

X Infotech Government

Software solutions
for identity documents



About

X Infotech provides turnkey software solutions for issuance, management and verification of electronic identity documents. Our solutions manage the complete lifecycle of identity documents.



PRE-ENROLMENT
an individual applies for an identity document, sets an appointment and pays for the inquiry



ENROLMENT
a state unit branch collects personal data (including biometrics).



DATA PROCESSING
the state organization carries out personal data verification, de-duplication check and ICAO data preparation



PERSONALIZATION
the identity document is linked to the applicant's profile, designed and printed



ISSUANCE
the state organization issues and delivers the identity document to the applicant



POST ISSUANCE
the state organization provides post-issuance services for identity document use, support and renewal

Our Products

Citizen Identity

Enrolment
Identity Management
AFIS/ABIS
Biometric Verification

Document Personalization

ICAO Data Preparation
Key Management System
Chip Encoding
Secure PIN Manager
Production Management
Instant Issuing
Stock Management

Process Management

Case Management
Document Lifecycle Management
Quality Assurance
Document Verification
Document Distribution

PKI

Country Signing Certification Authority (CSCA)
Document Signer (DS)
Country Verifying Certification Authority (CVCA)
Document Verifier (DV)
Terminal Control Center (TCC)
Single Point of Contact (SPOC)
National Public Key Directory (nPKD)

Benefits & Customers

Solutions Benefits

- Flexible
- Easy to integrate and modify
- Vendor independent
- Possible to extend functionality
- Secure and industry-proven

Our Customers

Governmental organizations responsible for identity management and issuance of

- ePassports and eID cards
- Social cards
- Health cards
- Driver's licenses

Citizen Identity

ENROLMENT

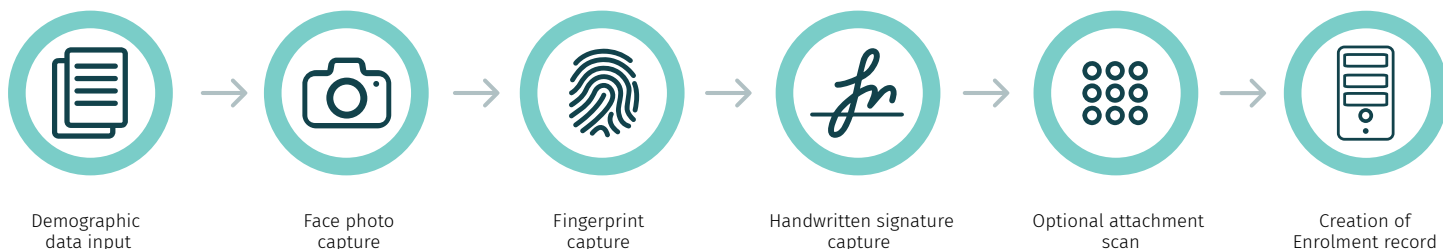
X Infotech Enrolment is a software solution for capturing personal data – both demographic and biometric data (fingerprints, facial image, and handwritten signature). The comprehensive solution supports all aspects of desktop and mobile workstations for enrolment at central and remote locations. Prior to the enrolment stage, the easy-to-use system can be integrated with self-service portals for an electronic identity document application.

The efficiency of a biometric system entirely depends on the quality of biometric data, X Infotech offers an integrated quality control component to capture high-quality biometric data in line with the industry standards and the best practices.

FEATURES

- Scalable enrolment to adjust the type of data captured and ensure compatibility with different AFIS/ABIS.
- Effective process control to lower the risk of human error (automated quality validation).
- Highly secured environment with access control, data encryption and communication via secured communication channels.
- Flexible integration with a central database for customized data synchronization, validation and export.
- Vendor independent platform to give greater flexibility in the selection of hardware.

Standard Enrolment Process



IDENTITY MANAGEMENT

X Infotech Identity Management handles customer identity management based on biometric data. The comprehensive solution consists of a biometric registry, a verification service to perform biometric verification 1:1 or 1:F as well as a capability to integrate with different biometric search engines AFIS/ABIS systems.

The Identity Management solution provides a graphical user interface (GUI) for identity managers who control and resolve identity conflicts (e.g. duplicated records, people with similar biometric data etc.).

FEATURES

- Flexible and configurable interface for identity management
- Integrated data storage for various biometric modalities (e.g. face, fingerprint, iris etc.).
- Additional level of security against illegal access to sensitive data.
- Unlimited expansion possibilities to address evolving client.
- Vendor independent platform to give greater flexibility and deploy different biometric search engines in a single solution.

Citizen Identity

AFIS / ABIS

X Infotech AFIS/ABIS is a biometric authentication solution which provides fast and precise identity checks on large scale biometric databases.

The ready-to-use software solution provides effective means for identity verification and de-duplication control. It can process, search, store and retrieve biometric templates and records in real time.

X Infotech ABIS is an extension of the Identity Management solution.

FEATURES

- Supports multiple biometric modalities - fingerprints, face image, iris.
- High accuracy of matching algorithms ensured in a number of international projects.
- Scalable architecture to increase matching speed (up to 100 000 000 fingerprints per second on server).

BIOMETRIC VERIFICATION

X Infotech Biometric Verification is a software platform that validates the identity of a client based on biometrics such as fingerprints, face recognition and dynamic signatures. Access rights to electronic identity documents are manually granted by an operator or processed through an application.

The vendor-independent solution permits clients to deploy any technology or product for operator workplaces, mobile workstations or mobile devices.

X Infotech Biometric Verification is integrated with the Identity Management solution that serves as a centralised biometric data storage facility and processes all verification requests.

FEATURES

- Flexible deployment to support verification of multiple biometric modalities.
- Scalable solution to adjust necessary data fields (personal data - ID number, document number etc.).
- Face liveness detection feature to ensure that the user is a real person.
- Additional level of security against illegal access to sensitive data.
- Compliance with legal requirements, industry practices and recommendations.

Deployment Scenarios



Mobile App
for Android OS



Stand-alone application
for Windows OS



WCF Service
for external applications

Document Personalization

ICAO DATA PREPARATION

X Infotech ICAO Data Preparation performs data preparation for all types of electronic identity documents.

Prior to document personalization, the ICAO Data Preparation receives applications and profile data, keys and certificates from multiple sources. Thereafter, data is checked and prepared according to a defined setup.

Batch Processing

Data input and encoding separated by steps

User case: high-end personalization machines and multiple personalization bureaus

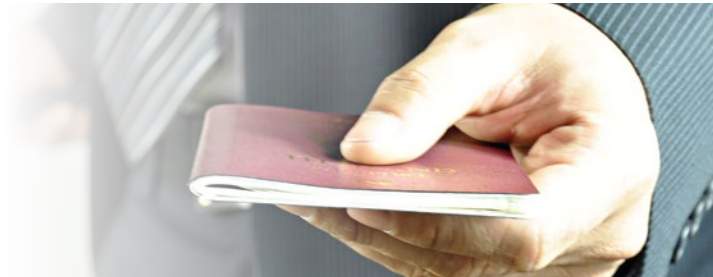
Single Step

Data preparation and chip encoding in a single step

User case: various personalization machines (desktop, mid-range and high-volume)

FEATURES

- Fully automated data preparation solution to enable fast and easy electronic identity document production.
- Flexible functionality to adapt and configure the solution according to customer-specific requirements.
- Compatibility with third parties to permit seamless integration with an existing environment and personalization system.
- User friendly interface to provide effective management of multiple electronic identity documents or personalization profiles.



KEY MANAGEMENT SYSTEM

X Infotech Key Management System provides all the necessary functionality for secure generation, handling and transportation of chip personalization keys and certificates. The system manages highly sensitive objectives, in compliance with strict security standards.

All cryptographic calculations are performed by dedicated crypto-processors built in a certified HSM appliance.

FEATURES

- Secure system to support centralized and highly secure management of cryptographic keys.
- Intuitive user interface to permit easy configuration, management and auditing.
- Deployment of Hardware Security Modules (HSMs) to protect sensitive objects and minimize any information loss or breach.
- Open standard architecture to enable and facilitate vendor interoperability.

CHIP ENCODING

X Infotech Chip Encoding receives input data from the Data Preparation solution and virtually carries out chip encoding according to an electronic identity document's profile and following the dedicated scripts.

The solution is based on an open architecture, supporting any chip and personalization equipment. X Infotech Chip Encoding enables chip personalization to be performed simultaneously on multiple small or large-volume personalization machines.

FEATURES

- Flexible infrastructure for easy system integration and configuration.
- Compatibility with third party vendors to support integration with an existing document production platform.
- Extensive facilities to encode contact and contactless chips for any type of electronic identity documents .
- Deployment of transparent inline quality control.

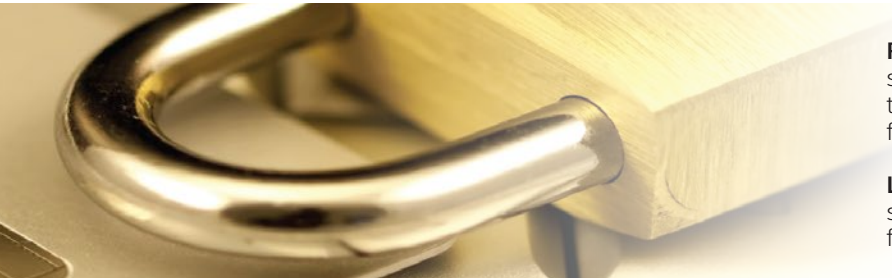
Document Personalization

SECURE PIN MANAGER

X Infotech Secure PIN Manager is an all-in-one solution for PIN generation, secure printing of PIN envelopes and PIN Tabs as well as different modes for PIN distribution. The flexible infrastructure permits PIN distribution and synchronization between multiple systems. The PIN management solution implements strict access control and secured communication channels for data transmission.

FEATURES

- Secure system to provide multiple PIN and PUK value generation.
- Flexible choice for PIN printing: remote or on-site facility.
- PIN block generation and encryption, supporting the best known PIN block formats.
- Compatibility with third party vendors to support different data preparation solutions.



Remote printing

secret codes are generated in the head office, transferred to a remote branch/processing centre for PIN envelope printing.

Local PIN printing

secret codes are generated on a local HSM for immediate printing.

PRODUCTION MANAGEMENT

X Infotech Production Management enables governments to manage the complete production process of electronic identity documents.

The modular system offers advanced monitoring and workflow management features, supporting the entire production lifecycle - data retrieval, data preparation, quality control, stock management and distribution management. The open and module architecture permits clients to extend and configure production flow according to their specific project needs and requirements from third party systems and hardware vendors.

FEATURES

- Complete production management of electronic identity documents - from data import to stock management and reporting.
- Production monitoring in order to control the distribution of requests to personalization machines.
- Superior quality control for validating graphical (images, barcodes, MRZ, etc.) and electrical personalization (in line with ICAO specifications).
- Support for mag-stripe, contact and contactless chips, third-party equipment and systems.

STOCK MANAGEMENT

X Infotech Stock Management provides complete tracking of blank, printed and damaged Passports, Driver Licenses, ID cards and other travel documents. The software solution is integrated with the Production Management and Instant Issuing solutions, providing numerous event registration facilities.

The system keeps a complete history of each movement between stock locations. The easy to use client interface provides the functionality to import or manually input products, customize the system, and manage customers and stock locations in compliance with strict regulations.

FEATURES

- Flexible configuration for stock, workflow and products via graphical user interface, without programming.
- Document production tracking in real time by product type, customer, serial number, stock location, date or any custom product attribute.
- Complete stock tracking down to actual location and status of an individual document.
- Complete document movement audit log.

INSTANT ISSUANCE

X Infotech Instant Issuing is a comprehensive solution that permits government to offer on-site issuance of electronic identity documents.

The Instant Issuing solution consists of several X Infotech components, including data preparation, document personalization, cryptographic processing and chip encoding. The user-friendly interface permits operators to design and produce fully operable electronic identity documents within a few minutes, delivering maximum convenience and benefits for citizens.

FEATURES

- Support for contact or contactless chips, various document/card types and applications.
- Flexible architecture for easy integration within an existing infrastructure and third party hardware.
- High level of security - centralized management of cryptographic keys.
- Advanced Monitoring to generate reports at every step of the personalization process.

Process Management

CASE MANAGEMENT

X Infotech Case Management is a centralized solution for data and application management. The functionality of the software solution includes data collection, validation, and verification in different systems as well as data delivery to a personalization centre for electronic identity document production and issuance.

The Case Management solution stores a person's application with personal details, biometric enrolment records, electronic identity document status and other attachments received during the application process. The operator can search, view and report on applications and issued electronic identity documents via web.

FEATURES

- Flexibility to support unlimited number of enrolment record types.
- Customizable application workflow and Web interface for demographic data collection.
- On-line and off-line mode for the delivery of application and enrolment data.
- Automated data verification and validation with third party systems (Blacklists, AFIS, Personalization system, National Register, etc.).

DOCUMENT LIFECYCLE MANAGEMENT

X Infotech Document Lifecycle Management handles the entire lifecycle of e-ID documents, starting from data preparation and application personalization to post-issuance activities - issuing, re-issuing, blocking and unblocking PINs and final revocation of electronic identity documents.

The open and modular architecture gives clients unlimited flexibility to support present and future requirements - new extensions and integration with third-party solutions.

FEATURES

- Complete document lifecycle management from the application stage to post-issuance activities.
- Multiple security mechanisms to control access rights, including 4-eye principle.
- Ability to interact via multiple communications channels.

Process Management

QUALITY ASSURANCE

X Infotech Quality Assurance is a quality control module for validating electronic identity documents. X Infotech solution ensures a visual scan of a document/smart card as well as reads data on the chip.

The vendor independent solution permits integration into third party production management platforms and various document readers.

FEATURES

- Fast validation and data checks for produced smart cards and e-ID documents.
- Flexible integration with the Production Management System and Public Key infrastructure (DVCA, CSCA etc.).
- Hardware independent solution to support easy integration with various document readers.
- International standard-compliant module to establish an easy interface with external systems.

E-DOCUMENT VERIFICATION

X Infotech eDocument Verification is a mobile application for reading and verifying embedded RFID chip data on driver's licenses, passports, eID and other ICAO 9303 compliant identity documents. This portable solution permits police, immigration officers and civil servants to conduct document checks at any time and place. It verifies data authenticity and the identity of a document holder, comparing the photo and fingerprints.

Deployment Scenario – NFC enabled devices

- Smartphones
- Tablets

Integration with External Systems

- System for driver violation records
- Terminal control centre
- Border control system

FEATURES

- Improved verification of ICAO 9303 compliant documents: ePassports, eID, Driver licenses.
- Support for various data access control methods (BAC, SAC, EAC.).
- Reading of an MRZ zone for Machine Readable Travel Documents.

DOCUMENT DISTRIBUTION

X Infotech Document Distribution Workplace is a software solution for biometric verification against the data stored on an e-ID document. This solution supports any document reader or biometric capture device, enabling flexible integration with the core business system for data retrieval and document activation.

X Infotech Document Distribution Workplace guarantees easy integration with X Infotech or third party Public Key Infrastructure (PKI) for document verification and access control (BAC, EAC, and SAC).

FEATURES

- Easy integration with PKI infrastructure (CVCA, Document verifier) and an existing business system.
- Compliance with ICAO document access control standards (BAC, SAC, EAC).
- Vendor independent solution for deploying different document readers and biometric capture devices.

PKI

COUNTRY SIGNING CERTIFICATION AUTHORITY (CSCA)

X Infotech CSCA is a PKI solution that issues public key certificates for one or more Document Signers and optionally for other entities such as Master List Signers. The CSCA stores private keys in a HSM cryptographic device and operates in an offline environment highly protected from any outside or unauthorized access.

FEATURES

- CSCA certificates and key profiles are compliant to ICAO 9303 specification.
- Key Pair generation and protection by HSM cryptographic devices.
- Graphical User Interface for configuration, management and auditing.
- Supports multiple CSCA dedicated to different document types.
- Flexible User Access Control policies (m-of-n).



DOCUMENT SIGNER (DS)

X Infotech DS is a PKI solution that digitally signs data on electronic documents. A digital signature ensures integrity and authenticity of a document. In turn, it is validated using a CSCA certificate during Passive Authentication to confirm that the chip data is authentic to the issuing state.

FEATURES

- DS certificates and key profiles are in full compliance with ICAO 9303 specification.
- Key Pair generation and protection by HSM cryptographic devices.
- Graphical User Interface for configuration, management and auditing.
- Integration with Personalisation Solution to simplify infrastructure and reduce cost.

COUNTRY VERIFYING CERTIFICATION AUTHORITY (CVCA)

X Infotech CVCA is a national PKI trust point that authorizes domestic and foreign Document Verifiers (DVs) to access sensitive data from electronic documents like fingerprints or iris biometrics to which access is protected via Extended Access Control (EAC).

The CVCA stores private keys in a HSM cryptographic device and operates in an offline environment highly protected from any outside or unauthorized access.

FEATURES

- CVCA certificates and key profiles are in full compliance with BSI TR03110 technical guidelines.
- Key Pair generation and protection by HSM cryptographic devices.
- Graphical User Interface for configuration, management and auditing.
- Flexible User Access Control policies (m-of-n).

DOCUMENT VERIFIER (DV)

X Infotech DV is a PKI solution that determines which Inspection System (IS) will get authorization to read sensitive data like finger-prints or iris biometrics from electronic documents with Extended Access Control (EAC) protection.

Document Verifier requests and obtains Document Verifier certificates from the CVCA of each country whose electronic documents it is authorized to access.

DV issues Inspection System certificates in response to certificate requests from Inspection Systems. These certificates authorize an Inspection System to access protected sensitive data on electronic document chips.

FEATURES

- DV certificates and key profiles are in compliance with BSI-EAC and BSI TR-03139.
- Operates in compliance with BSI TR-03129 protocols.
- Key Pair generation and protection by HSM cryptographic devices.
- Graphical User Interface for configuration, management and auditing.



CLIENTS AND PARTNERS

Our clients and partners comprise many of the world's best-known enterprises and governments. X Infotech international network serves hundreds of clients in more than 45 countries.

PKI

TERMINAL CONTROL CENTER (TCC)

X Infotech TCC solution automates verification of National and Foreign Machine Readable Travel Documents (MRTD) both by manual and fully automated Border Control Inspection Systems.

TCC provides a Document Terminal Authentication (TA) service that allows Inspection Systems to access sensitive personal data (fingerprints, iris) on the document's chip and to use advanced mechanisms of biometric authentication. The mechanism is based on the integration with a Document Verification (DV) system that issues card verifiable certificates which are valid only for a short time period, typically between 1 day and 1 month.

The TCC solution also provides a Document Passive Authentication service to verify the authenticity of a document by comparing the Document Signer certificate to certificates received from the ICAO PKD or National PKD.

SINGLE POINT OF CONTACT (SPOC)

X Infotech SPOC manages exchange of CVCA certificates between various countries in order to grant access to sensitive biometric data on ICAO compliant EAC Documents at border control points.

Extended Access Control (EAC) PKI architecture is currently the most advanced standard in secure travel documents.

SPOC implements international standards, protocol and certificate management for EAC ePassports in order to exchange Document Verifying (DV) and (CVCA) certificates between countries. The solution is compliant with ICAO and BSI standards and guidelines, allowing ease operation and integration with third party systems.

NATIONAL PUBLIC KEY DIRECTORY (nPKD)

X Infotech nPKD is a PKI solution component that manages electronic document PKI certificates on a national level.

The comprehensive solution acts as a central broker to manage exchange of Document PKI certificates and certificate revocation lists on a country level. It creates a centralized database of document certificates received from multiple sources such a Country Signing Certification Authority (CSCA), ICAO PKD and Foreign nPKD systems.

HEADQUARTERS
X INFOTECH SIA

Daugavas 38-3
Marupe, LV-2167, Latvia

P. +371 67930171
F. +371 67930172

info@x-infotech.com
WWW.X-INFOTECH.COM