



# Electronic healthcare solutions

||||| Putting the patient at the center of modernization

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The health sector holds an important place in our societies, as evidenced by funds appropriated to it, the role the state plays, and the large number of associated parties with various functions that it connects.

Because medical advances have resulted in increased life expectancies, and because citizens are being actively encouraged to take personal responsibility for their health, the number of people in need of medical care has increased. As a result, public healthcare systems are coming under severe financial strain.

With such demand for medical care, health services and related public-sector services are overwhelmed and spend more time managing than treating. Unless effective solutions are found to cope with this high demand, the system will ultimately lose all credibility.

Our customers' challenge is to process administrative tasks faster and more efficiently, and reduce the number of intermediate steps. The goal is to provide a single point of access where the patient will only pay his deductible, as determined by the principle of the Third Party payer.

Most e-Government programs in this area are aimed at facilitating exchanges of information and helping medical professionals concentrate on care and treatment rather than management, notably through:

- > Much faster registration of patients at treatment centers. This can be crucial, as the time that elapses before a patient is seen can directly affect the effectiveness of some treatments.
- > No up-front fees to pay at most health centers, with costs paid directly by health insurance authorities.

The next stage in the restructuring of the relationship between patients, healthcare professionals and public-sector authorities is obviously the introduction of digital transaction technologies and the creation of e-Health cards, sometimes referred to as "Personal Health Records" or "PHRs".



Personal Health Records allow healthcare professionals to access all the information concerning a patient's health immediately, regardless of their location, thus avoiding hesitation in urgent situations and optimizing quality of service.

Personalization, of course, is inextricably bound up with identification. As secure cards, based to a large extent on a standard smart card model, PHRs can be linked to e-ID almost immediately.

**Using e-Health cards brings numerous benefits** from an administrative point of view. Countries that have adopted this technology have noted a significant decrease in fraudulent reimbursement claims, as well as smoother, more efficient interaction between patients, healthcare professionals and health insurance authorities.

**PHRs enable care to be streamlined**, avoiding the need for multiple interventions and providing a coherent structure for the treatment of each patient. There are also advantages for government health policy: a well treated patient does not have to keep coming back every day. e-Health is not a commercial venture, and emphasizing the role of the public authorities in safeguarding the relationship of trust between the patient and his or her qualified medical doctor is a good way of building the public acceptance that is so vital to this process of modernization.

**The next step is to involve private health insurance providers** in established card schemes and then to link up different countries' systems so that patients can receive effective healthcare anywhere in the world.

Use of PHRs inevitably helps health service workers to work more effectively together and pool information about the patient. All too often at present this does not happen, with people "protecting their turf" as if the information belonged to them.

Preventive applications are still in their infancy, but a number of innovative services are beginning to appear in this field, be it for statistical monitoring or simply for managing access to certain drugs.

For some of the less advanced countries, setting up an e-Health system represents a quantum leap and a crucial stage in their development; such is the widespread modern day acceptance that a healthy population is a crucial prerequisite for growth and



prosperity. These countries often evolve from having virtually no collective healthcare provision to adopting a modern, patient-centric approach.

The simplification of procedures for patients and medical professionals alike makes it possible to offer quality medical care at the point of need.

**Why use a smart card-based solution?**

Any healthcare system manager in charge of a budget of millions of euros understands the need for better control. Smart cards are the best proven technology to meet these needs as they are cost-efficient and easy-to-use.

Unlike paper documents, which can easily be forged, smart cards are in practice impossible to forge or unlawfully manipulate. They benefit from the inherent high levels of security used in other applications, such as banking, telecom and identity. The same security mechanisms as in the banking sector, with strong offline and/or online verification (PIN or biometric) limit the unlawful use of lost or stolen cards to gain access to healthcare.

Dematerialization of the medical prescription from paper to electronic

format helps organizations reduce costs and increase efficiency. Smart card solutions enable the pre-authorization of the health transaction by storing the validity of the patient's rights.

An electronic cash functionality stored within the card secures the distribution of social funding to low income groups.

The card body itself becomes a secure tool by adding the user's picture and extra security features, such as a guilloche, rainbows, hidden words, etc. – all of which have been previously developed for banknote and ID applications and can be easily re-used in eHealthcare systems.

Finally, the smart card enables the ultimate privacy protection by filtering access to sensitive data - only authorized people can read it, such as the card holder and their doctor.

**Why Gemalto?**

Gemalto is a world wide leader in digital security based on smart cards, offering its customers a complete set of flexible, personalized solutions.

These range from the basic supply of smart cards to the delivery of an entire infrastructure and management of services.

Gemalto's uniquely strong capacity enables it to meet high volume and stringent time-to deployment demands, including diverse personalization needs, which are adapted to the individual customer/country requirements (online/offline or centralized/de-centralized).

Gemalto provides eHealthcare solutions for:

**> Patients**

- National Healthcare Insurance card (standard or customized products for the benefit of the client)
- Secure web access to medical services
- European Healthcare Insurance card (EHIC)

**> Healthcare Professionals**

- Health professional smart cards (standard or customized products for the benefit of the client)
- Secure access control – physical (building & offices) and logical (computers)

- Authentication solution: for connection to medical applications
- Set readers adapted to every need (PC-connected, Standalone, Tokens)

**> Issuance Organizations (Governments and Health Insurance companies)**

- Enrolment of patient data
- Personalization of cards including data preparation
- Packaging and direct mailing according to specific customer requirements
- Healthcare portal authentication gateway

Solutions can be provided as turn-key systems to issuance organizations or directly operated by Gemalto.

**...all within the utmost security:**

- Card body security features and durability
- Chip and operating system security
- Secure and scalable systems for enrolment and personalization
- Proven personalization services: secured and certified operations
- Security applications for both patients and health professionals
- Security consulting around the smart card application

With references in Algeria, China, Finland, France, Gabon, Germany, Mexico, Puerto Rico, Slovenia, South Africa, UK, and the European Health card, Gemalto is a strong and reliable partner.



# The French way to smarter health

## France – a complete eHealthcare solution: phase II

### The environment

France (population 64 million) has always been at the cutting edge of smart card technology, first deploying its use in the healthcare industry as far back as the early '90s. Simplifying the reimbursement system was essential in this country where nearly 95 million healthcare claims were made in June 2010 alone (Source: GIE SESAM-VITALE 2010).

The data entry system for SESAM-Vitale electronic health insurance replaced the standard paper individual health insurance cards with a smart card, the 'Carte Vitale', containing administrative data. One card was issued to every family in the system in order to simplify the administration process, slash paperwork costs and provide a faster, more efficient and secure way of submitting claims for reimbursement.

The system uses two cards to electronically sign claim forms – the patient data card and a health professional card in the same reader – and the forms are sent directly to the patient's health insurance provider.

More than a decade since it was launched, the SESAM-Vitale scheme has grown to include some 53 million patient cards, 600,000 health professional cards, and 200,000 card readers, 20,000 terminals for updating cards, 230 health software applications and 25 servers. Gemalto provided the operating system, personalization services and a large proportion of the cards themselves.

### Moving on

The second generation, Carte Vitale 2, is being deployed over five years starting in November 2006 with family cards issued to every person over 16 years of age eligible for French social security coverage. Nationwide, Vitale 2 cards are gradually replacing the Vitale 1 cards distributed earlier.

Vitale 2 includes enhanced security features such as a new operating



system, cryptographic capabilities and larger memory. Because protecting privacy is of the utmost importance, specific attention was also paid to the personalization processes in order to ensure a high level of security for each individual's data.

Gemalto strongly contributed to the definition of a strong security framework for Vitale 2 personalization services, which have now become a new benchmark for the industry.

The new Vitale 2 features are being activated progressively according to the need. Vitale 2 is key to the new Personal Health Records project ("dossier médical personnalisé") and numerous potential applications are also linked to its IAS features (Identification, Authentication, Signature). Vitale 2 will contain more information (family doctor, organ donation, complementary health insurance, etc.) and will be integrated into the existing infrastructure right from the start.

### Reducing Fraud

With so many millions of cards in the field, fighting fraud has always been key to GIE SESAM-VITALE. Hot lists of lost or stolen cards have been issued and

to counter this further, the new Vitale 2 cards are featuring a photo ID of the holder, printed on the card and stored on the secure microprocessor as well.

The SESAM-Vitale program currently links more than 275,000 healthcare professionals with the Health Insurance System for the benefit of millions of Vitale card holders.

Gemalto has been selected as a primary supplier for the next generation of Vitale 2 health insurance cards and is playing a key role in personalizing and issuing these cards.

### Key numbers

- > Over 1 billion electronic claims processed in 2009
- > Over 83,63% (July 2010) of general practitioners are using the system
- > 99,65% (July 2010) of pharmacists are using the system
- > 81% of dentists (July 2010)

# Algeria

||||| A complete eHealthcare solution for the benefit of its Citizens  
Technology working to reduce costs, fraud and paperwork



||||| **Boualem Touati**  
*IT Director CNAS (Caisse Nationale des Assurances Sociales [National Social Security Fund]) Algeria*

"The key to this in my view is the need for robust identification so that we can answer the question "who is paying for who and for what?" It is essential for better rationalization of health expenditure, for checking purposes and, above all, for the sustainability of the social security system. It would be illusory to think that the supply of services could remain anonymous. Secondly, this identification highlights the importance of the original identity data including the central element providing proof of authenticity of the identity, which is the extract from the civil register.

Finally, the unique identification efforts, such as those that we have made within the social security system in Algeria, must be able to be used in other national projects, by pooling identifiers and management of processes. We must obviously avoid the duplication of technologies, registering processes, verification, identity management, etc., for major forthcoming national projects, such as the national eID program."



## ■ The environment

Algeria is a fast growing country with a population of 34 million, over 80% of who benefit directly or indirectly from the national healthcare organization, the CNAS (Caisse Nationale des Assurances Sociales des Travailleurs Salariés).

With the geographical dispersal of the existing healthcare system, spread out across the 48 wilayas or departments, there was a pressing need to put in place a faster electronic solution that would increase the security, reduce costs linked to administration, increase the speed of reimbursements and offer the visibility required by the CNAS to manage the overall system efficiently.

Gemalto, with its strong experience in deploying eHealthcare systems, was able to respond to the CNAS with a tailor made solution based on four main elements:

- > **Consulting services** – Gemalto was present from the beginning of the project in order to fine-tune the needs with the CNAS and find the most appropriate system architecture and processes.
- > **Card issuance for patients**, including future-proof cards and the whole personalization system.
- > **Card acceptance** – the use of a PIN code strongly authenticates the patient thus slashing fraud and misuse of the card. Health professionals, on the other hand, were issued with a USB key offering strong authentication to the national healthcare IT system. This enables them to centralize all the claims issued during the working day and allows them to electronically sign prescriptions.
- > **Application and security** – The PC based application manages the claim and prescription functionality.

## ■ The solution

With this in mind, the CNAS opted for Gemalto as the provider of a healthcare solution designed to secure their existing system. As prime contractor, Gemalto is managing the entire project including

customization and an integrated issuance and management system. Leveraging its expertise in solutions, Gemalto assisted the CNAS in launching the production process and ensure proper training for the CNAS personnel.

In addition, Gemalto will provide 7 million smart health cards, which will securely identify each beneficiary and their dependants. This solution validates each patient's rights at the moment of use, helping control fraud and the use of health products. The CNAS selected an off-line system for patient authentication and an on-line system for the authentication of health professionals.

This allows for a decentralized healthcare electronic application while providing a centralized collection of data between health professionals and the CNAS organization.

## ■ Benefits

Once the system is fully deployed, the CNAS will benefit from improved control of the system, health needs across the population, and it will provide useful indicators for the decision-making process. The creation of the central repository reduces operational costs and increases efficiency in the management of the Algerian healthcare program.

With secure access to the database through their USB keys, based on Public Key Infrastructure, health professionals will be able to centralize all claims issued during the working day and allow them to electronically sign prescriptions.

## ■ Key numbers of the CHIFA system as of May 2010

- > System is running in 48 agencies (100%)
- > Over 3,600,000 CHIFA cards issued since inception
- > 7 500 USB dongles for Health professionals
- > Over 10,600,000 e-invoices fully processed

# Slovene eHealthcare initiative

||||| Opening a new era of secure on-line access for the benefits of all



||||| **Marjan Suselj**  
*Director of the HIC System Sector, from January 2010 on acting as director of Ljubljana regional unit at the Health Insurance Institute of Slovenia*

“The goal of our strategic e-Health 2010 plan is to join up health information systems nationwide, thus ensuring that electronic services and transparent information can be provided to all stakeholders in a secure and efficient fashion.”

“Apparently it is very difficult for large countries to introduce the second generation of Health cards integrating digital certificates in addition to current functionalities.

Slovenia, as a small country is certainly more agile. After a thorough 2 year-preparation work we have embarked on this change in March 2009 and are on schedule to finish for spring 2010.

I would say that the key challenges of our renovation include active participation of all actors, swift execution of changes without disruption of service and the introduction of acceptable, manageable and up-to-date ICT solutions. Key to the successful running of the operation is also the fact that the new system is fully backward compatible with existing infrastructure.”



## ■ First generation of Health Insurance cards

Since gaining independence in 1991, Slovenia has wasted no time in establishing itself as a pioneer in terms of modernizing its public healthcare system. Indeed Slovenia, along with France, led the way with the introduction of micro-processor-based health insurance cards as far back as 2000, when the country rolled out two million smart cards to the Slovenian population.

This first foray into a nationwide health card system by the Health Insurance Institute of Slovenia (the Institute), was a significant breakthrough in European healthcare management, with the Slovenian Health Insurance Card (HIC) winning the “Sesame 2000” award at Cartes in Paris and for its enhancements the “Drops 2007” award at Omnicard in Berlin.

These cards offer secure patient ID, accurate and up-to-date data in the cards and a significant reduction in fraud and administration. They have been in daily use throughout the entire Slovenian healthcare environment for the past seven years.

## ■ Facts on first generation of Health insure cards as of end of 2007

- > Smart cards in circulation: 2,061,659
- > Professional smart cards: 21,023
- > Card readers: 6,280
- > Self-service terminals: 297

## ■ New challenges

In the spring of 2006, the Institute prepared, with all key actors in the Slovenian healthcare environment, a renovation concept for the renewal of the existing system while ensuring the continuity of all supported business processes.

The Institute has several goals with this new project:

- > to develop and introduce a new version of the HIC to enable the use of digital certificates in addition to current functionalities
- > to develop and introduce a new health professional card with digital certificates as a fundamental security element of the system which will allow for electronic signing.

- > to develop and introduce the infrastructure required for on-line access
- > to develop and introduce the application equipment for healthcare providers and insurance companies
- > to develop and prototype the introduction of electronic prescriptions.

## ■ The solution

In February 2008, the Institute chose Gemalto and Cetus, the Slovenian leader in security document printing, to supply a comprehensive solution for its latest generation of health insurance cards. Cetus will provide card personalization and the PKI infrastructure.

The Gemalto's Sealys Health Insurance cards will be the first of their kind in Europe to feature its Java-based Sealys Multi App ID to further secure a fully on-line system with digital signatures for healthcare professionals. Gemalto's Coesys Issuance solution is also perfectly adapted to the Slovenian project, and Gemalto will also be supplying middleware and applets. The Institute will act as system integrator and as operator of the national healthcare system will issue cards to citizens.

## ■ The results

The first pilots for the new cards began in 2008.

Gemalto's Sealys Health Insurance cards is significantly enhancing on-line services for health providers, enabling simpler and harmonized administrative procedures, and more importantly, allowing electronic transactions to be carried out in compliance with regulations governing the protection of personal data and eTransactions.

For patients, updating data on the card via the network of self-service terminals will no longer be necessary and new services, such as viewing one's own health insurance and health related data, will be gradually introduced.

For health insurance companies, the risk of misuse due to the concurrent review of data on insured persons is reduced.

# The Gabon health program

## ||||| Ambition and solidarity

### A project born from a presidential initiative

A promise made to the poorest Gabonese, this project is the result of the commitment of the

Gabonese government to expand social security cover to all citizens and quickly modernize the health insurance system.

On August 21, 2007, the government created, by order, the National Health Insurance and Social Welfare Fund (Caisse Nationale d'Assurance Maladie et de Garantie Sociale [CNAMGS]) which must cover the healthcare costs of the unemployed, the peasant farmers, the self-employed, the poor and all those excluded from existing structures.

### An ambitious project with many challenges

2008 saw the project launch with numerous challenges to face, since it involves the setup of the new body, its operational implementation with the creation of the CNAM GS headquarters in Libreville and the refurbishment of the selected buildings. It also includes defining the project, preparing and sending out

The ambitious schedule incorporates a pilot phase from December 2008 to March 2009, then a roll-out until 2011 when all dependents of the three funds, the GEFs as priority, should be registered.

### Ensure identity to guarantee rights

Even before the program started, it was clear to everyone that all resources should be implemented to avoid the

health cover program turning into a centre of attention for the citizens of neighboring countries and 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.

### The Gabon health insurance card: durability, security and the protection of rights

In May 2009, the Gabon national health body entrusted Gemalto with the prime contractor role for the national electronic healthcare card program.

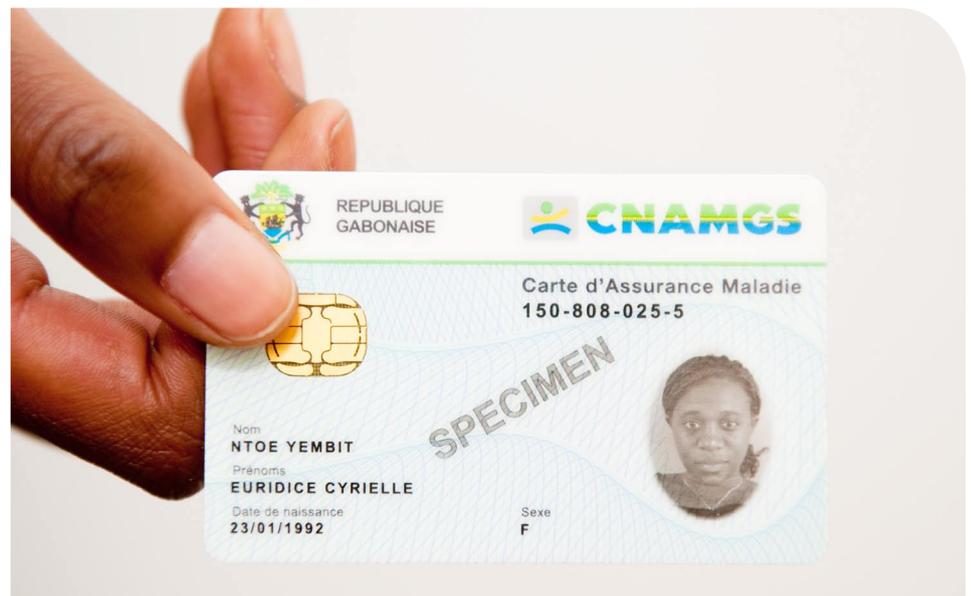
Gemalto supplies a solution which includes enrolment of beneficiaries, the health insurance cards, its Allynis

Issuance operated personalization services and an identity data verification system. The Sealys Laser-Secured health insurance card, which is valid for 10 years, is made of polycarbonate, a material which offers a higher level of security and is resistant to extreme climatic conditions.

Civil data, a photograph of the holder and two fingerprints are digitized within the microprocessor ensuring encryption and protection of this data.

The multi-application Java Card OS supports opening and upgradeability of software applications. The health card is used in hospitals, pharmacies and clinics, to check social security rights whilst protecting the confidentiality of personal data.

Checks are performed using terminals with fingerprint sensors.



## Scale of the project

Since early 2009, the pilot phase has been successfully completed with over 9,000 registrations and the intensive registration phase has now commenced. The registration solution for beneficiaries is provided by registration officers with mobile and fixed stations.

A personalized health insurance card is created from a set of specified personal data (surname, first name, date of birth, sex, etc.), the fingerprint of each future beneficiary and a passport photo.

Approximately 130 registration centers are gradually being set up across Gabonese national territory. They are equipped with high-level IT equipment required for the registration of GEFs (digital camera, fingerprint sensor, laptop, enrolment software, etc.).

By December 2009, more than 100,000 Gabonese people were already registered.

- > 1.5 million health cards on completion
- > 130 registration stations
- > 1 central site for processing registrations and a personalization workshop
- > 115 verification terminals
- > 1,500 registrations/day



## Benefits

The first stage sees each health insurance card holder immediately benefit from access to pharmacies and hospitals registered and approved by the CNAM GS, and medical costs being covered by the CNAMGS, within the limits of the care package defined by the order.

**Professor Michel Mboussou**  
Chief Executive Officer of the  
CNAMGS

*"More than a card, it is a seed, a symbol for a new right, the right to social security for life."*



# Others references

## Gemalto assures smart Healthcare in Azerbaijan



Gemalto, along with local partner Bestcomp, have been selected to provide a digital security solution

for the national eHealthcare program in Azerbaijan. Bestcomp, a leading Azerbaijani IT company, will act as integrator for the project, while Gemalto will deliver 3 million Sealys microprocessor cards and eGovernment middleware. The pilot phase began in February 2008, and progressive rollout is taking place over the next two years.

This is the first large-scale eGovernment project in Azerbaijan led by the Health Ministry, which will provide social security benefits to all. For Azerbaijani citizens, the healthcare smart card substantially simplifies the submission of claims to the country's social security services by digitizing forms. It also offers a high degree of identification and transaction security and speeds up reimbursements. The cards are considered as the basis for the wider implementation of social support throughout the country.

## Gemalto to Deliver 25 Million e-Health Cards for German Citizens

In July 2007, Gemalto was awarded a tender by Allgemeine Ortskrankenkasse (AOK), Germany's biggest health insurer, to supply and personalize e-health-cards. The contract win comes after Gemalto participated in Germany's first healthcare pilot program based on highly secure microprocessor cards.

Gemalto's new digital healthcare solution will avoid duplicate

examinations, cutting unnecessary use of healthcare services. The new cards will also carry ePrescriptions, significantly reducing paperwork, and in-the-field data updates will mean the new system enables insurance funds to potentially adjust their cost of ownership. The Sealys Health Insurance cards will be produced at the local Gemalto Filderstadt site.

The Sealys Health Insurance card, Gemalto's latest-generation card, will also act as an active security device to perform strong patient authentication, thus slashing fraud. The cards will enable secure access to an electronic file including emergency data such as blood group, allergies alerts and ongoing treatments. The cards will only be readable if the patient consents by entering the card's PIN.

## Mexican health insurance organization, Seguro Popular, relies on Gemalto secure cards and services for its revolutionary healthcare program



The Mexican Seguro Popular project is a government healthcare initiative with broad political

support, which aims to provide social security benefits to underprivileged members of the population. In place since 2004, it is considered the basis for the wider implementation of social support throughout Mexico.

Mexico has a large population of 107 million inhabitants. The "Seguro Popular" program addresses inhabitants who receive no healthcare benefits by providing them with subsidies for medicine and medical care.

The scale of the project was one of the first challenges to address. To set up a system able to support millions, there was a pressing need to establish a means of identification that was portable, secure, auditable and usable, especially addressing individuals with no bank account. It was also essential to eradicate fraud from the start.

In addition, the project was under strong scrutiny. For the Mexican government, the Seguro Popular project was the first step of a larger new countrywide eHealthcare program aimed at securely storing patient information, ensuring citizens get the correct healthcare benefits and reducing paper-based administration.

As part of this objective, Seguro Popular began implementation of an eHealthcare smart card-based solution in early 2006.

They gave each of the families in the Seguro Popular program a card for use by the whole household. The head of the house was clearly identified on the front of the card, and the list of beneficiaries on the back, thus covering the people in the program.

Each time a cardholder visited their doctor, important patient information could be securely accessed and additional medical information added in real time, thus reducing fraud and the costs of administration.

Allynis Issuance Services, Gemalto's local production and personalization services linked with a strong partnership with the integrator, Image Technology Mexico, ensured a smooth integration into Seguro Popular's ground-breaking healthcare program.

The Sealys Health Insurance Cards, based on Gemalto technology, were first deployed in March 2006 and contain an e-purse, patient information and prescriptions. The information can only be read by authorized healthcare professionals once the card is inserted into a reader, also part of the wider Gemalto solution for eHealthcare. This ensures privacy of confidential data and better control over healthcare payment and subsidies. The secured card includes high security features - such as UV printing, laser engraving, guilloche, rainbow effects and green fluorescent ink.

These enhanced security features make the card virtually impossible to alter, forge or duplicate.

By 2009, there were close to 11 million families affiliated to the Sistema de Protección Social en Salud, which accounted to about 31 million beneficiaries.

### **Gemalto Smart Cards Secure Access to Personal Health Records in Bulgaria**



In February 2010, Gemalto announced that Bulgaria has started deploying its smart cards to secure

access to personal health records for the country's military personnel and their family.

In Bulgaria, Gemalto delivered double-slot readers and smart cards with the associated middleware to KIM-2000, a local company specialized in eHealth projects. KIM-2000 acts as prime contractor for the electronic health record system commissioned by the

Military Medical Academy. The Military Medical Academy is under the authority of the Ministry of Defense and is the organization in charge of medical care for the Bulgarian Armed Forces.

This innovative system optimizes medical treatments, simplifies and modernizes procedures and increases security for accessing health information.

The Gemalto card is compliant with the Identification Authentication Signature (IAS) European standard to ensure the highest level of security for accessing personal electronic health records. The patient and the healthcare professional simultaneously insert their own card into the double-entry Gemalto reader and type in their PIN code to enable viewing or modifying of the medical file, which is stored on a highly secure IT infrastructure. The patient can also view their personal data online, using the Gemalto reader and card to authenticate themselves.

The personal electronic health record is a complete electronic archive of the patient's medical history. It stores all existing medical documentation, including laboratory tests and results, X-ray pictures, all visual tests, electronic prescriptions, etc. It also contains the patient's blood group, allergies and genetic predisposition to diseases, health check ups, surgical interventions and all useful medical information.

The personal electronic health record enables healthcare professionals to immediately access a patient's medical data and therefore, make more accurate decisions, especially in emergency situations, for which there is a special section in the electronic health record, containing the most important relevant information.



## More on Gemalto

Gemalto is the leader in digital security with pro forma 2009 annual revenues of over €1.654 billion, operations in about 85 countries and over 10,000 employees.

Gemalto provides end-to-end digital security solutions, from the development of software applications through design and production of secure personal devices such as smart cards, SIMs, e-Healthcare cards, e-passports and eIDs, to the deployment of managed services for its customers.

More than a billion people worldwide use the company's products and services.

## Gemalto and the public sector

In the public sector, Gemalto is contributing to over 50 national programs.

The company has a long history in secure printing as well as in the smart card industry. Gemalto has produced identity cards, passports and e-passports, driving licenses and e-healthcare cards for many years. It also has extensive experience in the delivery of issuance, enrolment and e-Government solutions or even turn-key solutions and operated services for national passport, ID or health systems.

Gemalto is taking an active part in 14 national eID initiatives and 9 major eHealthcare programs around the world. In 2005, Gemalto began producing Sweden's, Norway's and Denmark's e-Passports. As of today, Gemalto is contributing to more than 20 national e-passport programs including in particular Côte d'Ivoire, Estonia, France, India (diplomatic), Italy, Morocco, Portugal, Qatar, Singapore, Slovenia, Turkey and USA.

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security to be free