International Standard

ISO/IEC 17839-3

Information technology — Biometric System-on-Card —

Part 3: Logical information interchange mechanism

Technologies de l'information — Système biométrique sur carte —

Partie 3: Mécanisme d'échange de l'information logique

Second edition
2026-05

Reference number
ISO/IEC 17839-3:2026(en)

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Published in Switzerland

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Foreword

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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 or www.iec.ch/members_experts/refdocs).

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This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 17, *Cards and security devices for personal identification*.

This second edition cancels and replaces the first edition (ISO/IEC 17839-3:2016), which has been technically revised.

The main changes are as follows:

— aligned with ISO/IEC 24787-1:2024;

— improved terms and definitions;

— restructured feedback messaging;

— corrected feedback message format and examples;

— updated all figures;

— updated Annex A and Annex C;

— introduced autonomous enrolment in Annex F.

A list of all parts in the ISO/IEC 17839 series can be found on the ISO and IEC websites.

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

A Biometric System-on-Card (BSoC) is a portable card-sized device including the following entities: biometric capture, image/signal processing, storage, comparison, decision and action. The use of a BSoC with such specifications is subject to an information flow and security mechanisms, which are detailed in this document.

ISO/IEC 17839-1 describes two types of BSoC. Type ID-1 is a fully flexible card conformant with ISO/IEC 7810. Type ID-T deviates from some of the requirements of size and flexibility, while keeping the rest of the requirements intact, including the use of a contactless ICC interface. The logical interface and security mechanisms are independent on whether the BSoC is of type ID-1 or type ID-T, so the specifications stated in this document are applicable to both types of BSoC.

The ISO/IEC 17839 series is organized into three separate documents:

— ISO/IEC 17839-1, *Biometric System-on-Card — Core requirements*

— ISO/IEC 17839-2, *Biometric System-on-Card — Physical characteristics*

— ISO/IEC 17839-3, *Biometric System-on-Card — Logical information interchange mechanism* (this document)

Information technology — Biometric System-on-Card —

Part 3:
Logical information interchange mechanism

1 Scope

This document specifies:

— logical data structures for a Biometric System-on-Card (BSoC);

— enrolment procedures; and

— usage of commands and data structures defined in other International Standards for BSoC.

This document does not define requirements for:

— commands and data structures that apply to devices external to a BSoC;

— commands and data structures that apply to logical interfaces inside a BSoC.

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*

ISO/IEC 7816-4, *Identification cards — Integrated circuit cards — Part 4: Organization, security and commands for interchange*

ISO/IEC 7816-11, *Identification cards — Integrated circuit cards — Part 11: Personal verification through biometric methods*

ISO/IEC 18328-3, *Identification cards — ICC-managed devices — Part 3: Organization, security and commands for interchange*

ISO/IEC 24787-1, *Information technology — On-card biometric comparison — Part 1: General principles and specifications*

Bibliography

[1] ISO/IEC 7810, *Identification cards — Physical characteristics*

[2] ISO/IEC 7816-13, *Identification cards — Integrated circuit cards — Part 13: Commands for application management in a multi-application environment*

[3] ISO/IEC 7816-15, *Identification cards — Integrated circuit cards — Part 15: Cryptographic information application*

[4] ISO/IEC 19785-1, *Information technology — Common Biometric Exchange Formats Framework — Part 1: Data element specification*

[5] ISO/IEC 19785-3, *Information technology — Common Biometric Exchange Formats Framework — Part 3: Patron format specifications*

[6] ISO/IEC 19794 (all parts), *Information technology — Biometric data interchange formats*

[7] ISO/IEC 24761, *Information technology — Security techniques — Authentication context for biometrics*

[8] ISO/IEC 29794 (all parts), *Information technology — Biometric sample quality*

[9] ISO/IEC 18092, *Telecommunications and information exchange between systems — Near Field Communication Interface and Protocol 1 (NFCIP-1)*

[10] ISO/IEC 7816-3, *Identification cards — Integrated circuit cards — Part 3: Cards with contacts — Electrical interface and transmission protocols*

[11] ISO/IEC 14443-2, *Cards and security devices for personal identification — Contactless proximity objects — Part 2: Radio frequency power and signal interface*

[12] ISO/IEC 24761, *Information technology — Security techniques — Authentication context for biometrics*

[13] ISO/IEC 17839-1:2025, *Information technology — Biometric System-on-Card — Part 1: Core requirements*

[14] ISO/IEC 17839-2, *Information technology — Biometric System-on-Card — Part 2: Physical characteristics*