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Part 11: Protocol specifications for secure operations

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This document was prepared by ITU-T as ITU-T X.510 (10/2023) and drafted in accordance with its editorial rules, in collaboration with Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 6, *Telecommunications and information exchange between systems*.

This second edition cancels and replaces the first edition (ISO/IEC 9594-11:2020), which has been technically revised.

A list of all parts in the ISO/IEC 9594 series can be found on the ISO and IEC websites.

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Introduction

The Internet Engineering Task Force (IETF) maintains a substantial set of protocols for supporting public-key infrastructure (PKI). Recommendation ITU-T X.510 | ISO/IEC 9594-11 provides protocols to supplement those protocols developed by IETF, especially for:

a) supporting new functions specified by Rec. ITU-T X.509 | ISO/IEC 9594-8, for which IETF has not provided support, e.g., support for authorization and validation list (AVL) maintenance;

b) constraint environments, where lean protocols are required.

In addition, it specifies:

c) a wrapper protocol that provides security services for other protocols.

This Recommendation | International Standard consist of three sections as follows.

Section 1 gives general specifications for this Recommendation | International Standard.

Section 2 is the wrapper protocol specification.

Section 3 specifies some protocols to be protected by the wrapper protocol:

a) a protocol for maintaining authorization and validation lists (AVLs);

b) a protocol for subscribing public-key certificate status information from certification authorities (CAs); and

c) a protocol for accessing a trust broker.

The following annexes are included:

Annex A, which is an integral part of this Recommendation | International Standard, provides the ASN.1 module for specifications to be imported by protocols providing a migration path for cryptographic algorithms.

Annex B, which is an integral part of this Recommendation | International Standard, provides cryptographic algorithm specification.

Annex C, which is an integral part of this Recommendation | International Standard, provides the ASN.1 module for the wrapper protocol.

Annex D, which is an integral part of this Recommendation | International Standard, provides specifications for how a protected protocol is wrapped by the wrapper protocol.

Annex E, which is an integral part of this Recommendation | International Standard, provides the ASN.1 module for maintenance of the authorization and validation lists (AVLs) protocol.

Annex F, which is an integral part of this Recommendation | International Standard, provides the ASN.1 module for certification authority subscription protocol.

Annex G, which is an integral part of this Recommendation | International Standard, provides the ASN.1 module for the trust broker protocol.

Annex H, which is not an integral part of this Recommendation | International Standard, provides guidance for cryptographic algorithm migration.

Annex I, which is not an integral part of this Recommendation | International Standard, reproduces the ASN.1 specification from other Specifications in the Rec. ITU X.500 Series | ISO/IEC 9594-all parts.

Annex J, which is not an integral part of this Recommendation | International Standard, provides lists amendments and corrigenda included in this Specification.