BEE — Result In Brief

Project ID: IST-1999-20078
Funded under: FP5-IST
Country: Greece

Biometrics enhance smartcard and PKI security

*Researchers are investigating biometrics as a means to enhance existing security technologies of Public Key Infrastructure (PKI) and smart cards with a view to satisfy security needs, such as e-banking, e-government and e-health applications.*

Increased security needs nowadays call for stricter identification, authorisation and confidentiality measures. Passwords, PIN numbers, recognition of fingerprints are new methods that banks, health centres and government institutions are willing to use in order to secure their operations and gain customers' trust. Although, the sole use of PKI and smart cards can prove effective in their daily operations, combining the two with biometrics may prove an even more successful security solution.

Smart cards are an evolutionary step - technology wise, above the older versions of swipe-cards, barcodes and magnetic stripe technologies. Even though they include secure memory modules, it is still possible to breach security to uncover the user's biometric template, despite the smart card’s advanced architecture. This is why an embedded crypto-processor is inserted in the card to increase the both security levels and confidence in the architecture. The PKI authentication procedure for gaining access to the private key, may also prove vulnerable, as it does not always correctly verify the identity of the person in question. Biometrics however guarantees increased efficiency for both technologies.

The developers believe that biometrics can enhance security in the authentication procedure for using the private key and for binding the certificate stronger with its owner. Instead of a just a mix of PKI-smart card with fingerprint recognition, banks, governmental and health sectors could use signature verification and voice recognition systems for identifying their clients, employees or patients.

It is essential to enlist terminal vendors, system integrators and dominant smart card manufacturers to ensure the successful mass integration of this technology. The production of biometric products will increase their market share, revenue and profit and will grant them knowledge and expertise.

Business markets should therefore focus in strengthening their relations with the above in order to gain access to the technology and overcome technical, legal and standardisation barriers. The use of proper methodology and project management standards is essential in avoiding market risks. This powerful combination of smart cards, PKI and biometrics will render optimism in meeting with and satisfying the customer’s security needs.

Related information
Report Summary

Business strategies for a successful biometric deployment in the banking, health, government and e-commerce sectors

Subjects

Economic Aspects - Information Processing and Information Systems - Innovation and Technology Transfer

Last updated on 2005-09-18
Retrieved on 2019-08-10

© European Union, 2019