ISO/IEC 39794-2:2023-09 (E)

Information technology - Extensible biometric data interchange formats - Part 2: Finger minutiae data

Contents

Page

Foreword ..... **v**

Introduction ..... **vi**

1 Scope **1**

2 Normative references **1**

3 Terms and definitions **1**

4 Symbols and abbreviated terms **4**

5 Conformance **4**

6 Modality-specific information **5**
6.1 Purpose 5
6.2 Minutia description 5
6.3 Minutia kind 5
6.3.1 General 5
6.3.2 Unique minutia 5
6.3.3 Encoding trifurcations 5
6.4 Minutia location 6
6.4.1 General 6
6.4.2 Coordinate system 6
6.4.3 Minutia location of a ridge ending (encoded as valley skeleton bifurcation point) 6
6.4.4 Minutia location of a ridge bifurcation 7
6.4.5 Minutia location of a ridge ending (encoded as ridge skeleton endpoint) 8
6.4.6 Usage of the minutia placement 9
6.5 Minutiae direction 9
6.5.1 Angle conventions 9
6.5.2 Minutia direction of a ridge ending (encoded as valley skeleton bifurcation point) 9
6.5.3 Minutia direction of a ridge bifurcation 9
6.5.4 Minutia direction of a ridge ending (encoded as ridge skeleton endpoint) 9
6.6 Core and delta placement 9

7 Abstract data elements **11**
7.1 Purpose 11
7.2 Finger minutiae data 12
7.3 Version 12
7.4 Representation block 12
7.5 Position 12
7.6 Impression 12
7.7 Minutiae data 13
7.8 Spatial sampling rate 14
7.9 Ridge end encoding 14
7.10 Capture date and time 14
7.11 Capture device 14
7.11.1 Capture device model identifier 14
7.11.2 Certification identifier blocks 14
7.11.3 Certification schemes for finger images 14
7.11.4 Capture device technology identifier 15
7.12 Biometric sample quality blocks 16

7.13 Generic ridge counts 16
7.14 Four neighbour ridge counts 17
7.15 Eight neighbour ridge counts 17
7.16 Core data 18
7.17 Delta data 18
7.18 Zonal quality 18
7.19 PAD data block 19
7.20 Vendor specific data 19

8 Encoding 19
8.1 Tagged binary encoding 19
8.2 XML encoding 19
8.3 On-card biometric comparison format 19
8.3.1 Overview 19
8.3.2 Minutia placement 21
8.3.3 Encoding 21
8.3.4 Minutia position 21
8.3.5 Minutia type 21
8.3.6 Minutia angle 21
8.3.7 Number of minutiae and truncation 22
8.3.8 Usage of extended data for the on-card comparison format 22
8.3.9 Biometric comparison parameters 31

9 Registered format type identifiers 34

Annex A (normative) **Formal specifications 35**

Annex B (normative) **Conformance test methodology 46**

Annex C (informative) **Encoding examples 51**

Annex D (informative) **Detailed description of finger minutiae location, direction, type 54**

Bibliography 79