IDEMIA Travel Documents Solutions

Public
Security & Identity

IDEMIA

IDEMIA ePassport Solution

IDEMIA's vision for new generation ePassports

21st century governments worldwide must meet the challenges of border security. They must guarantee high security whilst smoothing traveler flow and reducing queues. In recent years, ePassports have become increasingly popular with 138 governments adopting this innovative ID technology. In 2018, 85% of all passports issued were electronic.

This is a problem for the infrastructure needed to process ePassport holders securely and smoothly. Automated document inspection is the key to this but reader capacity and speed cause bottlenecks. Universally machine-readable travel documents are needed on a large scale and these need to provide the security and privacy demanded by ICAO specifications and primarily by citizens. A solution is needed now.

The answer to the Border Control Challenges

IDEMIA ePassport Solution is an electronic document that offers unique features. Incorporating data storage for a fully ICAO compliant travel document, it is the ultimate medium for a truly secure, contactless, biometric ePassport.

IDEMIA ePassport Solution enables electronic document readers to perform verification in less than 3 seconds.

The result is that 3 vital questions will be answered in that time:

- Is the document authentic?
- Has the document been altered?
- Is the person presenting the document its authorized holder?

IDEMIA's ePassport Solution can be verified rapidly, securely and without compromising any personal privacy issues. It provides a modern, high technology approach to automated document verification and answers to many of the challenges facing busy border crossings. IDEMIA ePassport Solution provides state-of-the-art electronic security documents with ICAO PACE mechanism.

ICAO ePassport security

IDEMIA participates in the ICAO committee and therefore plays a significant role in emerging standards. In short, IDEMIA has a complete understanding of ICAO standards and is providing governments with the expertise to reach ICAO requirements.

The development of IDEMIA ePassport Solution has benefited greatly from this experience with ICAO. The result is an electronic document that's ideally suited to ePassports and that adheres 100% to the internationally agreed specifications, summarized here:

BAC, PA, AA

Basic Access Control (BAC)
- Access control to generic data, to prevent unauthorized access & eavesdropping

Passive Authentication (PA)
- Issuer Authentication & Data integrity based on digital signature of passport data

Active Authentication (AA)
- Chip authentication to prevent cloning (RSA)

EAC specification

Extended Access Control (EAC)
- Chip and terminal authentication

SAC specification

Supplemental Access Control (SAC)
- Proposes PACE as alternative to BAC

Enhanced cryptography
- AA with Elliptic Curves
- EAC: support of AES session keys generation

2005 *1st generation ePassport*

2008 *2nd generation ePassport*

2015 *3rd generation ePassport*

Embedded OS features

Some major advances are incorporated:

Interoperability & Speed

Freedom of travel demands that passports can be recognized by all states. The passport must also be compliant with the latest standards and compatible with existing infrastructure.

IDEMIA ePassport Solution achieves this. It has successfully passed all the ICAO and EU interoperability tests conducted between 2005 and June 2014.

Independent laboratories have tested IDEMIA ePassport Solution and published reports that give governments confidence in product efficiency and compliance. IDEMIA's own laboratories have verified compatibility with most of the document readers on the market.

Optimal Reading Time

The contactless reading of the document works at up to 848 Kbits per second. This and the highly efficient operating system enable IDEMIA ePassport Solution to read a typical EAC profile within 3 seconds. This industry-leading performance will be a major contribution to smoother, faster border crossings.

Standards & Data Management

New threats to our security appear all too frequently. IDEMIA plays a very active role in this by helping set the standards. With its ePassport Solution, IDEMIA assures compliance with:

- Data interoperable organization: LDS V1.7 and V1.8,
- Secure communication: Supplemental Acces control with comprehensive cryptography, including Integrated Mapping and AES encryption,
- Reinforced authentication: Biometric data access is protected by EAC (Extended Access Control).

IDEMIA ePassport Solution offers storage capacities from 80KB to 180KB for personal data.

This makes it possible to store mandatory personal data (biographic and portrait) as well as optional data or biometrics (fingerprint, iris etc.).

Enhanced Security

An electronic passport is usually valid from 5 to 10 years and must be long term resistant to data hacking. The state has to guarantee that personal data and biometrics are secure when stored in an ePassport.

IDEMIA ePassport Solution has earned the highest level of security from independent standards laboratories and has received the Common Criteria security certificate for:

- BAC at EAL 4+ level (PP 055),
- EACv2 with PACE at EAL5+ level (PP 056v2).

IDEMIA ePassport Solution supports the largest cryptographic algorithm key length:

- AES up to 256 bits,
- Elliptic curve up to 521bits.

Since January 2015,

all EU member states have to issue electronic machine-readable travel documents (eMRTDs) with the new 'SAC' feature. SAC defines two ways of establishing secure communication with eMRTDs:

- BAC (Basic Access Control)
  The earlier method, for backward compatibility with early equipment
- The new PACE method.

The adoption of PACE concerns secure communications with the eMRTD. Encryption relies on keys derived from:

- Document number;
- Date of Birth;
- Date of Expiry.

Both BAC and PACE use keys derived from these sources but BAC has a weakness. The PACE protocol is more robust and further strengthens security by using 3DES and AES encryption with longer keys. This is an excellent example of IDEMIA's contribution to ICAO standards. The company's cryptographic experts designed 'Integrated Mapping' for achieving quicker and more secure protocol which is fully adopted by ICAO.

Physical Features

A passport reflects a country's identity. It also gives its citizens a feeling of pride and of belonging. Physical and visual appeal is important and IDEMIA's designers are acknowledged for the excellence of their design. These tailor-made works of art combine stunning visual effects with state-of-the-art security.

The result is a travel document to be proud of. It is also an identity document that strongly resists counterfeiting and data manipulation. IDEMIA ePassport Solution is a major step towards smoother border crossing with cross-checking physical and electronic attributes that reduce processing time and increase security. IDEMIA ePassports are designed to last for 10 years, a claim that is supported by an independent durability report.

Physical security features for passports with polycarbonate DataPage

A passport requires strong security features that can be easily checked with the naked eye. These are known as first-line security features. Photo substitution is the main threat in counterfeiting a passport and to counter this IDEMIA has developed optical security features such as LASINK™, Multi OVI (Optically Variable Ink), Stereo Laser Image (SLI®), Clear window, ImagePerf/TLI®, Tactile relief and 3D Photo ID™.

SLI® is a security feature designed to check the authenticity of the primary photo. It does this by adding a small three-dimensional portrait, clearly visible to the naked eye.

It is possible to make a direct comparison between the primary photo and the SLI®. Any attempt to change the primary picture will result in a clear mismatch with the 3D picture. Any attempt to change the SLI® portrait cannot reproduce the 3D effect and tactile characteristics of the lenticular structure of this image. In addition to first-line security features, second and third-line features will also be applied.

IDEMIA security Binding

IDEMIA's high security binding is highly durable and prevents substitution of the polycarbonate data page.

It is based on a flexible polymer hinge material that is locked inextricably with the data page itself and with a polycarbonate strip.

LASINK™ technology

IDEMIA's LASINK™ technology leverages unique personalization techniques to protect a photo against tampering and allows fast and reliable verification of the authenticity of an identity document. Citizens of the principality of Andorra benefit from this new generation of color pictures on their passports. It is easily identifiable and strongly protects their identity from alteration.

Polycarbonate data page

The IDEMIA data page is a homogeneous polycarbonate ID-3 card. It incorporates a contactless chip with antenna for storage of the document holder's information and the required data protection mechanisms (ICAO compliant).

By embedding the chip in the data page an unbreakable and tamper proof link is created between personalized graphical and digital information. This also provides a greater choice in the selection of security features. Fraudulent combinations of chips with manipulated or forged data pages are virtually impossible.

If the eCover solution is preferred, IDEMIA can offer a thin polycarbonate data page. This combination provides the same level of security with an exclusive binding technology. Half of the deployed polycarbonate passport programs worldwide have chosen IDEMIA as their sole supplier.

Customer choice: a “modular” approach

IDEMIA offers great flexibility in its products and services. Our goal is to provide the very best answer to the most demanding customer needs.

A customer might need a turnkey passport solution with a Polycarbonate or eCover passport, but with or without full personalization. It is the customer's choice. With IDEMIA, the customer is free to mix and match the most appropriate and cost-effective products, options and services.

We also offer cooperative ventures where we support national printing houses with IDEMIA expertise and technology. The printing houses can choose IDEMIA ePassport Solution components such as inlays, eCover or the binding, including the possibility for a technology transfer.

IDEMIA ePASSPORT SOLUTION PRODUCT FEATURES

FORM FACTORS
- Data Page/eCover Passport booklet and resident cards or the subset (inlay, module)

DURABILITY & INTEROPERABILITY
ICAO Technical Report:
- RF Protocol & Application test standard for ePassport - Part 3,
- Physical test methods for passport books (durability).

SECURITY
- BAC EAL 4+ (PP 055)
- EACv2 with PACE at EAL5+ level (PP 056v2)
- Generic and Integrated Mapping

COMPLIANCE TO STANDARD
- ICAO 9303 7th Edition
- TR Supplemental Access Control
- LDS v1.7 and 1.8
- EAC v2.20 (TR 03110 v2.20 part 1&3)
- ISO/IEC 14443 & ISO/IEC 10373 part 6
- ISO/IEC 18745 part 1 and part 2

CHIP
- 80 KB – 180 KB
- Double source available

PERFORMANCE
- Electronic data reading in 3 seconds

CRYPTOGRAPHY
- 3DES
- AES up to 256 bits
- RSA up to 3072 bits (4096 bits in option)
- Elliptic curve up to 521bits

ADDITIONAL COMPLIANCE
- EU 383/12 European driving licenses with microchip
- ISO/IEC 18013 – 2 ISO Compliance Driver's License Machine readable technologies
- ISO/IEC 18013 - 3 ISO Compliant Driver's License – Access Control, authentication and integrity validation

A turnkey solution for your travel documents

From registration to usage

IDEMIA is a preferred partner for government agencies, institutions, national printing houses and other public entities at every stage of the work they do to:

- Issue trusted identities
- Embed and integrate identities into secure documents and systems
- Enable use of their secure ID documents

IDEMIA is the only company with all the necessary technologies in house to provide the required smart documents, multi-biometric systems, terminals and integration services so as to meet its customers' identity challenges.

Our end-to-end solutions are secure, easy to deploy and based on global best practices.

REGISTRATION OFFICE | BACKGROUND CHECKS | PERSONALIZATION | DOCUMENT USAGE

IDEMIA ePassport Solution is yet another example of IDEMIA's commitment to smooth, safe travel. State-of-the-art digital and physical features and advanced biometric technology make it the market reference for ePassports. It is ideally suited to eVisa and border crossing applications (whether fully automated or with direct human verification). IDEMIA ePassport Solution complies with the most advanced standards making it usable in all conditions, for border crossings anywhere in the world. It is compatible with all authentication equipment on the market and with all automated and semi-automated border control solutions.

In fact, IDEMIA offers a complete range of automated and semi-automated border control solutions, as well as document authentication terminals.

eVISA

Citizens can apply online to an eVisa using their passports. The embedded biometrics in the passport enables the applicant's identity to be authenticated from home or from the office, using a suitable device.

This is a major convenience, saving the applicant the time and expense of visiting the embassy. Biometrics makes online operations secure enough to allow governments to offer these critical services on-line. Via the appropriate web portal, the applicant can use a smartphone or a tablet for these transactions.

The passport holder only needs to read the passport's MRZ and/or chip to enable automated face or fingerprint authentication. The entire eVisa process can be powered by IDEMIA products.

Tailor made financial models

IDEMIA offer governments tailor made project financing options, including: contract supply, turn-key, lease, concessions and private ownership of assets.

Our worldwide customer base gives us the experience needed to create attractive business and pricing models for various needs, cultures and budgets.

BOOT Funding

IDEMIA frequently recommends the BOOT financing model. This is a three-step program consisting of:

BUILD,
OWN & OPERATE,
TRANSFER.

BUILD

The public authority specifies its expectations in terms of outputs: service level and results. A contract is signed to lay down the specifications and the framework in which outputs are to be delivered by the contractor. IDEMIA handles the design, development and implementation of the infrastructure necessary to run the operations.

OWN & OPERATE

During the contractual period, the built infrastructure is completely or partially owned by IDEMIA, depending on how much funding is desired. IDEMIA is responsible for fully or partially operating and maintaining the infrastructure, as well as keeping the system up and running throughout the overall contractual term.

TRANSFER

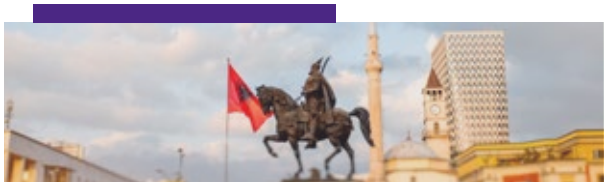
At the end of the contractual period, IDEMIA transfers ownership to the public authority. The transfer includes property (buildings and systems) but also knowledge (system operations, administration and maintenance). The BOOT business model can be applied on the end-to-end identity management framework or parts of it.

IDEMIA's BOOT Business Model

IDEMIA invests, manages and operates the system

- Customer and/or the citizen pays by document issued
- IDEMIA hands back the system to the customer at the end of the contract period

Albania



From the beginning of this partnership in 2008, IDEMIA has proven its ability to deploy rapidly a large scale identity project by providing an end-to-end solution.

In five months, IDEMIA achieved a lot:

- Created Aleat, the Albanian joint venture;
- Hired and trained 800 people;
- Created the document design;
- Prepared the personalization center;
- Set up over 400 registration offices throughout Albania.

In 2011, the concession was awarded ISO 27001 certification. This proved our ability to maintain the highest security standards in identity management business processes and citizens' data handling. In 2013, the concession was extended for an additional period of 10 years, including new features and services.

Chile

The Chilean government wished to reinforce the security of their existing identity management system and travel documents.

In 2012 IDEMIA was chosen as sole supplier under a 10 year build & operate project to provide latest-generation ID management for the national ID card and for e-Passport issuance. IDEMIA provides Chile with secure multi-biometric citizen enrollment and secure ID document production and personalization. Estimated output during the contract is 25 Million identity cards and 4 Million passports.

During the set-up of this program IDEMIA was able to meet different challenges in a short period of time:

- Create local subsidiary;
- Recruit staff locally;
- Build local project infrastructure;
- Set-up registration offices throughout Chile (650 offices deployed to date).

IDEMIA's ePassport for Visa waiver programs

- IDEMIA's knowledge and experience in managing identity programs, combined with cutting edge technology, have helped Chile and Albania to benefit from Visa Waiver programs. When travelling with their ePassport, Chilean citizens benefit from the US Government Visa Waiver program. Chile is the first country in South America to be a part of it. For Albanian citizens, their electronic passport allows them to travel under the Schengen Visa Waiver program.

We stand for Augmented Identity

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