

Description of an innovative Belgian e-government application: The eID Card

1. e-government application summary description

The Electronic Identity Card (eID Card), is a smart card that provides strong authentication and digital signature capabilities for Belgian citizens. In October 2002, the Belgian government launched the project and in less than 3 years, approximately 2 million smart cards have been issued. By 2009, all Belgian citizens over the age of 12 will have their own eID card. The card is used to secure applications ranging from online income tax returns and medical scheduling, to online applications for a "Certificate of Residence" and safe chat rooms, plus private sector applications such as online banking.

2. The objectives of the eID

The eID has two main objectives:

- to give Belgian citizens an electronic identity card enabling them to authenticate themselves in various applications, and
- to create digital signatures.

Through its powerful authentication mechanism, the eID enables transparent and secure access to government information and services irrespective of the service provider (local, regional, federal government or private sector).

In addition to strong authentication, the card also provides a "qualified" digital signature. This feature enables e-commerce (signing legally binding contracts) and non-repudiation, as well as the integrity and confidentiality of any exchange of information.

The eID increases citizens' overall trust not only in e-government, but also in online transactions in general and as such it is a key element of our knowledge-based economy.

3- Main functions and features of the e-government application

The eID is a fundamental building block in the security architecture of a "connected government", where several departments within one government and various other departments are able to exchange personal or enterprise-related confidential information.

Like a "regular" identity card, the eID card contains visual information that uniquely identifies the holder (picture, name, birth date, card number etc.). However, it also stores standards-based (X509v3) certificates to enable the strong authentication required by various online applications, and to create a digital signature. Through its use of innovative PKI (Public Key Infrastructure) technologies and open standards, the eID is easily integrated into custom-built as well as off-the-shelf applications.

The main physical features of the eID card are:

The eID card consists of a secure physical section and an electronic section (a chip). Counterfeit-proof details are engraved and printed on the plastic surface. The contact chip is embedded and glued into the plastic layer. The card is made of polycarbonate material and its "ID1" size is identical to a credit card.

Chip functionality

The chip is a JavaCard with a crypto-processor that performs basic cryptographic operations (RSA and DES). The cardholder's key pair (public and private key) is generated on-chip and only the public key is accessible. The use of the private key is protected with a PIN code. In the personalisation phase, the public key is entered into two certificates signed by a government-approved "certificate authority". The certificates have a standard format (X509v3) and in addition to the public key, contain the name and national registry number (unique personal identifier) of the cardholder. The eID card contains a minimal set of personal data so that the individual's privacy is protected in the event of theft or loss.

The eID card functions as a key-holder to access decentralised confidential information in an online world.

4- Impact/results

In less than 3 years, approximately 2 million smart eID cards have been issued. By 2009, all Belgian citizens over the age of 12 will have their own eID card, making a total of over 8 million cardholders. The Belgian government has not only developed middleware to enable the large-scale deployment of low-cost eID-compatible smart card readers, but has distributed more than 125,000 readers to youngsters receiving their first eID card at the age of 12. This programme has resulted in a substantial reduction (> 50%) in the price of entry-level smart card readers.

In conjunction with the private sector, the Belgian government has also launched initiatives where the eID is used to secure chat rooms visited primarily by children. It has also supported developer roadshows to promote the integration of the eID card in e-government applications. This has resulted in an eID-compatible application portfolio ranging from online income tax returns to online medical scheduling, as well as online applications for various certificates, including a "Certificate of Residence", and private sector applications such as online banking.

The Belgian eID card is the largest deployment of smart card-based identity cards in Europe and is often viewed as the benchmark for such programmes. This has led to multinational corporations creating "Centres of Excellence" in Belgium to explore the technological and organisational requirements for successful, large-scale smart card projects.

5- Key issues

The key issues in defining and implementing the eID card were:

- The legal and regulatory framework for enabling the use of the eID card in online applications (government and private sector)
- Communication to citizens (benefits, how to use the card, etc.) and businesses (benefits, how to integrate the card, etc.)
- Privacy. To find the right balance between the ease of integrating the eID card into applications (enhancing the tangible benefits for citizens) and protecting cardholder privacy.
- Resources at local government level. As it was a new process, issuing the eID card required more time and more staffing resources than the previous identity card. In turn, this has resulted in higher operating costs at a local government level.

6- Target audience and public response

An identity card is mandatory for all Belgian citizens over the age of 12. Full roll-out to the whole target audience is scheduled for 2009 (8 million cardholders). Over time, the eID will also incorporate a digital driving licence and the features of a social security card.

Overall public response has been positive. The form factor is more practical than the previous one and the card can be used in a wide variety of applications. The public's response has been one of increased trust in e-government applications and online transactions in general.

7- Lessons learned

The success of a smart card-based identity card relies heavily on the availability of applications. The mandatory aspect of our eID card guaranteed a potential user base of 8 million people. In turn, this created a business case for hardware (smart card readers) and software developers to integrate the eID card into their applications. The major computer companies now incorporate eID-compatible card readers as part of their local portfolio. This leads to a more robust and better supported infrastructure.

Application availability (both government and private sector applications) is the key element for success of this type of project.

. Web address for the application: www.eid.belgium.be

· E-mail address of a person who can provide more detailed information: hugues.dorchy@fedict.be, eID program manager, FEDICT (Federal ICT, Belgium).