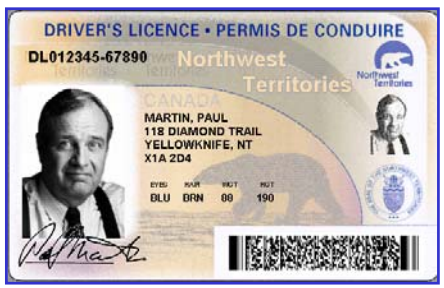
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CCMTA Annual Conference - Quebec, May 2004

Advanced Technologies

Better methods of Laser Engraving



Ian Williams
Principal
Identity Systems Group Inc.

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Important Notice

The PDF format of this presentation will not display the animation necessary to illustrate many of the topics discussed such as photo substitution.

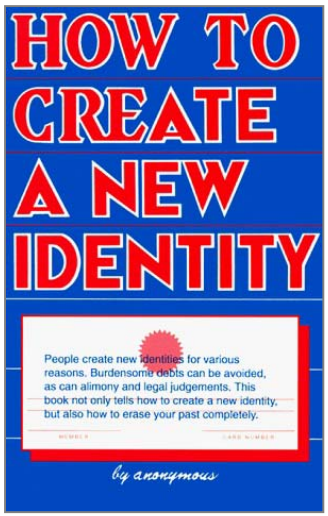
View the Online version to see the full presentation at:

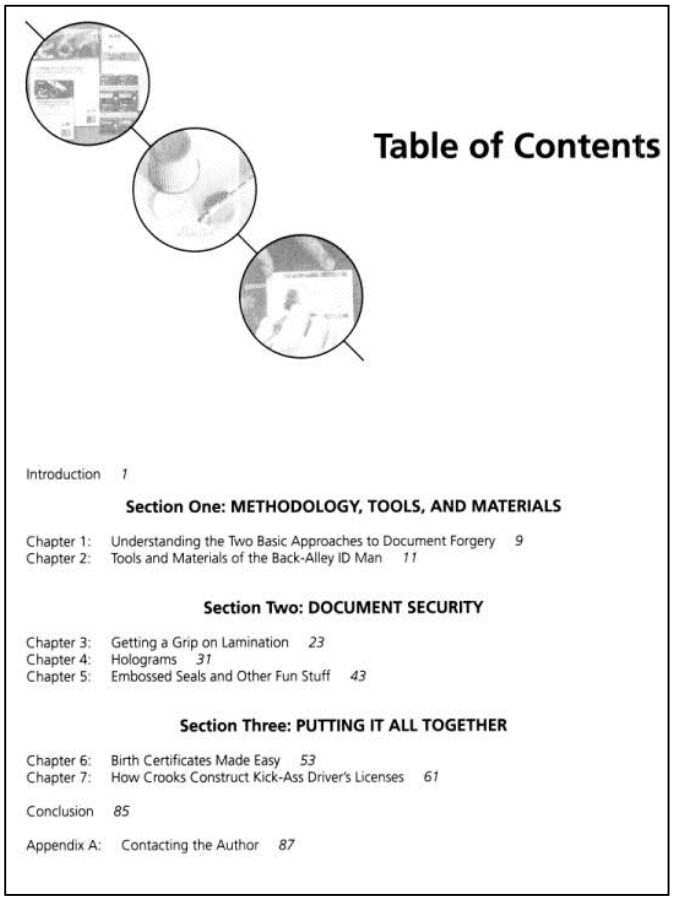
www.idsysgroup.com

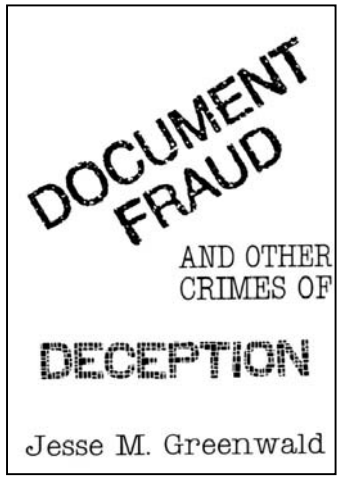
Follow links to the Document Security Resource Centre

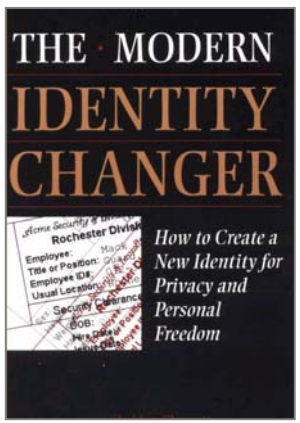
DL/ID Threats

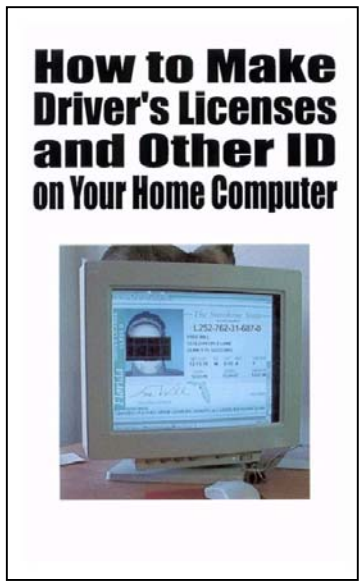
How easy is it really?

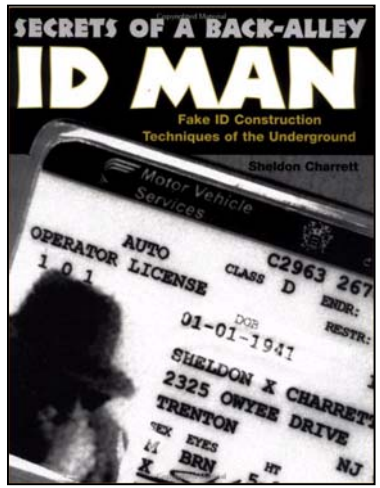












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Driver Licence Security

ID Process - Verification

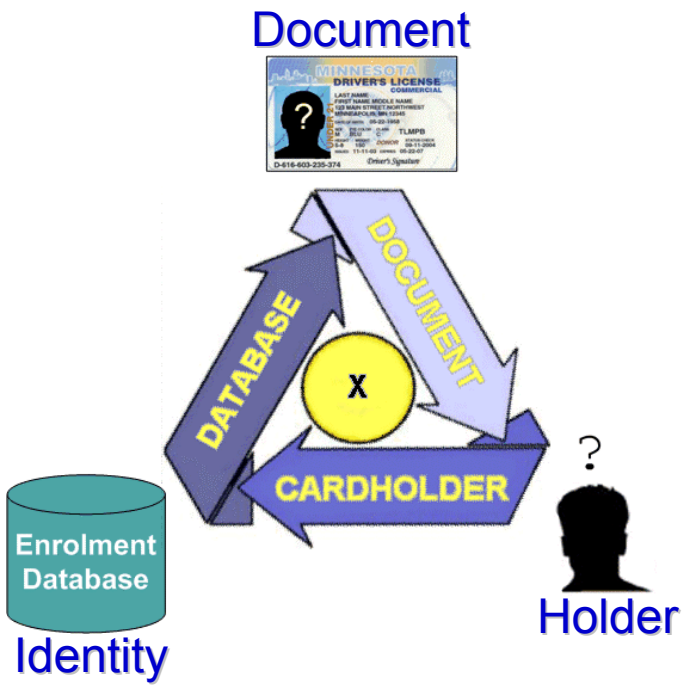
Three factor Verification

Verification of the DL & the Identity

Identity – Legitimate (as enrolled)

Document – Authentic & valid

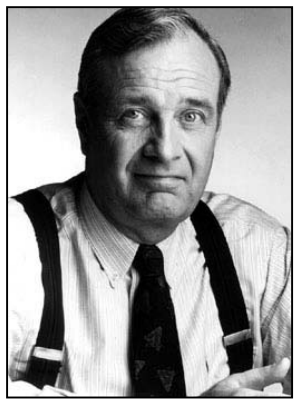
Holder – Authorized entity



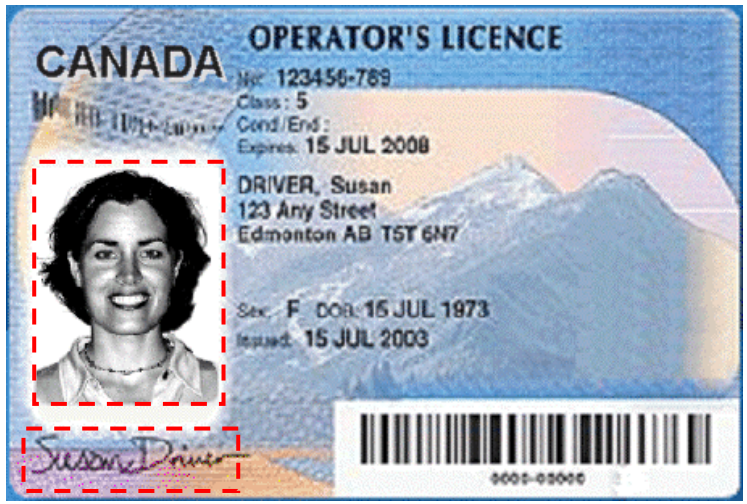
Without direct verification to the enrolment database, one can NEVER be positive that the Document presented was issued to the Cardholder

Physiological Data

A Driver Licence contains only TWO pieces of Physiological data that can TIE the Cardholder to the Document







These two data fields must be placed upon the Document in a fashion that cannot be modified, altered or replaced.

Laser Engraving

Technology not a Security Feature

The Document must resist:

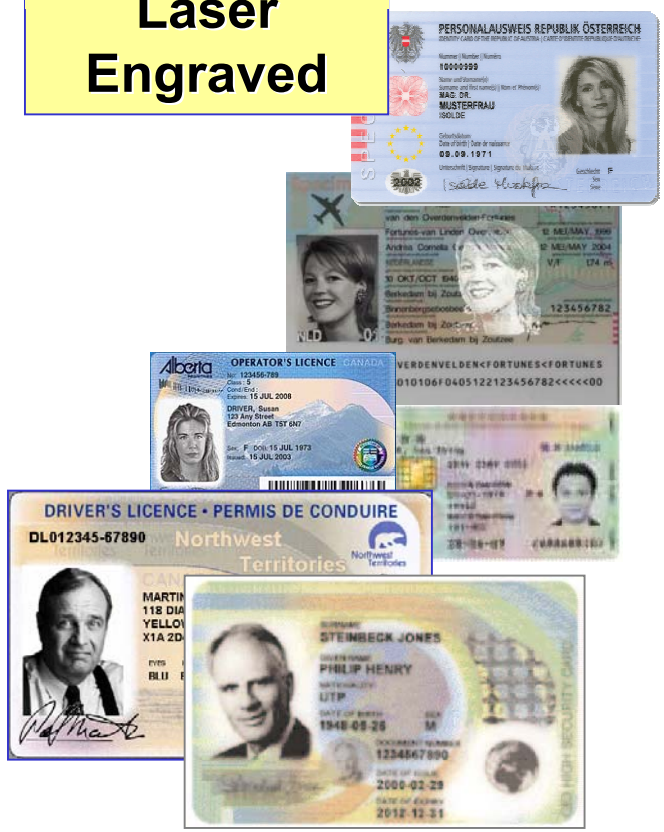
Modifeiting - altered from original appearance at time of production by the Issuing Authority.

Genuifeiting - A reproduction using genuine materials.

Counterfeiting - Originally produced documents from other than an Issuing Authority

Laser engraving in itself, is a Technology not a Security Feature. The inherent security is dependant upon the methods of application.

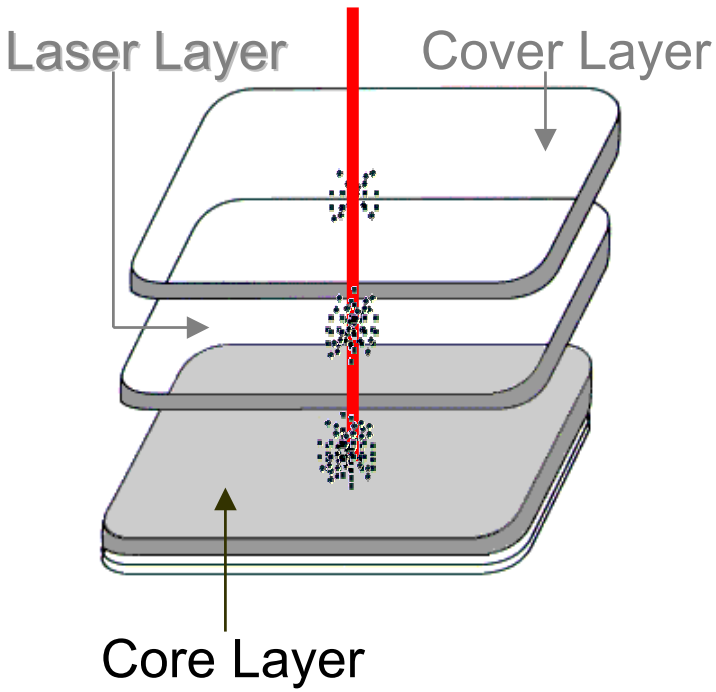
Laser Engraved



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How Laser Engraving Works

Multi Layer ID Document



Visible effects are produced by a combination of irreversible changes of the data page material

Several layers are marked during the engraving process

Chemical interaction between laser beam and data page material (sometimes referred to as carbonizing)

Laser Engraved?

Further Improving the Security of Data



Laser Engraved





Laser Facsimile



The use of laser engraving is an improvement. However resolution reductions and lack of “higher” methods of securing personalized data can allow for exploitation.

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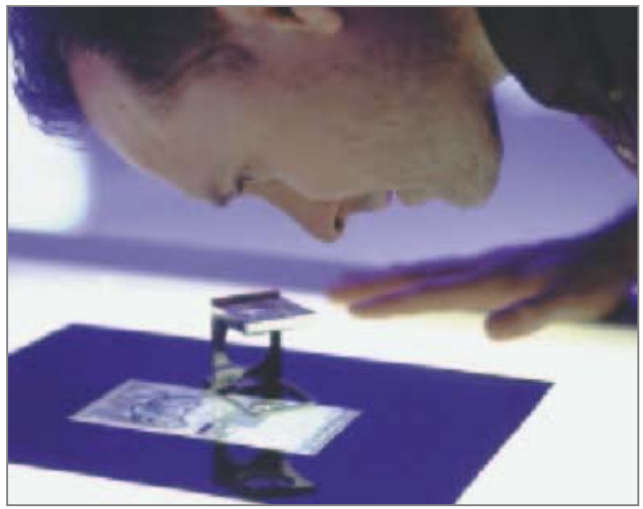
Laser Engraving

Higher Methods of Application

Changeable Laser Image - Originally produced documents from other than an Issuing Authority

Image Perforation – Microscopic holes burned completely through - Unalterable

Multiple Laser Image – Multiple laser images are engraved on a lenticular surface





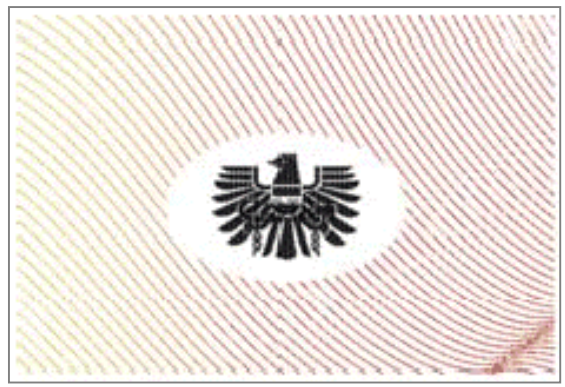
Issuing Authorities must ensure the Physiological Data Elements are Secure

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Laser Engraving

Changeable Laser Image (CLI)







In a highly specialized processing, the CLI is integrated into the transparent overlay as a live screen. Up to 3 partial pictures are engraved into the live screen in 3 different angles.

Austria National ID

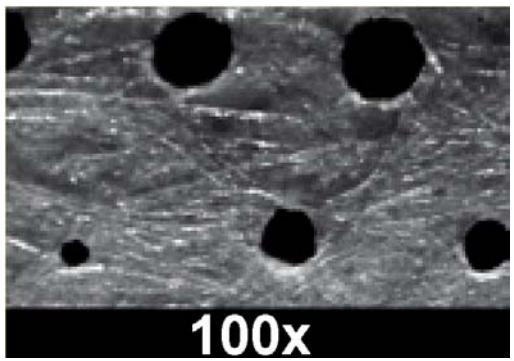
Swedish National ID

Czech Driver's Licence

CLI is a development of Setec

Laser Engraving

Image Perforation (TLI)



Laser technology burns minute holes completely through document. Image is invisible until held up to light. Feature is sold only to government & security printers.

Dutch Passport

Swiss Passport

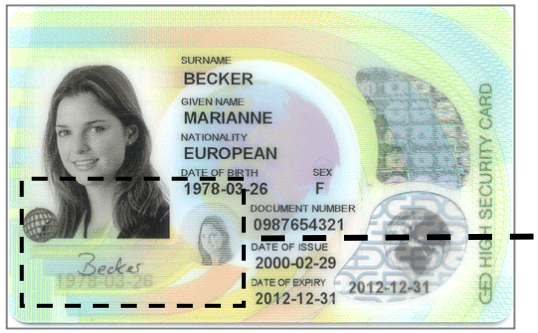




ImagePerf/TLI is a joint development by IAI & Enschede/SDU

Laser Engraving

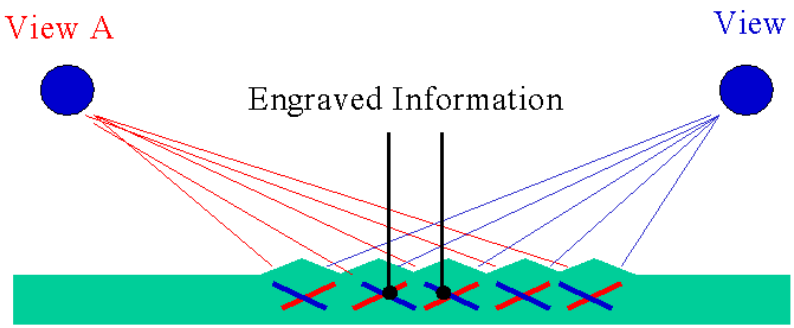
Multiple Laser Image (MLI)





Protects both Physiological data fields.

Not susceptible to Photo Substitution or other methods of modification compromise.



Lithuania Driver's Licence

Macau National ID

Hong Kong ID

MLI is a development of Giesecke & Devrient

Driver Licence Security

Laser Engraving

Conclusions

Laser Engraving is a *Technology* not a *Security Feature*

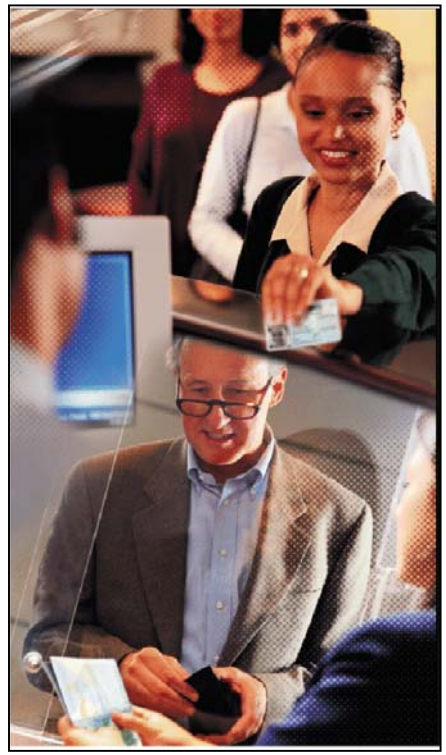
Physiological fields need better protection

Reducing image resolution can affect security

European nations lead “higher methods” development

CLI, TLI and MLI are laser engraving security features

Must continually strive to stay ahead of fraudsters advancements



Get more info here:

To request a copy email:

security@dlid.org

You must have a valid government domain return email address

www.idsysgroup.com

Biometric Technology Resource Centre

Document Security Resource Centre



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