
**Information technology — Cross-
jurisdictional and societal aspects
of implementation of biometric
technologies — Pictograms, icons
and symbols for use with biometric
systems —**

iTeh STANDARD PREVIEW
Part 1:
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General principles

ISO/IEC 24779-1:2016
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*Technologie de l'information — Aspects sociétaux et trans-
juridictionnels de la mise en oeuvre de technologies biométriques —
Pictogrammes, icônes et symboles pour l'utilisation avec les systèmes
biométriques —*

Partie 1: Principes généraux

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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 meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/IEC JTC 1, *Information technology*, Subcommittee SC 37, *Biometrics*.

ISO/IEC 24779 consists of the following parts, under the general title *Information technology — Cross-jurisdictional and societal aspects of implementation of biometric technologies — Pictograms, icons and symbols for use with biometric systems*:

- *Part 1: General principles*
- *Part 4: Fingerprint applications*
- *Part 5: Face applications*
- *Part 9: Vascular applications*

Introduction

A major public application of biometric authentication today is likely to be passports, but in the near future it is probable that biometric recognition will be used in other public terminals. These terminals will be located in a variety of environments including unsupervised, a terminal supervised by an attendant or only partly supervised – for example an attendant supervising a number of terminals or observed via CCTV and an audio link.

With the widespread use of biometrics throughout the world today, this International Standard is intended to provide the necessary symbols and icons that show the modality of biometrics and to advise the necessity of appropriate preparation for and behaviour required when using biometric systems. This International Standard is also intended to assist subjects by guiding them as they use biometric systems and thus create a base of internationally recognized symbols and icons.

Language-independent symbols that indicate the modality of biometrics and/or instructions, such as icons, will be particularly important for occasional users. In general, it is desirable for there to be more than one mode of presentation (e.g. visual and audible or tactile). Only visual presentation is addressed in this International Standard.

A standard family of icons and/or symbols is required since in the absence of widely used standard icons and/or symbols manufacturers will adopt their own proprietary symbols and icons for display on screens. This is likely to lead to confusion, as an example, for public users of self-service terminals.

Though common usage makes the distinction that icons are for display on visual display screens and symbols are for printing on signs and in documents including: user documents, handouts, training material, installation/maintenance manuals, and on the case or key tops and buttons of devices; but in this International Standard no distinction is made between these terms.

There are no normative symbols in this International Standard, but it contains a collection of symbols that may be used by biometric systems.

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Information technology — Cross-jurisdictional and societal aspects of implementation of biometric technologies — Pictograms, icons and symbols for use with biometric systems —

Part 1: General principles

1 Scope

The ISO/IEC 24779 multi-part International Standard specifies a family of icons and symbols used in association with devices for biometric enrolment, verification and/or identification. This part of ISO/IEC 24779 describes the approach used in specifying icons and the range of biometric technologies for which icon and symbol development is considered. The symbols and icons are intended to show the modality of biometrics and to advise the necessity of appropriate preparation for and behaviour required when using the biometric systems. They are also intended to assist subjects by guiding them as they use the biometric systems.

This multi-part International Standard focuses on both enrolment and recognition processes. Icons and symbols used exclusively for biometric enrolment are not specified since most enrolment systems will be supervised, and an attendant will be available to explain to biometric capture subjects what to do.

This multi-part International Standard focuses on communication with the data capture subject. Operators could use this part of ISO/IEC 24779, but they might need additional symbols and information.

2 Conformance

The use of icons, pictograms and symbols within a biometric system is conformant to this part of ISO/IEC 24779 if it follows the specifications provided in [Clause 6](#). The definition of icons, pictograms and symbols for being used in a biometric system is conformant to this part of ISO/IEC 24779 if they follow the methodology provided in [Clause 5](#).

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

attendant

individual who is present to guide or assist a (biometric capture) subject in enrolling or verifying their biometric data

3.2

(biometric capture) subject

individual who provides biometric data for storage or comparison in a biometric system

4 Needs and use of icons and symbols in biometric systems

4.1 General

The icons and symbols specified in this part of ISO/IEC 24779 are for use across different applications, industries and consistent for all biometric types/modalities.

4.2 Cross application and industry icons and symbols

Icons and symbols which are used across different applications will be encountered more often and therefore achieve wider recognition by the public and improve user familiarity.

4.3 Types of biometric modalities

The part numbers of ISO/IEC 24779 correspond to the part number of ISO/IEC 19794.

Table 1 — Part number correspondence between ISO/IEC 24779 and ISO/IEC 19794

ISO/IEC 24779	ISO/IEC 19794
Part 1: General principles	Part 1: Framework
Part 4: Fingerprint applications	Part 4: Finger image data
Part 5: Face applications	Part 5: Face image data
Part 9: Vascular applications	Part 9: Vascular image data

4.4 Recognition scenarios – enrolment, identification or verification

The icons and symbols specified in this part of ISO/IEC 24779 indicate system provided notifications, which could include:

- a) Wait (or hold steady);
- b) Success process;
- c) Failure;
- d) Request assistance.

Icons and symbols for general use of biometric device and its type/modality (e.g. facial recognition or fingerprints) shall be described for each modality. For each modality, the icons and symbols will be defined in the part of ISO/IEC 24779 that addresses that modularity including specifications on how to use or display the icon or symbol. Where multiple modalities are present then multiple symbols and icons may be used.

Compound concepts such as retrying following a failure through to seeking assistance may use a series of combined icons and symbols to guide a user.

Where icons and symbols are common to biometric enrolment and recognition, they shall be used in both contexts. It is recommended that the enrolment of an applicant is used to familiarize both the applicant and operator with the generic symbols for the various biometric modalities.

NOTE 1 Other features such as illuminated signs indicating that the system is operational or internally illuminated fingerprint readers are not within the scope of this part of ISO/IEC 24779. The use of icons included in this part of ISO/IEC 24779 would not preclude other illuminated features to help partially sighted persons position their finger in the reader.

NOTE 2 It is not precluded that other icon/symbols can be applied where biometric capture is undertaken while a subject is moving.

5 Methodology for icons and symbols definition

5.1 Design

The family of icons and symbols specified should achieve high levels of association between the meaning and the symbol and visual discrimination in a variety of different situations. Symbols and icons in the different parts of this International Standard are developed in line with ISO and IEC 80416: Basic principles for graphical symbols for use on equipment (4 parts) and through liaison with the relevant ISO/IEC committee IEC/SC 3C.

5.2 Testing

The symbols and icons defined in different parts of this International Standard should have been tested under operational conditions with subjects from both genders and a range of age, cultural, ethnic, religious and different educational backgrounds, as well as people with disabilities (in accordance with ISO 9186 (all parts): Procedures for the development and testing of public information symbols). Different approaches to testing may have been used and should have been described. For example, ISO/IEC 24779-4:—, Annex A describes the NIST testing approach used.

The testing methodology needs to acknowledge real world situations and conditions, so that care has been taken with respect to considerations to cultural sensitivities including hands, face, eyes etc. Scenario and/or operational testing will need to be supplemented by testing in one or more realistic environments. For example, the testing allows for various types of usage, e.g. when queuing to use a terminal as well as when using the terminal itself.

The tests comprise of different aspects of thought and functionality of the icon/symbol for example:

- a) Does the user understand what the symbol/icon means (use a scale based point system)?
- b) Is the symbol/icon clear in its instruction (same point system to be used)?
- c) Any cultural/ethnic considerations brought to the testers attention by the subject?
- d) Ideal location of where the location of the symbol/icon will be (2-3 locations suggested to the test subject)?

With comprehension testing, consideration should be given to the difference between modalities which can have a physical representation (e.g. face and fingerprint) and those which are more abstract (e.g. voice and vascular image).