

# 3D PHOTO ID

the first line security feature

**ICAO/IACM MRTD Regional Seminar**

**Maputo, Mozambique**

**24 – 26 November 2010**

Jan Willem 'JW' ter Hennepe  
Sales Manager ID documents  
Haarlem, The Netherlands



# Morpho is a member of the Safran group



**SAFRAN**  
AEROSPACE · DEFENCE · SECURITY

is a high-technology group, organized in three branches:

## Aerospace

- **No. 1** worldwide\* for commercial aircraft engines (mainline jets with over 100 seats)  
\* in partnership with General Electric
- **No. 1** worldwide in helicopter engines
- **No. 1** worldwide in landing gear
- **No. 2** worldwide in liquid propulsion

## Security

- **No. 1** worldwide in fingerprint-based biometrics
- **No. 1** worldwide in secure biometric identification documents
- **No. 1** worldwide in biometric terminals

## Defense

- Optronics systems  
**No. 1** in Europe
- Inertial navigation  
**No. 1** in Europe
- UAV systems  
**No. 1** in Europe

## Figures 2009:

- 54,900 employees in over 30 countries,
- Sales: 10,448 billion €



**Morpho** (Safran group) is the world leader in multi-biometric technologies for fingerprint, iris and facial recognition, a global leader in the smart card industry and an acknowledged expert in identification and detection systems.

## Key facts

- **No. 1** in the world for biometrically secured ID documents
- **No. 1** in the world for AFIS (Automated Fingerprint Identification System)
- **No. 1** in the world for Explosive Detection Systems (EDS)
- **No. 2** in the world for gaming and betting terminals
- **No. 4** in the world for smart cards
- World leader for Trace Equipment

## Figures 2009:

- 5,600 employees in over 24 countries

# Company overview Morpho B.V.

- **Established in 1994 as a joint-venture:**
  - **Sdu nv (The Hague, 1577)**
  - **Joh. Enschedé bv (Haarlem, 1703)**
- **2000: 100% Sdu**
- **2005: Sdu Segenmark SSO Finland**
- **2007: 100% AAC Capital Partners, Allianz Capital Partners**
- **2008: 100% SAFRAN Group => Sagem Identification,**
- **2010: name change: We are Morpho now!**
  
- **340 fte employees**
- **Headquartered in Haarlem, The Netherlands**

# Product range

## ■ ID Documents

- Passports and National ID-cards
- Driver licenses
- Residence Permits/asylum seeker cards

## ■ Electronic ID (smart)cards, banking cards, loyalty cards, health cards, digital tachograph cards

## ■ Security printing

- registration certificates, national examination papers, visas, gift vouchers, certificates, etc.

## ■ Personalisation services

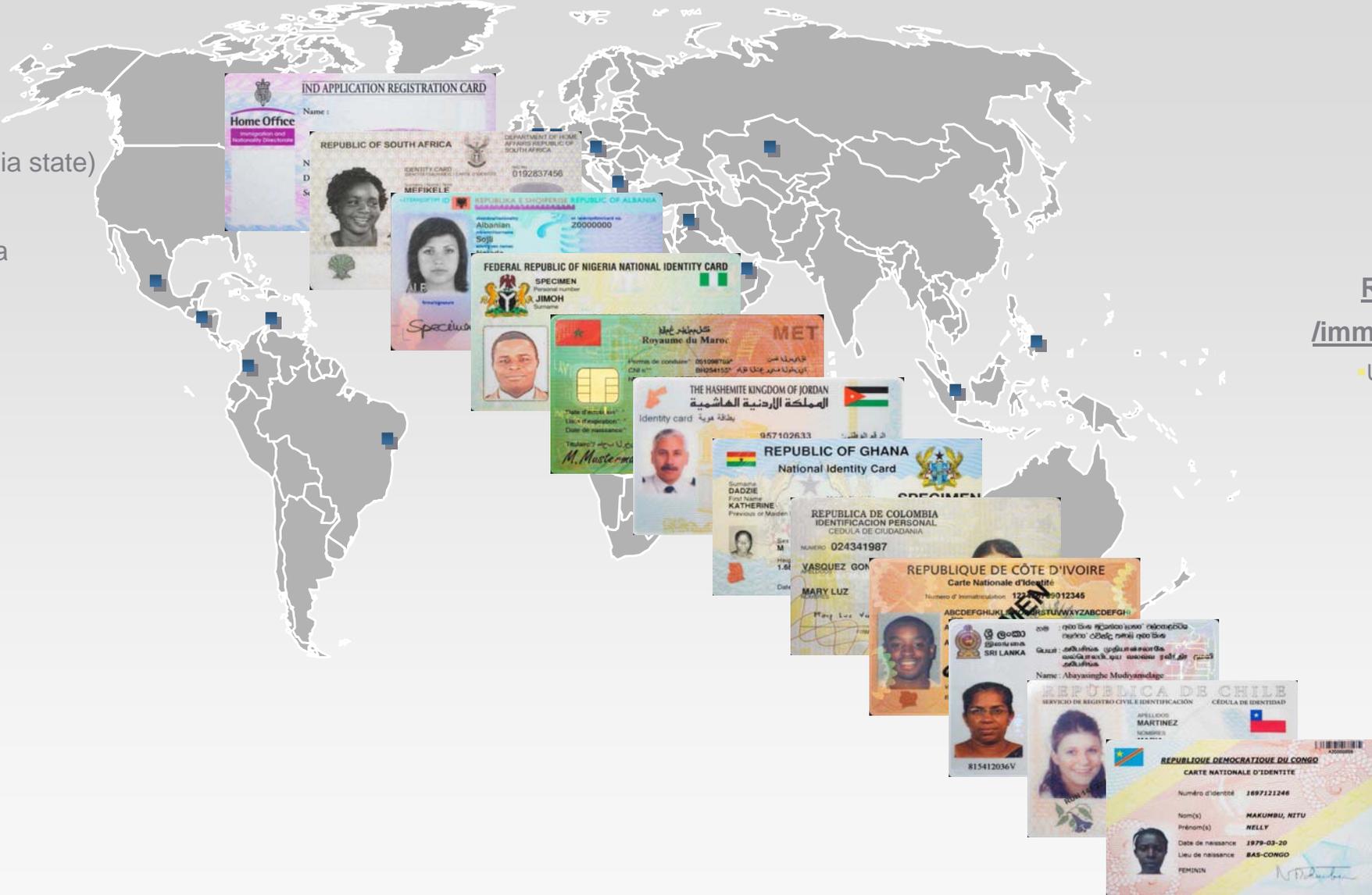
## ■ Logistical management



# References Morpho ID cards

## ID Cards

- Aruba
- Botswana
- Brazil (Bahia state)
- Columbia
- Costa Rica
- Ghana
- Guatemala
- Honduras
- Kosovo
- Lebanon
- Mauritania
- Nigeria
- Philippines
- Perou



## e-ID Card

- Albania
- Ivory Coast
- Kazakhstan
- UAE
- Spain
- Guatemala

## Resident Permit / Immigration/Voting

- UK (Asylum seeker)
- Malaysia
- Mexico
- Netherlands





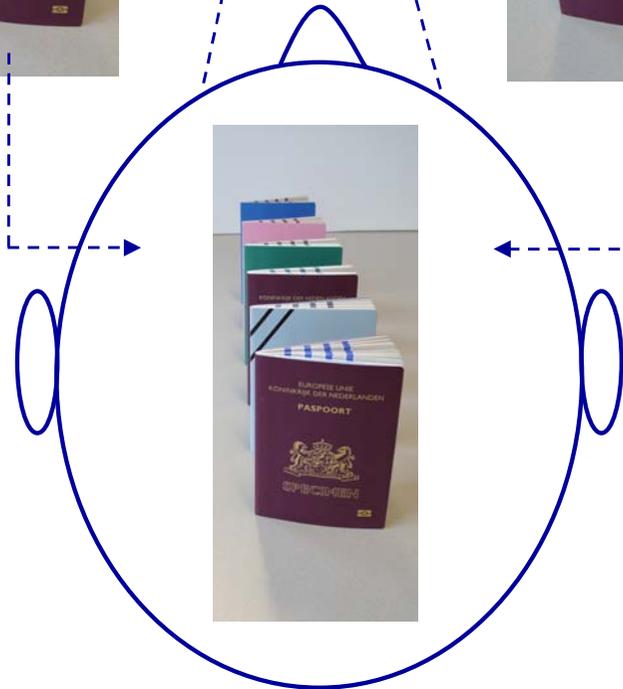


# 3D perception (to see depth)

left eye

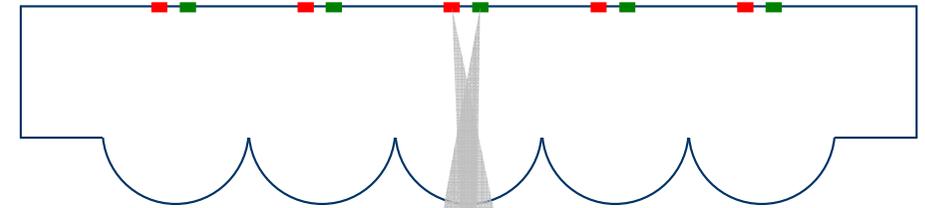


right eye

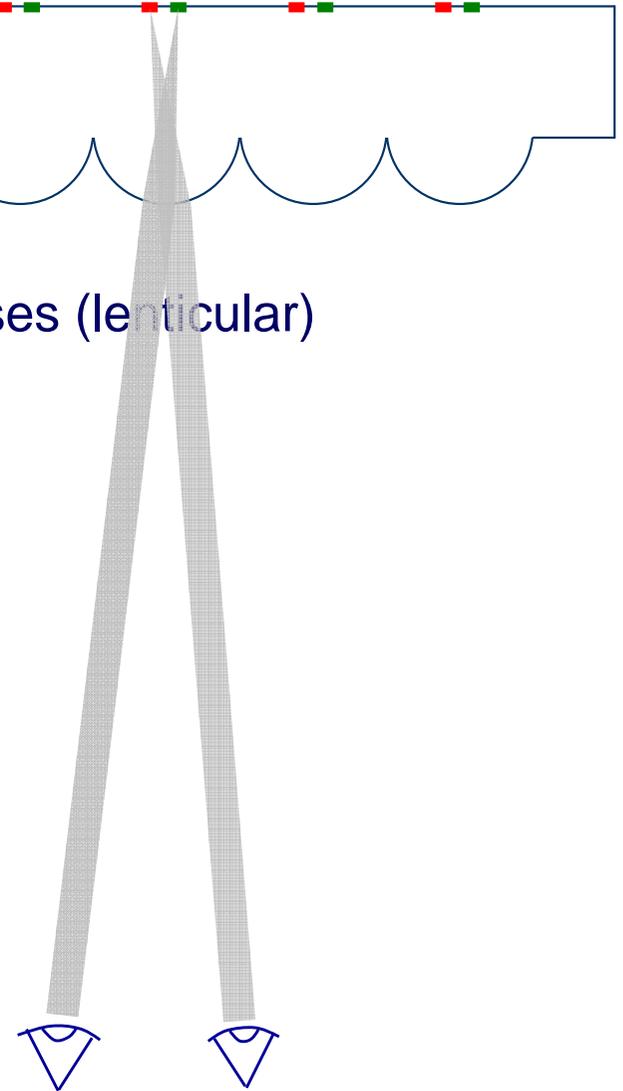


■ right eye image

■ left eye image

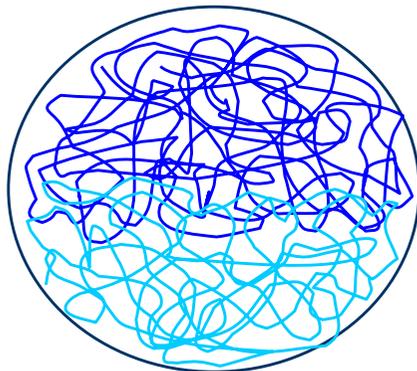
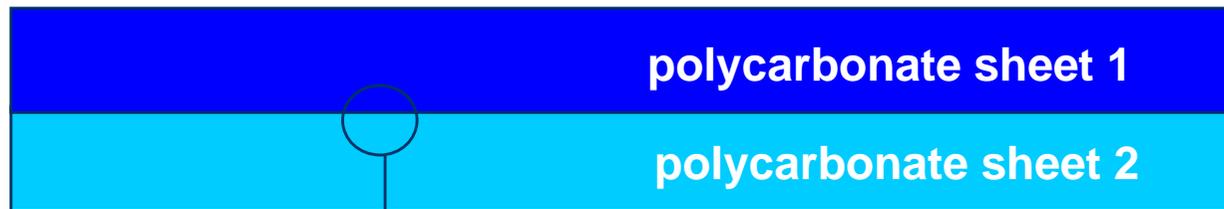


Cylinder lenses (lenticular)



In this way, two different images will be observed by each eye respectively

## Polymer sheets melt together during lamination



entanglement of the polymer molecules during lamination

Result: a solid polycarbonate card body

## with polycarbonate

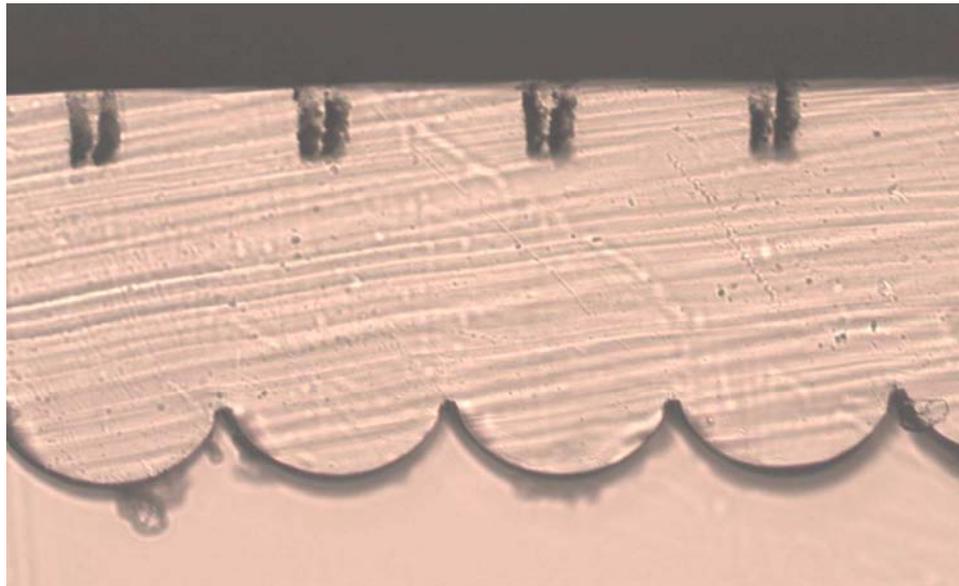
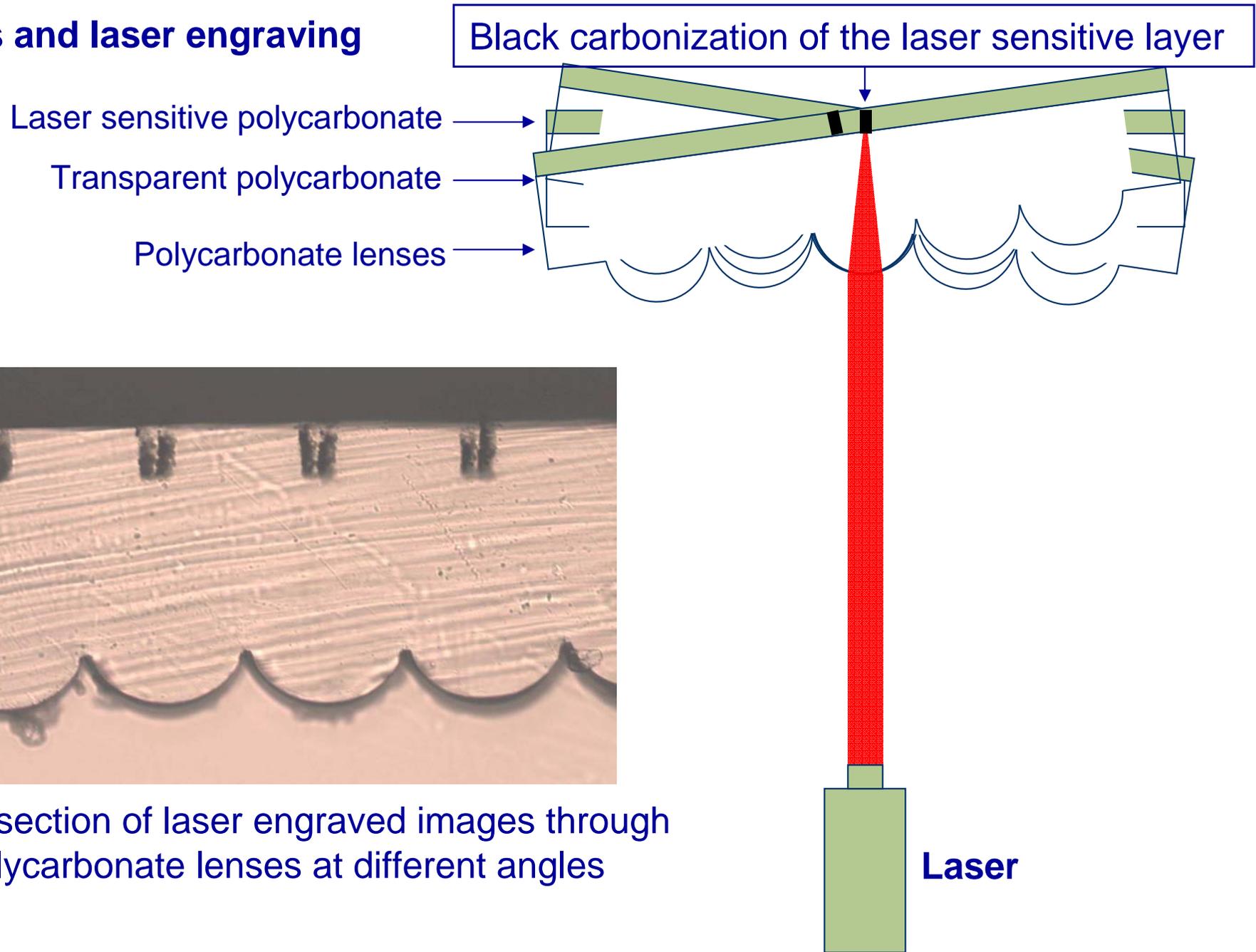


*Laser engraving (IN)*



*Laser perforation (THROUGH)*

## Lenses and laser engraving



Cross section of laser engraved images through polycarbonate lenses at different angles

# Creating 3D Photo ID images

Normally one photo is needed for passport enrolment



3D Photo ID needs at least two photos, made from different angles.

Four images is better





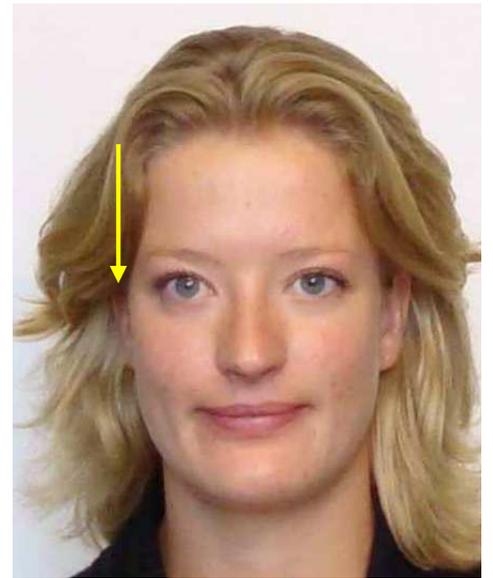
1



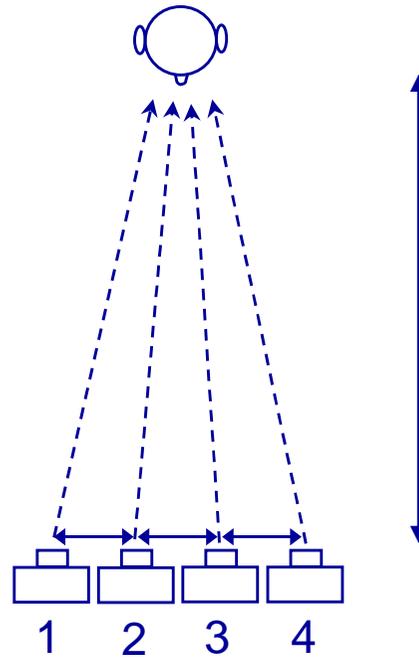
2

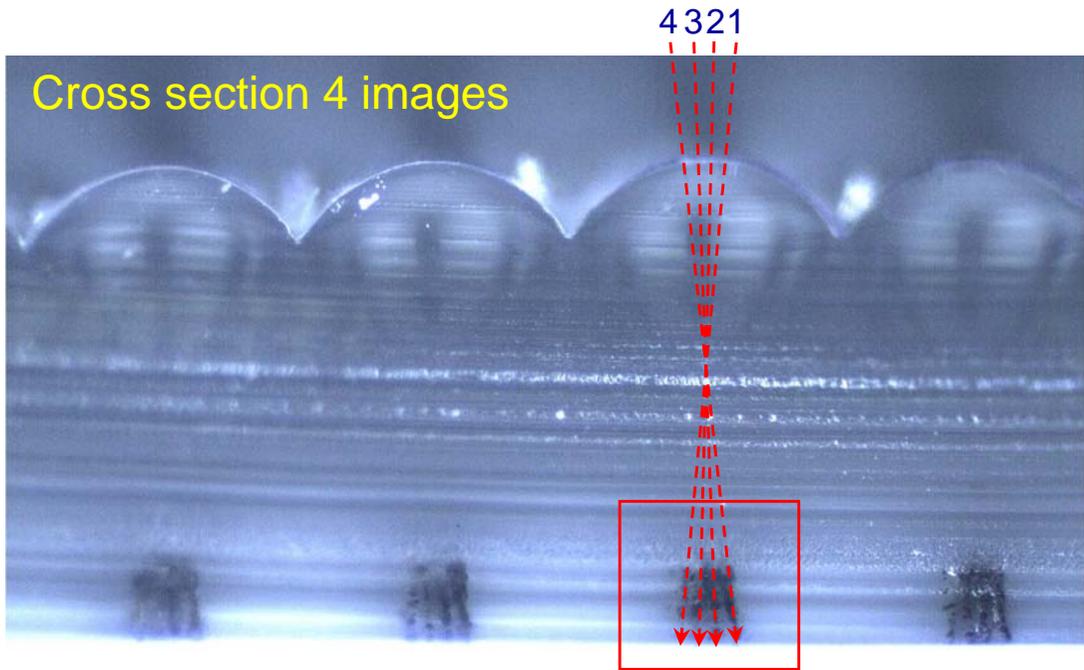


3

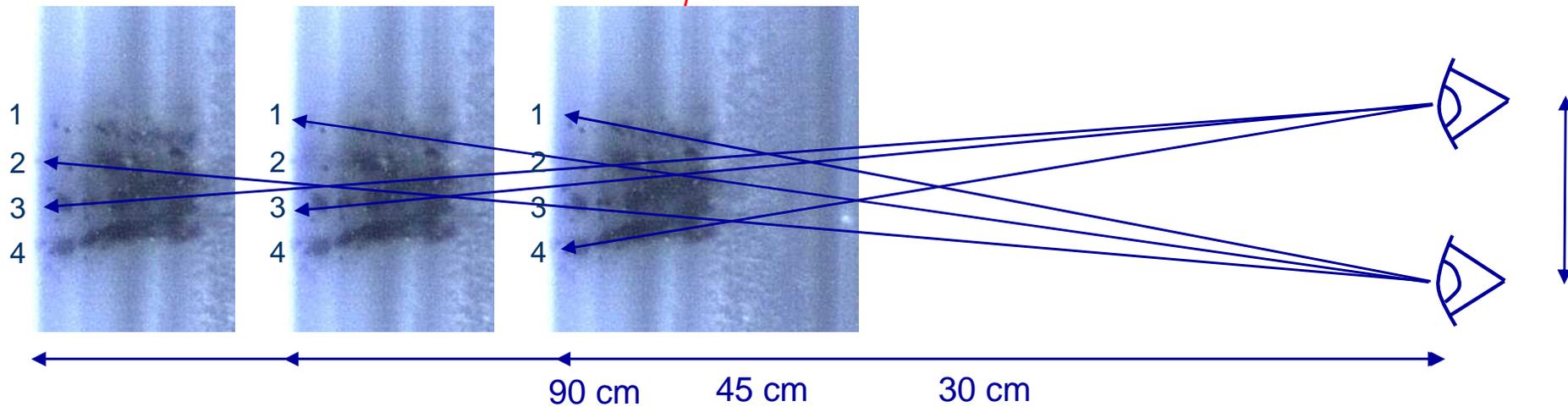


4





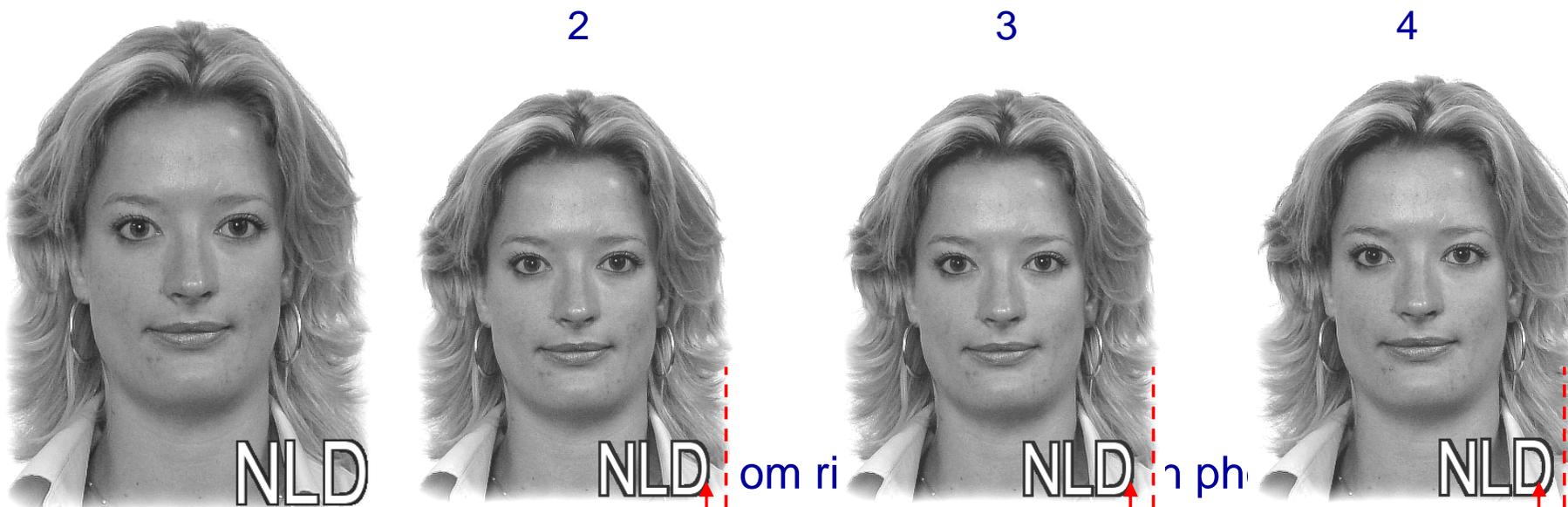
Advantage of using four images instead of two,  
 resulting in a sharp 3D image from 30 to 90 cm from the passport or ID card



# Applying a country code

Applying a country code (example 'NLD')

Could also be 'MOZ' ...



This makes it seem as though the letters float above the surface

# Reality of document checking

The importance of strong first line security features



3D Photo ID will be authenticated intuitively by anyone without being aware of it.

- ✓ no training
- ✓ no special equipment
- ✓ no special lights

# NEWSFLASH

Morpho has been awarded a contract in the USA for the North Carolina Driver License with 3D Photo ID

