



ICAO Ninth Symposium and Exhibition on MRTDs,  
Biometrics and Border Security 22-24 October 2013

# Doc 9303 developments and actual Technical Reports

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# The Doc 9303 standard

- Part 1 - Machine Readable Passports, Sixth edition - 2006
  - Volume 1 - Passports with Machine Readable data stored in OCR format
  - Volume 2 - Electronically enabled Passports with Biometric Identification Capability
- Part 2 - Machine Readable Visas, Third edition - 2005
- Part 3 - Machine Readable Official Travel Documents, Third edition - 2008
  - Volume 1 - MRtds with Machine Readable data stored in OCR format
  - Volume 2 - Electronically enabled MRtds with Biometric Identification Capability

# Supplement to Doc 9303

- Supplement Release 13 - 2013
- 167 pages
- 234 issues
  - Clarifications
  - Interpretations
  - Fixes

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  - Volume 2 - Electronically enabled MRtds with Biometric Identification Capability
- Supplement to Doc 9303, Release 13 - 2013

# Technical Reports

## TR - MRTDs: History, Interoperability and Implementation

- Version 1.4 - March 2007
- Summary of ICAO key decisions
  - Policies
  - Procedures
  - Technology
- Guide in using specifications
  - Doc 9303
  - Supplement
  - Technical reports
- Concepts
  - Global interoperability
  - Uniformity
  - Technical reliability
  - Practicality
  - Quality

# Technical Reports

## TR - CSCA Countersigning and Master List issuance

- Version 1.0 - June 2009
- Bilateral exchange of CSCA certificates
  - Lack of specified mechanisms
  - Inefficiency
- CSCA certificate distribution/publication mechanism
  - Electronically
  - Publication of signed list of received & validated certificates
  - State to State service
  - PKD

# Technical Reports

## TR - LDS and PKI Maintenance

- Version 1.0, May 2011
- Evaluation of the standard
  - Accuracy
  - Security
  - Especially cryptographic security features and PKI
- Updated specifications
  - LDS version number electronically signed
  - Updated certificate profiles
  - Access Control
  - Active Authentication with Elliptic Curve Cryptography
- New update coming
  - Guidance on certificate profiles

# Technical Reports

## TR - Supplemental Access Control for MRTDs

- Version 1.01 - November 2010
- Basic Access Control recommended feature
  - Anti skimming (access control)
  - Anti eavesdropping (session encryption)
  - Strength limited by design
  - 5 & 10 years passport validity periods
- Supplemental to Basic Access Control
  - PACE V2 (Password Authenticated Connection Establishment)
  - Strength of session keys independent of password
  - Password: Document Number, Date-of-Birth, Date-of-Expiry
  - Password: Card Access Number
  - SAC = BAC + PACE



# Technical Reports

## TR - Machine reading options for td1 size MRTDs

- Version 1.0, April 2011
- Machine reading issue
  - MRZ on rear side
  - Biographical profile (including photograph) on front side
  - Document related features on front side
  - Card turning
- Study on options for one-side reading
- Non-chip enabled
  - One-line MRZ
  - (2D) barcode
  - Further study
- Chip enabled
  - Chip access
  - CAN position specified

# Technical Reports

## TR - Machine Assisted Document Security Verification

- Version 1.0, July 2011
- Updates/Replaces Doc 9303 Informative Appendix
  - Machine-assisted document security verification
- Machine authentication of document security features
  - Materials
  - Security printing
  - Copy protection techniques
- Advice on reader technologies

# Technical Reports

## TR - Transliteration of Arabic Script in MRTDs

- Version 2.9, July 2012
- VIZ
  - Doc 9303 mandates provision of Latin character equivalent
  - Transcription
  - Transliteration
- MRZ
  - MRZ character set
  - Unambiguous - database searches
  - Reversible

# Technical Reports

- TR - MRTDs: History, Interoperability and Implementation
- TR - CSCA Countersigning and Master List issuance
- TR - LDS and PKI Maintenance
- TR - Supplemental Access Control for MRTDs
- TR - Machine reading options for td1 size MRTDs
- TR - Machine Assisted Document Security Verification
- TR - Transliteration of Arabic Script in MRTDs

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# Doc 9303 revision

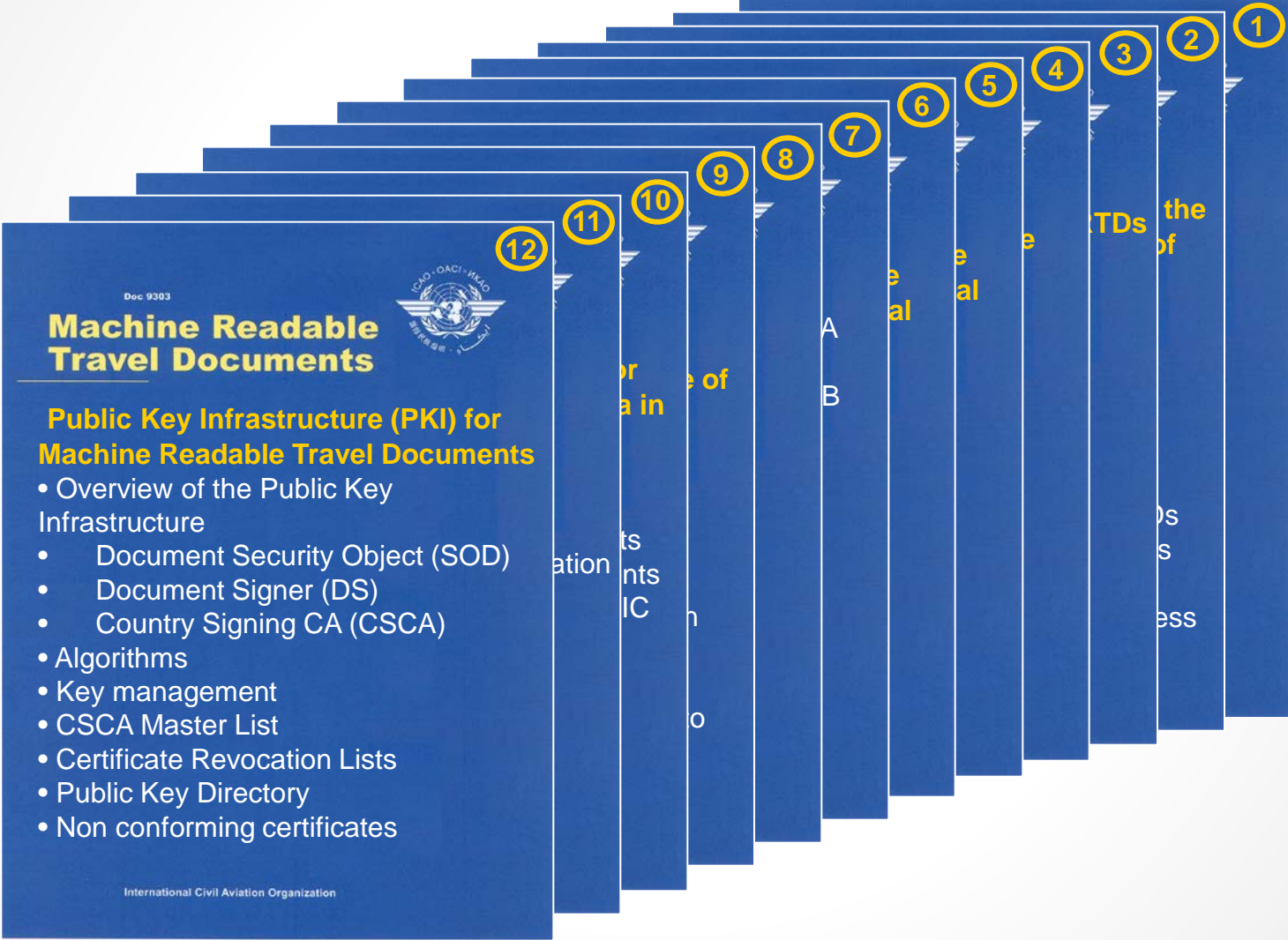
- Three activities
  - Clean up Supplement
  - Incorporate Technical Reports
  - Re-structure Doc 9303

# Re-structure Doc 9303

- Different publication dates for different parts
- Until 2009 paper based
  - Separate (complete) standards for part 1, 2 and 3
  - Duplicate, mainly general, information
  - Volumes 2 of part 1 and 3 almost identical
- Since 2009 electronic (pdf) format
  - Maintenance
  - Readability
  - Efficiency
- Restructuring
  - Specifications appear only once
  - Grouping of general as well as form factor specific specifications
  - Set of (pdf) files
  - User composes relevant subset

<http://www.icao.int/security/mrtd/pages/default.aspx>

# Re-structure Doc 9303





# Re-structure Doc 9303

- ePassport book

The image displays 12 book covers for 'Machine Readable Travel Documents' (Doc 9303) from the International Civil Aviation Organization. The covers are numbered 1 through 12 and contain various technical specifications and protocols related to MRTDs.

- 1** Introduction
  - Amendments
  - Foreword
- 2** Specifications for the security of the design, manufacture & issuance of MRTDs
  - Security of the MRTD &
- 3** Specifications common to all MRTDs
  - Illustrative guidelines for portraits
  - Three letter codes
  - Transliterations
- 4** Specifications specific to ID3 size MRTDs - Machine Readable Passports
  - Construction & dimensions
- 5** Metrics
- 6** Solution
- 7** Solutions
- 8** Applicable to
- 9** The deployment of biometric identification & electronic storage of data in MRTDs
- 10** A Logical Data Structure (LDS) for storage of biometrics & other data in the contactless IC
  - Process for reading eMRTDs
  - Requirements of the LDS
  - Mandatory & optional data elements
  - Ordering & grouping of data elements
  - Mapping principles for contactless IC
  - Data Group specifications
  - Worked examples
- 11** Protocols
  - Basic Access Control
  - PACE V2
  - Passive Authentication
  - Active Authentication
  - eMRTD production and personalization
  - eMRTD inspection
  - Worked examples
- 12** Public Key Infrastructure (PKI) for Machine Readable Travel Documents
  - Overview of the Public Key Infrastructure
    - Document Security Object (SOD)
    - Document Signer (DS)
    - Country Signing CA (CSCA)
  - Algorithms
  - Key management
  - CSCA Master List
  - Certificate Revocation Lists
  - Public Key Directory
  - Non conforming certificates

# Re-structure Doc 9303

- Non-chip td1 card



# Doc 9303 revision project

- Three activities - Three phases
  - Phase 1 - Re-structuring
  - Phase 2 - Supplement incorporation
  - Phase 3 - Technical Reports incorporation
- Timeline
  - New structure design - Q4 2011
  - Re-structuring finalized - Q3 2012
  - Supplement issues incorporated - Q4 2012
  - Technical Reports incorporated - Q3 2013
  - Review cycles completed - Q1 2014
  - Ready for translation / publication - Q2 2014



# THANK YOU



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