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Information technology — Biometric data interchange formats —

Part 8: Finger pattern skeletal data

*Technologies de l'information — Formats d'échange de données
biométriques —*

Partie 8: Données des structures du squelette de l'empreinte

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

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.

ISO/IEC 19794-8 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 37, *Biometrics*.

ISO/IEC 19794 consists of the following parts, under the general title *Information technology — Biometric data interchange formats*:

- *Part 1: Framework*
- *Part 2: Finger minutiae data*
- *Part 3: Finger pattern spectral data*
- *Part 4: Finger image data*
- *Part 5: Face image data*
- *Part 6: Iris image data*
- *Part 7: Signature/sign time series data*
- *Part 8: Finger pattern skeletal data*
- *Part 9: Vascular image data*
- *Part 10: Hand geometry silhouette data*
- *Part 11: Signature/sign processed dynamic data*

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Introduction

With the interest of implementing interoperable personal biometric recognition systems, this part of ISO/IEC 19794 establishes a data interchange format for pattern-based skeletal fingerprint recognition algorithms. Pattern-based algorithms process sections of biometric images. Pattern-based algorithms have been shown to work well with the demanding, but commercially driven, fingerprint sensor formats such as small-area and swipe sensors.

The exchange format defined in this part of ISO/IEC 19794 describes all characteristics of a fingerprint in a small data record. Thus it allows for the extraction of both spectral information (orientation, frequency, phase, etc.) and features (minutiae, core, ridge count, etc.). Transformations like translation and rotation can also be accommodated by the format defined herein.

With this part of ISO/IEC 19794 for pattern-based skeletal representation of fingerprints

- interoperability among fingerprint recognition vendors based on a small data record is allowed;
- proliferation of low-cost commercial fingerprint sensors with limited coverage, dynamic range, or resolution is supported;
- a data record that can be used to store biometric information on a variety of storage media (including but not limited to, portable devices and smart cards) is defined;
- adoption of biometrics in applications requiring interoperability is encouraged.

It is recommended that biometric data protection techniques in ANSI/X9 X9.84 or ISO/IEC 15408 are used to safeguard the biometric data defined herein for confidentiality, integrity and availability.