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Cards and security devices for personal identification — ISO UAS license and drone/UAS security module —

Part 2: Drone/UAS security module

Cartes et dispositifs de sécurité pour l'identification des personnes — Permis ISO de systèmes d'aéronefs sans équipage à bord et module de sécurité de drone/système d'aéronefs sans équipage à bord —

Partie 2: Module de sécurité de drone/système d'aéronefs sans équipage à bord

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Foreword

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A list of all parts in the ISO/IEC 22460 series can be found on the ISO and IEC websites.

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Introduction

The ISO/IEC 22460 series consists of the following parts, under the general title *Cards and security devices for personal identification — UAS license and drone/UAS security module*:

— Part 1[1)]: *Physical characteristics and basic data sets for UAS licence*. Part 1 describes the basic terms for the ISO/IEC 22460 series, including physical characteristics, basic data element set, visual layout, and physical security features.

— Part 2 (this document): *Drone/UAS security module*. This document describes data and cryptographic functions of the drone/UAS security module. The drone security module does not limit the types of data contained in this module and the cryptographic functions it provides.

— Part 3[2)]: *Logical data structure, access control, authentication and integrity validation for drone license*. Part 3 describes guidelines for the design format and data content of a UAS license with regard to logical data structure, access control, authentication and integrity validation.

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Cards and security devices for personal identification — ISO UAS license and drone/UAS security module —

Part 2:
Drone/UAS security module

1 Scope

This document specifies cryptographic functions of the drone/unmanned aircraft system (UAS) security module. The drone/UAS security module is a security device that serves as a container for the drone/UAS pilot license, drone/UAS operator license, and other personal identification. It provides storage space for storing optional elements and has the capability of cryptographic functions including integrity validation, authentication and data encryption.

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 21384-4, *Unmanned aircraft systems — Part 4: Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 21384-4 and the following apply.

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

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

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

3.1
drone security module
drone/unmanned aircraft system security module
drone/UAS security module
security device that serves as a container and cryptographic function provider for the drone pilot/operator license and other personal identification and for drone ID and flight permit ID, as optional elements

3.2
access entity
functional entity that can read, write and update data of the drone security module

3.3
drone security module issuer
authority, company or country issuing a drone security module, which applies a digital signature to a drone security module and is responsible for the associated key management

3.4
drone security module user
entity that writes data to the drone security module and reads data from the drone security module, but which cannot write or update data to be issued by the issuing authority

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3.5
remote control station
control station that provides the facilities for the pilot control or automatic flight of an unmanned aircraft (UA)

3.6
unmanned aircraft
UA
aircraft which is intended to operate with no pilot on board

3.7
unmanned aircraft system
UAS
aircraft and its associated elements which are operated with no pilot on board

3.8
unmanned aircraft system management system
UAS management system
counterpart entity as a system responsible for the identification, authentication, registration, operation, flight-permit, and other management of an unmanned aircraft (UA)

4 Symbols and abbreviated terms

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

AAD	Additional Authentication Data
AES	Advanced Encryption Standard
AKA	Authentication and Key Agreement
APDU	Application Protocol Data Unit
BCD	Binary Code Decimal
CA	Certification Authority
DER-TLV	Distinguished Encoding Rules – Tag Length Value
DH	Diffie-Hellman
EC	Elliptic Curve
ECDH	Elliptic Curve Diffie-Hellman
ECDSA	Elliptic Curve Digital Signature Algorithm
ECKA-DH	Elliptic Curve Key Agreement Algorithm – Diffie-Hellman
eSIM	embedded Subscriber Identity Module
GCM	Galois/Counter Mode
HKDF	HMAC-based Extract-and-Expand Key Derivation Function
HMAC	Keyed-Hashing for Message Authentication Code
IV	Initial Vector
KDF	Key Derivation Function
MAC	Message Authentication Code

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