KCG Smart Transport Card
A MULTOS Solution for Transit and Payments

Catering to a population of nearly 2 million, the Kaohsiung City Government (KCG) is responsible for administering Taiwan's second largest public transportation system. In 2005, KCG initiated a project intent on realizing the benefits of smartcards within an electronic ticketing system.

The main objectives of the Transportation Bureau of Kaohsiung City Government were:

- Improve efficiency of the transport system
- Improve the convenience of use for the public
- Minimise implementation costs
- Maintain overall control of all products

Who We Are

Multos International is a leading implementer of MULTOS technology. We offer a complete range of contact, contactless and dual interface products, on many EEPROM sizes. Applications spanning the Banking, Govt/ID and Transit market sectors have been introduced on our products. Furthermore, any application, be it existing or proposed, can be developed for the MULTOS or MULTOS step/one platforms.

Our products have been used in numerous security sensitive projects, in a broad mix of issuing environments and supply chain configurations. With Operations personnel and Technical Support staff located around the world, we are fully capable of providing MULTOS products and ancillary services that form the basis of a successful smartcard-based solution. Contact us at info@multosinternational.com to see how MULTOS or MULTOS step/one fits your needs.

Smart Transport Cards

The incorporation of smartcards into a transport system necessitates many of the same requirements associated with the management and operation of a payment scheme. These include:

- Card issuing
- Risk management
- Clearing
- Settlement
- Payment acquiring

Traditionally, transport schemes have opted to implement smartcards in a closed-loop fashion – requiring the Transport Company to establish a new payment scheme. Although some have been able to extend their offerings to low-value retail payments, these have generally been restricted to a very limited geographic region. Outside of that area, the cards are not able to be used.

Taking advantage of existing skill-sets and infrastructure, KCG opted to implement an open-loop solution. Such an implementation is beneficial for both the banks and the transport agency, increasing the relevance and geographic scope of the cards. KCG has been able to establish numerous partnerships with established financial instituitions. In doing so, a wide array of card products, each supporting KCG transit initiatives, have been developed and offered to users of the public transport system. Such flexibility allows products to be specifically tailored for identified market segments.

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The Solution

A multi-function banking and transit card requires an optimal combination of EMV smartcard technology with a high-speed contactless payment application. This allows for continued utilization and expansion of existing EMV infrastructure and security protocols. The contactless payment application used is MasterCard's PayPass M/Chip, providing fast and convenient transactions. Furthermore, because it is an open-loop implementation, the card may be used to pay not only within the transit system, but also at every merchant accepting MasterCard® or PayPass.

The card uses a MULTOS 36K dual-interface chip which contains M/Chip4, PayPass and Taiwan's local debit/ATM application (FISC) as well as several other applications for possible future use, including MasterCard's secure data application MODS, loyalty and PKI.

The PayPass M/Chip application is configured as a Pre-Authorised Debit account. This serves to optimize transaction times by allowing for transactions to be authorized offline. It also facilitates the offering of a dedicated product that targets visitors or tourists, even children, who wish to use the public transit system.

Conclusion

The continued success of the KCG transport initiative is a vivid demonstration of the ability of MULTOS to support a comprehensive, multi-vendor, multi-application implementation.The enhanced security and flexibility afforded by MULTOS enables financial and transit issuers to work together in designing and commissioning a solution that is feasible, technically savvy and commercially sustainable. Contact us at info@multosinternational.com for more information concerning MULTOS and transit.

Pre-Authorized Debit

MasterCard's Pre-Authorized Debit uses the M/Chip application and is fully supported by standard EMV infrastructure. The move away from a reliance on specialized infra-structure means many more points of acceptance, with payments possible at any EMV terminal. Pre-Authorized Debit is ideal when low-value transactions are able to be authorized offline. It also provides an excellent opportunity for closed-loop schemes to reduce their infrastructure costs by moving from proprietary platforms to one supporting the EMV standard.

An off-line spending amount (the "off-line balance") is stored on the card. This amount is tracked as the funds are spent and can be topped up during any on-line transaction. Management of the balance can be left to the cardholder or managed by the Issuer based on pre-determined risk parameters.

Dual-Interface and MULTOS

Contactless technology has proven very popular in payment transactions. Multos International invested early into developing a wide range of dual-interface products and is now a leading provider of this technology.

We offer dual-interface products ranging from 8k up to 80k in memory and have worked with dozens of card manufactures to take various antenna and card bodies to certification (including 4-line embossing, ½ size antennas)

All of our dual-interface products allow MULTOS (or step/one) applications the ability to communicate with terminals via either the contact (ISO-7816) or contactless (ISO-14443) interface. As a result, any number of applications may be combined on a single smartcard, including MasterCard's PayPass M/Chip or PayPass Magstripe.

Some of the key features of our dual-interface products are:

- Security features as standard across the entire MULTOS range such as data and application firewalls and platform integrity checking.

- Securely load and delete applications under control of the issuer, even after cards have been issued.

- Contact Interface: ISO7816-3.

- Contactless Interface: ISO14443 Type A (106kbps) – Note: Type B (848kbps) is available on request.

- Applications in ROM: M/Chip4, MODS, PKI, PayPass, VSDC/qVSCD, XLS and many more.

- Standard MULTOS applications can be used on the contact interface without any modification.

- Standard personalisation systems can be used without modification (from such industry leaders as Thales, DataCard, NBS/Ubiq, Muehlbauer).

Contact us at info@multosinternational.com if you have further questions about our dual-interface product range.

www.multosinternational.com