



International Civil Aviation Organization

Eighth Symposium and Exhibition  
on ICAO MRTDs, Biometrics  
and Security Standards

ICAO Headquarters, Montréal, Canada  
10 - 12 October 2012



# Dutch (e)Residence Permit with 3D Photo ID<sup>®</sup> and biometrics

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October 11, 2012 – Montreal



# EU RESIDENCE PERMIT (1)

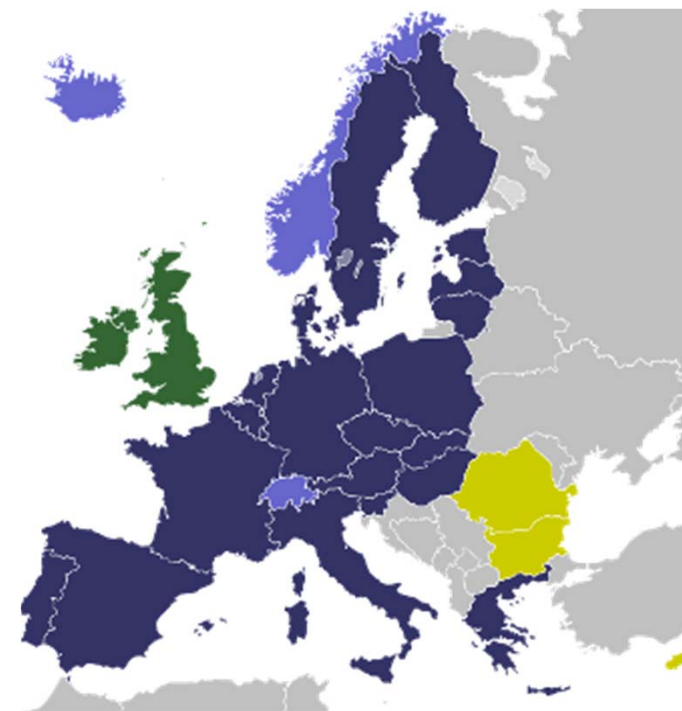


## → Purpose

- For third-country nationals (non-EU)
- Proof of right to stay legally on territory of issuing member state
- In the Netherlands, the residence permit also serves as an identity document
- Allows permit holder to travel within Schengen area

## → Travel in Europe

- Schengen Agreement: abolition of checks at common borders of member states
- Enables travel within Schengen area without border checks and without visa (for stays < 3 months)
  - EU citizens: national ID card
  - Third-country nationals: national passport and residence permit issued by member state



# EU RESIDENCE PERMIT (2)



## → EU regulation 1030/2002

- Establishing uniform format for residence permits
  - Allowed form factors: (visa) stickers, ID1 and ID2 cards
  - Uniform design, prescribed security features
- Based on ICAO Doc 9303 standards
- Emphasis on measures against counterfeiting and falsification



## → EU regulation 380/2008

- Introducing biometrics
- Limiting form factor to stand-alone ID1 or ID2 card
- Improving uniform security features
- Allowing for additional security features

# SPECIFICATIONS (1)



## → Card and personalisation technology

- Since 2001
  - ID1 format
  - 100% polycarbonate card body
- Laser engraved biographical data

## → Contactless chip (since May 2011)

- Biometrics: Face, two fingerprints (since May 2012)
- Access control
  - Basic Access Control (BAC)
  - Extended Access Control (EAC)
  - Supplemental Access Control (SAC)
    - No later than December 31, 2014
    - Card Access Number (CAN)





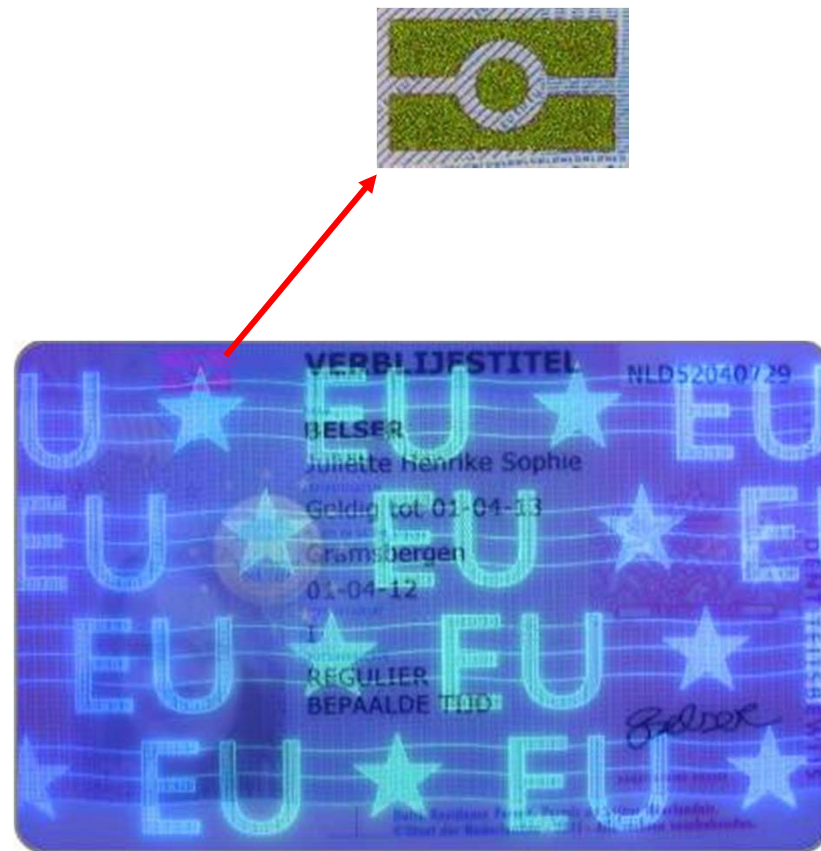
# SPECIFICATIONS (2)



## → Uniform design

## → Uniform (mandatory) security features

- Transparent Kinegram
- UV rainbow print
- ICAO contactless chip logo in OVI



## Slide 5

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m2

Todo: add feature by feature: text first, image after  
martinl, 16/08/2012

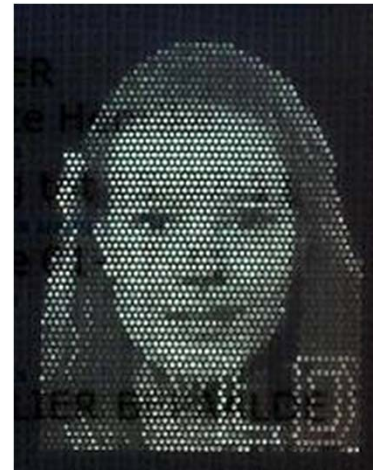
# SPECIFICATIONS (3)



## → Additional security features

- Tactile relief
- ImagePerf with TLI
- 3D Photo ID®

m11



## Slide 6

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**m9**      Todo: add feature by feature: text first, image after  
martinl, 16/08/2012

**m11**      Move to Mandatory features!!  
martinl, 07/09/2012



# 3D PHOTO ID® (1)



## Three-dimensional portrait of the document's holder



### Mastering technologies:

- Document design & production
- 3D imaging
- Laser engraving

# 3D PHOTO ID® (2)



Maximum security  
against fraud and  
identity theft

→ photo cannot be  
tampered with or  
altered

Auto-stereoscopic  
(No polarized glasses  
need)

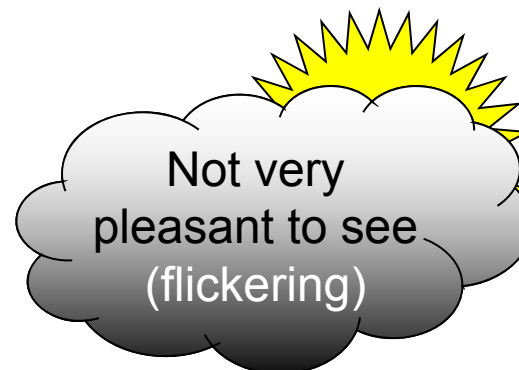
→ feature may be verified  
without special  
inspection tools



NLD



NLD



# 3D PHOTO ID® (3)



Maximum security  
against fraud and  
identity theft

- photo cannot be tampered with or altered

Auto-stereoscopic  
(No polarized glasses  
need)

- feature may be verified without special inspection tools

High Quality  
3D effect

- 4 pictures provide better quality

Easy to verify

- visible at various view angles and distances
- 4 photographic laser engraved images



Additional protection by  
other optically variable features:  
floating text

# 3D PHOTO ID® (4)



Specific card body

Photo acquisition

Photo  
conversion

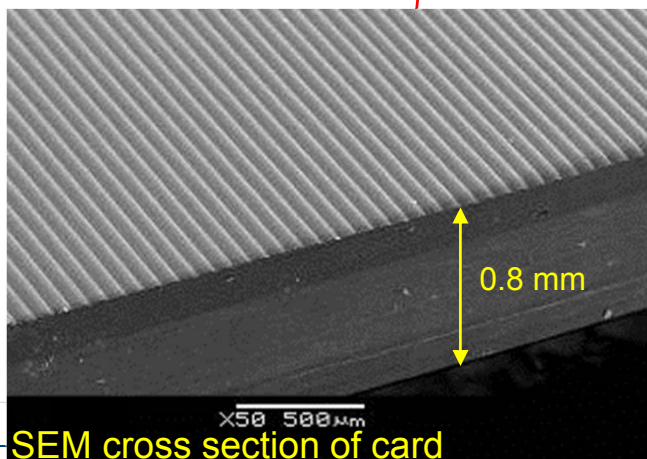
Laser  
engraving



→ Integrated  
lenticular lens

→ Optical quality

No glasses  
needed



SEM cross section of card

# 3D PHOTO ID® (5)

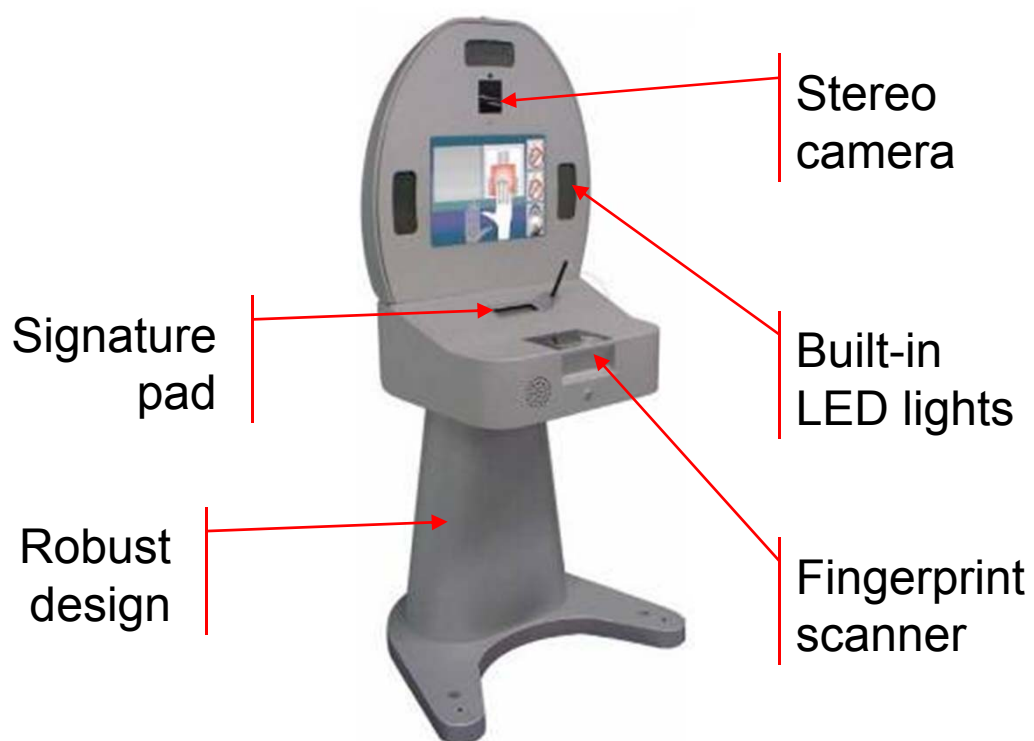


Specific card body

Photo acquisition

Photo  
conversion

Laser  
engraving



- Simultaneous capture of the two images
- Generation of two virtual pictures
- Robust and reliable



# 3D PHOTO ID® (6)



Specific card body

Photo acquisition

Photo  
conversion

Laser  
engraving



**real left**



**virtual**



**virtual**



**real right**

→ Software for the generation of the intermediate pictures  
(also used in ROBOTICS)

**High  
Quality  
3D effect**



# 3D PHOTO ID® (7)



Specific card body

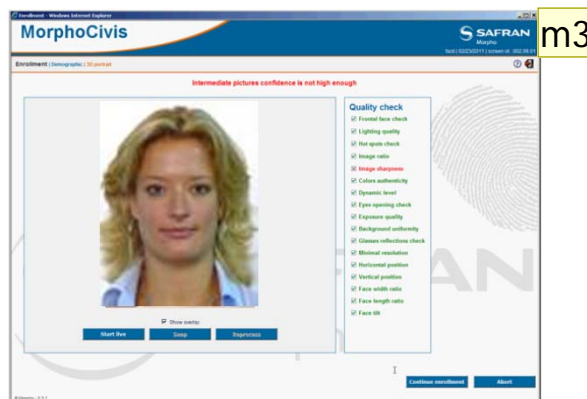
Photo acquisition

Photo  
conversion

Laser  
engraving



Real image



Quality check



Processed  
image



Improved image  
enhancing

High  
Dynamic  
images

## Slide 13

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m3

Replace by screenshot from kiosk software

martinl, 16/08/2012

# 3D PHOTO ID® (8)



Specific card body

Photo acquisition

Photo  
conversion

Laser  
engraving



→ Tuned laser engraving technology to print 3D Photo ID® images under four different angles

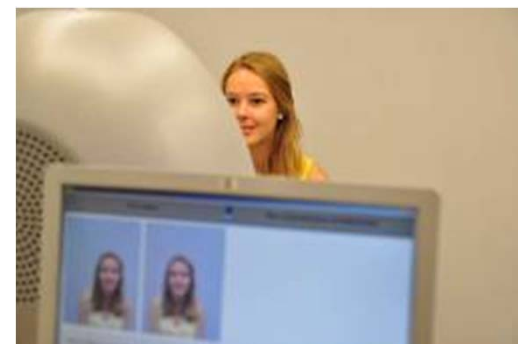
Easy to  
verify

# ENROLMENT (1)



## → MorphoTrak live enrolment kiosk

- Robust design
- Portrait
- Fingerprints
- Signature
- Monitor
- Controlled by operator



# ENROLMENT (2)



## → Process

- Start of the enrolment
- Portrait
  - Stereo capture
  - 2 intermediate pictures
  - ICAO check
- Fingerprints
  - Quality
- Signature
- Overview and submission



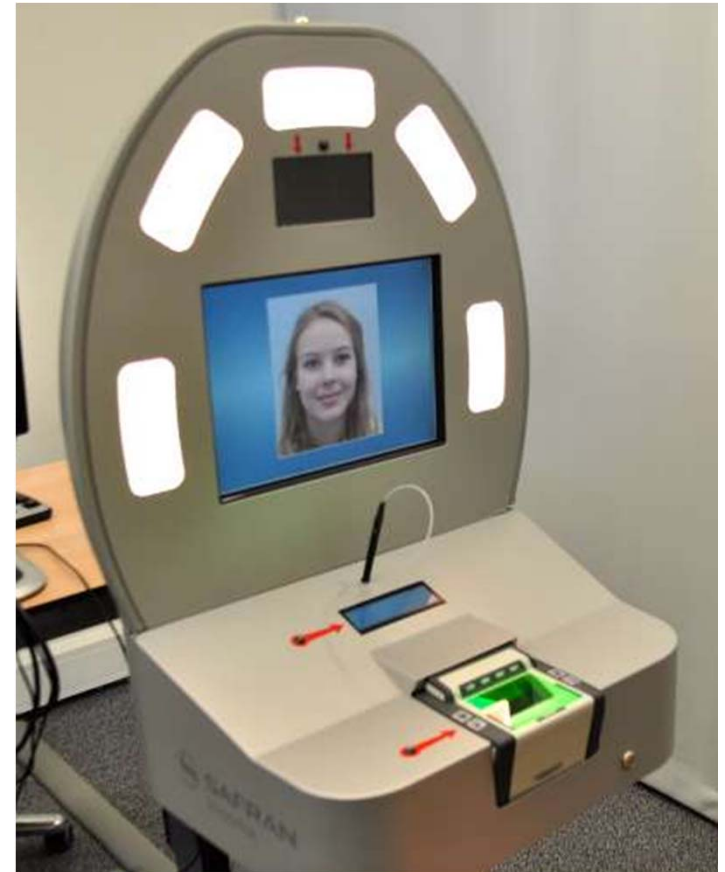


# DEPLOYMENT



→ Limited space

→ Lighting



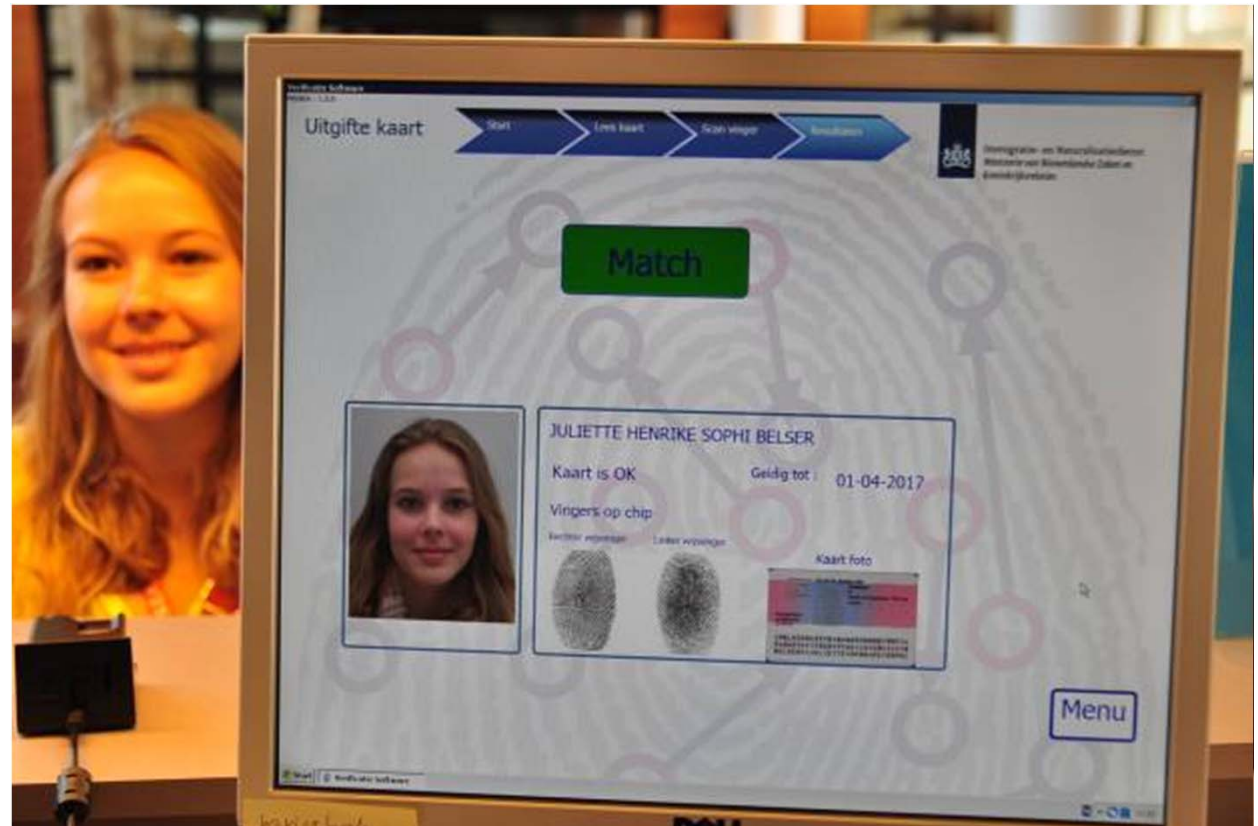


# ISSUANCE



## → Verification

- Fingerprint capture
- Matching fingerprint with fingerprint on card



# Thank you for your attention!

## Any questions?