INTERNATIONAL STANDARD

ISO/IEC 29192-2

Second edition
2019-11

Information security — Lightweight cryptography —

Part 2: Block ciphers

Sécurité de l'information — Cryptographie pour environnements contraints —

Partie 2: Chiffrements par blocs

Reference number
ISO/IEC 29192-2:2019(E)

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

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).

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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.

This document was prepared by Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 27, *Information security, cybersecurity and privacy protection*.

This second edition cancels and replaces the first edition (ISO/IEC 29192-2:2012), which has been technically revised.

The main changes compared to the previous edition are as follows:

— the LEA algorithm has been added to 6.3;

— numerical examples and feature tables of LEA have been added to B.3 and Annex C.

A list of all parts in the ISO/IEC 29192 series can be found on the ISO website.

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Introduction

ISO/IEC 29192-1 specifies the requirements for lightweight cryptography.

A block cipher maps blocks of *n* bits to blocks of *n* bits, under the control of a key of *k* bits.

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Information security — Lightweight cryptography —

Part 2:
Block ciphers

1 Scope

This document specifies three block ciphers suitable for applications requiring lightweight cryptographic implementations:

— PRESENT: a lightweight block cipher with a block size of 64 bits and a key size of 80 or 128 bits;

— CLEFIA: a lightweight block cipher with a block size of 128 bits and a key size of 128, 192 or 256 bits;

— LEA: a lightweight block cipher with a block size of 128 bits and a key size of 128, 192 or 256 bits.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
block
string of bits of defined length

[SOURCE: ISO/IEC 18033-1:2015, 2.8]

3.2
block cipher
symmetric encipherment system with the property that the encryption algorithm operates on a *block* (3.1) of *plaintext* (3.6), i.e. a string of bits of a defined length, to yield a block of *ciphertext* (3.3)

[SOURCE: ISO/IEC 18033-1:2015, 2.9]

3.3
ciphertext
data which has been transformed to hide its information content

[SOURCE: ISO/IEC 10116:2017, 3.2]

3.4
key
sequence of symbols that controls the operation of a cryptographic transformation (e.g. encipherment, decipherment)

[SOURCE: ISO/IEC 18033-1:2015, 2.27]