



**TECHNICAL ADVISORY GROUP ON MACHINE READABLE
TRAVEL DOCUMENTS (TAG-MRTD)**

EIGHTEENTH MEETING

Montréal, 5 to 8 May 2008

Agenda Item 1: Activities of the NTWG

Agenda Item 1.10 Application of Photo Standards in the e-MRTD Issuing Process

**APPLICATION OF PHOTO STANDARDS
IN THE E-MRTD ISSUING PROCESS**

Presented by the New Technologies Working Group (NTWG)

1. INTRODUCTION

1.1 Part 1 of ICAO Doc 9303 (6th Edition) references the specifications set out in ISO/IEC 19794-5, Biometric Data Interchange Format - Face Image Data, for the compliance of biometrically suitable passport images.

1.2 Experiences of various issuing authorities that have applied these specifications suggest that a number of key specifications within in the ISO/IEC 19794-5 Standard may need to be modified.

1.3 The NTWG decided that immediate consideration be given to identifying potential solutions, including revised practices and/or tolerance adjustments, to ensure that issuing agencies are able to meet specifications for “Biometric Data Interchange Format - Face Image Data” within the 6th Edition of Part 1 of ICAO Doc 9303.

1.4 Preliminary results and recommendations were presented by the NTWG at TAG-MRTD/17.

2. TECHNICAL REPORT SUMMARY

2.1 At its seventeenth meeting, the TAG/MRTD acknowledged the preliminary analysis and the conclusions on the application of ISO/IEC 19794-5 specifications to the e-MRTD issuing process.

2.2 TAG/MRTD-17 also approved on-going research in this area and the proposed next steps:

2.2.1 Complete the analysis.

2.2.2 Publish the recommended adjustments in the Supplement.

2.2.3 Amend the ISO/IEC 19794-5 standard “Biometric Data Interchange Format - Face Image Data”.

3. RESULTS

3.1 At its meeting in Tel Aviv, January 2008, the subcommittee ISO/JTC1/SC37 agreed on the Technical Corrigendum to the ISO/IEC 19794-5 standard “Biometric Data Interchange Formats – Part 5: Face Image Data”. It is now forwarded to ISO publication.

3.2 This Technical Corrigendum reflects the analysis and the recommendations given by the NTWG work group at TAG/MRTD-17 in 2007.

3.3 The Corrigendum calls for relaxing the tolerance in head roll (tilt) to $\pm 8^\circ$. The tolerances for the deviations from the frontal pose in the pitch- and the yaw-axis remain unchanged at $\pm 5^\circ$.

3.4 The Corrigendum also calls for the following relaxations of tolerances in head size and position (where A is image width, B is image height, CC is head width, DD is head height, and M_x and M_y are the x and y coordinates of M, the center of the face, as measured from the upper left corner of the image).

Section in the standard	Definition	Requirements
8.3.1	General requirement	Head entirely visible in the image
8.3.2	Horizontal Position of Face	$0.45 A \leq M_x \leq 0.55 A$
8.3.3	Vertical Position of Face	$0.3 B \leq M_y \leq 0.5 B$
8.3.3	Vertical Position of Face (Children under the age of 11)	$0.3 B \leq M_y \leq 0.6 B$
8.3.4	Width of Head	$0.5 A \leq CC \leq 0.75 A$
8.3.5	Length of Head	$0.6 B \leq DD \leq 0.9 B$
8.3.5	Length of Head (Children under the age of 11)	$0.5 B \leq DD \leq 0.9 B$

3.5 The modifications set out in the Technical Corrigendum to ISO/IEC 19794-5 will be backward compatible with the earlier provisions of ISO/IEC 19794-5 since only the normative

requirements will be relaxed; best practice requirements remain unchanged and are strongly recommended for the application in the e-passport framework.

3.6 This ensures that issuing authorities and/or photographers do not have to change their already-published photo requirements which are based on the best practice requirements of the earlier version of ISO/IEC 19794-5. Also, issuing authorities will now be able to accept more of the submitted photographs without degrading facial recognition performance.

4. **CONCLUSION**

4.1 The NTWG welcomes the adjustments made to the standard ISO/IEC 19794-5, closely following its own analysis and recommendations.

4.2 The way these adjustments are made guarantees solid ground, backward compatibility for already issued MRTDs.

4.3 The NTWG will monitor the application of the modified photo standards to the issuance of passports with biometrically suitable passport images and report any new developments to TAG/MRTD.

5. **ACTION BY TAG/MRTD**

5.1 The NTWG invites the TAG/MRTD:

- a) To acknowledge the adjustments made by a Technical Corrigendum to the ISO/IEC 19794-5, Biometric Data Interchange Format - Face Image Data, affecting the according reference of Part 1 of ICAO Doc 9303 (6th Edition) for passport photographs.
- b) To approve the continuation of on-going awareness or research in this area.

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