

New chip card architecture is enabling highly secure communication between users and providers of Web-based services.

Attempts to steal the identify of Internet users such as phishing, pharming, redirecting and man-in-the-middle attacks can now be prevented with the Internet Smart Card.

Users of Web-based services such as online banking, e-learning, VPN, etc. who connect using the Internet Smart Card can be secure in the knowledge that they are communicating with the provider of their choice and have not been redirected or manipulated in any way.

Until now there has been no simple and user-friendly solution that ensures highly secure communication between a PC and the smart card world. Most smart cards require users to install a whole range of software and hardware on their computers before they can use them. That means not just more work for card users, but higher administration costs for card issuers. And because technical solutions vary from provider to provider, it can also mean carrying out several installations in order to comply with different providers and types of solution.

Our priority when developing the Internet Smart Card was to create a solution that was both user-friendly and eliminated the need to install additional hardware and software. The card even controls the configuration of network components and the TCP/IP stack.

We have integrated the high-security features of smart card technology in the IT world using common Internet standards. The smart card uses state-of-the-art technology and supports existing software components as well as communicating via the PC's USB interface. Accessing websites and services on the Internet, for example gaining access to Web portals, accessing company networks or simply backing up data, is now fast, easy and secure.

Internet Smart Card

The Internet Smart Card sets new standards in smart card architecture. It allows secure and easy access to web-based services such as Internet banking or closed user groups, as well as to corporate functions without the installation of additional software (The world's first plug & play Smart Card!).



Some Benefits of the Internet Smart Card

- Very easy to use
Reduces administration costs
- No need to install user software, drivers or middleware (plug and play)
- Increases security through secure storage of login details and SSL/TLS encryption
- No need to purchase special expensive card readers
- Uses standard software (available on any PC)



Security to go - the "WebServer on Board" Unique 2-way Repudiation

What is the Internet Smart Card?

The Internet Smart Card is a web server, in other words an active Internet participant.

- The information content can be displayed in website format
- WebServer can generate dynamic HTML pages (CGI, servlets)
- Data security can be ensured through SSL/TLS
- Card and PC (browser) communicate directly via PC's USB port
- The card is a full member of the LAN
- The Internet Smart Card guarantees secure Internet access

Benefits for the card issuer

- Reduced administration costs
- Less roll-out expenditure
- Uses standard Internet technology
- No installation of card readers, drivers or middleware required
- No user training required

Benefits for users

- No need to install new user software (the browser comes with the PC operating system)
- Top security when accessing web-based services (accessing portal operators)
- No need to purchase special expensive card readers
- The individual data and stored applications are transportable (USB token) and can therefore be used flexibly on any standard PC

WebServer on Board

The new card works like a portable Web server. The information it contains is stored in classic website format (HTML). The WebServer itself can generate dynamic HTML pages (servlet), which means the card determines the layout of the data displayed, in contrast to other browser-based applications, which use middleware settings to display data.

The data stored on the card, for example login details, can be called up and edited at any time and from any PC (with a preinstalled Internet browser), depending on the user's access authorization. The only software required on the PC is standard software found on any PC operating system.

What's more, you can use the Internet Smart Card to access the contents of Web portals. The Internet Smart Card controls the login procedure and security is ensured through SSL/TLS technology. The Internet Smart Card acts as a genuine network device and autonomously encrypts the entire data transfer with the service provider. Direct communication with the external server ensures that no sensitive data ends up on the PC.

Communication between the Internet Smart Card and the PC (browser) takes place via the powerful USB protocol. Traditional card readers and card driver software are not required.

The finalized product will have a latest-generation operating system based on a multitasking kernel with extensive additional features, including:

- Multithreading, for loading pages fast
- TCP/IP protocols for easy and uncomplicated integration into the IT-environment



The card also includes a hierarchical file system, storage management and a communication interface with its own network address. Data security is ensured through SSL/TLS encryption, which is commonly used on the Internet. The hardware platform is a chip with 32-bit processor, crypto coprocessor and USB 2.0 Full Speed interface.

INTERNETsmartcard Technical Information

Card token technology

- Handy size
- No drivers required
- Optical personalization: name, personal number, etc.
- Lettershop capable

Internet protocols

The Internet Smart Card supports these protocols:

- HTTP/HTTPS
- TCP/IPHTTP/HTTPS

Interface support

The card can use both user interfaces and machine interfaces

Communication

- USB 2.0, Full Speed
- RNDIS alternative CDC Ethernet
- ICMP, WINS, DNS
- ARP

Chip

Uses latest 32-bit technology with USB 2.0 and 24k RAM (minimum requirement)

Security

Standard Internet security algorithms

- SSL client authentication
- SSL server authentication
- HTTP user authentication

Software

- Multitasking kernel-based operating system with
 - Multithreading
 - TCP/IP interface
- Central application on the card is the WebServer
- Web application can be implemented on the basis of a servlet engine using common standards
- Servlets can use HTTP or HTTPS connections depending on security requirements
- Servlets can accept secure connections to remote application servers
- Integrated web client for downloading of information from the Internet

Application options

- Secure web access
- Single Sign-On
- Loyalty and bonus software
- Access control
- Health cards
- VPN replacement
- e-learning
- Internet banking
- Corporate ID
- e-voting
- Authentication Gateway

Data storage

- Hierarchical file system
- Rights management for Servlets