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Information technology — Message Handling Systems (MHS): Protocol specifications

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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. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

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.

ISO/IEC 10021-6 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 6, *Telecommunications and information exchange between systems*, in collaboration with ITU-T. The identical text is published as ITU-T Rec. X.419.

This third edition cancels and replaces the second edition (ISO/IEC 10021-6:1996), which has been technically revised.

ISO/IEC 10021 consists of the following parts, under the general title *Information technology — Message Handling Systems (MHS)*:

— *Part 1: System and service overview*

— *Part 2: Overall architecture*

— *Part 4: Message transfer system — Abstract service definition and procedures*

— *Part 5: Message store: Abstract service definition*

— *Part 6: Protocol specifications*

— *Part 7: Interpersonal messaging system*

— *Part 8: Electronic Data Interchange Messaging Service*

— *Part 9: Electronic Data Interchange Messaging System*

— *Part 10: MHS routing*

— *Part 11: MHS Routing — Guide for messaging systems managers* [Technical Report]

Introduction

This Protocol Specification is one of a set of Recommendations | International Standards defining Message Handling in a distributed open systems environment.

Message Handling provides for the exchange of messages between users on a store-and-forward basis. A message submitted by one user (the *originator*) is transferred through the Message Transfer System (MTS) and delivered to one or more other users (the *recipients*). A user may interact directly with the MTS, or indirectly via a Message Store (MS).

The MTS comprises a number of message-transfer-agents (MTAs), which transfer messages and deliver them to their intended recipients.

This Protocol Specification was developed jointly by ITU-T and ISO/IEC. It is published as common text as ITU-T Rec. X.419 | ISO/IEC 10021-6.

INTERNATIONAL STANDARD
ITU-T RECOMMENDATION

Information technology – Message Handling Systems (MHS): Protocol Specifications

SECTION 1 – INTRODUCTION

1 Scope

This Recommendation | International Standard specifies the MTS Access Protocol (P3) used between a remote user-agent and the MTS to provide access to the MTS Abstract Service defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

This Recommendation | International Standard also specifies the MS Access Protocol (P7) used between a remote user-agent and a message-store (MS) to provide access to the MS Abstract Service defined in ITU-T Rec. X.413 | ISO/IEC 10021-5.

This Recommendation | International Standard also specifies the MTS Transfer Protocol (P1) used between MTAs to provide the distributed operation of the MTS as defined in ITU-T Rec. X.411 | ISO/IEC 10021-4.

ITU-T Rec. X.402 | ISO/IEC 10021-2 identifies the other Recommendations | International Standards which define other aspects of Message Handling Systems.

Section two of this Recommendation | International Standard specifies the MHS Access Protocols (P3 and P7). Clause 6 provides an overview of the MHS Access Protocols. Clause 7 defines the abstract-syntax of the MTS Access Protocol (P3). Clause 8 defines the abstract-syntax of the MS Access Protocol (P7). Clause 9 defines the mapping of the MHS Access Protocols onto used services. Clause 10 specifies conformance requirements for systems implementing the MHS Access Protocols.

Section three of this Recommendation | International Standard specifies the MTS Transfer Protocol (P1). Clause 11 provides an overview of the MTS Transfer Protocol (P1). Clause 12 defines the abstract-syntax of the MTS Transfer Protocol (P1). Clause 13 defines the mapping of the MTS Transfer Protocol (P1) onto used services. Clause 14 specifies conformance requirements for systems implementing the MTS Transfer Protocol (P1).

Annex A provides a reference definition of the MHS protocol object identifiers cited in the ASN.1 modules in the body of this Recommendation | International Standard.

Annex B describes protocol rules for interworking with implementations of the CCITT Recommendation X.411 (1984) using the MTS Transfer Protocol (P1).

Annex C identifies the differences between the CCITT Recommendation X.411 (1984) and this Recommendation | International Standard.

Annex D identifies the technical differences between the ISO/IEC and ITU-T versions of ITU-T Rec. X.419 and ISO/IEC 10021-6.

Annex E covers use of lower layer services, and is only applicable to ITU-T Recommendation X.419.

Annex F provides an index to this Recommendation | International Standard, categorised into: Abbreviations; Terms; Information Items; ASN.1 modules; ASN.1 information object classes; ASN.1 types; and ASN.1 values.

2 Normative References

The following Recommendations and International Standards contain provisions which, through reference in this text, constitute provisions of this Recommendation | International Standard. At the time of publication, the editions indicated were valid. All Recommendations and Standards are subject to revision, and parties to agreements based on this Recommendation | International Standard are encouraged to investigate the possibility of applying the most recent

editions of the Recommendations and Standards listed below. Members of ISO and IEC maintain registers of currently valid International Standards. The Telecommunication Standardization Bureau of the ITU maintains a list of currently valid ITU-T Recommendations.

2.1 Open Systems Interconnection

This Protocol Specification cites the following OSI specifications:

- ITU-T Recommendation X.216 (1994) | ISO/IEC 8822:1994, *Information technology – Open Systems Interconnection – Connection-oriented presentation service definition*.
- ITU-T Recommendation X.217 (1995) | ISO/IEC 8649:1996, *Information technology – Open Systems Interconnection – Service Definition for the Association Control Service Element.*
- ITU-T Recommendation X.218 (1993), *Reliable Transfer: Model and service definition*.

  ISO/IEC 9066-1:1989, *Information processing systems – Text communication – Reliable Transfer – Part 1: Model and service definition*.
- CCITT Recommendation X.228 (1988), *Reliable Transfer: Protocol specification.*

  ISO/IEC 9066-2:1989, *Information processing systems – Text communication – Reliable Transfer – Part 2: Protocol specification.*
- ITU-T Recommendation X.680 (1997) | ISO/IEC 8824-1:1998, *Information technology – Abstract Syntax Notation One (ASN.1) – Specification of Basic Notation*.
- ITU-T Recommendation X.681 (1997) | ISO/IEC 8824-2:1998, *Information technology – Abstract Syntax Notation One (ASN.1) – Information Object Specification.*
- ITU-T Recommendation X.682 (1997) | ISO/IEC 8824-3:1998, *Information technology – Abstract Syntax Notation One (ASN.1) – Constraint Specification.*
- ITU-T Recommendation X.683 (1997) | ISO/IEC 8824-4:1998, *Information technology – Abstract Syntax Notation One (ASN.1) – Parameterization of ASN.1 Specifications.*
- ITU-T Recommendation X.880 (1994) | ISO/IEC 13712-1:1995, *Information technology – Remote Operations – Concepts, Model and Notation*.
- ITU-T Recommendation X.881 (1994) | ISO/IEC 13712-2:1995, *Information technology – Remote Operations – OSI Realizations: Remote Operations Service Element (ROSE) Service Definition*.
- ITU-T Recommendation X.882 (1994) | ISO/IEC 13712-3:1995, *Information technology – Remote Operations – OSI Realizations: Remote Operations Service Element (ROSE) Protocol Specification*.
- ISO/IEC 14766:1997, *Information technology – Telecommunications and information exchange between systems – Use of OSI applications over the Internet Transmission Control Protocol (TCP)*.

2.2 Message Handling Systems

This Protocol Specification cites the following Message Handling System specifications:

- ITU-T Recommendation F.400/X.400 (1999), *Message handling: System and service overview.*

  ISO/IEC 10021-1:2003, *Information technology – Message Handling Systems (MHS) – Part 1: System and service overview.*
- ITU-T Recommendation X.402 (1999) | ISO/IEC 10021-2:2003, *Information technology – Message Handling Systems (MHS) – Overall architecture.*
- CCITT Recommendation X.408 (1988), *Message handling systems: Encoded information type conversion rules.*
- ITU-T Recommendation X.411 (1999) | ISO/IEC 10021-4:2003, *Information technology – Message Handling Systems (MHS) – Message transfer system – Abstract service definition and procedures.*
- ITU-T Recommendation X.413 (1999) | ISO/IEC 10021-5:1999, *Information technology – Message Handling Systems (MHS) – Message store: Abstract service definition.*
- ITU-T Recommendation X.420 (1999) | ISO/IEC 10021-7:2003, *Information technology – Message Handling Systems (MHS) – Interpersonal messaging system.*

2.3 Directory Systems

This Protocol Specification cites the following Directory System specification:

– ITU-T Recommendation X.501 (1997) | ISO/IEC 9594-2:1998, *Information technology – Open Systems Interconnection – The Directory – Models.*