AS ISO/IEC 21472:2025
ISO/IEC 21472:2021

Australian STANDARD®

STANDARDS Australia

Information technology — Scenario evaluation methodology for user interaction influence in biometric system performance



AS ISO/IEC 21472:2025

This Australian Standard® was prepared by IT-032, Biometrics and Identification. It was approved on behalf of Standards Australia's Standards Development and Accreditation Committee on 28 May 2025.

This Standard was published on 27 June 2025.

The following are represented on Committee IT-032:

Department of Defence (Australian Government)
Department of Foreign Affairs and Trade (DFAT)
Department of Home Affairs - Digital and Technology Policy Division
Photo Marketing Association
SITA

This Standard was issued for comment as DR AS ISO/IEC 21472:2025

Keeping Standards up-to-date

Ensure you have the latest versions of our publications and keep up-to-date about Amendments, Rulings, Withdrawals and new products by visiting:

www.standards.org.au

ISBN: 978 1 76175 249 0

AS ISO/IEC 21472:2025

ISO/IEC 21472:2021

Australian Standard®

Information technology — Scenario evaluation methodology for user interaction influence in biometric system performance

First published as AS ISO/IEC 21472.2025.

© ISO/IEC 2025 — All rights reserved
© Standards Australia Ltd 2025

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher, unless otherwise permitted under the Copyright Act 1968 (Cth).

How to read this Standard

This page explains the meaning of the language and structure of this Standard.

Refer to Standards Australia's Standardisation Guide 006 for more details about drafting rules.

Australian and Australian/New Zealand Standards are voluntary unless they are referenced in legislation or called up in contracts.

Requirements

To conform to a Standard, all requirements in the Standard need to be met.

A requirement is any statement in the Standard which uses the word "shall".

Recommendations, permissions and possibilities

The following words are commonly used in Standards, but statements using them do not have to be followed to conform to the Standard:

(a) "should" means that something is recommended.

(b) "may" means that something is permitted.

(c) "can" means that something is possible.

Structure of Standards

A Standard always has the following parts:

(i) The Preface states who developed the Standard, what the Standard is aiming to do, and how it relates to other documents.

(ii) The Scope states what the Standard is about, what it covers and what it does not cover.

(iii) The Normative references clause lists other documents that are referenced in the Standard as part of requirements.

(iv) The Terms and definitions clause defines important terms to help with understanding the Standard.

A Standard may also include other parts, such as the following:

(1) A normative appendix sets additional requirements that need to be conformed to.

(2) An informative appendix provides additional information or guidance. An informative appendix provides additional information or guidance. They usually do not contain requirements. If an informative appendix does contain requirements, the Standard will explain when those requirements apply.

(3) A Bibliography lists documents referenced in the Standard but not as part of requirements.

Many Standards include notes. Notes provide recommendations and/or guidance only. They never contain requirements.

Preface

This Standard was prepared by the Standards Australia Committee IT-032, Biometrics and Identification.

The objective of this document is to address the following:

(a) Requirements for planning, executing and reporting the influence of user interaction on biometric system performance based on scenario test methodologies, considering three kinds of factors:

  (i) Factors related to the design, position or condition of the capture device.

  (ii) Factors depending on users and user attributes.

  (iii) Factors depending on the interaction of users with the biometric system.

(b) Specifications for the definition, establishment and measurement of conditions needed for evaluation, including those relating to equipment.

(c) Requirements for establishing a reference evaluation condition (REC) and target evaluation condition(s) (TEC) to compare the influence of user interaction factors.

(d) A specification of the biometric evaluation including requirements for test population, test protocols, data to record, test results.

(e) Procedures for carrying out the overall evaluation.

This document does not —

(A) determine which parameters ought to be analysed for a specific biometric modality. This is currently covered in SA TR ISO/IEC 19795.3:2025;

(B) specify requirements for performing a vulnerability analysis modifying user interaction influence factors; and

(C) include procedures for performing usability testing.

This document is identical to, and has been reproduced from, ISO/IEC 21472:2021, *Information technology — Scenario evaluation methodology for user interaction influence in biometric system performance*.

As this document has been reproduced from an international document, a comma is to be read as a full point when referring to a decimal marker.

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

The terms “normative” and “informative” are used in Standards to define the application of the appendices or annexes to which they apply. A “normative” appendix or annex is an integral part of a Standard, whereas an “informative” appendix or annex is only for information and guidance.

© Standards Australia Limited 2025

Contents

Page

Preface ..... **v**
Foreword ..... **vii**
Introduction ..... **viii**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **2**
4 Conformance **2**
5 Overview **2**
5.1 General 2
5.2 User interaction influence factors 3
6 Evaluation conditions specification **3**
6.1 General 3
6.2 Specification of user interaction influence factors 4
6.2.1 General 4
6.2.2 Factors depending on the biometric system 4
6.2.3 Factors depending on the user 4
6.2.4 Factors depending on the user-biometric system interaction 6
6.3 Specification of the evaluation conditions 6
6.3.1 General 6
6.3.2 Specification of reference evaluation conditions (REC) 7
6.3.3 Specification of target evaluation conditions (TEC) 7
6.3.4 Enrolment-related considerations in REC / TEC 7
6.3.5 Recognition-related considerations in REC / TEC 8
6.4 Generation of the evaluation conditions 8
6.5 Control of the evaluation conditions 8
7 Requirements for planning a user interaction influence testing of biometric systems **8**
7.1 Test specification 8
7.2 Test information 9
7.3 Test instructions 9
7.4 Testing order of evaluation conditions 10
7.5 Test results 10
Annex A (normative) **Requirements for testing and reporting user interaction influence of biometric systems — Best practices** **11**
Bibliography **13**

© Standards Australia Limited 2025

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.

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 or www.iec.ch/members_experts/refdocs).

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) or the IEC list of patent declarations received (see patents.iec.ch).

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

For an explanation of 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 www.iso.org/iso/foreword.html. In the IEC, see www.iec.ch/understanding-standards.

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

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html and www.iec.ch/national-committees.

© Standards Australia Limited 2025

Introduction

This document describes a methodology for testing and reporting user interaction influence on the performance of biometric recognition systems. Specifically, it describes a methodology for testing and reporting that influence.

The performance of biometric systems can vary or can be influenced by user interaction influence factors. According to ISO/IEC 19795-1:2021, C.2, user physiology, user behaviour, sensors and hardware (all user interaction influence factors) are some factors that can influence the performance of a biometric system.

This methodology is a scenario test in which a set of test subjects interacts with a biometric system to execute transactions when one or more of the following factors is controlled:

— Factors related to the design, position or condition of the capture system.

— Factors depending on the users and their attributes.

— Factors depending on the user interaction with the biometric system.

Testing user interaction influence can be subjective and is not necessarily straightforward. Therefore, this document is intended to address the main conflicts that arise in such cases.

Within the context of this document, it is important to differentiate between “usability testing” and “user interaction influence in performance”. Usability testing relates to “the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use” (ISO/IEC 9241-11:2018). Usability testing involves the measurement of “how usable” a specific system or product is. Usability testing is addressed in documents including ISO/IEC TR 25060. On the other hand, "user interaction influence in performance" deals with measuring how the performance of a biometric system can differ from a reference evaluation, based on subjects using the system in operational or scenario conditions.

© Standards Australia Limited 2025