EUROSMART
The Voice of the Smart Security Industry

**Electronic Driving Licence –
A Pan-European Long Term Solution**

September 2008

EU legislation and funded research continue to support ICT technologies and promote their deployment in the European Union. Smart Card technology is still well positioned in that field as more and more applications are now being influenced by governmental bodies.

For the smart security industry, the European Agenda in the public sector domain is impressive:
Electronic Passport,
Electronic Residence permit,
Healthcare Smart Card,
Tachograph,
Car registration…

Context of increased security for Member States and citizens
The trend is set in the European Union: Electronic Passports have been deployed successfully; most EU countries have a National ID card and several (Belgium, Estonia, Finland, Germany, Italy…) have adopted or are adopting an electronic National ID card; several countries have deployed an electronic Healthcare card (Austria, Belgium, France, Germany, Italy, Slovenia…).
The European Union should take the benefit of existing standards, existing infrastructure, existing experience put into place for the e-Passport and e-ID.
Driving Licences are set to follow a similar trend. In some countries, they are also widely used as ID documents for security-sensitive operations such as opening bank accounts or boarding airplanes.
Precondition is that the driving licence document has the same security level like National ID cards which represent not only the licence to drive a certain car class but represent the identity and the citizenship of a person.
Driving Licence-based ID theft leads to substantial financial and human risks.
The migration for more secure credit-card format (versus paper) Driving Licences has already been set by many European countries. And the EU directive imposes that all Members States switch to ID1 format before 2012 for the new documents issued. The introduction of the chip to provide an ultimate level of security and privacy is a logical next step.

European Driving Licence legislation is well advanced and needs to go further
In 1991, the European Union harmonised many of the driving rules, enabling eased circulation in the EU Member States. In 1994, the EU authorised the use of plastic credit card-shaped Driving Licences in conjunction of the joining of Finland and Sweden, which already used such secure documents. In 1997, the EU made plastic credit-card format Driving Licences an option in addition to the paper format.
With the new Member States there are more than 110 different driving licence models used by around 493 million European citizens. All of these driving licences have to be recognised throughout the EU without any formality and are thus an essential tool for facilitating the free movement of such a large number of citizens. Although driving licences have to be mutually recognised, the continued existence of different models, differing in inherent rights, validity periods, language and layout renders such recognition difficult. Lack of communication between issuing authorities could increase this challenge.
Today, 37 countries in Europe (EU Member States and non-Member States) have started deploying credit card format driving licences. Almost all European Member States have so far changed to a credit card format. Nevertheless no country in Europe has introduced a smart driving licence with chip so far.
Ongoing discussions in some countries are linking national security to electronic ID cards and electronic driving licence cards. Some early indications are published in UK, Sweden and Spain.

The European Directive 2006/126/EC aims at deploying a Europe-wide harmonised and secure credit card-shaped driving that would have a document lifetime of 10 years. It sets the chip as an option to further improve the level of fraud protection.

A common regulation with precise objectives
The Directive has the following main objectives:

- **Reduce the possibilities of fraud**: elimination of the possibility of issuing a paper model driving licence in favour of the plastic card driving licence model. Member States will have the option of incorporating a microchip in the driving licence containing the information printed on the card;

- **Guarantee the free movement of citizens**: driving licence holders will keep their acquired rights, but regular renewal of the document will limit the possibilities of fraud by allowing the anti-fraud protection of all licences and the holder's photograph to be updated. All licences will have the same validity period and will be valid in all the Member States, unconditionally, for the same administrative validity.

- **Contribute to improved road safety**: introduce a new category of licence for mopeds, harmonise the periodicity of medical checks for professional drivers and lay down minimum requirements for the initial qualification and the training of driving examiners.

Smart card for Driving Licence provides additional security and privacy. It also provides an easier verification – in particular with the diversity of national languages in the E.U. - with new adapted equipments. It is also the way to introduce new functionalities and new applications.
Although, as mentioned, the chip is optional and left to Member States to decide, it will provide significant **advantages, corresponding to the objectives of the regulation**:

Security: information written on the document is also securely stored into the chip so it cannot be altered. It provides an ultimate level of security against counterfeiting. It enables additional use of biometric information if required.
Privacy is enabled as the chip can filter appropriate information to selected authorised people. This includes sensitive information such as home address or optional biometric information.
Verification is eased by instantaneous uncovering of counterfeiting. Optional biometrics is processed by matching algorithms.
Flexibility and Convenience: Data on the chip can be changed or updated in the field. The chip can contain much more information than the front and rear side of a classical driving licence. By this way national specific data could be included.

If Driving Licences have a contactless interface, they can take advantage of the reading infrastructure being deployed for electronic Passports or ID cards. The system used for electronic Passports is now proven to be a reliable interface in terms of security, privacy, interoperability and durability and has been tested in interoperability tests.

Standards are established, and Europe needs to contribute to their finalisation
International ISO standards focus on the machine-readable, credit card-shaped Driving Licence**: ISO 18013**[1]. Organizations and companies from various countries contribute to it: United States, Japan, Korea, Australia, South Africa and Europe in particular.

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[1] ISO/IEC 18013-1:2005

Part I, which relates to the physical characteristics of the plastic Driving Licence card, is finalised. Part II relates to the data structure of the machine-readable data and is close to publication. Part III relates to the verification and access control procedures (reading of the data on the chip) and is currently being finalized. This latter part describes the privacy mechanisms similar to the Basic Access Control and Extended Access Control implemented by the European Union for the electronic Passport.

Although no country has any obligation to implement ISO standards, it is desirable that the EU contributes to the Verification Procedures with its own requirements in terms of privacy mechanisms.

Recommendations from EUROSMART

If we combine the objectives of the driving licence regulation, the advantages of choosing an electronic driving licence and the existing standard and infrastructure, EUROSMART wishes to address the following recommendation to the European Ministers of Transport:

The European Union should adopt a common framework to secure and enhance its identity documents by adding a electronic component; it is already the case for travelling documents like electronic passports[2], as well as electronic identity cards (if used travelling inside the EU);

The EU should take the benefit of existing standards, existing infrastructure, existing experience put into place for the e-Passport and e-ID.

EUROSMART wishes to point out various documents on the table to provide guidance and interoperability in the implementation of an electronic driving licence interoperable on the EU territory:

• Registration documents for vehicles (smart card format specifications available) EC Directive 127/2003;

• National e-ID card, common minimum security standards and procedure[3] adopted by Council of Ministers in December 2005

• International Standard for electronic driving licence, ISO 18013 (Working group 10).

EUROSMART proposal for high secure, EU harmonised, electronic driving licence:
ISO-Standard 18013 for format & data structure combined with the existing security architecture for travelling documents in line with the Council Conclusions of December 2005 on national identity documents.

MORE INFORMATION
Learn from examples and exchange on common basis
Several countries are deploying electronic driving licence. Early deployments use proprietary implementations and EUROSMART would not recommend this approach. To give a worldwide overview:

   • **El Salvador** was the first country to introduce, in 1998, a smart card-based Driving Licence. The scheme is proprietary and the chips securely store the facial photo, fingerprints and a digital signature.

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[2] Council Regulation 2252/2004 of 13 December 2004
[3] Council Conclusions Justice and Home Affairs of 1-2 December 2005

- **India** has followed in 2004. Their solution is proprietary, contact-based, 4k Memory, without biometrics. Until today 5m cards have been deployed.

- **Russia** has deployed and starts test installation with contact-less Driving Licence in 2005.

- **Japan** has deployed an ISO-compliant contactless Driving Licences since 2006. A complete switchover could be possible by 2013. Japan has already adopted a plastic card document renewed every 3/5 years and demonstrated the increase of road safety with today round 80 Mio Driving Licence in circulation. About 20 million licences are issued annually. The next generation of Driving Licence cards has 8k memory and contains facial data with data compression, according JPEG 2000. The purpose of this CC is prevention of counterfeits of licence card, streamline of administration efforts, convenience of the holder and protection of privacy of the driver.

- Some **Mexican States** have deployed a microprocessor based Driving licence since 2007. It contains a picture and digital signature. It serves as a secure ID card and is the basis for future driving licence applications.

- **Moroccan** driving licence (and vehicle registration) was recently introduced. The card production started early 2008 is based on an 18K full contactless card. Official data stored in the memory: Name & ID card number.

- **UK** Smartcard pilot started this year. It is based on a Microprocessor card. The Data, Photo and driving licence information are stored in the chip.

- The state of **Washington** has introduced the "enhanced driver's licence" with a chip in 2008. Washington residents can use the licence instead of a passport or birth certificate when travelling from the United States, Canada, Mexico or the Caribbean by land or sea. It is expected that other US states follow this example.

Existing viable national large scale projects should help convince EU Members States to adopt a long-term strategy and to measure the reality of fraud reduction impact of an electronic document.

Eurosmart is an international non-profit association located in Brussels and representing 25 companies of the smart security industry for multi-sectors applications. Founded in 1995, the association is committed to expanding the world's smart secure devices market, developing smart security standards and continuously improving quality and security applications.

Manufacturers of smart cards, semiconductors, terminals, equipment for smart cards system integrators, application developers and issuers gather and work into dedicated working groups on communication and marketing, security, electronic identity and new form factors, and prospect emerging markets. Members are largely involved in political and technical initiatives as well as research and development projects at the European and international levels.

Eurosmart is acknowledged as representing "the Voice of the Smart Security Industry".

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