INTERNATIONAL STANDARD

ISO/IEC 18033-7

First edition 2022-04

Information security — Encryption algorithms —

Part 7: **Tweakable block ciphers**

Sécurité de l'information — Algorithmes de chiffrement — Partie 7: Chiffrements par blocs paramétrables



ISO/IEC 18033-7:2022(E)



COPYRIGHT PROTECTED DOCUMENT

© ISO/IEC 2022

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

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

Published in Switzerland

Co	nteni	Page	
Fore	eword		iv
Intr	oductio	v	
1	Scor	pe	1
2	Nor	mative references	
3	Teri	1	
4	Sym	ıbols	2
5	Req	uirements on the usage of tweakable block ciphers	3
6	Deo	3	
	6.1	Deoxys-TBC versions	
	6.2	Deoxys-TBC encryption	
	6.3	Deoxys-TBC decryption	
	6.4	Deoxys-TBC tweakey schedule	6
7	Skir	7	
	7.1	Skinny versions	7
	7.2	Skinny encryption	8
	7.3	Skinny decryption	10
	7.4	Skinny tweakey schedule	11
Ann	14		
Ann	ex B (n	ormative) Object identifiers	16
Bibl	18		

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.

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.iso.org/directives<

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents) or the IEC list of patent declarations received (see patents.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html. In the IEC, see www.iso.org/iso/foreword.html. In the IEC, see www.iso.org/iso/foreword.html.

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

A list of all parts in the ISO/IEC 18033 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.iso.org/members.html and www.iso.org/members.html and

Introduction

This document specifies tweakable block ciphers. A tweakable block cipher is a family of permutations parametrized by a secret key value and a public tweak value.

Information security — Encryption algorithms —

Part 7:

Tweakable block ciphers

1 Scope

This document specifies tweakable block ciphers. A tweakable block cipher is a family of *n*-bit permutations parametrized by a secret key value and a public tweak value. Such primitives are generic tools that can be used as building blocks to construct cryptographic schemes such as encryption, Message Authentication Codes, authenticated encryption, etc.

A total of five different tweakable block ciphers are defined. They are categorized in <u>Table 1</u>.

Tweakey length Algorithm name Block length 128 bits 256 bits Deoxys-TBC-256 128 bits 384 bits Deoxys-TBC-384 64 bits 192 bits Skinny-64/192 128 bits 256 bits Skinny-128/256 128 bits 384 bits Skinny-128/384

Table 1 — Tweakable block ciphers specified

2 Normative references

There are no normative references in this document.