



## Excellence in Over-the-Air SIM Management

SmartAct™ provides the means for reliable Over-the-Air (OTA) management of SIM cards for Mobile Operators. It uses the Remote File Management standard, supports vendor specific OTA protocols from all major SIM suppliers and supports Remote Applet Management (RAM) according to the ETSI specifications for Java™ Card based SIMs. SmartAct is designed to meet high demands on performance for remote updates in batch mode.

### The Challenge

The SIM is emerging as a vital element for the success of new business opportunities for mobile operators like Near Field Communication (NFC) based commerce, Secure Authentication and Digital Signatures. With these new opportunities there is an increasing need to manage applications, domains, keys and files on the card in a reliable and secure way.

Many CMDA operators around the world are focused on migrating to GSM / 3GPP / 4G technologies. Moving from a technology without SIM to a SIM based technology creates significant challenges. For example, existing administrative systems have no SIM management tools and SIM knowledge must be built in the organization.

The Java Card Platform has grown in popularity and some operators make exclusive use of the Java Card. However, not all Java implementations are the same and are SIM vendor independent only in theory. Operators that have chosen to pursue a multi-vendor strategy for SIM cards must have a management platform that can manage these variations.

Legacy cards must not be forgotten by the operator. Optimal card management encompasses the entire subscriber base regardless of card type or vendor. The SIM management system must be capable of managing large numbers of cards and distribution of multiple updates to specific user groups.

### The Solution

SmartAct is a holistic SIM management product managing multiple card types regardless of card vendor. It utilizes the message transport capabilities of the SmartTrust DP™ to communicate with the SIM. It handles transparently differences that might exist regarding the implementations of the Java Card run-time environment as well as the Remote Applet Management commands.

The Batch Order Manager (BOM) of SmartAct meets the high demands on performance for remote updates of large series of SIM cards. The BOM performs OTA downloads to operator defined subsets of subscribers.

Customer Care Agent (CCA) is the Web based customer care tool for operator staff to manage the subscriber the SIM. CCA is built on the SmartTrust common portal model. All SmartTrust products have the same look and feel, making for a rapid learning curve.

Network migrations from "SIM-less" network technologies like CDMA to GSM / 3GPP / 4G requires special considerations since the existing provisioning / billing systems may not have SIM knowledge. SmartTrust OTA Provisioning Manager is the option in SmartAct that simplifies the provisioning process during the network migration.

### Benefits

SmartTrust has nearly twenty years of experience in managing SIM cards providing a unique advantage in creating SmartAct for superior SIM management. These many years of experience with over 200 leading mobile operators globally have given SmartTrust unique insight into managing the SIM OTA.

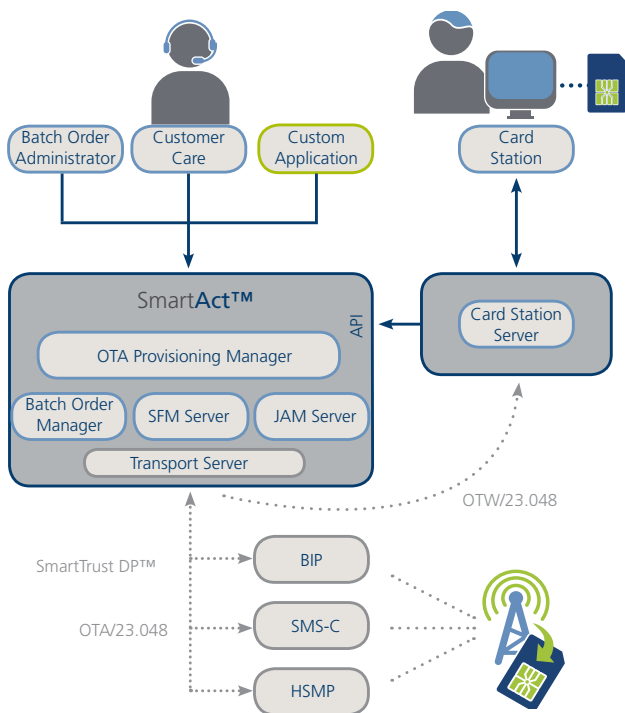
SmartAct provides the necessary functionality required for OTA SIM Management. This includes; clients, such as campaign tools or point-of-sale; and interfaces to back-office business support systems, like billing and customer care requiring OTA SIM management actions.

The SmartAct OTA server receives service requests from these clients and back office systems. It verifies that the requests are correct and composes the OTA request as short messages. The structure of these short messages is in accordance with the 3GPP Remote File Management (RFM) standard or alternatively following the specific SIM supplier's proprietary over-the-air protocol implementation.

The OTA server retains an image of the SIM card contents in the database. The image is continuously updated to reflect all changes.

SmartAct utilizes the SmartTrust DP messaging capabilities. All message delivery methods in the SmartTrust DP are available for SmartAct including via SMS-C; directly via SS7; and direct IP sessions with the SIM utilizing BIP. The SmartTrust DP can intelligently choose IP message delivery based on handset and SIM capabilities.

The Over-the-Wire (OTW) method utilizes the OTA server to download short messages over a secure internet connection to a SIM card via a card reader (normally utilized by Point-Of-Sales).



## Features

### Java Applet Manager

Java Card applets (either stand-alone Java SIM Toolkit applets or Java plug-ins) are managed by the JAM server. Key features of JAM include:

- Version control
- Seamless management of vendor specific applets
- Support for installation parameters
- SIM file database image
- Request validation in Application Program Interface (API)
- Query API
- Runtime adaptation to vendor specific RAM implementations
- Synchronization

### Subscriber Provisioning

- High Level Interface with Advanced business logic to simplify instant OTA operations while provisioning/enabling the subscription in the network to make sure the subscriber has the latest applet/wiblet-updates
- Customer Care Agent (Web based) tool to simplify subscriber support

### Advanced OTA Service

- Formatting of OTA messages according to the appropriate OTA protocol.
- Configurable queues / buffer to ensure constant load on the SMS-C. The queue value can be set according to the SMS-C channel's capability.
- Proof-of-Receipt can be requested for SIM command execution receipts.
- Cancel download requests.
- Upload file data from SIM card content OTA. (Only for Proof of Receipt enabled SIM cards)
- Activate and deactivate subscriptions. Download subscription parameters as well as populate subscriber information in the database.

### Batch mode

- High performance remote update of large series of SIMs
- Support for large updates for the whole subscriber base in one operation or to an easily defined subset of subscribers
- An advanced throttling mechanism is available to configure the download rates in order to control the download speed as well as running multiple batch jobs simultaneously.

## Related SmartTrust Products and Services

### SmartTrust Broker™

Performs RAM operations on Security Domains according to the GlobalPlatform standards including Supplementary Security Domain creation, loading and personalizing applications as well as allocating keys.

### SmartTrust Certified™

SIM card certification, ensuring correct implementation of SmartTrust Wib™, RFM, RAM and S@T. The certification program is open to all SIM card vendors

### SmartTrust DP™

The OTA common platform to manage all of the equipment in your subscribers' hands. With a full range of management tools, it supports your special needs for scalability, performance, reliability and interoperability. The cornerstone of the SmartTrust SIM and device management portfolio.

### SmartProvisioning™

The product for comprehensive device management for all your subscribers. SmartProvisioning manages the entire device life cycle from automatic detection, initial configuration, continuous settings provisioning and diagnostics to terminal retirement.

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