionally, the cardholder may also have to provide a biometric in order to gain access. This is an optional extension of the application.

The application uses the ITU-T X.509 industry standards for digital certificates. A certificate is stored on the 16K smart card with MULTOS to identify and authenticate the cardholder to a web site. If a biometric is required for web access, then that information is also stored on the smart card and matched with the cardholder at the time of entry.

This application allows corporations and government agencies to customize their web site content depending upon the identity of the individual accessing their site. For example, if a corporation is selling products via their web site, they would have the ability to offer targeted product information and customized pricing based on the identity of the buyer using his smart card with MULTOS with the Logicon Secure Web Site Access application.

Logicon Secure Asset Tracking

The Logicon Secure Asset Tracking for Windows NT application allows both corporations and government agencies to improve the tracking of their company property using MULTOS Version 4 containing a RSA private key to allow employees to digitally sign equipment in and out of a facility.

The Logicon Secure Asset Tracking for Windows NT application is a robust and complete tool for use by building managers and corporate security staff to track company assets and grant employees the privilege to remove property from a company site. The application uses private keys stored on MULTOS Version 4 to digitally sign company property in and out of the building. The corporate security officer has full control over the local, self-contained security domain and is responsible for all key management functions.

The application is highly flexible. A facility manager can assign specific pieces of property to specific employees or restrict employees from removing specific property from a corporate site. The application allows corporations to store detailed information about all their corporate property including Serial Number, Description, Asset Category, Department, Location, and Date of Assignment. The application also tracks basic employee information such as Name, Employee ID, Department, Location, Phone Number(s), and Email Address.

Additionally, for an even higher level of user authentication, there is a biometric option where fingerprint information can be stored on the smart card and then retrieved and matched when the employee signs out corporate property. Again, the corporate security officer has the flexibility and choice to designate this biometric option for some or all employees.

The Logicon Secure Asset Tracking for Windows NT application comes with a complete set of preformatted reports that can be easily generated using pull down menus. Therefore, at any point in time, a corporation knows exactly where all property is located and who is responsible for its safe return.

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MULTOS Applications

NTT DATA CORPORATION



SmartBIO™

SmartBIO is a trademark in Japan.



NTT DATA is Japan's top system-integrator company. We see ourselves as "value creators" in the information network society. By showing our customers how to use information technologies to their strategic advantage, we give them the skills they need to generate products and ideas that are valuable to them and society.

The SmartBIO is the fingerprint recognition system combined with smart card and public key infrastructure (PKI) technology. These technologies all together realize highly secure user authentication method. The resulting system raises security to a new level compared to the use of smart card or fingerprint recognition alone, and is also much easier to administer than other alternatives.

Using MULTOS, a multi operating system for smart card, you can deploy the smart card as a multi-function card. We will deploy "SmartBIO" as one of the applications for MULTOS.

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MULTOS Applications

Oberthur Card Systems



Oberthur Card Systems (Paris Stock Exchange SICOVAM 12413) is a global leader and an innovator in the smart card industry – providing advanced card-based solutions for a wide range of sectors.

We are the world's N°1 supplier of MasterCard and Visa cards, N°1 in banking, e-commerce & m-commerce and pay-TV. Oberthur is also a leader in multi-application and GSM technologies.

Firmly committed to open standards, Oberthur backs MULTOS and offers a wide range of MULTOS-based applications and cards, all of which can be managed by its personalisation centres and its advanced Card Management System.

A leader in SAT, WAP, UMTS and e-wallet technologies, Oberthur delivers secure, interoperable and flexible integrated solutions, whichever the market.

With 30 sales offices and 13 manufacturing sites around the world, our 3000 strong team is taking up the same challenge...Yours.

Oberthur supports MULTOS and offers a wide range of MULTOS-based applications that include:

BO: Debit / Credit payment application for the French banking system

Prolific for MULTOS: loyalty application on MULTOS

Authentic for MULTOS: Authentic allows secure network access – authentication – and digital signing. Authentic can be made available as an application on the MULTOS operating system.

Identrus on Multos: Identrus is the world's first global public key cryptography infrastructure for secure B-to-B transactions. Oberthur offers the Identrus application on MULTOS.

These applications can be offered on Oberthur's multi-application MULTOS card MELoDIC.

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MULTOS Applications

Panda Tecnologia en Identificacion



Panda is a company leader in the development of solutions with smart cards. During the last three years we have developed products for the bank sector under the operating system MULTOS. Our integration politics and our novel commercialization system give excellent advantages to our clients. Our solutions are ready and proven in field for immediate installation.

PANDAID-FM

Application developed in native code for the operating system MULTOS. It condenses the experience reached by PANDA in the development of solutions for this operating system.

Characteristic:

- It manages the properties of Privacy, Authentication, Authorization, Integrity of the information and not repudiation in an appropriate way.
- It allows defining freely for the user a registration of data. The fields of this registration can have the longitude that is wanted.
- It uses 3DES for the encryption of the messages carrying out the mutual authentication between terminal and card.
- Minimum quantity of necessary commands to communicate with the application.
- It possesses a DLL that allows communicating with the application in a transparent way for the user. Any applications that handle DLL can use the defined functions for interaction with the application of the card.

The data managed by the application can include templates biometrics, numeric and alphanumeric data.

Our application allows to begin immediately to store any information in a sure way in a card MULTOS.

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MULTOS Applications

SCB Solutions, Inc.



Description of Application Functionality and Benefits:

Smart card Single Sign-On and PC Secure Logon.

A user can access a PC or an application by inserting a smart card and a PIN code. With SCB Access™, usernames and passwords are securely encrypted and stored on a smart card. Usernames and passwords are then submitted automatically to the appropriate applications. Users need to remember only one password to unlock their smart card or token.

SCB Access™ consists of three modules:

- SCB Access™ Administration - to manage user profiles and smart card parameters
- SCB Secure Logon™ - to control access to the PC
- SCB Single Sign-On™ - to control access to PC and web applications

More on <http://www.scbsolutions.com/SCBAccess.htm>

Product details

Product version: V3.00

Type Approval / Evaluation Status: Non Applicable

Application Size: Variable: Typically 8 KB with Data

Reference sites / volumes of cards issued: Non applicable: New integration with Multos

Contact Details:

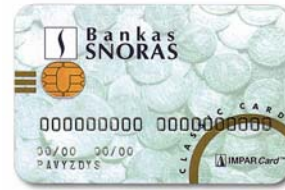
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MULTOS Applications

Snoras Bank



IMPARCard™

"**ImparCard**"-Allows the User to use an individual's smart card with emulated Snoras Bank local IMPARCard's application together with other applications. IMPARCard payment scheme's features: pre-authorized e-purses of 3 different currencies; data of 10 last expenditures and 3 last reloads.

Applications are developed by the Snoras Bank IT Department using MDS V1.24, and there are currently 50,000 card holders for this scheme.

Types of Application- E-Purse Application

Sizes of applications-640 bytes application, 544 bytes for data

Merchant Card

Allows the Merchant to use smart card to store and transfer POS terminal transactions, Stop list and POS terminal parameters. Application features:

authentication and identification of User's smart card and merchant's POS terminal;

User's smart card's key management and cryptogram calculation

Sizes of applications-4 Kb application, 10240 bytes for data

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MULTOS Applications

WAY Systems, Inc.



WAY Systems provides **secure authentication and payment solutions combining the use of smart cards with mobile devices**. WAY's Personal Points of Sale (PPOS™) solutions enable secure authentication for remote transactions **to address the fast growing multi billion dollar problem of Card Not Present (CNP) payment fraud**, allowing our customers (card issuers, payment processors and merchants) to combat fraud, differentiate themselves, and achieve higher revenue and better customer intimacy.

Card Payment Fraud cost businesses & consumers nearly \$3B last year and is expected to reach \$8B by 2005 if goes unchecked. Card Not Present (CNP) transactions represent the fastest growing segment of payment fraud. CNP transactions include Web, Mail Order Telephone Order (MOTO), TV, Mobile Orders (Prepaid top-up, orders placed with J2ME, WAP, BREW, etc. over SMS, GPRS, 3G protocols, etc.)

EMV (new global standard for credit/debit payments using smart cards, including multi application MULTOS cards) when used with Merchant Points of Sale (POS) will dramatically reduce fraud for all "Face to Face" transaction – but CNP transactions will not see the benefits of EMV without access points. Neither will the plethora of other applications on MULTOS cards.

WAY extends EMV usage to dramatically reduce fraud for ALL CNP transactions with Personal POS (PPOS™) solutions – mobile phone/PDA that accepts smart card payments. PPOS™ = Security + Convenience for Consumers => Increase Profits for Merchants, Acquirers/Processors, and Card Issuers!

WAY PPOS is a hardware and software solution. WAY's PPOS client software provides GSM/SIM application, Secure Mobile Payment Application for EMV and Mondex, M/Chip Payment Instrument and Mondex Payment Instrument all on one Multos card.

WAY PPOS solution includes accessory mobile readers that can attach to the back of existing GSM based mobile phone/PDAs, or will be OEMed in certain models of new mobile devices to allow full interaction between payment instruments like EMV or Mondex on a MULTOS SIM card, or a full size smart card, to communicate with a WAY Authentication Server over the air and fully conduct secure payment transactions, and other applications relating to customer intimacy and mobile commerce. EMV, Mondex payment and other applications on the client side are written on MULTOS.

WAY solutions offer real benefits for all stakeholders in the value chain:

- **CNP Merchants benefits:** Reduce fraud, No Chargebacks, lower fees, Card Present equivalent, add real profit to bottom line, able to offer incentives to consumers for use of PPOS, up sell opportunities to customers in the future.
- **Acquirers/Processors benefits:** Differentiate from competition to better attract / retain CNP Merchants, lock CNP merchants, reduce fraud costs, increase transaction flow & revenue.
- **Card Issuers benefits:** Differentiate from other issuers and better attract/retain consumers, reduce fraud costs, become the preferred card for CNP payments, increase transactions rates, increase customer intimacy.

Consumers benefits: Increase security, card number never given to merchants, min hassle of fraud, peace of mind, more likely to transact, increase convenience for CNP purchases: (no fax confirmations, no password setup, no software setup for PCs, no verification of identity, fast, easy, anywhere), Incentives to use (CNP merchants and card issuers who benefit from PPOS purchases can offer loyalty and discounts to consumers).

MULTOS Applications



WAY Systems, Inc.



Mobile Personal Point of Sale (PPOS™) Solutions

Description of Application Functionality and Benefits

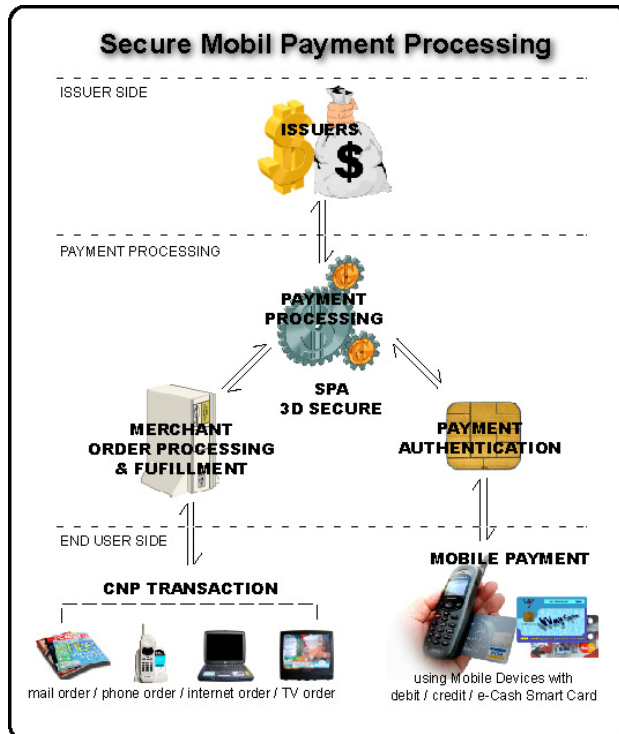
WAY Systems brings to market advanced payment solutions leveraging EMV & Mondex smart cards with mobile devices. WAY fulfills industry demand for solutions that can dramatically reduce credit/debit card fraud for Card Not Present transaction. WAY is the only company with the unique patent rights to commercialize both single SIM and dual chip/slot solutions complying with Mobey Forum's Preferred Payment Architecture and the Mobile Payment Forum's and MasterCard International's four models for non-repudiatable payment using mobile devices. WAY provides a Mobile Payment system that delivers a GSM/SIM application, a Secure Mobile Payment Application for EMV and Mondex, M/Chip Payment Instrument and Mondex Payment Instrument all on one Multos card. In addition the Multos SIM card, WAY provides an effective and economical way for mass distribution of mobile smart card readers for consumers and merchants that are integrated into mobile phones/PDAs as well as retrofitted for existing mobile devices. The smart card reader combined, with WAY's mobile payment system, can turn an ordinary GSM cell phone into a powerful personal point of sale (PPOS™) device and allow secure transactions to be made from anywhere.

When shopping on the Web or on the phone, the customer will select the PPOS option when payment is requested and provide the merchant with the mobile phone number. An invoice is sent via SMS to the phone, the customer authenticates with either an EMV or Mondex payment instrument on a Multos SIM or an external full-size EMV or Mondex payment smart card. The transaction is completed having verified not only the presence of the card, but also the cardholder through the use of a PIN. The entire transaction is encrypted and, most importantly, is deemed a non-repudiatable transaction by the payment associations resulting in a transaction that is lower cost to the merchant and not subject to charge backs.

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MULTOS Applications

Welcome

Welcome



Welcome creates loyalty software for multi-application smart cards issued by banks and other financial institutions.

The core product, XLS (eXtended Loyalty System), is designed to boost the use of smart payment cards by allowing the card to store and process the electronic equivalent of punch cards, paper loyalty cards used by sandwich shops and other small retailers to encourage repeat visits.

The system makes the financial institution issuing the card more competitive by adding value to the card and getting customers to use their card more often - to differentiate their card over other cards in the customer's wallet. It makes the card attractive to consumers, who can get rid of the paper bonus cards stacking up in the kitchen or making their wallets fat. And it gives retailers a competitive reason to invest in smart card readers by drawing customers back using a reliable, automated loyalty program. The company's technological leadership is recognised world-wide, thanks to such patented innovations as electronic punch cards, electronic couponing, as well as the company's novel use of the Internet to carry transaction data from the point of sale terminal to the central server.

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