

The trend in computing over recent years has been towards small machines and “distributed processing”. In simple terms, it means delegating tasks to many small computers rather than having everything done in large, centralized machines. Over time, smart cards, also known as Integrated Circuit Cards (ICCs) will put personal computing power into the hands of every one of us. Smart cards are secure, compact and intelligent data carriers.

Smart card can be viewed as a tiny personal computer, minus screen and keyboard. From Sankhya’s perspective, Smart Card has a great potential and wider applicability in various industry segments.

Market Segments

Smart Cards can be used for various applications for different market segments where there is a need of maintaining secure and personalized information with individuals to automate and reduce complex processes and procedure.

Sankhya develops robust, secure, scalable and high performance solutions for the following industry segments and applications.

Government

- Citizen ID cards
- Advanced driver’s license registration
- Voter registration cards

Financial Services

- Electronic money and E-commerce
- Secure remote banking access
- Electronic signature and verification

Travel and Transportation

- Ticketless airline boarding
- Tunnel access monitoring
- Highway & Bridge toll collection

Telecommunications

- SIM Cards
- Internet access and payment

Health Care and Health Insurance

- Medical profiles and treatment applications
- Health and benefits applications
- Hospitals

Education

- Administration
- Library function and book stores
- Access control



Smart Card Solutions



Innovations for a SMART future

Smart Card Solutions

Frameworks

A Smart card framework provides a mechanism to abstract the details of interacting with smart card and smart card readers. Standardized application platforms and easy-to-use frameworks to communicate with smart cards of any flavor and card terminals of any make are key factors for implementing smart card-enabled solutions and smart card-based services.

Sankhya has the expertise in working with PC/SC, a smart card framework for communicating with Smart Cards from Win32-based platforms for personal computers, and OpenCard framework which is an open standard that provides interoperability of Smart Card applications across POS, desktops and laptops etc.

Platforms

Among various platforms existing in Smart Card technology, Sankhya specialized in the following Multi Application Card Operating Systems (MACOS),

- Java Card
- MULTOS
- Windows for Smart Card (WfSC)

Multi-application operating systems allow the development of multiple applications that run on one card. Ideally the on-card applications can't interfere with each other and are protected by a firewall.

Sankhya demonstrated its capabilities in developing comprehensive integrated solutions for various industries using Java card, MULTOS and Windows for Smart Card platforms using both PC/SC and OpenCard Frameworks.

Software

Smart Card solutions require the power of host side computing and card side computing. Applications residing on Host computers provide the back-end computing and interface for the users. Card side applications, which reside on the Card, will provide security, storage and card level computing.

Sankhya has expertise in developing both Host Software and Card Software and can develop comprehensive Smart Card solutions.

Card Types

Sankhya developed solutions using Memory Cards, Processor Cards, Optical Cards and Biometric Cards using above platforms and frameworks as per the industry and applicability. These solutions are developed using both Contact Cards and Contact-less Cards.

Standards

In order to comply with the requirements like cross border inter-operability, multi-vendor sourcing and useful operation of the card throughout its life there are various international standards existing in Smart Card Technology. There are many standards, specifications and recommendations for smart cards. Some of them come from recognized international bodies such as ISO. Some come from industry organizations such as financial institutions; some come from companies that want their products set the norms; some are de facto standards.

Sankhya has the full understanding and knowledge about the following standards to develop Smart Card applications.

Common Criteria - The Common Criteria represents the outcome of a series of efforts to develop criteria for evaluation of IT security that are broadly useful within the international community. (Website: <http://www.commoncriteria.org/>)

EMV - Europay, MasterCard and Visa worked jointly over the last few years to develop specifications that define a set of requirements to ensure interoperability between chip cards and terminals on a global basis, regardless of the manufacturer, the financial institution, or where the card is used. The latest version of the specifications, EMV 2000 version 4.0, was published in December 2000. It is envisaged that the specifications will in the near future be supplemented with support for lower voltage cards and a definition of a contact-less interface to EMV chip cards. (Website: <http://www.emvco.com/>)

GSM 11.11 & 1.14 - Global System for Mobile Telecommunications standard (Website: <http://www.etsi.org/>)

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