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Part 5: The Directory: Protocol specifications

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This document was prepared by ITU-T as ITU-T X.519 (10/2019) 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*.

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This ninth edition cancels and replaces the eighth edition (ISO/IEC 9594-5:2017), which has been technically revised.

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

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Introduction

This Recommendation | International Standard, together with other Recommendations | International Standards, has been produced to facilitate the interconnection of information processing systems to provide directory services. A set of such systems, together with the directory information that they hold, can be viewed as an integrated whole, called the *Directory*. The information held by the Directory, collectively known as the Directory Information Base (DIB), is typically used to facilitate communication between, with or about objects such as application entities, people, terminals and distribution lists.

The Directory plays a significant role in Open Systems Interconnection, whose aim is to allow, with a minimum of technical agreement outside of the interconnection standards themselves, the interconnection of information processing systems:

– from different manufacturers;

– under different managements;

– of different levels of complexity; and

– of different ages.

This Recommendation | International Standard specifies the application service elements and application contexts for two protocols – the Directory Access Protocol (DAP) and the Directory System Protocol (DSP). The DAP provides for access to the Directory to retrieve or modify Directory information. The DSP provides for the chaining of requests to retrieve or modify Directory information to other parts of the distributed Directory System where the information may be held.

In addition, this Recommendation | International Standard specifies the application service elements and application contexts for the Directory Information Shadowing Protocol (DISP) and the Directory Operational Binding Management Protocol (DOP). The DISP provides for the shadowing of information held in one DSA to another DSA. The DOP provides for the establishment, modification and termination of bindings between pairs of DSAs for the administration of relationships between the DSAs (such as for shadowing or hierarchical relationships).

This Recommendation | International Standard provides the foundation frameworks upon which industry profiles can be defined by other standards groups and industry forums. Many of the features defined as optional in these frameworks may be mandated for use in certain environments through profiles. This ninth edition technically revises and enhances the eighth edition of this Recommendation | International Standard.

This ninth edition specifies versions 1 and 2 of the Directory protocols.

Rec. ITU-T X.511 (1993) | ISO/IEC 9594-3 (1995), Rec. ITU-T X.518 (1993) | ISO/IEC 9594-4 (1995) and Rec. ITU-T X.519 (1993) | ISO/IEC 9594-5 (1995) and their previous edition specified only version 1. Most of the services and protocols specified in this edition are designed to function under version 1. However some enhanced services and protocols, e.g., signed errors, will not function unless all Directory entities involved in the operation have negotiated version 2. Whichever version has been negotiated, differences between the services and between the protocols defined in the nine editions, except for those specifically assigned to version 2, are accommodated using the rules of extensibility defined in this edition of Rec. ITU-T X.519 | ISO/IEC 9594-5.

Annex A, which is an integral part of this Recommendation | International Standard, provides the ASN.1 module for the common specifications for the Directory protocols.

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

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

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

Annex E, which is an integral part of this Recommendation | International Standard, provides the ASN.1 module for the Directory IDM protocols.

Annex F, which is an integral part of this Recommendation | International Standard, provides the ASN.1 module which contains all the ASN.1 object identifiers assigned to identify operational binding types in this series of Recommendations | International Standards.

Annex G, which is not an integral part of this Recommendation | International Standard, lists the amendments and defect reports that have been incorporated to form this edition of this Recommendation | International Standard.

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