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

**Part 9:
Vascular applications**

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 9: Applications vasculaires

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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 9: Vascular applications*

The following part is under preparation:

- *Part 4: Fingerprint 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 terminals observed via CCTV and an audio link. Language-independent symbols and icons that indicate the biometric modality and illustrate actions and behaviour required 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 symbols and icons is required since in the absence of widely used standard symbols and icons, manufacturers will adopt their own proprietary printed symbols and icons for display on screens. This is likely to lead to confusion for public users of self-service terminals.

The vascular image recognition technology has been described in ISO/IEC/TR 24741 as one of the current biometric technologies.

From the view of the application system, it has been applied to bank ATMs for counterfeit prevention of the electronic bank card and which has been shown to be effective. Moreover, there are other applications, such as physical and logical access control.

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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 9: Vascular applications

1 Scope

This part of ISO/IEC 24779 specifies the symbols and icons to be used in conjunction with vascular image recognition.

This International Standard specifies a family of symbols and icons used in association with devices for biometric enrolment, verification, and/or identification. Icons are for display on visual display screens. Symbols are printed on signs and printed documents including user documents, hand outs, training material, installation/maintenance manuals, and on case or key tops and buttons of devices.

The symbols and icons are intended to show the modality of biometrics and to advise the necessity of appropriate preparation and the behaviour required in order to use the biometric systems. This International Standard focuses on communication with the data capture subject. Operators could use this International Standard but they might need additional symbols and information

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 24779-1, *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*

ISO/IEC 19794-9, *Information technology — Biometric data interchange formats — Part 9: Vascular image data*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 24779-1 and ISO/IEC 19794-9 apply.

4 Symbols and icons of vascular image recognition

Vascular image recognition technology observe features that are not only inside the body but also hard to see by the human eye. Current commercial products typically use the following three parts of body for vascular image recognition.

The symbol specified in [5.1](#) generally indicates vascular image recognition. Symbols and icons that are designed for indicating specific guidance on use of the system can be provided by vendor.

The symbols with body-parts, hand and finger, specified in 5.2.1 and 5.2.2 indicate vascular image recognition with body-parts.

Symbols and icons that should show the relation to vascular image recognition shall contain the symbol specified 5.1.

5 Symbols for use with vascular image recognition

5.1 Generic symbol (vascular)

Symbol No	IEC 60417-6260 modified	
Symbol ID	ISO/IEC 24779-9.1	
		
Name	Vascular image recognition, general	
Description	To identify the modality of the biometrics (Vascular)	
Notes	a) This symbol can represent all the vascular image recognition system. b) This symbol is intended to be used with the supplementary symbol to identify the part of body to be used for recognition. c) This symbol should not be rotated.	
Geometric form	One long straight line with five bent lines and ending with the shape of heart.	
Keywords	Biometrics Vascular Identification Recognition	

5.2 Symbols with body-parts

5.2.1 Hand

Symbol No	IEC 60417-6261 modified	
Symbol ID	ISO/IEC 24779-9.2	
		
Name	Vascular image recognition, hand	

Description	To identify that the biometric trait for vascular will be taken from the hand
Notes	a) This symbol is intended to identify Hand vascular image recognition b) This symbol should not be rotated.
Geometric form	One long straight line with five bent lines and ending with the shape of heart . One line outlines the shape of a hand .
Keywords	Biometrics Vascular Identification Recognition

5.2.2 Finger

Symbol No	IEC 60417-6262 modified	
Symbol ID	ISO/IEC 24779-9.3	
		
Name	Vascular image recognition, finger	
Description	To identify that the biometric trait for vascular will be taken from the finger	
Notes	a) This symbol is intended to identify Finger vascular image recognition. b) This symbol should not be rotated. c) Specific guidance on use of the system to be provided by vender.	
Geometric form	One long straight line with five bent lines and ending with the shape of heart. One line outlines the shape of a finger and one line outlines the shape of a nail.	
Keywords	Biometrics Vascular Identification Recognition	

Annex A **(informative)**

Methodology

A.1 General

It is difficult to make individuals imagine the symbols and icons that are relating to vascular image recognition because vascular image used for the vascular image recognition is not easily noticeable in the social life.

Therefore, specific attention was given to the subjects' need to have an intuitive understanding of the meaning of this symbol.

A.2 Design

Symbols specified in this part of ISO/IEC 24779 were developed in accordance with ISO/IEC 80416 which sets the common requirements for creation of graphical symbols.

The symbol was designed to avoid any confusion with other graphical symbols, specifically the USB symbol, and with indications of diseases such as varicose veins and spider veins.

A.3 Testing

Basically, testing was done in accordance with ISO 9186.

However, since vascular is hard to see, the current comprehension test for symbols and icons is not effective for the development of vascular image recognition.

In the comprehension test, in order to understand what kind of graphical symbol was appropriate, additionally, the following three issues were considered:

- a) whether the symbol was understandable as "vascular image recognition";
- b) whether the symbol appropriately indicated "vascular image recognition";
- c) whether the symbol did not evoke uncomfortableness.

Bibliography

- [1] ISO 7000, *Graphical symbols for use on equipment*¹⁾
- [2] IEC 60417, *Graphical symbols for use on equipment*
- [3] ISO 7001, *Graphical symbols — Public information symbols*
- [4] ISO 7239, *Development and principles for application of public information symbols*
- [5] ISO 80416-2, *Basic principles for graphical symbols for use on equipment — Part 2: Form and use of arrows*
- [6] ISO 80416-4, *Basic principles for graphical symbols for use on equipment — Part 4: Guidelines for the adaptation of graphical symbols for use on screens and displays (icons)*
- [7] ISO 9186-1, *Graphical symbols — Test methods — Part 1: Methods for testing comprehensibility*
- [8] ISO 9186-2, *Graphical symbols — Test methods — Part 2: Method for testing perceptual quality*
- [9] ISO/IEC 11581-1, *Information technology — User system interfaces and symbols — Icon symbols and functions — Part 1: Icons — General*
- [10] ISO/IEC 11581-2, *Information technology — User system interfaces and symbols — Icon symbols and functions — Part 2: Object icons*
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- [12] ISO/IEC 11581-5, *Information technology — User system interfaces and symbols — Icon symbols and functions — Part 5: Tool icons*
- [13] ISO/IEC 11581-6, *Information technology — User system interfaces and symbols — Icon symbols and functions — Part 6: Action icons*
- [14] ISO/IEC 13251, *Collection of graphical symbols for office equipment*
- [15] ISO/IEC 18035, *Information technology — Icon symbols and functions for controlling multimedia software applications*
- [16] ISO/IEC/TR 19765, *Information technology — Survey of icons and symbols that provide access to functions and facilities to improve the use of information technology products by the elderly and persons with disabilities.*
- [17] IEC 80416-1, *Basic principles for graphical symbols for use on equipment — Part 1: Creation of graphical symbols for registration*
- [18] IEC 80416-3, *Basic principles for graphical symbols for use on equipment — Part 3: Guidelines for the application of graphical symbols*
- [19] ETSI reports on the design, development and testing (to ISO 9186 and ETSI TR 0070) sets of symbols and icons. Both documents can be downloaded at no charge
- [20] ETSI/TR 102 520: (2006-09) *Human Factors (HF); Access symbols for use with video content and ICT devices; Development and evaluation. (This report also describes research into tactile and audio icons.)*

1) The graphical symbol collections of ISO 7000, ISO 7001, ISO 7010 and IEC 60417 are available on line in the ISO web store, http://www.iso.org/iso/home/store/graphical_symbols.htm. All graphical symbols can be previewed on the Online Browsing Platform (OBP), <https://www.iso.org/obp/ui/#search>.