



# TD1 Cards, Replacement of Essential Information

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Border Management

Regional Office for Southeast Asia

International Organization for Migration

**New Technology Working Group (NTWG)  
TAG/MRTD 19**

**19<sup>th</sup> Meeting of the Technical Advisory Group on Machine Readable Travel Document**

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TD-1



TD-2



TD-3



# The Issue 1

- Trial Schiphol Airport 18 June and 13 November 2007
- Self Service Kiosk for passengers on departure
- Used documents Passports & TD-1 and TD-2 identity cards
- During trial TD-1 cards were taken out
- Observations
  - There are 7 potentially incorrect ways to present the TD-1 card
  - The ID card was often presented 180 degrees out of alignment with the self service receptacle.
  - **Reasons:**
  - Turning card on scanner gave following problems:
    - Due to limited space for hand under the top plate scanner, the user couldn't see what is happening under the plate.
    - As the physical construction of an card is mostly synthetic and flat, a user with short finger nails was not easily able to remove the card from the scanner or turn the card



# The Issue 2

- An automated match between the front side and the rear side was not possible, causing the card to be automatically rejected. As a result, the information was correctly displayed on the screen but, as there was no mechanism to verify whether the front and rear of the card belong together, the system rejected the card as authentication could not be guaranteed.
- Consequently, immigration officers had to undertake manual checks, adding unnecessary time to the overall control process.

## ➤ Germany

- Will introduce new ID card and change from TD-2 to TD-1. One of the disadvantages discovered is that in border control processes the card has to be turned to be able to read and compare front and rear side.



# Immigration Requirement

**NEDERLANDSE IDENTITEITSKAART**  
 IDENTITY CARD / CARTE D'IDENTITE

**KONINKRIJK DER NEDERLANDEN**  
 KINGDOM OF THE NETHERLANDS / ROYAUME DES PAYS-BAS

NATIONALITEIT / NATIONALITY: Nederlandse  
 DOCUMENTNUMMER / DOCUMENTNO.: XI020DF23

NAAM / SURNAME: Van der Steen

VOORNAMEN / GIVEN NAMES: Marianne Louise Danielle

GEBORTE DATUM / DATE OF BIRTH: 14 AUG/AUG 1972

GEBORTE PLAATS / PLACE OF BIRTH: Specimen

LENGTE / HEIGHT: 1,75 m  
 GESLACHT / SEX: V/F  
 PERS. NUMMER / PERS. NO.: 123456783

INSTANTIE / AUTHORITY: Burgemeester van Heerlen

AFGIFTE DATUM / DATE OF ISSUE: 26 AUG/AUG 2006  
 GELDIG TOT / DATE OF EXPIRY: 26 AUG/AUG 2011

HANDTEKENING / SIGNATURE: *M. van der Steen*

MODEL 009  
 1994 / 1 SEP 99

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VERVOLG NAAM - VOORNAMEN / CONTINUE SURNAME - GIVEN NAMES

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ITG DRUJSTEEN INV. / SDU IDENTIFICATION IMP

I<NLDXI020DF236123456783<<<<<<<  
 7208148F1108268NLD<<<<<<<<<<<<9  
 VAN<DER<STEEN<<MARIANNE<LOUISE



?





## Operational use MRZ

- MRZ = Quick Database Search on Document en Personal details
- MRZ = Quick Database Search only Document details
- MRZ = Quick Database Search only Personal details
- MRZ = Open chip
- Compare visual data with MRZ data
- Compare visual data, MRZ data and chip data



# Reading Process TD-2 and TD-3





# Reading Process TD-1



**Step 1**



**Step 2**

## Ideas

- 3 line MRZ at the front side of the card
- 1 line MRZ at the front side of the card
- 2D Barcode on the front side
- 6-digit PACE code in additional zone
- New reading equipment




## Reduction of Ideas


- To make a distinction between TD1 cards is necessary:
  - Non e-Identity cards
  - e-Identity cards
  
- A first study reveal that some of the ideas had drawbacks, most suitable seems to be:
  - Barcodes for non e-Identity cards
  - PACE for e-Identity cards



# Option 3: Barcode on the front side

**PHILIPPINES**  
  
**MILLENNIUM**

**REPUBLIC OF THE PHILIPPINES**  
**DEPARTMENT OF TRANSPORTATION & COMMUNICATIONS**  
**LAND TRANSPORTATION OFFICE**  
**EAST AVE QUEZON CITY**



**NON-PROFESSIONAL**

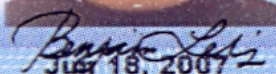
LAST NAME, FIRST NAME, MIDDLE NAME  
**LELIS, BENJAMIN NAVAS**



ADDRESS (NO. STREET, CITY, MUN., PROVINCE)  
**2428 GEN OSMALIK ST PANDACAN MANILA**

BIRTH DATE	SEX	HT.(cm)	WT.(kg)	NATIONALITY
1986-07-02	M	170	74	FIL
RESTRICTIONS	CONDITIONS	AGY	EXPIRES	
12		N11	2009-07-02	

LICENSE NO.  
**N04-04-008130**

  
JUL 18 2007  
SIGNATURE OF LICENSEE

Gen. REYNALDO I. BERROYA  
ASST. SECRETARY



# Option 4: 6-digit PACE code in additional zone

<b>N E D E R L A N D S E</b> <b>IDENTITEITSKAART</b> IDENTITY CARD / CARTE D'IDENTITE		<b>KONINKRIJK DER NEDERLANDEN</b> KINGDOM OF THE NETHERLANDS / ROYAUME DES PAYS-BAS			
NATIONALITEIT / NATIONALITY		DOCUMENTNUMMER / DOCUMENTNO.			
Nederlandse		XI020DF23			
NAAM / SURNAME					
Van der Steen					
VOORNAMEN / GIVEN NAMES					
Marianne Louise Danielle					
GEBORTE DATUM / DATE OF BIRTH					
14 AUG/AUG 1972					
GEBORTE PLAATS / PLACE OF BIRTH					
Specimen					
LENGTE / HEIGHT		GESLACHT / SEX		PERS. NUMMER / PERS. NO.	
1,75 m		V/F		123456783	
INSTANTIE / AUTHORITY				P	
Burgemeester van Heerlen				XI020DF23	
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26 AUG/AUG 2006		26 AUG/AUG 2011		<i>M. van der Steen</i>	
		MODEL 009 2006   SERIE 001			



# Impact MRZ front side on Current Cards 1

**N E D E R L A N D S E**  
**IDENTITEITSKAART**  
IDENTITY CARD / CARTE D'IDENTITE

**KONINKRIJK DER NEDERLANDEN**  
KINGDOM OF THE NETHERLANDS / ROYAUME DES PAYS BAS

**NATIONALITEIT / NATIONALITY**  
Nederlandse

**DOCUMENTNUMMER / DOCUMENTNO.**  
XI85385F5

**NAAM / SURNAME**  
Van der Steen >>

**VOORNAMEN / GIVEN NAMES**  
Marianne Louise Daniëlle

**GEBORTE DATUM / DATE OF BIRTH**  
14 AUG/AUG 1972

**GEBORTE PLAATS / PLACE OF BIRTH**  
Specimen

**LENGTE / HEIGHT**  
1,75 m

**GESLACHT / SEX**  
V/F

**PERS. NUMMER / PERS. NO.**  
999999990

**MRZ:**  
I<NLDXI85385F509999999990<<<<<8  
7208148F1108268NLD<<<<<<<<<<<6  
VAN<DER<STEEN<<MARIANNE<LOUISE



# Impact MRZ front side on Current Cards 2



## Impact MRZ front side on Current Cards 3

UNITED STATES OF AMERICA  
 ★ PASSPORT CARD ★

Passport Card No. C00000867

U  
S  
A  
U  
S  
A

Nationality USA

Surname TRAVELER

Given Names HAPPY

Date of Birth

I P U S A C 0 0 0 0 0 8 6 7 5 <<<<<<<< A 0 2 < 1 5 9  
 8 1 0 1 0 1 2 M 1 8 0 5 1 5 6 U S A << 0 7 5 4 0 5 2 2 2 9  
 H A P P Y << T R A V E L E R <<<<<<<<<<<<<<<<<<<<<<<<<





# Looking for Solutions

## ➤ Interesting question is:

- What will be the size of a barcode when the 3-line MRZ is converted into a 2D Barcode?

## ➤ MRZ TD1:

```
I<NLDXI85385F50999999990<<<<<8  
7208148F1108268NLD<<<<<<<<<<6  
VAN<DER<STEEN<<MARIANNE<LOUISE
```



# Possible Size & Place of 2D Barcode



# Possible Size & Place of 2D Barcode



# Possible Size & Place of 2D Barcode



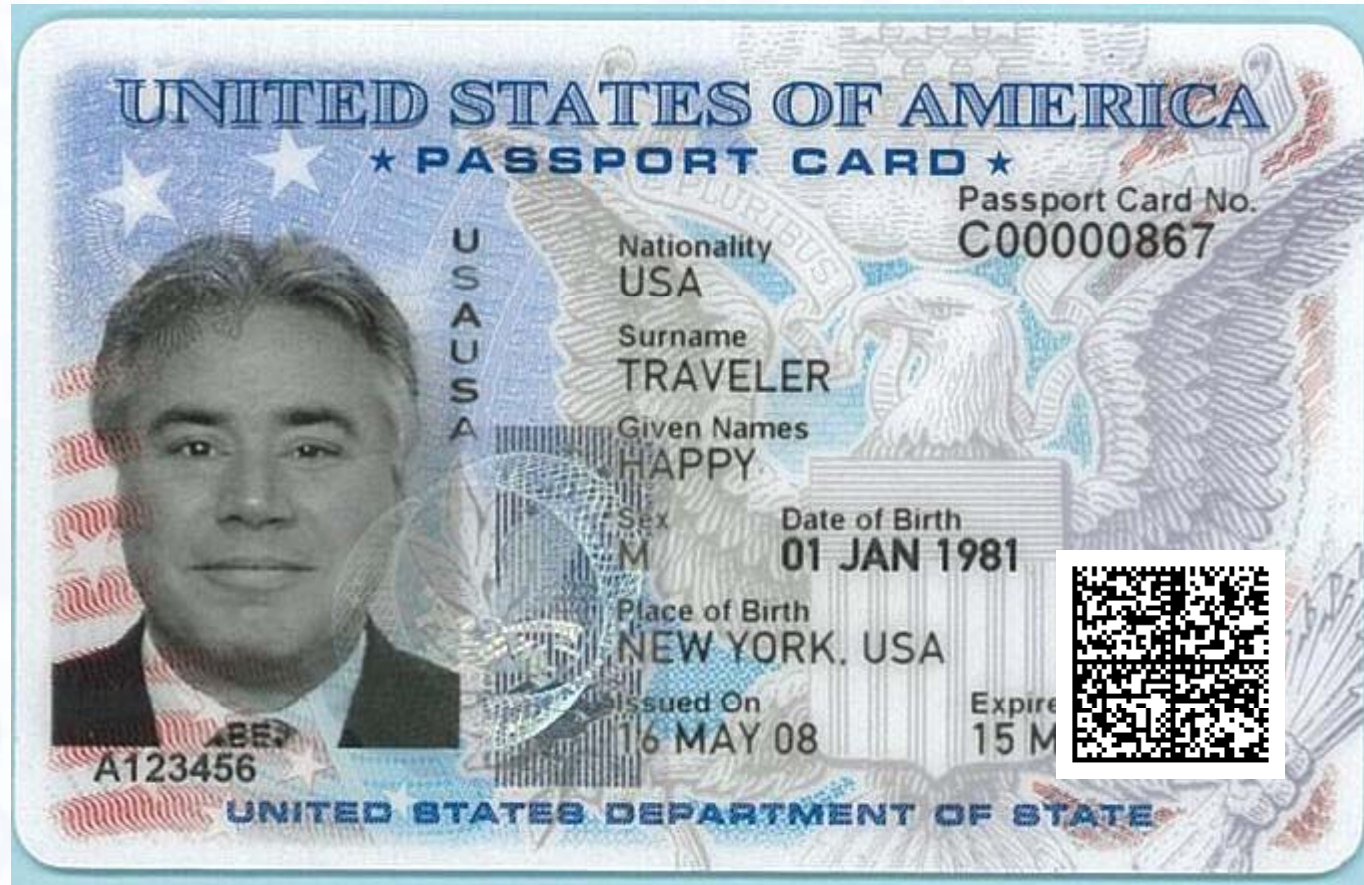
# Possible Size & Place of Barcode

Type: - PDF 17-



# Possible Size & Place of Barcode

Type: - Data matrix -



# Possible Size & Place of Barcode

Type: - QR -



# Pros & Cons of Barcodes

## ➤ Pro

- Takes less space on the card then MRZ
- Almost all personalization systems support printing
- It is well known and used technology
- Reader infrastructure already in place

## ➤ Con

- Not yet a strict standard, needs to work on
- Reader software needs to be updated





# e-ID Germany



CAN



## Pros & Cons of PACE/CAN

### ➤ Pro

- Takes less space on the card
- It is a new technology and easy to integrate in the card / printing process
- Can be read by the current process
- Reader infrastructure is already in place

### ➤ Con

- Not yet strict standard, needs to work on
- Readers software needs to be updated



# Proposal for TAG

- The NTWG invites the TAG/MRTD:
  - To take note of the work that has been done to date on the technical report follow up research;
  - Recognize the importance of reading non e-Identity documents and e-Identity documents at the border in an efficient and non intrusive way by border officials or the passengers themselves at a self-service kiosk.
  - To look for solutions to create synergy in reading ICAO compliant travel documents;
  - To approve further work to be carried out on the suggested approach.



# Thank you 4 your Attention

