Coesys Applications Portfolio

> Boosting e-Services
> Contributing to national sustainability policies
Introduction

For public authorities, eGovernment initiatives are a powerful lever for improving services rendered to citizens and making necessary productivity gains.

The move to the digital economy and beyond, to a more sustainable world, will further accelerate the transition to paper free processes, with rewards to reap including improved service, reduced cost and more fluid processes.

Gemalto’s Coesys Applications Portfolio is a set of concrete applications in order to:

- Increase security and privacy for all
- Enable administrations to increase agility and quality of services
- Strengthen and improve the link between citizens and collective bodies

This portfolio of applications uses Gemalto core offer and experience:

- Secure Documents with physical, visual, and electronic security for Passports, eID cards, Resident permits, eHealthcare cards, eDriving Licenses and Vehicle Registration Certificates,
- Enrolment equipment integrating biometrics technology,
- Personalization & Issuance platform compatible with large issuance volume and web services environment,
- eVerification solution range including mobile verification terminals and automated border control gates,
- Coesys eGov 2.0 Identity Provider services, enabling strong authentication, centralized signature, identity federation services with integrated Public Key Infrastructure and Mobile ID platform

It leverages Gemalto professional services capabilities on an implementation standpoint:

- Experience-based Solution design,
- Stringent Project management,
- Fast and seamless System integration,
- Efficient Deployment,
- Complete Knowledge transfer,
- Operation support.

The following application examples describe the context and the general benefits that can be expected.

These applications are elaborated and developed with customers, in order to ensure their success in the field.
Traveller’s ID eVerification on-the-go

Traveller’s ID eVerification at the gate

Secure eVoting List

On-line eVoting

On-line Tax

eID for Payment

Patient’s Entitlement eVerification

Medical Expense eClaim

On-line Driving License & Vehicle Registration Services
Traveller’s ID eVerification on-the-go

**Description**

Mobility and flexibility are decisive factors in protecting against identity fraud.

Reading and authenticating all the traditional ID documents and new electronic ones such as ePassport, eID, eDriving License, eResident Permit Card are now required. Designed for mobile use of police and border and customs authorities, these devices take document inspection and identity verification off the desktop and onto the road.

**Benefits for Authority**

> Reduce document and identity fraud with reliable verification of individuals and ICAO-compliant documents off fixed control points
> Take benefits of security mechanism on electronic documents that they have been deployed or are planned to be deployed
> Bring, when connected, additional information – for instance, wanted-list queries – provides support for on-site decisions during mobile use
> Increase control throughput. Flexible deployment structures are made easier for police and border control authorities

**Benefits for Citizen**

> Fast and transparent controls
> Better protection of identity

**Gemalto Solution**

**Return On Investment Considerations**

> All documents can be checked, supporting the extensive security feature controls and are fully compliant with standards
> Back-office workload optimization thanks to mobile terminal capacity, electronic fine, incident and verification reports are done on the fly, then officer tasks optimization is extra time in the fight against crime

**Key points for Government**

> Mobile eVerification Terminal that allows police officers to read and authenticate all the traditional ID documents and new electronic ones.
> Police officers can perform on-the-spot fingerprint enrolment and verification against a central police database
> Best terminal uptime thanks to a rugged solution where mobility is a priority (IP 65, High battery capacity & high power management)
> Reduce costs of terminal administration & support thanks to a Terminal Management System (dedicated Administration console, Helpdesk console for terminals)
> Budget optimization with unique flexibility of hardware and services

**Key points for Citizen**

> Fast and efficient ID control
> Accurate and comprehensive ID checks
As international travel is experiencing a steady annual growth of 6% in passenger volumes, it is essential for authorities to find a way to facilitate passenger processing. Automation on border checks is a welcome solution as comprehensive technology can improve the convenience in cross-border traffic without compromising security.

Automating the routine border-checks allows governments to free up resources to better combat the ever-growing threats of international terrorism, illegal immigration and organized crime. Non-routine crossings will be handled by border control agents equipped with document readers at their desks, or mobile units in their hands.

By leveraging ePassport infrastructure governments capitalize on their investments and improve the border control intelligence by collecting real-time information on traveler movements from all systems involved in the travel process. In addition, automated border control increases security as the same document verification and biometric matching is applied to all travelers with no human factor affecting the process.

**Benefits for Government**

- Comprehensive eBorder control turnkey solution.
- Fast and reliable clearance on border checks eliminating bottleneck situations.
- Improved border control intelligence leveraging real-time information from various electronic systems on travelers entering or leaving the country.
- Automation reduces errors as no human intervention is required during the verification processes.
- Full use of ePassport slashes trans-border crime and illegal immigration.

**Benefits for Citizen**

- Convenience and speed with smooth and fast border crossing.
- Secure travelling as fellow travelers have been thoroughly checked.

**Gemalto Solution**

- 100% interoperability with ePassports in the field thanks to Gemalto end-to-end expertise.
- Better anticipate and integrate standards as Gemalto is actively contributing to standard specifications, security proofs and conformance requirements.
- Maximize success during deployment projects as Gemalto’s track record in multiple ePassport programs allows sharing of international best practices.

**Key points for Government**

- Reduced operating costs
  - One officer can control 4 to 6 border gates (moving from one officer per traveler to one officer per 4-6 travelers).
- Streamlining passenger handling & clearance processes, and targeting resources more effectively.
Secure eVoting List

Description

Aimed at facilitating an open and fully transparent voting process, a Secure eVoting List enables authenticating voters before their ballot is cast at polling places. It is ensuring the “one voter - one vote” principle for free and fair elections—the cornerstone of representative democracy.

Citizens can use the Secure eVoting List system to participate in election in effective yet convenient ways.

If citizens can use their eID card biometrics to authenticate themselves when voting, the risk of error can be virtually eliminated. This, in turn, will eliminate double voting anywhere in the country.

Benefits for Government

> Slash electoral fraud and create trust
> Cost savings through less paperwork & more efficient process, eliminating the need of a complementary voter’s card

Benefits for Citizen

> Separation of ballot and e-verification for trust & privacy
> Easier voting process with a ready-to-vote procedure
> All-in-one eID document always with you (eliminate the need of voting card)

Gemalto Solution

Key points for Government

> Using biometrics for “one voter-one vote” - slashes fraud
> Ability to post-deploy apps in the field, simplified roll-out of new services
> eVoting post issuance management enhances security through central control
> Electronic time stamping slashes errors
> Promote transparency with simple technical solution, creating trust

Key points for Citizen

> A light and flexible procedure available close to the citizen with the Mobile Units
> No waiting line at poll station
> Secure and evolutive multi-purpose eID for convenience

Return On Investment Considerations

> Showing effective public administration and enabling citizens to participate in election in effective yet convenient ways
> Less paper work and Voter’s card not necessary
> New secure services can be launched at marginal costs
> Bring added-value services on top of the eID card
**Description**

Electronic on-line voting or eVoting is an election system that allows a voter to record his or her secure & secret ballot electronically over the Internet. As concerns are very often expressed on election fraud, the new system must ensure security, privacy and transparency. Internet voting brings flexibility as voting can be done from remote locations. This system has already been tested at national level or in overseas absentee voting. Estonia, for example, was the first country to elect its parliament via voting over the internet using a national ID equipped with a microchip or by providing voter passwords through the postal service. eVoting is usually not necessarily replacing traditional voting processes but offers a complementary way of participating to ballots.

Aimed at facilitating an open and fully transparent voting process respecting the citizen’s privacy, eVoting based on electronic ID card enables secure identification and ensures the “one voter - one vote” principle for free and fair elections - the cornerstone of representative democracy.

**Benefits for Government**

- Reduce election costs: eVoting is paperfree, environment friendly and can dramatically less polling stations, less administration costs
- Speed up the counting of voices making results available at a short period of time
- Reduce the error rate which is usually induced by human intervention
- Reduce fraud: a valid vote cannot be changed, all valid votes are counted
- Increase security: only entitled voters can vote and each voter casts only one vote
- Protect confidentiality: it is not possible to link a vote to a voter and all votes remain secret up to the end of the election

**Benefits for Citizen**

- Easier voting process, voting from any place and at any time during the ballot period
- Saving time and effort, avoiding travel or any other related expenses
- Facilitating accessibility to all citizens: disabled persons, citizens abroad

**Gemalto Solution**

**Key points for Government**

- Ability to post-deploy eVoting apps in the field, simplify roll-out of new services
- Flexibility and security thanks to certified eDocuments protecting citizen privacy
- Electronic time stamping and voting counters slash errors and fraud
- Promote transparency with simple and secure solution, creating trust

**Key points for Citizen**

- A light and flexible procedure available for on-line voting saving time and resources
- Integrity and privacy of the voting process
- Multi-purpose eID to bring many other convenient apps at issuance or on demand during the card life cycle

**Return On Investment Considerations**

- Showing effective public administration and enabling citizens to participate in election in efficient yet convenient ways
- Less paper and administration work
- New local/regional/national e-polls can be launched at minimal costs boosting participatory democracy
- New secure services can be launched at marginal costs
- Bring added-value services on top of the eID card
**Description**

The collection of taxes and duties is, by its very nature, the area in which the State has the most trouble in getting citizens onboard. The State must therefore pay particular care in order to get citizens to buy into the process.

Simplified procedures are one of the main factors that encourage uptake among citizens in relation to online tax services. Citizen can use their Tax Account to declare their income, communicate with the appropriate civil servant, find out how much tax they owe, pay on-line, manage their standing orders and direct debts, view their fiscal calendar, print all kind of tax documents.

If identification, authentication and signature can be performed using a secure document such as an eID card, then public acceptance will be greater still, as the need to manage passwords or soft certificates on their computers remains the most common cause of mistrust of such systems among citizens.

**Benefits for Government**

- Maximize tax revenues and optimize budgeting process
- Reduce fraud
- Slash administrative costs

**Benefits for Citizen**

- Ease-of-use with simplified processes
- Time-saving

**Gemalto Solution**

**Return On Investment Considerations**

- Potential source of revenues: potential for selling Authentication and Signature as a service to Service Providers (public or private) - fee per transaction for example
- Source of savings: Administrative savings in costs of processing tax forms are significant
- Bring added-value services on top of the eID card
- New secure services can be launched at marginal costs

**Key points for Government**

- Citizen-centric solution plug-and-play connectivity from any computer: ease of use will boost usage
- Becoming national identity provider & providing strong authentication and digital signature services to services provider with potential source of revenues for better ROI and visible contribution
- End-to-end security. National benefits: higher security and privacy
- Simplify roll-out and management with its cloud-based solution delivery - Easy maintenance: savings in resources, training, equipment

**Key points for Citizen**

- Immediate access to new benefits (eServices, Health services, eDemocracy...)
- Remove the pain of multiple passwords
- Perceived enhancements in security and privacy creating trust
- No installation software for the end-user/seamless/fast: solve installation problems, immediately use of eID - instant connectivity
eID for Payment

Description

Today’s governments are increasingly scrutinized over their usage of public funds - which is directly impacted by the quality of operations - and the quality of their service to citizens. Reducing the costs induced by managing cash (counting, securing transport, risk of theft or fraud) is an important factor in streamlining transactions with administrations. At the same time, providing faster and easier access to subsidies, as well as reducing the time spent at registers for payment, provides for a much better citizen experience with public services.

An ePurse is a prepayment scheme enabling citizens to pay with their eID as they would if they had a banking card, in the limit of the amount they have previously loaded.

Giving access to electronic payments to people without a bank account, ePurse helps the mission of providing a fair access to public service while harmonizes its costs over the whole population, independently of their financial situation.

Benefits for Government

> Slash costs of managing cash (secure transport, multiple counting, time-to-value)
> Prevent unlawful use of public subsidies
> Reduce risk of corruption with direct transfers
> Get total transparency over public payments

Benefits for Citizen

> Receive public benefits faster than cash
> Less cash to handle: reduce risk of theft or loss
> Free access to electronic payment without a banking account
> Less time lost in lines as payment is processed faster

Gemalto Solution

Government issues the card

- Creates ePurse account with local bank
- Sets up ePurse app on ID card
- Issues ID card to Citizen

Government wires benefits payment to ePurse account

or

Citizen top up his account with cash at bank, shop or Government office

ePurse is credited

In Government offices, Citizen pays for taxes

In authorised shops, Citizen buys subsidized products

ePurse is used to make payments

Key points for Government

> Fast and cost-effective processing of payments through batch top-up drastically reduces the cost of distributing benefits
> Limited financial risk when offering balance recovery thanks to the configuration of a maximum number of offline transactions
> Assurance from a field proven solution and experience of a multi-domain expert
> Lower cost of operation thanks to the support of offline reload, enabling ePurse top-up without network connection

Key points for Citizen

> Intuitive usage within deployed payment infrastructure
> Secure eTransactions

Return On Investment Considerations

> Reduce cost of handling cash: multiple counting, secure transport and storage
> Improve financial return with faster reception of payments
> Build an image of transparency, effectiveness and modernity
The patient goes to the nearest registered dispensary, pharmacist or hospital. He/she shows his/her patient card to the doctor or pharmacist. The card is inserted in a reader. The patient can receive healthcare.

Benefits for Health Insurance

- Slash fraud, abuse and errors by identifying the patient and validating his/her entitlements
- Light investment in readers as no complex networks are needed
- Reduce risk of corruption

Benefits for Healthcare Professional & Patient

- Make checks easier and better accepted
- Avoid complex network as check is performed in the terminal
- Provide security & confidentiality to all stakeholders
- Fingerprints are useful when patient cannot remember his/her PIN, do not know how to write, or when face is concealed

Key points for Health Insurance

- Best terminal uptime thanks to rugged solution where mobility is a priority
- Budget optimization with unique flexibility of hardware and services
- Easy maintenance for practitioners
- Possibility to update Healthcare cards information

Key points for Healthcare Professional & Patient

- Rapid and transparent ID verification with full electronic security mechanism
- Complete ID and biometric checks enhance identity verification and secure data confidentiality
- Simplified access to Healthcare rights and associated services
Medical Expense eClaim

**Description**

Electronic medical expense claim eliminates the need for the paper-based documents required for the reimbursement of medical expenses (medical expense claim forms, tear-off portions of invoices, etc.).

It is based on two main principles:
- The implementation of electronic data exchange between the healthcare professionals and the health insurance organizations
- A common coding system to standardize identification of medical services supplies and equipment

To achieve this target the use of eHealth cards brings numerous benefits: by identifying the holder and his/her affiliation to an organization, and by verifying his/her rights, this card acts as an essential component of the IT system for the creation and secure transmission of standardized medical expense claims. Integral part of service automation, it helps improve the quality of data collected. Countries that have adopted smart card technology have observed a significant decrease in resources dedicated to process administrative tasks as well as smoother, more efficient interaction between patients, healthcare practitioners and health insurance authorities.

**Benefits for Health Insurance**

- Administrative savings in processing claims are huge. Costs are divided by around 7 when processes are dematerialized. Example of France: €0.27 vs €1.74
- Slash fraud, abuse and errors by identifying the patient and validating his/her entitlements
- Increase the quality of data entry and reduce errors in database
- Bring opportunities to create new services (on-line services, profiling, marketing)
- Reduce risk of corruption

**Benefits for Healthcare Professional & Patient**

- Faster registration of patients saving more time for care
- No up-front fees to pay at most health centers, with costs paid directly by health insurance authorities
- Faster reimbursement for patients and doctors
- Security and confidentiality provided to all stake holders
- Improve global quality of service for patients and healthcare professionals

**Gemalto Solution**

**Key points for Health Insurance**

- Ability to identify both professionals and patients in a secure and unique way
- Fight medical fraud and abuse by preventing access to the service for non eligible patients or fraudulent professionals thanks to strong cryptography
- Improve data collection quality and limit the error rate by using automatic form filling up service
- Benefit from an end-to-end solution to cut down administration costs

**Key points for Healthcare Professional & Patient**

- Save time thanks to a user-friendly and secure technology
- Fast reimbursement thanks to service automation
- Improved quality in data collection and reporting can help reduce health disparities
- Enhanced privacy and data integrity

**Return On Investment Considerations**

- Increase health service efficiency: less paper and administration work
- Prevent and fight fraud and abuse
- Leverage on multi-application eHealth cards that can be updated with new services
On-line services with identification and authentication using an electronic driving license (eDL) bring convenience and security to users, especially in countries without national eID. Services in the web can be easily accessed with the eDL around the clock. As these services are designed to be secure, only the user, the Transport Authority and private organizations like insurance companies can access information. Further services are enabled with electronic vehicle registration (eVR).

Using electronic services removes the need to visit Government buildings, wait, and telephone for information or use paper to submit applications. It also allows Government to respond faster to submissions, be more responsive and invest less in human resources.

Benefits for Transport Authority
- Slash administration costs and improve efficiency
- Enhance quality of services
- Reduce errors

Benefits for Driver & car Dealer
- Save time with instant vehicle registration, declaration of new car owner
- Slash paper work with other organizations: ie immediate coverage insurance
- Manage multiple vehicles: cars, motorbikes, trailers, etc.
- Reduce risk of losing DL with up-to-date access to driving history
- Legal proof with electronic signature

Type of on-line services
- Renew driving license
- Change address on eDL
- Request driving history (violations, number of points associated for each violation)
- Vehicle registration services
- Change address on vehicle registration
- Report vehicle being taken off road, and back in use
- Request personalized license plate
- Insure/de-insure vehicle

Gemalto Solution

Key points for Transport Authority
- Easy to use, citizen-centric solution (plug-and-play connectivity from any computer) will boost usage of eServices
- Highly secure eDL can serve as a proof of identity with convenient access to eServices
- Higher security and privacy through end-to-end secure solution
- Selling authentication and digital signature services to Service Providers (e.g. insurance companies) provides a potential source of revenues for better ROI

Key points for Driver & car Dealer
- Convenient 24/7 access to eServices
- Seamless and fast connectivity with immediate use of eDL/eID as no installation software required
- Perceived enhancements in security & privacy creating trust

Return On Investment Considerations
- Reduced costs by modernizing administration and re-designing business process around driving license and vehicle registration
- Potential source of revenue by selling Authentication and Signature as a service to Service Providers (e.g. insurance companies) - for example a fee per transaction
- Bring added-value services on top of the eDL/eID card
- New secure services can be launched at marginal costs
The deployment of secure identity systems and applications comes with the introduction of solutions to securely and efficiently manage the identity document during all his life cycle: from data collection and issuance phase to verification and usage in the field.

To support customers in their deployment program, Gemalto has developed a complete set of solutions called Coesys. It covers enrollment, issuance, e-verification and e-government applications.

As every customer environment and needs are unique, Coesys solutions comes with end to end consulting and integration services to support the customer in all the steps of his Government program.

Alongside with our own Coesys products, Gemalto will bring together best-in-class partner Hardware and Software products to deliver a solution perfectly matching with customer needs and environment. In addition, Gemalto can leverage on a large network of local partners in a wide range of applications and services.

Whatever the needs are (deploy enrollment stations countrywide, setup a personalization center for your secure document or setting-up e-government services), Gemalto will mobilize the right team and the right partners to support you throughout your project.

With more than 20 years of experience in Identity solution integration, Gemalto is your reliable system integrator for your Identity project.

Coesys Services: results with peace of mind

**Project Management:** The methodology developed by Gemalto is based on proven management tools and standards, skilled resources and project management experience capable of delivering a successful project. It comes with a process based approach leveraging on a dedicate Project Life Cycle supported by vertical process based on CMMI model. Risk and Quality management are at the heart of each project.

**Solution Design:** With more than 60 successful deployment projects, customers can rely on Gemalto’s rich experience to design a solution fitting their needs. They will get advises on hardware and software options as well as on architecture and deployment scheme. Consulting on business process analysis, best practices as well as technical standard and security are integrated.

**System Integration & Deployment:** A dedicated team of experts has been setup to address government SI needs. This dedicated team counts numerous people around the world and enables Gemalto to quickly mobilize the necessary resources to support our Government Program customers in meeting their deadline.

**Knowledge Transfer:** As knowledge transfer is a key step in the success of a project, Gemalto has packaged mentoring and training programs matching key roles in the customer organization. The trainings are designed by Gemalto training services department created in 1997 and are delivered by professional trainers with field experience and expert knowledge on Gemalto solutions, Identity technologies and Security.

**Operational Support:** Tailored services are provided through a network of dedicated Support & Maintenance teams specialized in Government Program solutions. On site technical assistance is also proposed, especially to support our customer during deployment phases or the first months of operations.
A trusted authority in eGovernment applications

Gemalto has extensive experience in the public sector, having contributed to more than 60 national government programs worldwide. These include passport, national ID, residence permit, driver’s license and healthcare initiatives and solutions to modernize civil records, enrolment, personalization, training and project management.

Further, our managed services allow us to provide an end-to-end service right through from manufacture to delivery to local authorities or citizens (Germany, Denmark, Sweden, Norway, Estonia, etc.)

User-friendly eGovernment services even more inclusive

Gemalto’s Coesys eGov 2.0 Identity Provider services, enabling strong authentication, centralized signature and identity federation, is now the basis of several national eGovernment infrastructures.

Coesys 2.0 provides a shared and future-proof platform for the use of electronic identity and the delivery of secure public services for all government authorities.

Coesys eGov 2.0 middleware has also been adopted in Azerbaijan, Algeria, in Slovenia and the United Kingdom in national eHealthcare programs and in France, Portugal and Kuwait for eID initiatives.

Winning hearts and minds

e-ID has become a real catalyst for the success of e-Government particularly in countries where applications have been carefully put in place, demonstrating that e-ID is an efficient tool for the exercising and protection of citizens’ rights and bringing added value to citizens, government authorities and businesses. Out of the 30+ e-ID card projects that have been rolled out worldwide, Gemalto is proud to have contributed to some 16 of these (Belgium, Finland, Hong Kong, Sweden, Oman, United Arab Emirates, Qatar, Bahrain, Saudi Arabia, Portugal, Kuwait, Lithuania, Czech Republic, to name just some examples). The company has been able to develop tailored applications now available via its new Coesys Applications Portfolio.

Qatar’s Supreme Council of Information and Communication Technology (ictQATAR) is deploying the Coesys eGov 2.0 solution for eGovernment in Qatar. Using Qatari citizens’ national eID card as a strong authentication token, the solution will boost usage and enhance the access security of the national eGovernment services portal, called Hukoomi. Qatar plans to expand the existing service to incorporate more than 50 eGovernment initiatives in the coming years.

Mobile ID is transforming the Finnish eID scheme into a mobile success story by delivering a comprehensive mobile PKI platform to the leading Finnish MNOs. Rollout of the mobile PKI and PKI SIM cards has already begun and as the end of 2011, every mobile phone user has the option of activating an eID credential for their mobile phone.

The largest national banks have adopted Mobile ID as an option along with Bank ID, basically all services protected by Bank ID can be used with Mobile ID such as: All eGov portals, Online shops, financial services (other than banks), Online insurance services, etc...
Protecting rights and fighting fraud

The exact identification of voters is an essential component in each and every ballot. It is important for the correct functioning of any healthcare system as well, since identity theft or fraud are sources of social injustice. Indeed, authorities could unintentionally allocate rights and resources to an ill-intentioned individual, depriving the rightful beneficiary to what he or she is entitled to.

Contribution to these projects provides the company with an excellent overview of the technology involved, its applications and the quality of information systems, as well as the social context of its use. Furthermore, Gemalto’s experts have provided support for national debates on how to improve systems, in particular to fight fraud and cut the number of errors. Finally, Gemalto is an active collaborator in European and global standardization organizations.

Oman’s Electronic ID Card Voting System: from ink to electronic Fingerprints

To deter electoral fraud, the Sultanate has deployed an Electronic ID Card Voting System ahead of the next elections to the SHURA Council of Oman in October 2011.

Aimed at facilitating an open and fully transparent voting process, the new system will enable authenticating the participation of voters before their ballot is cast at polling places: a perfect illustration of the “one voter - one vote” principle.

Gabon’s national healthcare program: ensure identity to guarantee rights

Even before the program started, it was clear to everyone that all resources should be implemented to ensure that the generosity of the program would not lead to its collapse through the fraudulent use of rights.

Hence beneficiaries must be individually identified so that access to care can be reserved for them. It has been decided that the identification of insured parties will be nominative with the implementation of a Gabonese individual health insurance number.

Gabon’s health card is used in hospitals, pharmacies and community clinic to verify the rights of the social insured while protecting the confidentiality of the patient data.

Mobile identity verification is performed thanks to biometric verification of patient with his/her fingerprint scanning. The Heath card confirms or not the identity with a one-to-one fingerprint matching (not need to access to fingerprint data base).