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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

Technologie de l'information — Formats des données biometriques pour les échanges — Partie 1: Cadre

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

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ISO/IEC 24779-1 was prepared by Joint Technical Committee 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*

Note. The part numbers correspond to the part numbers of ISO/IEC 19794 series.

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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. The 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 ISO/IEC 24779.

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, hand outs, training material, installation/maintenance manuals, and on the case or key tops and buttons of devices; but in this document no distinction is made between these terms.

There are no normative symbols in this document, 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 multipart standard specifies a family of icons and symbols used in association with devices for biometric enrolment, verification and/or identification. Part 1 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.

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. 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.

This multi-part international standard focuses on communication with the data capture subject. Operators may use this international standard, but they could need additional symbols and information.

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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 7. 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 6.

3 Normative references

The following referenced documents are indispensible for the application of this document. For dated references, only the edition cited applies.

IEC 80416-1:2008, *Basic principles for graphical symbols for use on equipment – Part 1: Creation of symbol originals*

ISO 80416-2:2001, *Basic principles for graphical symbols for use on equipment – Part 2: Form and use of arrows*

IEC 80416-3:2002, *Basic principles for graphical symbols for use on equipment – Part 3: Guidelines for the application of graphical symbols*

IEC 80416-4:2005, *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)*

ISO 9186-1:2007, *Graphical symbols – Test methods – Part 1: Methods for testing comprehensibility*

ISO 9186-2:2008, *Graphical symbols – Test methods – Part 2: Method for testing perceptual quality*

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4 Terms and definitions

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

4.1
attendant
individual who is present to guide or assist a (biometric capture) subject in enrolling or verifying their biometric data

4.2
(biometric capture) subject
individual who provides biometric data for storage or comparison in a biometric system.

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5 Needs and use of icons and symbols in biometric systems

5.1 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.

5.2 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.

5.3 Types of biometric modalities

The biometric modalities most commonly used or proposed for use in public application will be addressed in ISO/IEC 24779: fingerprint, vascular, facial recognition, iris scan and voice.

5.4 Recognition scenarios – enrolment, identification or verification

The icons and symbols specified in this part of ISO/IEC 24779 indicate:

a) System notification – system provided messages. Indication of these notifications could include:
   i) Wait (or hold steady)
   ii) Success process
   iii) Failure
   iv) 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.

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 standard. The use of icons included in the standard 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.

6 Methodology for icons and symbols definition

6.1 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 & IEC 80416: Basic principles for graphical symbols for use on equipment (4 parts) and through liaison with the relevant ISO/IEC committee ISO/TC 145 – IEC/SC 3C JWG 11.

6.2 Testing

The symbols and icons defined in different parts of ISO/IEC 24779 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: Procedures for the development and testing of public information symbols). Different approaches to testing may have been used

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