

Super-smart USB card delivers rich multimedia content

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A powerful new platform that delivers high computing power and high channel capacity could help meet consumer demand for multimedia content via PCs, interactive TV and mobile phones. The FULL SPEED project that developed this platform created an innovative solution based on USB high-speed communication techniques. This smartcard connectivity uses the high-throughput channel USB 2.0.

FULL SPEED's capability permits the direct embedding of critical applications in smartcards such as Pay TV, on-the-fly digital signatures, on-card stream processing of data such as Web content, audio (MP3) or video data (MPEG2), and Web access. The platform opens up a realm of possibilities.

“Due to the feasibility of direct integration of advanced streaming and deciphering functionalities in the USB FULL SPEED platform we could manufacture a set top box at a very low cost,” project coordinator Alain Couchard explains. “We could also reproduce the concept of a digital video broadcasting common interface in mobile handsets or smart phones, providing device independence for value added applications such as mobile TV broadcast.”

An open 32-bit multi-protocol chip card, based on a powerful CPU and a Java Operating System, performs multimedia applications and cryptographic tasks such as supporting public key infrastructure, conditional access or data rights management.

Couchard says end-users stand to benefit from the FULL SPEED platform thanks to trusted access to multimedia applications, enhanced security and privacy of personal data and identity credentials. From the regulatory and content distribution industry point of view, benefits include end-to-end security and easier service management by direct linking of the end application to the user identity.

The successful ‘on-card streaming video’ demonstration during the final project review showed the high throughput capability of the USB FULL SPEED-enabled smartcard. A video stored on a server was encrypted with a key, exchanged every 10 Mbytes, and then sent to the terminal using the ethernet port. The FULL SPEED smartcard directly decrypted the data using the FULL SPEED USB interface, which then sent the data to the terminal for viewing.

“This will surely open new use cases in consumer electronics, home-networked and mobile communication applications,” says Couchard.

The next step for them is industry adoption of this new smartcard interface for high throughput channel connection in the mobile communication environment and PC market.

Source: [IST Results](#)

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