

ISO/IEC 30137-1:2024-03 (E)

Information technology - Use of biometrics in video surveillance systems - Part 1: System design and specification

| Contents | | Page |
|-------------------|--|-------------|
| Foreword..... | | v |
| Introduction..... | | vi |
| 1 | Scope | 1 |
| 2 | Normative references | 2 |
| 3 | Terms and definitions | 2 |
| | 3.1 Terms related to the target subject..... | 2 |
| | 3.2 Terms related to VSS..... | 2 |
| | 3.3 Terms related to biometric systems..... | 4 |
| | 3.4 Terms related to the environment and scenario..... | 4 |
| | 3.5 Symbols and abbreviated terms..... | 5 |
| 4 | Comparison of terms used in biometric systems with those used in video surveillance | 5 |
| 5 | Architecture | 6 |
| 6 | Use cases | 7 |
| | 6.1 General..... | 7 |
| | 6.2 Post-event use cases..... | 8 |
| | 6.3 Real-time use cases..... | 8 |
| | 6.4 Enrolment use cases..... | 9 |
| 7 | Specification of hardware and software | 9 |
| | 7.1 General..... | 9 |
| | 7.2 Physical environment..... | 10 |
| | 7.3 Illumination environment..... | 10 |
| | 7.4 Inducing frontal view..... | 10 |
| | 7.5 Cameras and supporting infrastructure..... | 11 |
| | 7.5.1 Selection of cameras..... | 11 |
| | 7.5.2 Positioning of cameras..... | 12 |
| | 7.5.3 Infrastructure considerations..... | 16 |
| | 7.6 Biometric software..... | 17 |
| | 7.6.1 General..... | 17 |
| | 7.6.2 Face detection software..... | 17 |
| | 7.6.3 Face comparison software..... | 18 |
| | 7.6.4 Algorithm selection and testing..... | 18 |
| | 7.6.5 Other (non-biometric) software..... | 19 |
| | 7.7 Computational requirements..... | 19 |
| | 7.7.1 General..... | 19 |
| | 7.7.2 Core biometric processes..... | 19 |
| | 7.7.3 Reducing computational expense..... | 20 |
| | 7.8 Specification for reference image database..... | 21 |
| | 7.8.1 General..... | 21 |
| | 7.8.2 Reference database size..... | 21 |
| | 7.8.3 Reference image quality..... | 21 |
| | 7.8.4 Reference database maintenance..... | 22 |
| 8 | Multiple camera operation | 22 |
| 9 | Interfaces to related software | 23 |
| 10 | Guidance for operator assistance | 23 |
| 11 | System design considerations | 24 |

| | | |
|--|---|-----------|
| 11.1 | General..... | 24 |
| 11.2 | Establishing the business requirements..... | 24 |
| 11.3 | Site survey..... | 24 |
| 11.4 | Size and content of the watchlist..... | 26 |
| 11.5 | Performance requirements..... | 26 |
| 11.5.1 | General..... | 26 |
| 11.5.2 | Key metrics of performance..... | 26 |
| 11.5.3 | PAD performance metrics..... | 27 |
| 11.6 | Image data and metadata considerations..... | 27 |
| Annex A (informative) Related (non-biometric) video analytic techniques and applications..... | | 28 |
| Annex B (informative) Societal considerations and governance processes..... | | 31 |
| Annex C (informative) Case study: The use of AFR with VSS for traveller triaging at the border..... | | 33 |
| Annex D (informative) Video acquisition measurements..... | | 35 |
| Bibliography..... | | 45 |