

smart!

News, Projects, Products, and Technologies

Reveal the Power of GalaxSIM®!

In November 2006, the European Telecommunications Standards Institute, ETSI, finally agreed on the USB protocol as the high-speed interface for SIM cards. Until the USB standard has fully conquered the market, the SIM industry is learning from trials for SIM cards with mass storage capabilities, which are based on the MMC protocol. G&D has been involved in the activities and developments of high-speed interface for USIM cards for quite a while. With the product family GalaxSIM®, G&D is well prepared for the current market needs and for the migration to the standard USB high-speed interface.



Over the last 18 months, the mobile industry witnessed a drawn out discussion about which high-speed protocol should become the standard for SIM cards: the USB or the MMC interface. In the end, the USB protocol was selected as it best fulfils the requirements of the majority of the ETSI member companies.

With the decision in favor of the USB protocol, new openings for additional services will be created such as the integration of web servers, multi-media phonebooks and much more. However, due to the fact that handsets and SIM cards supporting the MMC high-speed interface have been available for some time, there have already

been first trials targeting the mass storage use case. Here, the subscriber has been offered SIM cards with up to 128 MB of integrated flash memory.

Consequently, even if the deferment in standardization has caused some market delays, the high-speed interface standard is a very important step for the future of the SIM card in a converging environment. An established standard for the high-speed interface in combination with the results from the different MMC trials and the support of the Smart Card Web Server technology will further widen the opportunities for network operators.

Mobile phones supporting the high-speed interface

The main implication for a mobile phone manufacturer to support a high-speed protocol in its mobile phones is the actual decision as to which interface (MMC or USB) has to be implemented. Today, we already see a handful of different mobile phone models supporting the MMC high-speed interface. These phones can be used to realize the basic support of the mass storage use case. On the other hand, mobile phones with full support of USB as a high-speed interface to the SIM are available as first prototypes today and commercial models are expected in the 2nd half of 2007.



The accepted standard of USB for a (U)SIM card, in addition to the mass storage, mainly targets the "Smart Card Web Server on (U)SIM" use case. The USB high-speed communication to the SIM on the one hand and the (U)SIM Web Server on the other is, however, requiring some essential changes to the mobile phone architecture.

Migration from MMC to the standardized USB (U)SIM card

G&D has been offering GalaxSIM® products based on the MMC interface with different flash memory sizes ranging from 64 MB up to 1 GB since mid 2005. This market activity, the availability of MMC-based (U)SIM products and the corresponding mobile phones have led the involved parties into a challenging situation. Should they stop their MMC activities immediately after the USB becomes the accepted standard and confuse the subscribers right from the outset of this new market or is there a smooth migration path?

For the transition period, the industry itself came up with a solution: there are (U)SIM cards available, with an auto detection feature for the supported high-speed interface from the mobile phone, meaning that both functions are supported and will switch accordingly. G&D's GalaxSIM® Elara is a product offering this feature. In parallel, G&D is offering the GalaxSIM® Cyllene, a pure USB product with mass storage class and implemented (U)SIM Web Server. This double-track offering of GalaxSIM® Elara with MMC/USB auto detection and the GalaxSIM® Cyllene for USB is offering the network operator maximum flexibility. Most likely, the lifecycle of the migration product GalaxSIM® Elara will be phased out by end of 2008, to be replaced with the standardized USB product GalaxSIM® Cyllene, which will experience market growth as early as 2007.

With this product range, network operators have a smooth migration from existing MMC implementations on the market to the future-proof standardized solution of USB.

G&D experience—trial with TeliaSonera

G&D was one of the first SIM vendors to demonstrate an additional use case for the available flash memory on multi-megabyte (U)SIM cards by offering a sophisticated GalaxSIM®-based branding and configuration of mobile phones. In the latest implementation (beginning of 2007) for network operator TeliaSonera, G&D utilized a GalaxSIM® Callisto with 1 GB of additional flash memory based on the MMC interface. The GalaxSIM® card was loaded with different graphical brandings, configuration files for the modification of the network access parameter, and several additional applications such as GalaxSIM® Sync and a variety of Pocket PC games from Amiga. In this trial, the GalaxSIM® Sync application automatically synchronizes phonebook entries in the Microsoft® Windows® Mobile 5.0 based mobile phone to the GalaxSIM® flash memory together with the corresponding ring tones and caller ID pictures. As all phonebook data is always available on the GalaxSIM® due to the automatic synchronization feature, this data can easily be transferred to any handset.

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GalaxSIM® @ctive—The G&D (U)SIM Web Server

GalaxSIM® @ctive integrates a complete Smart Card Web Server into a SIM card and uses the mobile phone Internet browser for the presentation of HTML content stored on the USIM. This new category of SIM web services enhances the attractiveness of SIM-based services as the look-and-feel of the applications meets customer perceptions. In combination with the tamper-resistant environment of a SIM card, the USIM has tur-

ned into a personal security server in the hand of the subscriber. As the GalaxSIM® @ctive is based on standard web technology, a broad base of application developers and content providers familiar in web application design are ideally prepared to integrate their services into GalaxSIM® cards. Services based on the GalaxSIM® can be branded by the network operator with his own look-and-feel, independent of the handset manufacturer. Other

advantages are that these services can be updated or deleted over the air and the cryptographic features of a GalaxSIM® can be used.

Besides the Smart Card Web Server, the available memory can be used for services covering reconfiguration, branding of devices, and installation of additional software.