



Gemalto and the Traveler Identification Program (TRIP)

Securing the weakest links for a safer travel experience



The right time for the Traveler Identification Program initiative

Travel documents confirm the identity of persons and enable seamless and secure international travel but are only as satisfactory as the identification-related systems behind their production, issuance, control and inspection.

The International Civil Aviation Organization (ICAO) considers a new global approach, the Traveler identification Program (TRIP) initiative, a framework for security and facilitation, bringing together border controls, travel document security and identification management.

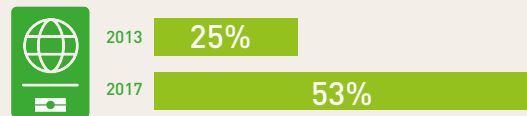
With robust electronic travel documents widely deployed worldwide, ICAO is focusing its efforts on the major links of the traveler identification program, from the identification of a travel document application to the issuance process and the inspection systems.

To guarantee a smooth progression to more comprehensive traveler's identification and ensure full interoperability compliance, it is important to select partners and suppliers with long-standing experience of the travel market and a proven track-record in identity related-systems.



As experts of both documents and related solutions, Gemalto strongly supports this initiative and shares the vision that there must be a global fight against fraud by securing all the links in the security chain.

Gemalto is one such supplier, active in the ePassport market since 2005. The company provides technologies and services to over 25 national ePassport programs and border and visa management projects, over 80 ID-related government programs around the world and is geared up to help you succeed in your project. The company offers a comprehensive solution to bring a country's documents and infrastructure up to the level recommended by ICAO, implementing best practices and deploying proven technology to help secure borders and citizens.



25% of all passports were electronic in 2013. 53% will be electronic in 2017.

109 countries are issuing ePassports
 650 million were in circulation at the end of 2014 (source ICAO)
 44 countries are now part of the Public Key Directory
 1 billion passengers travelled in 2013 without their passport being checked in the Interpol Lost and Stolen Documents Database

In 2014, electronic travel documents are deployed worldwide

The future of travel documents

The International Civil Aviation Organization is currently working on the next evolution of the ePassport standard, which was initially implemented in 2005.

This future version will introduce the ability to add data to the electronic component of the passport post issue, in order to load and read information such as biometric data or electronic visas and entry/exit stamps during its lifetime. This storage area, also known as Logical Data Structure version 2.0 (LDS2) is to be standardized in early 2016.

LDS2 will further enhance the benefits of modern, integrated visa management and border management systems. It is a huge opportunity to expedite inspection while also enhancing security by enabling immigration

officers to quickly and efficiently check passengers' visa and travel history by retrieving data from the chip. Because ePassports are contactless documents and in the hands of close to 600 million travelers as of today, LDS2 can do much more than transform visa and border control ecosystems. For example, airlines could use biometrics to securely grant access to their VIP lounges or use a passenger's travel history for more targeted communications. Duty free operators could also leverage the passport data for promotional activities. These use cases are of course subject to privacy regulations.

As the industry moves forward, it is clear that all stakeholders have to start considering how to manage and leverage the impending evolution of travel documents and associated systems.



Evidence of identity

The first two key steps are enrolment and identity verification at the enrolment stage. Enrolment is the moment when the travel document that proves an individual's identity is created so there can be no room for error. Many countries around the world are facing the need to improve their enrolment procedures for issuing e-passports.

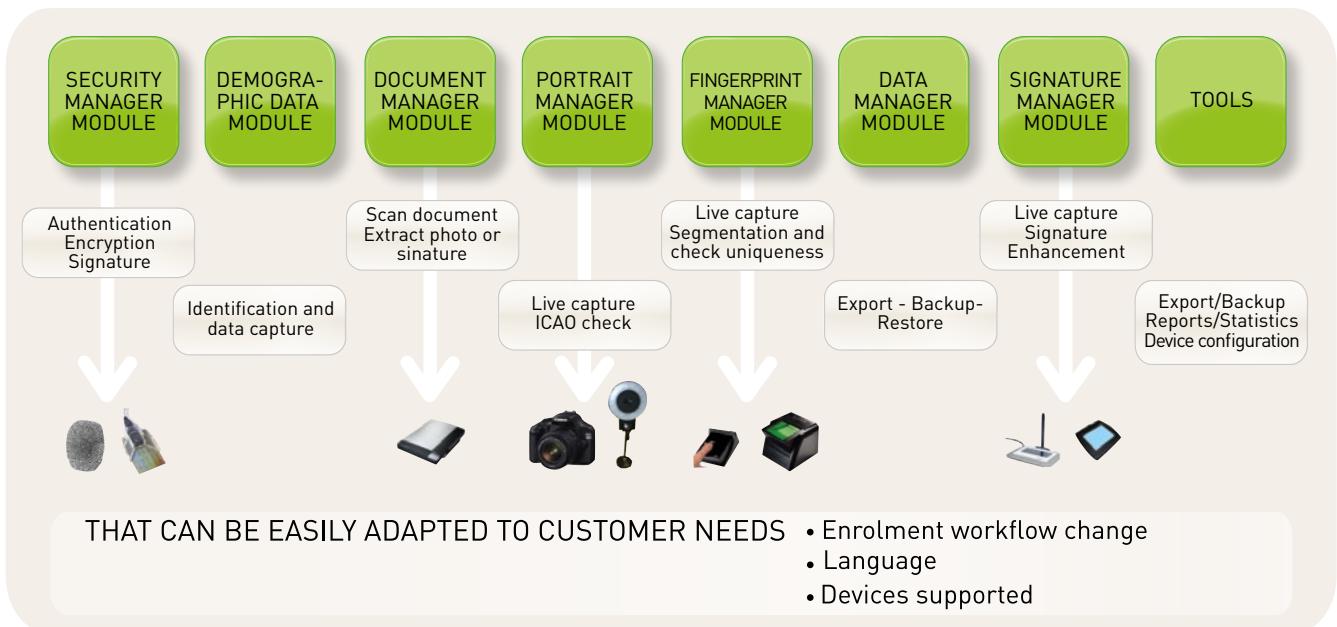
In addition, for most governments the national civil register is the primary way to manage the records of their citizens and is a key matrix in the issuing of different identification documents. A modern national civil register plays an important role in security, by increasing the reliability of information relating to the identity of citizens within a single, central database, and reducing potential identity theft and fraud when issuing breeder documents such as birth certificates.

What is the scope?

- > Making sure the enrolment process is fast, accurate and secure
- > Checking that documents presented during the passport enrolment phase are genuine in order to deliver a new passport to the right person

Why is it important?

- > The use of false identities and fraudulent travel documents are two areas exploited by trans-border criminal and terrorist networks. Passport issuance processes usually rely directly on breeder documents (birth certificate) and/or other national credentials also derived from breeder documents.



What are the weak points?

- > Usually lack of thorough verification of breeder and/or ID documents and face to face process
- > Lack of verification of potential application under a different identity (main type of fraud)
- > Lack of restricted access rights and authorization for data registration and passport application validation, with the risk of bribery. An officer could agree to process an application under a false identity
- > Lack of security of citizen data, which can lead to lack of trust in the system by the citizens

Gemalto Offer

- > Gemalto Enrolment, a secure registration solution with over 100 million people registered
- > Gemalto Document Verification, a distributed software system that automatically verifies the electronic and physical security features of identity documents
- > The Gemalto Gemalto solution for civil registers takes into account a diagnostic of the legacy procedures in place. Gemalto's offer is based on a set of technological building bricks (enrolment, central database, biometric database) each of which can be tailored to the individual needs of each country.

SWEDEN

> Project Scope

- eID Cards and ePassport manufacturing (15 different document types)
- Issuance Service in Stockholm with Gemalto operated services
- Enrolment infrastructure

> Enrolment

- 260 Enrolment Kiosks
- Deployed in 170 Police stations
- 1 Million enrolments per year
- Portrait/Signature/Fingerprint captured
- Enrolment for Driving Licenses with Kiosks & Mobile units





Secure Documents

Secure Documents

Standard set of security features are nowadays too easy to copy and high-end features very often require special decoders (tools) to verify. Gemalto offers a range of strong visual security features that are both easy to verify and difficult to forge.

What is the scope?

- > Designing and manufacturing of ICAO-compliant and highly secure machine readable travel documents

Why is it important?

- > The level of security must be sufficient to deter forgery and make verification as easy as possible at the same time

What are the weak points?

- > Standard set of features that are nowadays too easy to copy such as UV inks
- > Some high features require special decoders to verify

Gemalto has a unique combined expertise in security printing and digital security and offers:

- > A range of secure electronic documents fully compliant with ICAO specifications
- > Strong set of visual security features that are both easy to verify and difficult to forge (such as Gemalto clear window with decoding lens)
- > Highly secure ePassport embedded software, combining security, interoperability and performance
- > An industrial strength on which relies over 25 countries for their ePassport programs

We offer

- > Microprocessor and Operating System
- > Paper or synthetic substrate, with embedded module and antenna, ready to be glued to the cover
- > Polycarbonate page with embedded microprocessor and antenna, and hinge for attachment to booklet
- > Complete booklets, with the microprocessor and antenna either in the cover or in the data page, paper or polycarbonate datapage, blank or with personalized data delivered via our operated issuance services.

2014 INNOVATION

The security printing industry has long pursued to unite the benefits of laser-personalized polycarbonate passport data page with the detail and richness of color photography. Color photo protected with overlay resulted in compromised card integrity, while personalization at the time of manufacturing made issuance entirely inflexible. Now Gemalto makes it possible to print a high-resolution color photo directly inside the polycarbonate data page using postproduction technology. Gemalto Color in Polycarbonate is the first laser printing solution to deliver an unalterable color image combined with the high security and exceptional durability of polycarbonate.





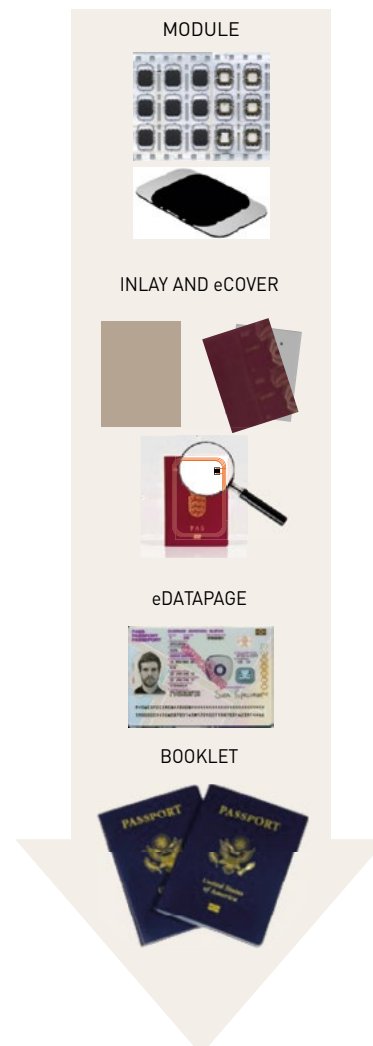
Continuous evolution of Gemalto ePassport secure embedded software

- > Supports all ICAO security mechanisms from PA, BAC, AA, EAC to the latest SAC
- > Common criteria certified on EAL5+ by German and French Governments
- > Availability on new silicon platforms for multisource flexibility
- > Ease of deployment: dedicated support for smooth implementation leveraging international best practices and return on experience and silicon multi sourcing to ensure continuity of supply

Gemalto eTravel Operating System: a long term commitment to speed, security and flexibility

We follow closely standard evolutions to rapidly integrate all new features for speedy time to market such as SAC / EAC v2.10 and LDS 2. At Gemalto, security is a state of mind. We have a recognized industry-leading group of crypto-analysts with over 250 patents in cryptography & security and over 40 products Common Criteria and ITSEC certified, including 20 EAL4+, 2 EAL5+ and EAL7 certifications. We develop our own crypto libraries designed for the needs of the market and with roll-out frequent updates to ensure resistance to latest known attacks.

Our products have been rolled out in over 25 ePassport programs including in particular Algeria, Burundi, Cape Verde, Denmark, Estonia, France, Hong Kong, Italy, Ivory Coast, Korea, Luxemburg, Malta, Moldova, Morocco, Norway, Oman, Poland, Portugal, Qatar, Slovenia, Sweden, Singapore, Sudan, Taiwan, Turkey, the USA.





Document Issuance

Authorities need to make sure that passports are securely issued and delivered to the right holder and that the process is fraud free: from passports stolen in transit, before and after issuance, to issuance and citizen delivery by a corrupted officer/clerk.

What is the scope?

- > Processes to issue documents in a secure environment, by appropriate authorities and ensuring their hand-over to their rightful holders.

Why it is important

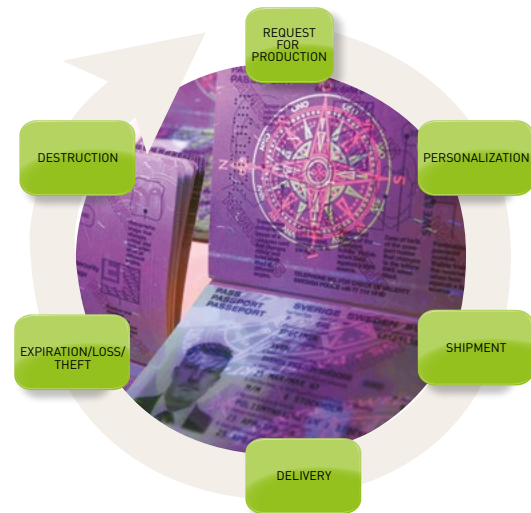
- > Ensure that the passport is securely issued, handed out to the right citizen and that there is no fraud (corrupted officer issuing a passport, passports stolen while in transit - before or after issuance)

Gemalto Gemalto Issuance solution offers end-to-end security with:

- > Traceability of sensitive goods : the blank booklets, finished products and rejects
- > Traceability, confidentiality and integrity of data
- > Restricted access rights to the system
- > Identification of issuing request sources. Public Key infrastructure with country signing and country verifying modules
- > Send certificates to ICAO Public Key Directory
- > Document life cycle management
- > Reports of lost and stolen passports to Interpol
- > Local issuance in a dedicated and secure personalization site operated by Gemalto
- > Highest level of security through encrypted transfer of data between the passport issuer and Gemalto
- > Citizen services such as SMS notifications holders citizens to pick up their passports

Our ePassport issuance solutions are being used in Estonia, France, Gabon, Morocco, Portugal, Singapore, Turkey.

In addition, Sweden, Norway and Denmark turned to Gemalto to set up and manage their personalization centers to provide a complete ePassport product with related personalization solutions and operated services. The authorities are able to draw on Gemalto's expertise and resources, and benefit from local, highly-secure sites. Furthermore, they have just one supplier to deal with for both the production and personalization of documents.



RESULTS WITH PEACE OF MIND GEMALTO SERVICES IN DENMARK



Denmark turned to Gemalto to set up and manage an operation center near Copenhagen for ePassports. The increasing complexity of the technical environment, the difficulty hiring qualified IT and operational personnel and lengthy procurement cycles to upgrade technology were all strong reasons for the Danish Police to outsource to Gemalto. This operated service has freed up national resources from non-core activities such as citizen's enrolment form processing, printing documents, logistics management and issuance. 700,000 polycarbonate travel documents are issued annually.



Inspection systems

Electronic passport can speed up the transition to more modern document control, identification and border border-crossing procedures. It is also a formidable catalyst to improve border intelligence for detection and prevention.

However chip enabled passports are too often treated as previous generations of travel documents. In addition, entry and exit data are not properly logged in and there is insufficient tracking of over-stayers. The chip and the document visual features are not checked against template database and the ICAO Public Key Directory. In April 2014, fewer than 10 countries were systematically checking passports against Interpol database of lost, stolen documents according to this organization.

What is the scope?

- > Inspection systems for efficient and secure reading and verification of MRTDs
- > Automated border crossing to facilitate passenger experience
- > Systematic check of INTERPOL databases and others
- > Use of the ICAO Public Key Directory when applicable

Why is it important?

Within new security and cost constraints, new technologies must be leveraged to:

- > cope with a rapid increase in traveler numbers
- > to facilitate a swift and secure passenger experience
- > boost legitimate trade and travel
- > prevent illegal immigration or identity fraud
- > tighten security measures at border crossings

What are the weak points?

- > The chip and the document visual features are not checked against template database and the ICAO Public Key Directory
- > Data is not properly consolidated and shared between visa registration sites, headquarters and border control points
- > Automated border control is not doing thorough document verification
- > There are not enough mobile apps in the field so that identity checks can be performed near the borders

Gemalto offer

With the massive surge of electronic travel documents, Gemalto is supporting border agencies and government authorities to exploit technology convergence to gain consistent, comprehensive border, visa management and document verification. Gemalto Border & Visa Management provides a secure and efficient way to manage the flow of travelers across a nation's borders by applying a systematic, consistent and reliable control.

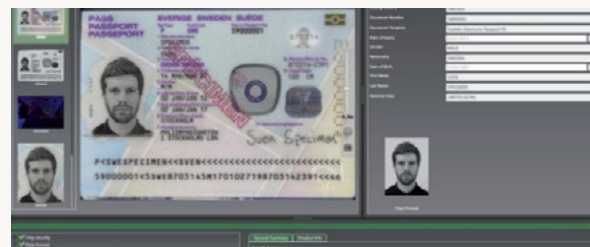
Gemalto offers a complete set of applications that processes both arriving and departing travelers in a wide range of contexts, at air, land and sea ports, implementing best practice immigration processes at the headquarters and border control points.

Gemalto's Border Management and Visa Management system includes visa, residence and work permit support, a traveler registry supported by an AFIS, Automated Border Control eGates, mobile stations for local checkpoints and ultra mobile devices for visa enrolment on remote sites.



Automated Border Control eGates are just one aspect of Border Management

Particular attention has also been paid to travel and identity document verification. The solution forms an integral part of sensitive processes like enrollment and registration, as well as in situations where certified identity is crucial - such as at border stations.



Fifty-two verifications are carried out automatically in a matter of seconds on this Swedish ePassport.

Our border control, visa and document verification solutions are being used in more than 15 countries including Croatia, Ghana, Morocco, Norway and South Africa.

Application Interoperability

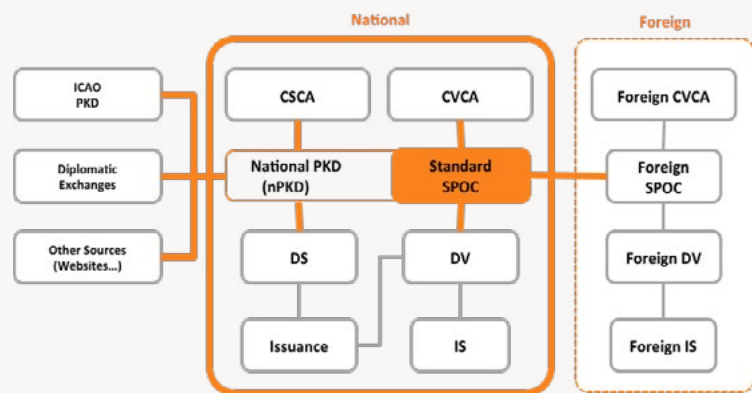
The inability to read the chip is often caused by the lack of secure interface for the exchange of certificates used in inspection systems. Gemalto offers infrastructure to exchange and periodically renew certificates between countries, insuring that border control inspection systems are securely fed with the right certificates.

What is the scope?

- > Globally interoperable applications linking MRTDs and holders to relevant data in the course of inspection operations

Why is it important?

- > Interoperability is achieved through sharing information, through the ICAO Public Key Directory and also directly between countries as part of bilateral agreements.



PKD: Public Key Directory
 CSCA: Country Signing Certificate Authority CVCA: Country Verifying Certificate Authority
 DS: Document Signer
 IS: Inspection Systems
 SPOC: Single Point of Contact

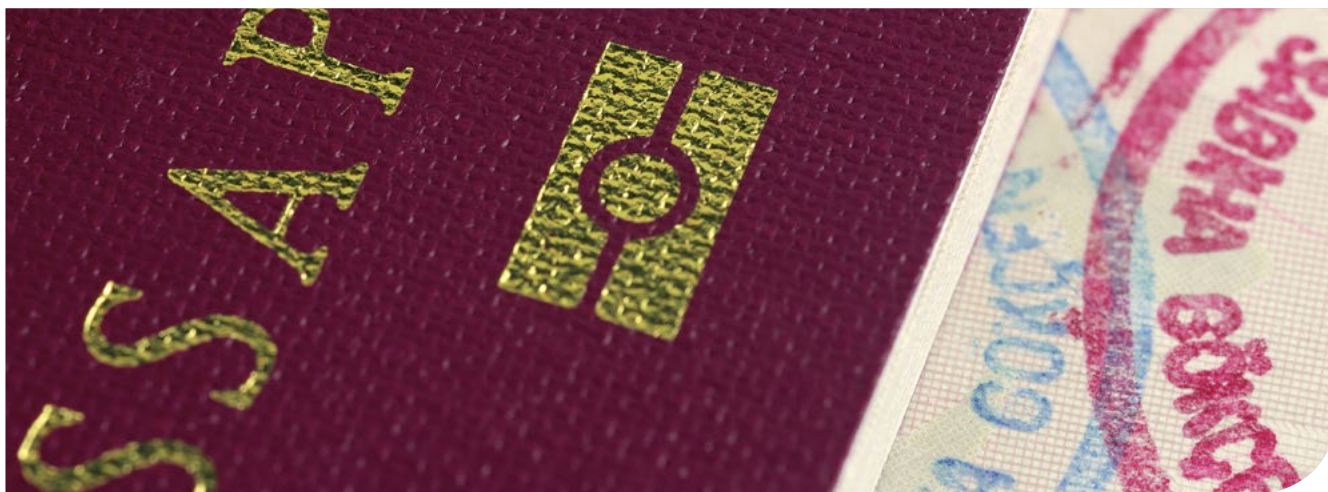
What are the weak points?

- > The inability to read the ePassport is often caused by the lack of secure interface for the exchange of Certificates used in inspection systems
- > This lack of exchange is also slowing the interconnexion of various national databases that could help in risk assessment and threat identification

Gemalto Offer

- > Single Point Of Contact (SPOC) infrastructure to exchange and periodical renew certificates between countries, insuring that border control inspection systems are securely fed with the right certificates
- > National Public Key Directory, a central repository of Country Signing keys and the Gateway between the ICAO PKD and border control





Your partner in the Traveler Identification Program

ePassport technology is an invaluable asset to combat document fraud and expedite border-crossing procedures. But as in any system, the security of a traveler identification system is only as strong as its weakest links.

With over 80 government programs deployed worldwide, Gemalto can help you secure the weakest links for a safer travel experience.

Gemalto is a trusted advisor when it comes to topics such as citizen registration, biometrics, secure electronic documents, secure issuance (electronic passport, visa), document lifecycle management and border control infrastructures, including automated gates.

Our involvement in the standardization process at ICAO and ISO allows us to anticipate forthcoming migrations and provide Governments with a head start to meet deadlines.

EVIDENCE OF IDENTITY	Tracing, linkage & verification of identity against breeder documents to ensure genuineness of identity
MACHINE READABLE TRAVEL DOCUMENTS	Design and standardized MRTDs that comply with ICAO specifications
DOCUMENT ISSUANCE AND CONTROL	Processes for document issuance by appropriate authorities to authorized holders; controls to prevent theft tampering, loss
INSPECTION SYSTEMS AND TOOLS	Inspection systems for efficient and secure reading and verification of MRTDs Use of ICAO Public Key Directory
INTEROPERABLE APPLICATIONS	Globally interoperable applications linking MRTDs and holders to relevant data in the course of inspection operations

About Gemalto

Gemalto, a Thales company, is a global leader in digital security, bringing trust to an increasingly connected world. We design and deliver a wide range of products, software and services based on two core technologies: digital identification and data protection.

Our solutions are used by more than 30,000 businesses and governments in 180 countries enabling them to deliver secure digital services for billions of individuals and things. Our technology is at the heart of modern life, from payment to enterprise security and the Internet of Things.

We have built a unique portfolio of technology and expertise including physical and digital identity credentials, multiple methods of authentication – including biometrics – and IoT connectivity as well as data encryption and cloud service protection. Together, these technologies help organizations protect the entire digital service lifecycle from sign-up to sign-in and account deletion with data privacy managed throughout.

Gemalto is part of the Thales group, a €19bn international organization with more than 80,000 employees in 68 countries worldwide.

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THALES

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