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Information technology — Biometrics — Overview and application

Technologies de l'information — Biométrie — Aperçu général et application

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Contents

Page

Foreword

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

This third edition cancels and replaces the second edition (ISO/IEC TR 24741:2018), which has been technically revised.

The main change is as follows:

— Guidance is given on the international standards that underpin the use of biometric recognition systems.

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.

Introduction

"Biometric recognition" is the automated recognition of individuals based on their biological and behavioural characteristics. The field is a subset of the broader field of human identification science. Example technologies include, among others: fingerprint recognition, face recognition, hand geometry recognition, speaker recognition and iris recognition.

Some techniques (such as iris recognition) are more biologically based, whereas some (such as signature recognition) are more behaviourally based, but all techniques are influenced by both behavioural and biological elements. There are no purely "behavioural" or "biological" biometric systems.

"Biometric recognition" is frequently referred to as simply "biometrics", although the term "biometrics" has also historically been associated with the statistical analysis of general biological data. The word "biometrics", like "genetics", is usually treated as singular. It first appeared in the vocabulary of physical and information security around 1980 as a substitute for the earlier descriptor "automatic personal identification" in use in the 1970s. Biometric systems recognize "persons" by recognizing "bodies". The distinction between person and body is subtle but is of key importance in understanding the inherent capabilities and limitations of these technologies. Within the context of JTC 1/SC 37 documents, biometrics deals with computer-based recognition of patterns created by human behaviours and biological structures and is usually associated more with the field of computer engineering and statistical pattern analysis than with the behavioural or biological sciences.

Today, biometrics is used to recognize individuals in a wide variety of contexts, such as computer and physical access control, law enforcement, voting, border control, social benefit programs and driver licencing.

Information technology — Biometrics — Overview and application

1 Scope

This document describes the history and purpose of biometrics, the various biometric technologies in general use today (for example, fingerprint recognition, face recognition and iris recognition) and the architecture of the systems and the system processes that allow automated recognition using those technologies. It provides information on the application of biometrics in various business domains, such as border management, law enforcement and driver licencing. It also provides information on the societal and jurisdictional considerations that are typically taken into account in biometric systems.

Additionally, this document provides guidance on the use of the International Standards that underpin the use of biometric recognition systems.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 2382-37, *Information technology — Vocabulary — Part 37: Biometrics*