

# Doc 9303 Update on New Developments and Specifications

R Rajeshkumar

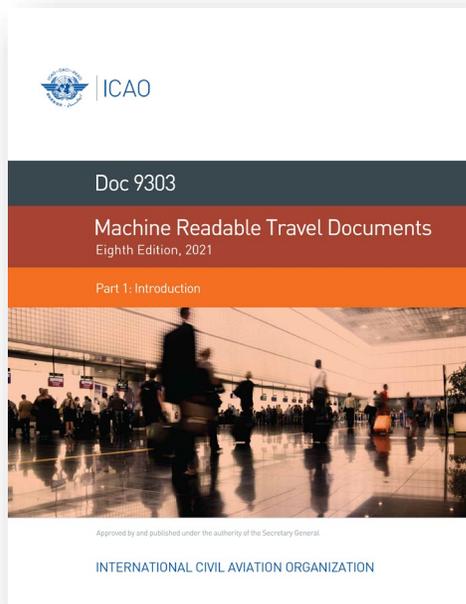
ISO SC17-WG3/TF5 Leader



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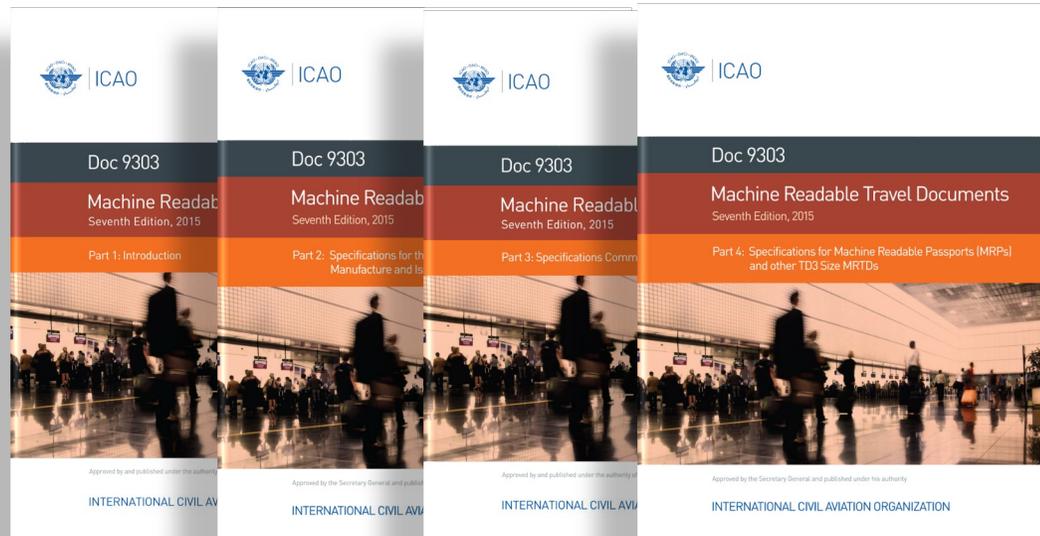
# 1. MRTD Specifications

## Doc 9303 – 8<sup>th</sup> edition



1. Introduction
2. Specifications for the Security of Design, Manufacture and Issuance of MRTDs
3. Specifications common to all Machine Readable Travel Documents
4. Specifications specific to TD3 size MRTDs, Machine Readable Passports
5. Specifications specific to TD1 size MRTDs, Machine Readable Official Travel Documents
6. Specifications specific to TD2 size MRTDs, Machine Readable Official Travel Documents
7. Machine Readable Visas
8. Emergency Travel Documents
9. The Deployment of Biometric Identification and Electronic Storage of Data in MRTDs
10. Logical Data Structure for storage of Biometrics and Other Data in Contactless Integrated Circuit (IC)
11. Security Mechanisms for MRTDs
12. Public Key Infrastructure for Machine Readable Travel Documents
13. Visible Digital Seal

# How to use – Issuing MRTD



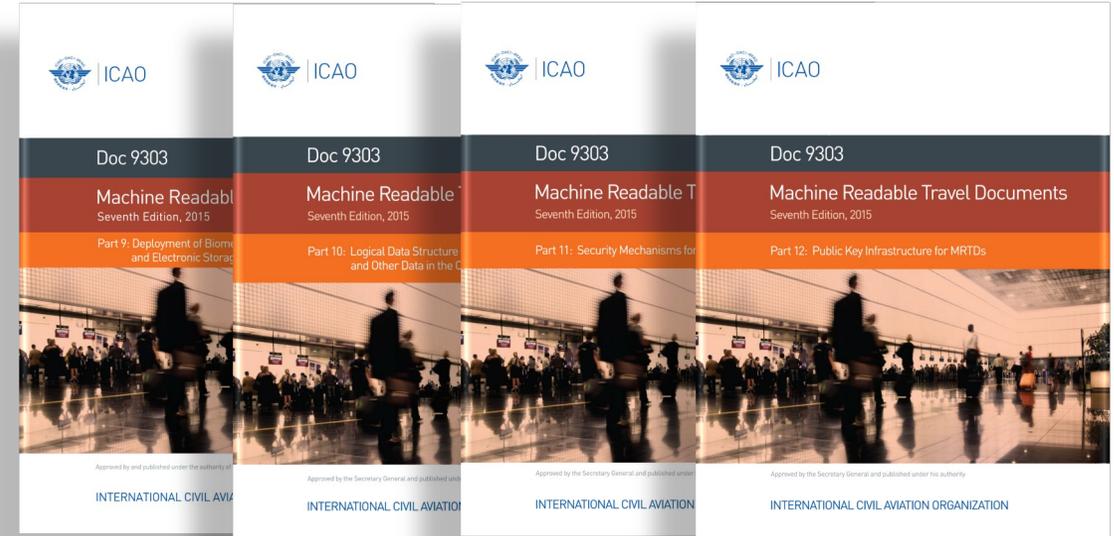
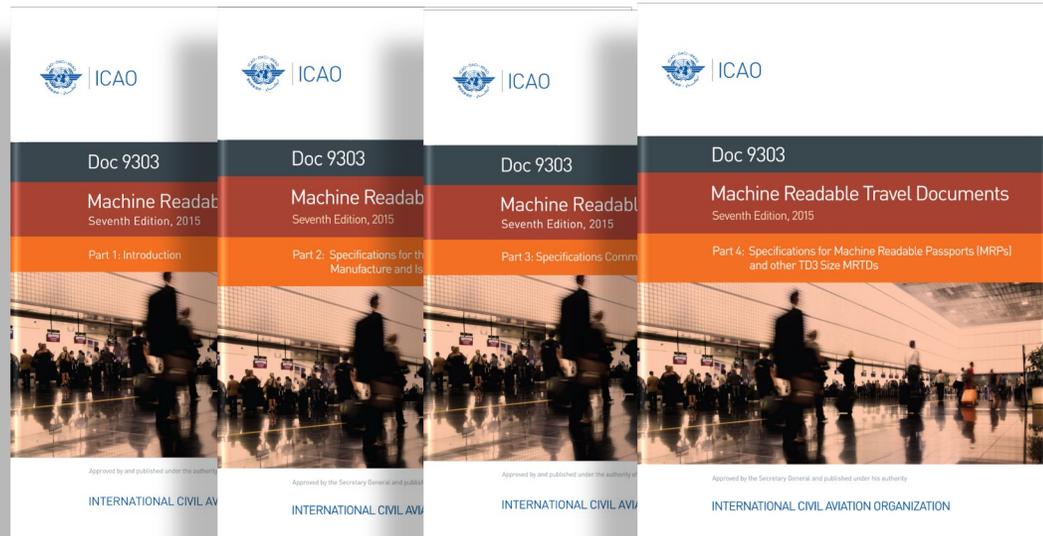
**Part 1:** Introduction

**Part 2:** Specifications for the Security of Design, Manufacture and Issuance of MRTDs

**Part 3:** Specifications common to all Machine Readable Travel Documents

**Part 4:** Specifications specific to TD3 size MRTDs, Machine Readable Passports

# How to use – Issuing eMRTD



**Part 1:** Introduction

**Part 2:** Specifications for the Security of Design, Manufacture and Issuance of MRTDs

**Part 3:** Specifications common to all Machine Readable Travel Documents

**Part 4:** Specifications specific to TD3 size MRTDs, Machine Readable Passports

**Part 9:** The Deployment of Biometric Identification and Electronic Storage of Data in MRTDs

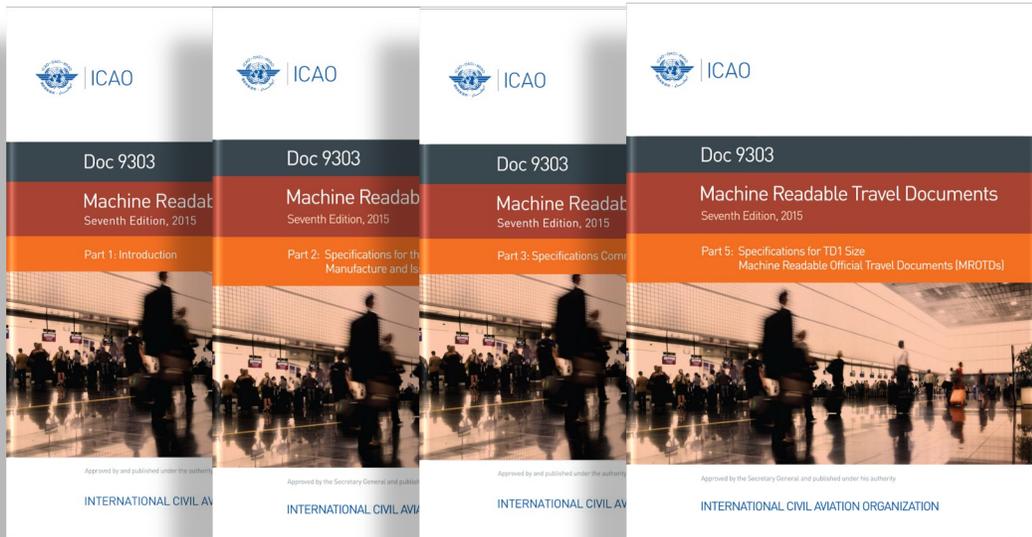
**Part 10:** Logical Data Structure for storage of Biometrics and Other Data in Contactless Integrated Circuit (IC)

**Part 11:** Security Mechanisms for MRTDs

**Part 12:** Public Key Infrastructure for Machine Readable Travel Documents



# How to use – Issuing TD1 size card without chip



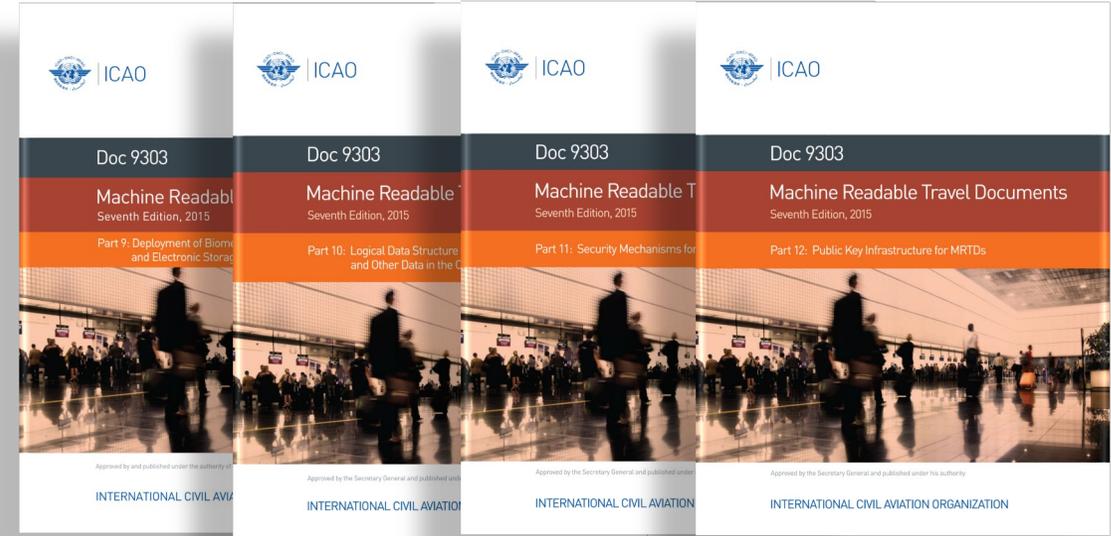
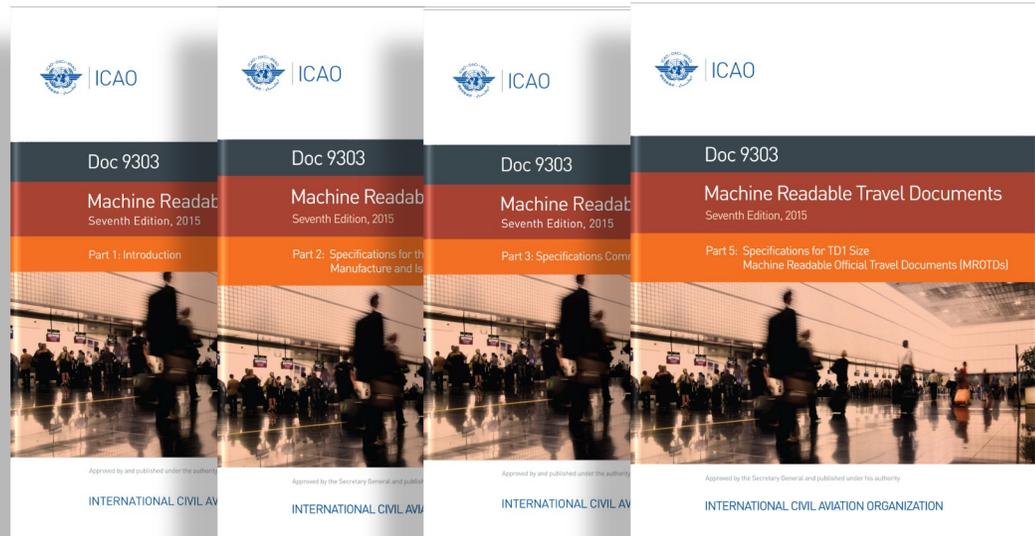
**Part 1:** Introduction

**Part 2:** Specifications for the Security of Design, Manufacture and Issuance of MRTDs

**Part 3:** Specifications common to all Machine Readable Travel Documents

**Part 5:** Specifications specific to TD1 size MRTDs, Machine Readable Official Travel Documents

# How to use – Issuing TD1 size card with chip



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ICAO

**Part 1:** Introduction

**Part 2:** Specifications for the Security of Design, Manufacture and Issuance of MRTDs

**Part 3:** Specifications common to all Machine Readable Travel Documents

**Part 5:** Specifications specific to TD1 size MRTDs, Machine Readable Official Travel Documents

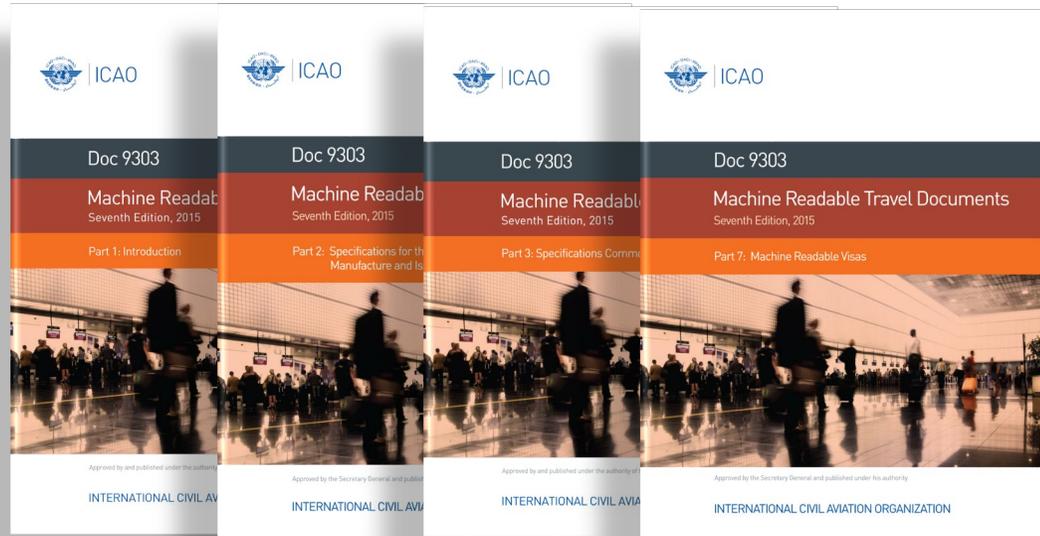
**Part 9:** The Deployment of Biometric Identification and Electronic Storage of Data in MRTDs

**Part 10:** Logical Data Structure for storage of Biometrics and Other Data in Contactless Integrated Circuit (IC)

**Part 11:** Security Mechanisms for MRTDs

**Part 12:** Public Key Infrastructure for Machine Readable Travel Documents

# How to use – Issuing MRV



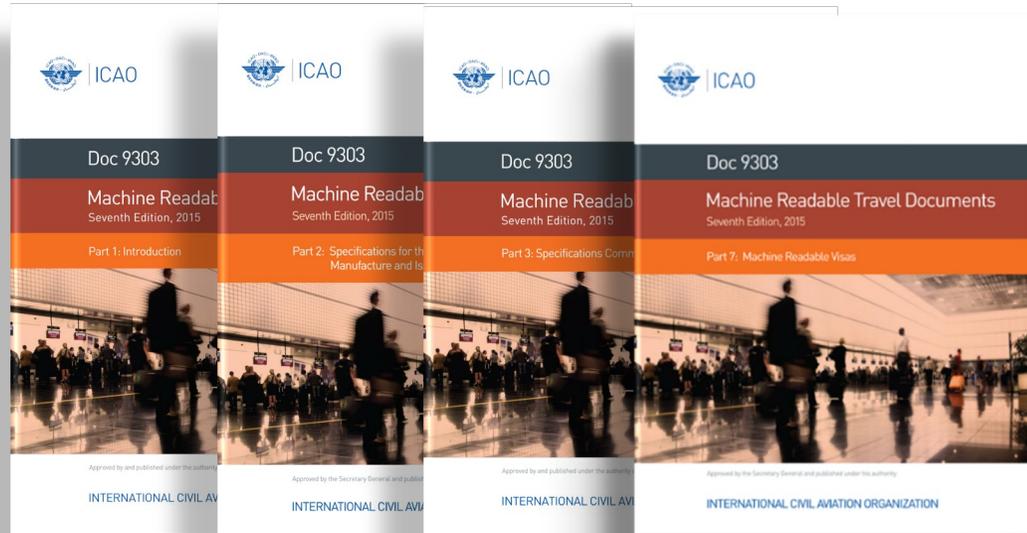
Part 1: Introduction

Part 2: Specifications for the Security of Design, Manufacture and Issuance of MRTDs

Part 3: Specifications common to all Machine Readable Travel Documents

Part 7: Machine Readable Visas

# How to use – Issuing MRV with VDS



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**Part 1:** Introduction

**Part 2:** Specifications for the Security of Design, Manufacture and Issuance of MRTDs

**Part 3:** Specifications common to all Machine Readable Travel Documents

**Part 7:** Machine Readable Visas

**Part 12:** Public Key Infrastructure for Machine Readable Travel Documents

**Part 13:** Visible Digital Seal

# Structure of document

- Normative information – Mandatory

Any document claiming conformance to Doc 9303 MUST implement these specifications.

- Informative (Mostly in Appendices)

Either a guidance or could also refer to optional elements.

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# Changes to Doc 9303

- Corrigenda – Correction of an error in the published document
- Amendment – A minor revision of the published document

# Technical Reports

- New specifications developed after the publishing of a specific edition of Doc 9303
- Created by ISO, approved by NTWG and then endorsed by TAG.
- Once approved by NTWG and endorsed by TAG, it is published on ICAO website
- Considered to be part of the published version of Doc 9303 specifications

# Next Edition of Doc 9303

- After a few technical reports are published, they are then incorporated directly into Doc 9303 to form the next edition.
- An editorial effort – **No new specifications are introduced during this process**
- On average, every 5 to 7 years – The technical reports are then retired in favour of the current edition of Doc 9303

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## 2. Recent Developments

# Visible Digital Seal

- Part of Doc 9303 – 8<sup>th</sup> edition – specified in parts 7, 12 and 13
- Amendments to the document
  - Explicitly mandate ECDSA for VDS and ETD Signers
  - Explain the choice of hash algorithm based on the bit length of the curve used for the signature as hash algorithm identifier is not part of the structure
  - Allow for encoding a transit visa in ‘duration of stay’ where entry into the country is not allowed

# Digital Travel Credentials (DTC)

- Technical Report for Virtual Component was endorsed and published in 2021.
- The Physical Component split into two phases
  - Phase 1 – defined the interaction between the PC and the Inspection System using NFC interface
  - Phase 2 – Define other form factors (mobile phone etc), which also includes the provisioning of such devices and protocols like Bluetooth Low Energy (BLE)
- Phase 1 specification approved by NTWG
- Will be presented to TAG in October 2023 for endorsement
- For Phase 2, a Gap Analysis exercise being conducted to identify differences between DTC Policy requirements and available technical specifications

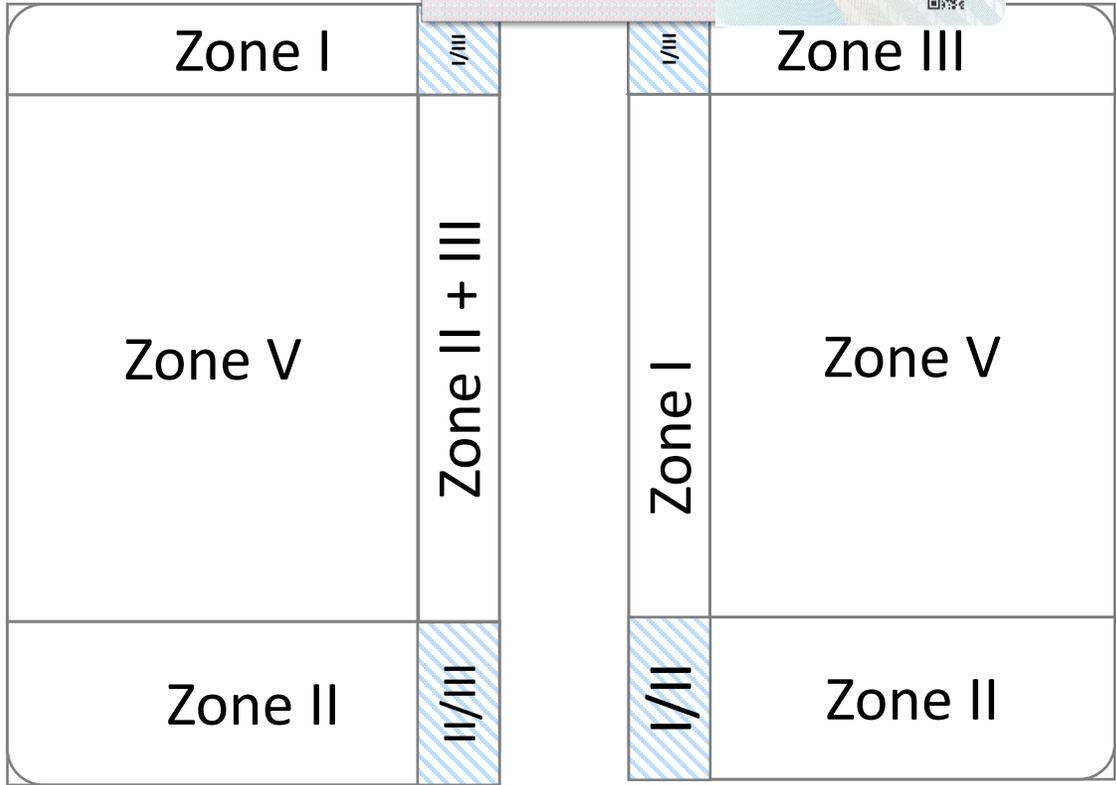
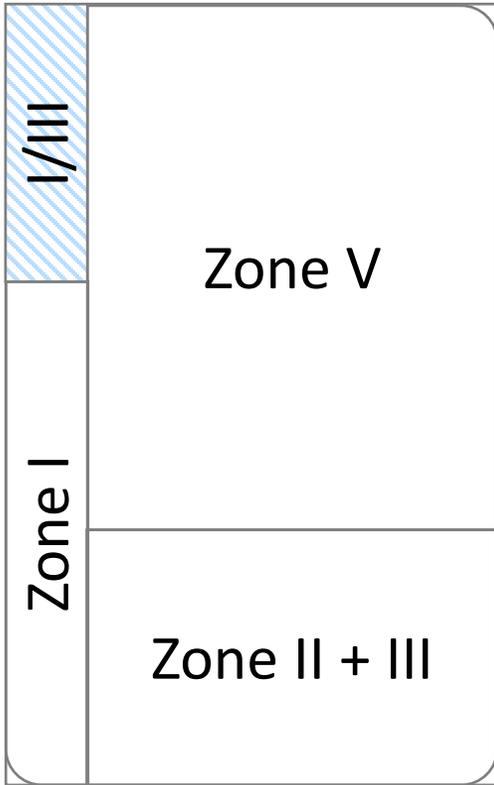
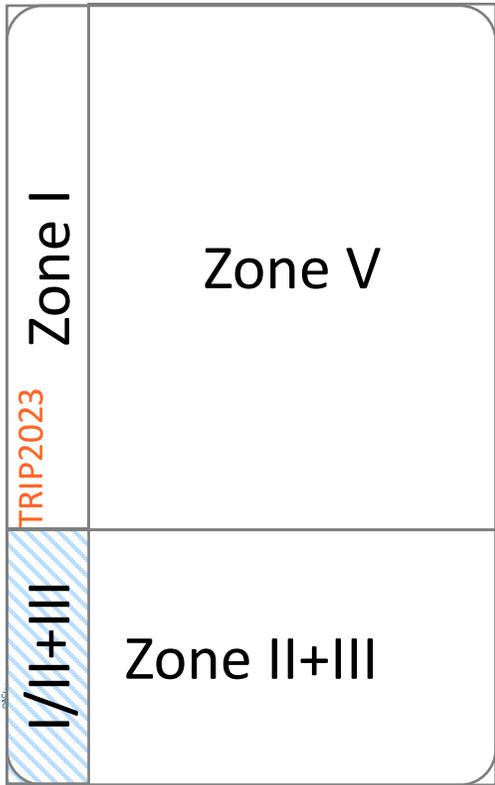
# ISO/IEC 39794-5 Application Profile

- SC37 has published 39794 in 2021
- NTWG agreed to transition from 19794 to 39794 for DG2, DG3 and DG4
- TF5 worked on Application Profile for Facial image
  - Applicable only to the first facial image stored in DG2
  - DG3 and DG4 encoding currently out of scope
  - Some metadata elements have additional restrictions
  - Gender (Sex) – Male, Female, Other – in line with Doc 9303
  - Image representation block – only 2D representation allowed
  - Image data formats – JPEG, JPEG2000 lossy and JPEG2000 lossless
  - 2D Face Image Kind – restricted to MRTD
  - 3D shape representation block – MUST NOT be used
  - ASN1 for 39794-1 and 39794-5 published to WG3 Github page

# TD1 Layout

- Main aim is to have a larger photo
- Hence, considering new layouts for the TD1 card
- Also considering using a barcode for CAN and MRZ and maybe removing MRZ in future

# TD1 Layout- Front side





# ICAO Datastructure for Barcode (IDB)

- Doc 9303 currently specifies Visible Digital Seal (VDS)
- VDS – created for primary use on visa stickers and constrained spaces – cryptographic signature mandatory – binary – cannot be read by scanners in travel industry
- VDS-NC was specified for Health Proofs and Digital Travel Authorization (DTA)
- VDS-NC – required to be human readable, with signature optional
- SMB – New barcode requirement to allow for encoding CAN and MRZ-space constrained but without signature and human readable for new TD1 layout
- Suggested harmonization – approved by NTWG as new work item
  - Drop human readability requirements
  - Single definition – signature requirement based on use case
  - Try for optimization in size and use base-32 to
- NTWG decided to specify a generic barcode format for all ICAO related barcode types (VDS, VDS-NC, SMB, ...) – IDB
- First release of the Technical Report approved by NTWG

# Deprecation of Basic Access Control

- Password Authenticated Connection Establishment (PACE) is successor to Basic Access Control
- Till December 31, 2017 – Countries had to issues passports that had both BAC and PACE
- From Jan 1, 2018 – Countries allowed to issue passports with PACE only
- From Jan 1, 2025 – PACE is Mandatory
- From Jan 1, 2028 – BAC MUST be dropped



# Second letter of Document Type in MRZ

- National Passport – PP
- Emergency Passport – PE
- Single Sheet ETD - PU
- Diplomatic Passport – PD
- Official/Service Passport – PO
- Refugee Passport – PR
- Alien Passport – PT
- Stateless Passport – PS
- Laissez-passer type documents – PL  
(UN, EU, Interpol, CARICOM, ECOWAS etc)

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Thank you!

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