



Machine Reading Options for td1 size MRtds

Sjef Broekhaar

Senior Regional Officer for Border & Identity
Management Solutions

Regional Office for Asia & Pacific Region
International Organization for Migration

New Technology Working Group (NTWG)
TAG/MRTD 20

20th Meeting of the Technical Advisory Group on Machine Readable Travel Document

The Issue

- Trial Schiphol Airport 18 June and 13 November 2007
- Self Service Kiosk for passengers on departure
- Used travel 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

- 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.



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 CAN code in additional zone
- Develop new reading equipment



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



Questions are:

- Do we use MRZ details for database searches?
- Do we use limited MRZ details for database searches?
- Do we use Chip details for database searches?



Option 2: 1 line MRZ at front side of card



(A1)



DocNumber + DOB + DOE + AbbrevName

Possible Uses

- **BAC**
- **Limited Document Searches (Lost & Stolen)**
- **Limited Person Searches (Watch List)**



(A2)




DocType + IssuingCountry + DocNumber + DOB + DOE

Possible Uses


- **BAC**
- **Complete Document Searches (Lost & Stolen)**
- **No person searches**



Option 3: 2D 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



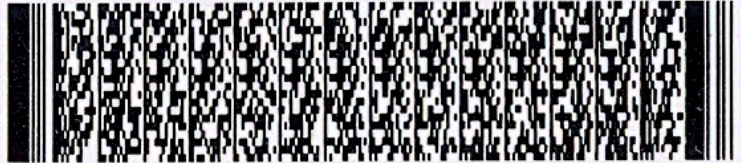
ADDRESS (NO. STREET, CITY, MUN., PROVINCE)
2428 GEN OSMALIK ST PANDACAN MANILA

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

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		DOCUMENTNUMMER / DOCUMENTNO.	
Nederlandse		XI020DF23	
NAAM / SURNAME			
Van der Steen			
VOORNAMEN / GIVEN NAMES			
Marianne Louise Danielle			
GEBOORTEDATUM / DATE OF BIRTH			
14 AUG/AUG 1972			
GEBORTEPLAATS / PLACE OF BIRTH			
Specimen			
LENGTE / HEIGHT	GESLACHT / SEX	PERS. NUMBER / PERS. NO.	
1,75 m	V/F	123456783	
INSTANTIE / AUTHORITY			
Burgemeester van Heerlen			
AFGIFTEDATUM / DATE OF ISSUE		GELDIG TOT / DATE OF EXPIRY	HANDTEKENING / SIGNATURE
26 AUG/AUG 2006		26 AUG/AUG 2011	XI020DF23 <i>M. van der Steen</i>
 MODEL 009 2006 SERIE 001			



Option 5: Develop New Reading Equipment



Impact MRZ front side on Current Cards 1



Impact MRZ front side on Current Cards 2



Looking for Solutions

➤ Important

- Make a distinguish between non-e-ID cards and e-ID cards

➤ Option for non-e-ID cards:

- A possible solution for non-e-ID cards could be a 2D-Barcode. Question is, what will be the size of the 2D barcode when the MRZ is converted into it.

➤ Option for e-ID cards:

- The selected solution for e-ID cards is SAC.



Possible Size & Place of 2D Barcode 1



Pros & Cons of 2D Barcode

➤ Pros

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

➤ Cons

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



Pros & Cons of SAC

➤ Pros

- 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
- Is already a standard

➤ Con

- Readers software needs to be updated



Action by the TAG₁

- The NTWG requests 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;
 - Agree with the decision to postpone the solution for the non-chip enabled chip td1 cards;



Action by the TAG ₂

- The NTWG requests the TAG/MRTD to:
 - Agree with the solution for chip-enabled td 1 cards to specify a Card Access Number (CAN) on the front side of the td1 card according to the specification laid down in the Technical Report, “Supplemental Access Control for Machine Readable Travel Documents,” Version 1.01 November 11, 2010.

