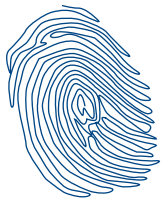


## The eID in Belgium



In 2001, the Belgian government decided to issue an electronic identity card to all citizens as part of a programme to improve and modernise its e-government services. To put this ground-breaking project into action, in 2002 the National Register asked Zetes to design, produce, and personalise the Belgian eID. Over the years, the contract was extended to other types of cards, and it was renewed in 2018 following another invitation to tender issued by the Ministry of Interior. Since 2019, Zetes' services also include the issuing of the authentication and signing certificates contained in the chip of the eID.

When the National Register launched its modernisation programme, it was probably the most ambitious and wide-ranging electronic identity (eID) card projects in the world, with the aim of equipping every citizen of the Kingdom aged over 12 with an eID allowing the use of e-government services. At that time, no other country had ever launched an initiative on that scale. Today, an electronic ID is also issued to foreigners living in Belgium and to children under 12. As an essential tool for the interaction between citizens and the authorities, the eID is also used to secure online transactions and facilitate commercial exchanges via electronic means.

### **A trusted partner, able to respond to technical and security requirements**

One of the biggest challenges in deploying the eID was to appoint a competent partner capable of handling all the phases of the project.

The production of ID cards requires a high level of security, because it involves handling sensitive data concerning citizens. The Belgian authorities chose Zetes for its exper-

tise in the implementation and management of the extremely secure production and personalisation phases. Convinced by the company's expertise, they chose it to supply polycarbonate cards, personalisation services, and the secure delivery of these documents to the municipalities.

The first cards were issued just five months after the contract was awarded, following a pilot phase conducted in 19 of the 581 Belgian municipalities. After this first success, the project was deployed nationwide in 2004. In view of all the requirements involved in implementing the project, completing it within the deadline was a real feat. Within three years, every citizen received a new eID. Since the cards at that time were valid for five years, the first renewals started in 2009. A second renewal phase began in 2014, and the validity period of the cards was extended to 10 years.

## Other national identity documents

### The residence permit

In 2007, Zetes was also chosen to produce and personalise residence permits for non-European residents. This document is visually different from other types of Belgian ID, because it must comply with the specific European uniform model for this type of card. Nevertheless, it too incorporates a laser-perforated image, which provides a certain uniformity to all Belgian ID documents. The residence permit for non-European residents contains high-level security features and information, making it a member of the very exclusive group of secure Belgian ID documents.

### The Kids-ID

In 2009, the Ministry of Interior approached Zetes about producing and personalising electronic ID cards for Belgian children under the age of 12. This ID is not mandatory, and is used mainly as a travel document valid in European countries and a few other countries with which Belgium has signed bilateral agreements. Because a child's face changes more quickly than an adult's, the Kids-ID is valid for only three years.

With the renewal of the contract in 2018, the Kids-ID was also updated. With a new design, harmonised with the design of the eID, it was changed from PVC to polycarbonate in order to improve its durability and security. Just like its older sibling, it has two electronic chips, but fingerprints are not stored here.

Like the eID, the Kids-ID is used as a social security card. Children who do not have a Kids-ID automatically receive an ISI+ card, which fulfils this same function. This card is also produced by Zetes. People who work in Belgium, but do not reside there, also receive it.

### Ultra-secure production

The identity card production process involves the handling of sensitive data concerning citizens, and therefore a production environment that provides the best possible guarantee of both physical and data security. In addition to ISO 27001 certification, our site benefits from the highest security certification level awarded by NATO. Moreover, everyone who works on it must undergo in-depth screening by the government security agency. The various mechanisms in place are continually re-evaluated and improved.

### Back-up site

To ensure that production can take place uninterrupted, even in the event of a major incident on the main site, an emergency back-up site is operational at a different location. It is equipped with everything needed to continue producing Belgian ID documents. This secondary site also allows upgrades to be carried out on the main site, without the need to interrupt production.

## Tremendous flexibility and high service levels for delivery times

Since 2012, with its ZetesExpress service, Zetes has been handling the delivery of ID cards to the 581 Belgian municipalities. This service guarantees extremely fast delivery, so that urgent deliveries can take place the day after the request.

### PPP model: payment per document and initial investment paid by Zetes

The contract for the Belgian eID is a PPP-type agreement (Public-Private Partnership). According to the terms of this agreement, Zetes is committed to paying the initial costs for the implementation of the whole project infrastructure. The reimbursement of these costs over time is calculated based on the annual volumes of documents to be issued. The advantage of this model is that it requires no initial investment from the government.





An electronic identity document that provides high levels of protection

The Belgian ID card offers the best possible security features for both physical and electronic use. With the new card in 2020, they have been made even stronger.

Card body

The card body incorporates several security features, starting with the material itself (the card is made of polycarbonate). Certain characteristics, such as the embossing and the microtext, allow an initial tactile and visual check to ensure that the document presented is not counterfeit. The patented ImagePerf/Rev technology combines a reproduction of the bearer's photograph with laser perforations. It is totally unique, and was developed in collaboration between Zetes and IAI, manufacturer of personalisation machines. Its use for the Belgian eID is a first, and contributed to the Belgian identity card winning the "Regional ID Document of the Year" award at the High Security Printing show in 2020.

Digital chips

Because it is designed for electronic use, the Belgian eID contains two chips. The contact chip is for user authentication and to sign digital documents. The main purpose of the contactless chip is to enable the card to be used as a travel document. These two chips have very high-level security, particularly thanks to the use of cryptography.

With the new card, switching to an elliptical curve has reinforced the security of the contact chip even more, with more robust algorithms to protect the certificates.

Photograph: the central security feature

When attempts are made to produce counterfeit documents, the photo is the feature of the card that is most often targeted. That is why it is reproduced in several locations on the document, whether physically or electronically.

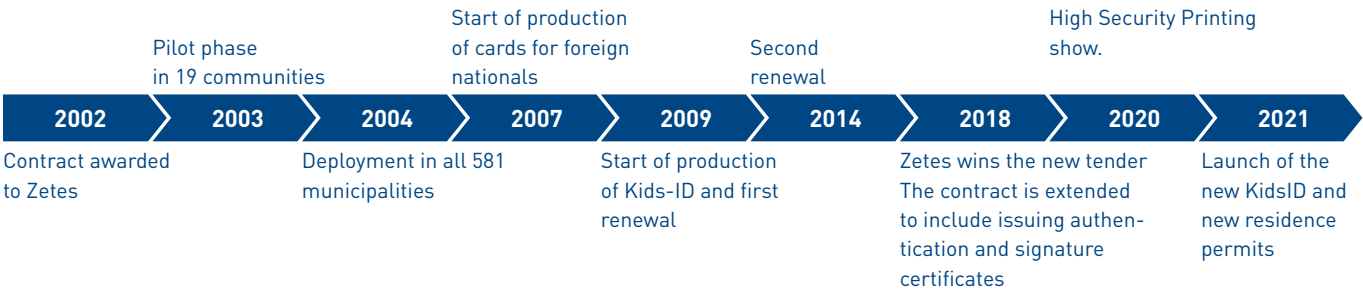
Fingerprints

Another innovative feature of the card: the incorporation of the holder's fingerprints into the contactless chip. This biometric data provides added effectiveness to the fight against identity fraud.

Key facts & figures

- 2 million cards issued per year
- Nearly 40 million cards issued to date
- Build, Operate and Transfer (BOT) contract
- First cards issued only 5 months after the agreement was signed

Key project dates



New card goes into circulation Winner of the "Regional ID Document of the Year" award at the High Security Printing show.



## Protecting citizens' personal data: essential features of the Belgian eID

Security is a central concern in any eID project. Zetes has obtained ISO 27001 certification for the production and personalisation of identity and travel documents. ISO 27001 is the only internationally-recognised standard defining the conditions of implementation of an Information Security Management System (ISMS). Zetes' accreditation provides the best possible guarantee that citizens' data is processed in compliance with the most exacting security standards.

The citizen has access to the data collected by the authorities, and can control who may view this data, and when. The eID therefore also contributes to strengthening data protection.

## Zetes has set up an ultra secure production and personalisation site

### ICAO and eIDAS: compliance with international standards

Originally intended for citizen authentication inside national borders, the function of the ID card itself has evolved over time, and must now satisfy a number of international standards.

At a European level, the purpose of the eIDAS regulation is to establish a trust framework for secure electronic transactions throughout the European Union. It determines how digital authentication and signature certificates must be issued in order to be recognised in other EU countries. In 2018, Zetes' ZetesConfidens division was declared compliant with eIDAS standards. Since then, it has obtained the status of Qualified Trust Services Provider (QTSP).

Internationally, the alignment with International Civil Aviation Organisation (ICAO) standards has ensured that the eID is accepted as a travel document. The photograph and the contactless chip are the main elements of the card that are relevant to this compliance.

### The digital component: a mission in its own right

#### Citizen certificates: authentication, signature, and eHealth

Since the new contract was signed, Zetes' responsibilities have broadened to include the digital component of the card. Through its ZetesConfidens division, Zetes is able to issue authentication and signature certificates from the contents of the contact chip. These services are based on the implementation of a Public Key Infrastructure (PKI). These certificates are essential, in particular for the implementation and management of eGovernment projects such as TaxOnWeb. Citizens may also use their eID to look up their personal file in the National Register, file a police report, etc.



In addition, for the last few years, the eID has served as a social security card (formerly the SIS card). To do this, a new feature was added to the contact chip, requiring the issuing of additional certificates (eHealth certificates). Used in the public health sector, these certificates allow the card bearer and healthcare providers to interact with the eHealth platform and look up the citizen's medical insurance or disability benefit information on line.

#### eTravel

A contactless chip has been incorporated into the eID so that the card can be used as a travel document. This component required the use of a PKI entirely devoted to protecting the personal data on the chip, and this too must comply with ICAO standards. The PKI chosen by Zetes for all of these operations, from the card's "citizen" functions to its eTravel features, is EJBCA by PrimeKey. The infrastructures operate 24/7, so that certificates can be issued, suspended, or revoked at any time in case of loss or theft of an ID card.

The fact that the card can be used as a travel document made it necessary also to implement an exchange protocol between EU countries. This must, for example, allow other EU countries to check fingerprints thanks to the exchange of the certificates' public keys. This is the European SPOC, equivalent to the National Public Key Directory system already in effect for passports.