

ISO/IEC 29794-1:2024-05 (E)

Information technology - Biometric sample quality - Part 1: Framework

Contents

Page

Foreword..... iv

Introduction..... v

1 Scope..... 1

2 Normative references..... 1

3 Terms and definitions..... 1

4 Abbreviated terms..... 4

5 Conformance..... 4

6 Biometric sample quality criteria..... 4

6.1 Reference model..... 4

6.2 Quality aspects: character, fidelity, utility..... 5

6.3 Use cases of data quality measures..... 6

6.3.1 General..... 6

6.3.2 Real-time quality assessment..... 6

6.3.3 Use in different applications..... 6

6.3.4 Use as a survey statistic..... 7

6.3.5 Accumulation of relevant statistics..... 7

6.3.6 Sample-based reference database improvement..... 7

6.3.7 Quality-based conditional processing..... 8

6.3.8 Quality-directed fusion..... 8

6.3.9 Interchange of quality measures by disparate systems..... 8

6.3.10 Workload reduction with quality scores..... 8

6.3.11 Selection of the best of a series of biometric samples..... 8

7 Data interchange format field definition..... 8

7.1 Abstract description..... 8

7.1.1 Overview..... 8

7.1.2 Quality assessment algorithm identifier block..... 9

7.1.3 Quality measure (quality score or quality component) or error..... 9

7.2 XML encoding..... 11

7.3 Tagged binary encoding..... 11

8 Exchange of quality assessment algorithm results..... 12

9 Quality score normalization..... 12

10 Pairwise quality..... 13

11 Evaluation..... 14

11.1 General..... 14

11.2 False non-match error versus discard method..... 14

11.3 False match error versus discard method..... 15

11.4 DET versus discard method..... 16

11.5 Sample acceptance or discard rate..... 17

Annex A (informative) Example of encoding a biometric sample quality block..... 18

Annex B (informative) Example of standardized exchange of quality assessment algorithm results..... 19

Annex C (informative) Procedures for aggregation of utility-based quality scores for sample-based systems..... 21

Annex D (informative) Example code for computing utility-prediction performance metrics..... 24

Bibliography..... 26