GOVERNMENT PROGRAMS

Steering the future with electronic Driving License

Deliver more with less

White Paper
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Executive summary

Over the years, the driving license has moved far beyond its original purpose. Today it is not just used for driving entitlement, but serves as proof of identity or services eligibility in many other situations. Fraud is a major challenge for issuers, authorities, businesses and citizens even when the document is used to show driving entitlement. Insecurity on the roads created by illegal drivers can lead to substantial damage. Furthermore when driving licenses are used as IDs, fraudulent claims increase overall cost for both private and public sectors.

Governments have looked to strengthen the security of driving licenses by introducing additional visual, physical or electronic security features such as an embedded microprocessor. Over 10 countries across the world have already implemented electronic driving licenses, from El Salvador in 1998, India in 2003, Mexico in 2007, Australia in 2010 or Ireland in January 2013. New projects in Europe like the French electronic driving license launched in September 2013 are replacing the traditional paper document, helping to combat fraud whilst maintaining robust protection of personal information. Including a chip has not only improved processes and reduced costs, but has also opened up new business opportunities.

Migration from a conventional driving license to an electronic one is a significant opportunity to bring benefits like increased accuracy and reliability to a state’s document and data management systems. For authorities who are under constant pressure to cut running costs, the electronic driving license is a real enabler for digital services simultaneously improving service availability and operational efficiency.

Today the main objectives for new driving license programs identified in our users group meeting held in Istanbul in May 2013 are to:

- Reengineer and streamline processes for better and more cost-effective applications and services related to managing driving license life cycle
- Modernize documents to actively combat fraud and increase trust at both national and international levels
- Positively impact road safety
- Ensure compliance with international standards
- Find opportunities to offer more and better services leveraging public-private partnerships
CHAPTER 1 – New era for drivers’ licensing

Improving public safety on roads

Originally a means to generate revenue to fund road infrastructure, driving licenses have evolved to become the proof of a person’s ability to operate a motor vehicle safely. As such they have become fundamental to ensuring public safety on roads.

Tackling fraud is central to improving road safety. As underlined by the European Commission in January 2013: “fake driving licenses are a license to kill”. The Governor of the US state of Connecticut summarized the challenge in May 2013: “It is about knowing who is entitled to drive on our roads and doing everything we can to make sure those drivers are safe and operating registered, insured vehicles”.

Slashing identity fraud

In many countries, driving licenses have also become a ‘de facto’ document for personal identification. Criminals, using fake documents to create fictitious identities, are becoming an increasing problem for governments. Rising levels of welfare fraud, illegal immigration, drug trafficking and credit card fraud are some of the consequences.

Countries that have introduced new driving licenses over the past decade, have added a range of additional visual and electronic security features to combat identity fraud and to strengthen public confidence in personal identification documents. For example as of 2014, to add an additional layer of security to the British driving license, a laser engraving process is applied during the production stage to the edge of the polycarbonate document.

Reengineering back office processes

Continually evolving technology offers the opportunity to improve operational efficiency. Implementing a more secure driving license program relying on smart card technology can enable governments to radically rethink back office processes.

The introduction of a chip-based driver and vehicle registration system in India has been the catalyst to move from paper-based systems to a faster and more efficient licensing process. For other countries, it’s a way to improve revenue collection through management of traffic fines and more regular license renewal. Other benefits include improved data interconnectivity between different state authorities and also private sector companies.

In Mexico, closer cooperation between authorities and insurance firms is improving driver accountability.

Technology can also help public education initiatives, aimed at developing a stronger sense of individual responsibility among drivers for safer behaviour on the roads.

Enhancing efficiency in law enforcement

Driving licenses play a fundamental role in law enforcement. With improved interconnectivity and communication between police and other state agencies, electronic licenses result in more effective policing.
The electronic driving licence and national vehicle registry introduced in El Salvador 15 years ago have helped create a highly integrated infrastructure linking the Ministries of the Interior and Transport, Police and Customs.

In Estonia, every patrol car is equipped with a mobile workstation. This provides officers in the field with near-instant access to databases, including vehicle registration, traffic insurance and population registers. As a result, queries are reduced to a matter of seconds, increasing by 1000% the number of driver and vehicle verifications per month.

**Developing new driver centric services**

Driving license programs are a way to develop a range of driving-related services (licensing, testing, penalty points management, retraining) that can be facilitated through better liaison between government agencies, and the private sector.

Technology is an enabler. It makes getting a license and dealing with state authorities, over-the-counter, on-line or in the field, much easier.

The inclusion of an electronic chip on licenses not only reinforces public trust in the integrity of a document, designed to prove identity and driving entitlement on the roads, but also opens up possibilities for use as a secure token to access e-government services.

Applications can be stored on the card and activated later as use cases are put in place, saving on cost and deployment time. When a typical website visit can cost 15p compared to over £8 (source: Computer World UK of 29 May 2012) for a face-to-face meeting, e-services can represent a significant cost saving for governments as well as a faster and more convenient customer experience.

**Turning the page**

Today the driving license is used in many situations as a proof of identity or other entitlements. Replacing paper based documents, as a proof of identity or other entitlements, with electronic alternatives will benefit the ecosystem. Improved identity security and public safety both impact positively on the environment, an increasingly important concern for governments and their citizens.

Public awareness of responsibilities and rights involved with driving will continue to evolve. In implementing new driver licensing programs, governments have a very real opportunity to shape the shared responsibility of state agencies and citizens in ensuring public safety on the roads.

The new wave of secure electronic driving licenses (eDLs) represents an opportunity for secure digital identification. The use of a secure, portable personal device for digital identity, such as a smart driving license issued by public authorities, enables citizens, consumers, or users to prove their identity when and where they choose and need to do so.
Chapter 2 – eDL: a license to drive and much more

Smart card technology has changed people’s life in many ways. It has been adopted into everyday usage in banking cards for trusted financial transactions, SIM cards that enable individual mobile communications and secure identification of individuals for travelling with electronic passports. Its widespread use has transformed consumer acceptance and expectation of security and convenience in both public and private sector services.

Smart card technology can be, and is, also integrated in driving licenses.

Using electronic driving license cards speeds up the transition to paperless, electronic procedures and data exchanges, which act as formidable catalysts for the modernization of systems. Although the improvements in terms of administration are impressive, this technology is often under-used at present in areas where it can deliver significant results.

Yet electronic driving license have a crucial role to play in creating accurate databases. It allows automatic reading of data, and the temporary or permanent local storage of additional confidential data such as blood groups, penalty points and insurance details. Electronic services that have already been implemented in Europe and the rest of the world—with identification systems, electronic authentication of entitled users and digital signature—clearly show that the key elements (microchip cards, public key infrastructure, authentication, etc.) of a modern driving license system relies on robust technology that meets the challenges presented by fraud, abuse and errors.

One document, many uses

- An eDL primarily verifies the identity of a driver and his/her entitlement relative to driving and vehicle use.
- It’s designed to reduce identity fraud by ensuring that the document can be validated visually and electronically to match the identity of its holder.
- It also serves as a multi-purpose identity document. For example in Mexico and Australia eDL is used to prove identity, age and access in traffic checks, opening bank accounts and ID control.

Mexico: multi-purpose identity document

Smart driver’s licenses have been deployed in four Mexican states since 2007. Cards are personalized on the spot with driver’s biometric information, linked to a centralized platform for the secure sharing of information between government departments for a faster more efficient way to issue licenses. The program ensures:

- Nationally recognized identity document for citizens
- Secure, difficult to forge format that reduces administrative fraud and identity theft
- Improved driver accountability through closer cooperation between authorities, insurance firms over fines, accident history and driver behavior

Mexico’s microprocessor card driver’s license: a multi-purpose document

In Mexico, a country with more than 110 million inhabitants and some 50 million drivers, migration to smart card drivers’ licenses has brought numerous advantages to regions and citizens alike, and is all the more effective for the fact that these cards are recognized nationwide as a ‘de facto’ form of identification.
The card’s capacity to store a variety of information concerning the driver, such as his or her accident history or past breaches of the Highway Code, represents an unquestionable advantage for the police and for the authorities responsible for issuing drivers’ licenses.

Nuevo Leon in Mexico adopted smart cards for their driver’s license in 2007. Results were impressive: a 22% decrease in injury accidents, a 34% decrease in DUI (Driving Under the Influence of alcohol) accidents, and a decrease of 39% in road fatalities recorded between 2006 and 2008. In the same period of time, the number of vehicles increased by 19%. The effectiveness in reducing traffic accidents, insurance costs, identity theft and administrative fraud demonstrated in the state of Nuevo Leon on a daily basis since 2007 pushed other states such as Mexico State, Sonora and Vera Cruz to adopt smart card drivers’ licenses.

Security and confidentiality

Over the years, authorities across the world have used a variety of tactics to combat fake driving licenses. Driving licenses are the most widely issued government document and, as a consequence, are assumed to be the most commonly counterfeited identity document. This is because:

- many insecure driving licenses are in use (produced on paper or teslin)
- driving licenses represent a high cost for citizens (driving school, examination, health check)
- driving licenses are often accepted as an official identity document. Fake driving licenses can then be used as a ‘breeder document’ to apply for an authentic identity document or as a means to gain entitlements or social benefits.

Smart card technology is an invaluable asset to combat driving license fraud in the interest of all.

- An eDL provides a combination of physical, visual and electronic security with an advanced set of security features. More secure plastics, like polycarbonate, invisible printing and tagging with individual personalization, make counterfeiting more difficult.
- Only limited information needs to be disclosed on the driving license card body. The chip allows additional information to be stored, respecting privacy rules for sensitive citizen data. Information such as insurance details, driving records or emergency data such as driver’s blood type can now be made available only to the entitled persons.
- Unlike data visible on the card, the chip securely stores cardholder data (photograph and biometric data) which cannot be altered. This ensures the integrity of an individual’s identity, entitlements, etc.
- The chip protects the privacy of the cardholder. After it is electronically signed at issuance and only authorized personnel afterwards have the electronic key granting them access to data.
- The chip can be integrated in either contact, contactless or a combination of both (dual interface) formats to match specific country requirements and use cases.
- It guarantees stringent international security certifications for highly secure applications, meeting ICAO, EAL 4+, Common Criteria and FIPS certifications.

Reliable identification on and off the road and in the digital world

Chip embedded, electronic driver licenses allow reliable and convenient verification without compromising security. Police can easily identify both the card holder and the authenticity of the card, with the help of a mobile verification device. Printed Information on the physical card could be tampered by sophisticated fraudsters.

Electronic driving license provides efficient means to facilitate a secure, reliable and convenient road side check. In addition, paired with a PIN code for example, the driving license can provide a secure platform for a reliable digital identity scheme.
Operational improvement and efficiency

- eDL also facilitates the modernization of driving license programs. Enrollment and issuance can be tailored to country requirements, from centralized, semi-centralized to over-the-counter. In India, it has enabled the streamlining of back-office processes, resulting in faster issuing of eDLs and vehicle registrations and significant cost-savings in the reduction of manual paper-based systems.
- The operating system underpinning eDL enables driving license programs to go beyond secure identity storage to multi-application use. Additional services can be included as applications that can be activated later according to use cases, thus saving on memory cost and deployment time.
- Flexibility of post-issuance updating of records or on-card applications can drive down costs and ensure a better return on investment of public funds.

India: improving administrative efficiency

In 2003 India introduced a smart card-based driving license program, based on its nationally developed SCOSTA standard. With over 50% of the drivers now having these new smart documents in 2013, the solution automates business processes at decentralized regional transport offices and state level transport registers. This enables the Indian government to consolidate driver and vehicle registration information across the population in a central repository, improving the administrative efficiency of the transport authority and other government departments.

Benefits of the program:
- Ensure national interoperability of a tamper-proof ID document
- Cost savings from reduced time of administrative processing
- Improve customer service through efficient fines, registration fees and tax management

India, with 110 million drivers and many more vehicles, is facing many challenges related to road security, pollution and administrative issues.

To tackle these problems, several Indian states are already rolling-out new secure documents, the so-called electronic driver’s license and electronic registration certificate cards.

The e-Driver’s License incorporates a microprocessor that securely stores the driver’s data, protecting citizens against identity theft. In addition, it contains information on the driver’s history which is expected to contribute to a reduction in car accidents.

In addition to delivering digital security and convenience, introducing these e-documents improves administrative efficiency and provides greater transparency for the authorities.

With the country’s rapid growth, there is an increasing need for expanding the implementation of secure, electronic documents to more states.
eDL as a platform for additional services

Security, public trust and process efficiency are critical challenges for governments. Beyond its 'de facto' use as a trusted identity document, the additional capabilities of the eDL offer opportunities for authorities to enhance the user experience of drivers and to facilitate additional services from public and private sector partners.

Unlike traditional driving licenses, the electronic driving license can serve as a platform for a wide variety of payment services, such as fines, parking fees and toll payments. It can also store critical health data such as blood type, allergies and organ donor status, information crucial in emergency situations.

With secure authentication and digital signing, eDL can be used as a proof of identity and entitlement for online transactions, such as car rental, purchasing vehicle insurance and document renewal. Driver’s privacy is protected by the eDL only allowing access to the minimum information set required to complete a transaction.

Document management and digital signature

Public authorities responsible for driving license programs often manage a series of processes related to driving – from test application, license application, to vehicle registration. eDL can help public authorities evolve from one-way services – typically downloaded forms that are printed, filled in on paper and submitted by traditional mail – towards two-way interaction where citizens can fill in, digitally sign and submit forms all on-line. This can represent a significant saving in the delivery of services. It also enhances user experience of driving-related services, bringing immediate access and convenience.

Penalty point management and better road behavior

An eDL can facilitate the online availability of information on penalty points. Points can be marked to a driver’s file following traffic violations, in some cases leading to temporary or permanent suspension of the right to drive.

Drivers could use their eDL to view points status, history of traffic behavior and access advice on available training to regain points. It provides drivers with a secure way to access transparent information on their driving rights and enables governments to encourage better road safety with personalized advice to drivers at a reduced administrative cost.

Authentication to on-line services

Public expectation of speed, convenience and efficiency is encouraging governments to provide different ways for citizens to access administrative services. The most popular e-Government services used by citizens in Europe and the Middle East are income tax declaration, management of social security benefits, police declarations, birth and marriage certifications and health related services.

As a trusted means of identification, the eDL can provide a secure citizen authentication device for connecting to online services from authorities responsible for driving license programs, other governmental agencies and also private agencies such as insurance companies. According to 2012 research in the UK, a website visit can cost 15p vs £8.62 for a face-to-face meeting.
Standards ensure interoperability

The development of global standards is driving a common framework towards an internationally recognized driving license. ISO/IEC 18013, first introduced in 2005 and which came into force in 2009, provides a common toolbox for the implementation of secure driving license programs. Initially focused on the physical format and visual security elements, the standard has evolved to include guidance on electronic security, testing and interoperability for migration towards a secure, credit-card format e-document.

In Europe, the 2006 directive (2006/126/EC) set the move to a credit card format, harmonized data set, physical security and validity of the document. The 2011 directive (2011/94/EC) made some progress on lay outs in order to harmonize the driving categories throughout Europe. The deadline to start issuing these new documents was set to January 19, 2013. The directive did not comment on the optional microprocessor embedded in the card by member states.

The commission regulation 383/2012 of May 2012 defined, for the first time, a unified European electronic driving license. The EU mandated the introduction of a single highly secure European driving license from January 2013 that replaces some 110 different paper and plastic licenses. The aim: to enhance safety as well as freedom of movement for European drivers on the roads, reduce driving license fraud through an easy to recognize European format and facilitate exchange of information between member states. Implementations are underway within the EU’s 28 members, with programs that incorporate contactless technologies enabling e-driving licenses potentially to benefit from infrastructures already deployed for e-passports or e-resident permits.

UK: enhancing security and lowering costs

To conform with EU harmonization, the UK’s DVLA (Driver and Vehicle Licensing Agency) in 2013 will commence issuing new secure documents made to the specifications of the new European driver’s license as well as digital tachograph cards and biometric resident permits compliant with ICAO standards. Benefits of the program:

- Tackling fraud / counterfeiting with introduction of highly visible secure features
- Reducing costs for more streamlined issuing and better value for taxpayers

“It will deliver millions of pounds of savings for the UK taxpayer and allows DVLA to issue even more secure driving licenses, and provide the next generation of high security smart cards for other parts of UK government.” DVLA.

Standards are helping driving licenses evolve towards a more secure and robust card format compared to legacy paper-based systems that are often issued once for life. New programs are introducing a regular renewal of licenses – typically between 10-15 years – bringing more secure regulation and a new revenue stream for governments. In El Salvador, the renewal of licenses every 3 years has proved not only a good source of public income, but contributed to reducing fraud and illegal driving.
Chapter 3 Best practices for launching your eDL program

Benefits of a national eDL initiative

The best practices in implementing electronic driving licenses can be found when a systemic approach is taken. This encompasses not only the issuance of new and more secure documents but also new or updated administrative procedures and cooperation with different authorities and even private companies.

In all the cases we have encountered these initiatives have clearly shown:

- Effectiveness in fighting fraud
- Contribution to road safety
- Better law enforcement and tax collection
- Cost effectiveness of new administrative processes
- Opportunities, mostly untapped yet, in delivering new services to drivers/citizens.

Seven suggestions based on Gemalto’s experience

1. Study
Conduct data collection and analysis to understand current performance as well as to identify potential bottlenecks and gaps.

- Which transactions are most widely used?
- Who are using the services and when?
- Which services cost the most? Which ones bring the biggest revenues?
- Can private services benefit from dematerialization and enhanced security? (car insurance companies,..) Could they share infrastructure costs?
- Can services be outsourced to the private sector?

2. Plan and innovate
Pick up three most often used services. Pilot them and collect customer experiences. Include end-users and private parties together with authorities in workshops to innovate new services around an electronic driving license card. Each country is different and the local ecosystem should be explored. This way you can find new business opportunities and maximize the driving license value to all stakeholders.

3. Don’t underestimate the power of promotion
Promote the usages and services enabled by eDL that can be provided to both businesses and citizens. By making people aware of the benefits they can receive through smart card based driving license can help ensure the payback of related investments.

4. Enhance end user convenience
Exceed customer expectations with better availability – through diverse and predominantly digital channels. Find new business opportunities facilitating driving license usage.

5. Improve security in all its forms
Implement microchip card technology to tackle fraud and make drivers and vehicle owners accountable for their actions. Utilize chip to combat corruption within the police or other authorities.

6. Make better use of available resources
Many transport authorities have targets to save significant amounts of money in their annual running costs. Adopt paperless procedures that enable more structured administrative processes and accuracy of driver data through smart card usage. Equip police with mobile verification equipment to allow reliable driver identification and accurate driver and vehicle data verification.
7. Streamline processes
Implement efficient and regular DL renewal process to reduce fraud and administrative cost. Coordinate and optimize information-sharing to highlight transparency between stakeholders.

Interview with Roberto Siegrist, Director of SERTRACEN, El Salvador – August 2013

El Salvador was one of the very first countries to introduce a smart card-based driving license and Setracen, as the system integrator selected for this project by the authorities, has accumulated a valuable experience.

Mr Siegrist, can you quickly summarize the project and its tangible benefits?

We designed and delivered a nationwide multi-application smart card solution to successfully manage the nation’s driver’s license, vehicle registration and tax payment procedures and processes. We set up a highly integrated and efficient infrastructure linking the Ministries of the Interior and Transport, Police and Customs.

Now in its 14th year of operation, more than 10 million electronic documents have been issued in El Salvador and 76,000 new cards are issued every month.

I see 4 main benefits impacting drivers, authorities and tax-payers:

• Convenience: the biometric enrolment and issuance processes only take 30 minutes
• Better tax collection: tax evasion was reduced by 35% after just one year of operation
• Impact on commerce: illegal car importation has been slashed
• Impact on crime: car theft has been reduced dramatically

Additionally, the program has been effective in compelling drivers and vehicle owners to be more accountable for their actions, resulting in more responsible driving habits, fewer accidents and lower insurance premiums.

What would be your recommendations for our readers?

I would say:

1. Secure driving license electronically in order to actively combat document fraud and increase the level of trust in the document. As in El Salvador, biometric enrolment and short period of renewals are also key here. Having a document created, say, 40 or 50 years ago and still in circulation is not acceptable!

2. Ensure compliance with international and regional driving license standards. El Salvador is a small country and interoperability with other countries can be instrumental in the future for fighting cross-border crime.

3. Build a modern, secure driving license and vehicle register on which police and other public administrations can confidently and sustainably rely on.

4. Try to set up a shared and future-proof platform for the electronic driving license that can be used for the delivery of public services for all government authorities as well as private organizations.

5. Provide driver’s license holders with a guarantee that their data is protected and can be exchanged in confidence.

6. Facilitate police day-to-day life with mobile verification equipment to allow reliable verification. Significant cost savings can be achieved here.
ABOUT GEMALTO

Gemalto is the world leader in digital security with 2012 revenues of €2.2 billion. In the public sector, Gemalto provides secure documents, robust identity solutions and services for governments, national printers and integrators in the service of citizens. Its products and solutions are deployed in more than 80 government programs worldwide.

Gemalto is contributing to 25 eID and eResidence Permit initiatives, more than 25 ePassport programs with specific expertise in border and visa management projects. The company is active in major eHealthcare schemes and numerous e-driving license and vehicle registration projects. Gemalto also collaborates with its clients to report and share best practices from around the world.