

Internet Smart Card

The smart card architecture of the future



The new Internet Smart Card from Giesecke & Devrient is setting new standards in smart card architecture. This prototype development gives end users convenient access to the data stored on the card, which makes using the card's applications easier.

What is the Internet Smart Card?

The card functions as a Web server, making it an active Internet participant.

- Its content is stored as a Web site.
- The Web server is also capable of generating dynamic HTML pages (CGI, Servlets)
- Communication between the card and PC (browser) takes place via a simple USB reading unit instead of a sophisticated card reader

Internet technology

The Internet Smart Card uses the TCP/IP Internet protocol. Data is edited by the card in HTML format so that it can be displayed on any PC using a browser.

Thus, the card determines the layout of the data being displayed.

Other browser-based applications use the specifications provided by the middleware when displaying data.

The Internet Smart Card prototype has the advantage of displaying data using the same layout on every PC, thereby achieving maximum flexibility.

High user acceptance

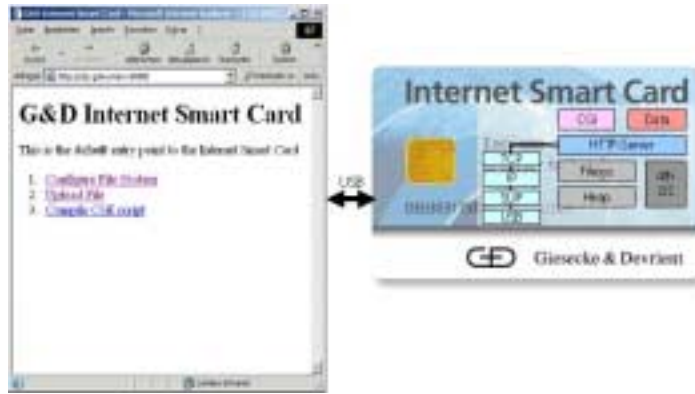
- No need to install new user programs. (The required Browser is provided with the PC's operating system.)
- Cost of procuring special – and therefore expensive – card readers is eliminated. Only minimal expense for USB contact unit.
- The Individual data is “portable”, allowing access to it on any standard PC.

High acceptance among card issuers

- Lower administrative costs
- Reduced roll-out costs (conventional card reader unnecessary)
- Application of standards
 - Teleprocessing network
 - Internet Explorer
- No need to install card readers, drivers, or middleware



Giesecke & Devrient



Technical data

Chip

Prototype:
SLE 66 CUX 640P

Product version:

- 32 bit CPU
- USB 2.0
- 400k EEPROM
- 16k RAM
- 66 MHz

Software

- Future operating system based on JC2.2 and following features: Multithreading, Full Garbage Collection, string functionality, TCP/IP and USB
- The card's main application is a Web server
- Web applications can be implemented based on common standards
- Web applications may also contain Servlets, enabling them to generate dynamic HTML pages

Internet protocols

The Internet Smart Card supports the following protocols:

- HTTP
- XML
- TCP/IP
- SLIP

Storage formats

- Static HTML pages (information in text format)
- Lists and spreadsheets
- Databases (structured information)

Communication

- Full-speed USB interface

Security

- typical Internet security algorithms, such as user authentication and SSL (secure socket layers)

USB contact unit



- Transmits data between card and browser
- Elementary technology
- Handy size
- No driver necessary

Possible uses

- Health care cards
- Public transportation
- Airline tickets
- Bonus programs
- Library
- Registration
- Access control
- ...

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