

This is a preview of "ISO/IEC TR 29196:2018...". [Click here to purchase the full version from the ANSI store.](#)

Second edition
2018-05

Information technology — Guidance for biometric enrolment

*Technologies de l'information — Directives pour l'inscription
biométrique*



Reference number
ISO/IEC TR 29196:2018(E)

© ISO/IEC 2018



COPYRIGHT PROTECTED DOCUMENT

© ISO/IEC 2018

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

This is a preview of "ISO/IEC TR 29196:201...". Click here to purchase the full version from the ANSI store.

Contents

	Page
Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Abbreviated terms	3
5 Role of enrolment in a biometric system	3
6 Stakeholders and approaches for enrolment	6
6.1 Enrolment stakeholders.....	6
6.2 Enrolment approaches.....	9
7 Stakeholder interests	10
7.1 Key observations.....	10
7.2 Best practices and recommendations.....	11
7.2.1 General.....	11
7.2.2 Subject interests.....	11
7.2.3 Enrolment Authority interests.....	14
7.2.4 Operator interests.....	22
7.2.5 Relying party interests.....	25
7.2.6 Developer interests.....	26
7.2.7 Regulator interests.....	31
7.2.8 Auditor interests.....	31
8 Biometric enrolment capability development	32
8.1 General.....	32
8.2 Enrolment station architecture and design.....	32
8.3 System definition.....	33
9 Modality specific guidance	33
9.1 General.....	33
9.2 Facial biometric systems.....	34
9.2.1 General.....	34
9.2.2 Environment.....	34
9.2.3 Pose and position.....	34
9.2.4 Ethnicity.....	35
9.2.5 Improvements.....	35
9.2.6 Glasses.....	36
9.3 Fingerprint biometric systems.....	36
9.3.1 General.....	36
9.3.2 Fingerprint capture considerations.....	37
9.3.3 Single finger systems.....	37
9.3.4 Tenprint systems.....	38
9.4 Vascular (vein) authentication systems.....	38
9.4.1 General.....	38
9.4.2 Palm vein technology.....	39
9.4.3 Finger vein technology.....	39
9.5 Iris biometric systems.....	40
10 Mobile applications	41
10.1 Best practice guidelines.....	41
10.2 Fingerprint systems.....	42
10.3 Facial image systems.....	43
10.4 Iris systems.....	44
Annex A (informative) Checklist of activities related to biometric enrolment	46

This is a preview of "ISO/IEC TR 29196:201...". [Click here to purchase the full version from the ANSI store.](#)

Annex B (informative) Examples of good and bad face enrolment pictures	50
Bibliography	54

This is a preview of "ISO/IEC TR 29196:201...". Click here to purchase the full version from the ANSI store.

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by ISO/IEC JTC 1, *Information technology, SC 37, Biometrics*.

This second edition cancels and replaces the first edition (ISO/IEC TR 29196:2015), which has been technically revised.

Introduction

One of the most important contributions to a successful biometric-based recognition system is a consistent enrolment service that generates the biometric data required for subsequent recognition of individuals. Subsequent verifications or identifications will be compared with the biometric data collected at enrolment. If the quality of capture at enrolment is not maintained consistently, the operators of a recognition system which depends on a good enrolment are likely to experience unreliable performance. For those who are enrolled in a verification system, a poor quality enrolment will result in inconvenience should they fail to be recognized. (Readers of this document should note that quality has a specific meaning when applied to biometric systems; a high quality capture is one that results in biometric data that provides good comparison scores when compared with other high quality images from the same biometric feature.)

By analysing the requirements for a good enrolment from the perspectives of a range of stakeholders, it is possible to derive a set of principles to guide the development of a biometric enrolment policy and the deployment of a service. Where enrolment is outsourced to a third party, it is extremely important to be able to measure quality metrics rather than quantity metrics, since the technical and business objectives of the two organisations (the relying party and the Enrolment Authority as defined in this document) may, in general, not be aligned.

Although the recommendations and guidelines in this document are directed primarily to the parties responsible for the enrolment itself and for management of the enrolment service (noting that these two entities may be one and the same), they will also be of value to the designers and developers of enrolment systems.