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**ISO/IEC
10021-2**

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Information technology — Text Communication — Message-Oriented Text Interchange Systems (MOTIS) —

iTeh STANDARD PREVIEW
Part 2:
Overall Architecture
(standards.iteh.ai)

Technologies de l'information — Communication de texte — Systèmes d'échange de texte en mode message
<https://standards.iteh.ai/catalog/standards/ISO/IEC%2010021-2%20-%20Partie%202%20-%20Architecture%20g%C3%A9n%C3%A9rale%201990>



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ISO/IEC 10021-2 : 1990 (E)

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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. 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.

International Standard ISO/IEC 10021-2 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

ISO/IEC 10021-2 consists of the following parts, under the general title: *Information technology — Text Communication — Message-Oriented Text Interchange Systems (MOTIS) —*

iTeh STANDARD PREVIEW — Part 1: System and Service Overview (standards.iteh.ai)

- *Part 3: Abstract Service Definition Conventions*
[ISO/IEC 10021-2:1990](#)
- *Part 4: Message Transfer System; Abstract Service Definition and Procedures*
<https://standards.iteh.ai/catalog/standards/sist/0752/10a-c4dd-41e1-9c90-56e3414695d>
- *Part 5: Message Store; Abstract Service Definition*
- *Part 6: Protocol Specifications*
- *Part 7: Interpersonal Messaging System*

Annexes A, B, C and E form an integral part of this part of ISO/IEC 10021. Annexes D, F and G are for information only.

Introduction

This part of ISO/IEC 10021 is one of a number of parts of ISO/IEC 10021 (the International Standards for Message-Oriented Text Interchange Systems (MOTIS)). ISO/IEC 10021 provides a comprehensive blueprint for a Message Handling System (MHS) realized by any number of cooperating open systems.

The purpose of an MHS is to enable users to exchange messages on a store-and-forward basis. A message submitted on behalf of one user, the originator, is conveyed by the Message Transfer System (MTS) and subsequently delivered to the agents of one or more additional users, the recipients. Access units (AUs) link the MTS to communication systems of other kinds (e.g., postal systems). A user is assisted in the preparation, storage, and display of messages by a user agent (UA). Optionally, he is assisted in the storage of messages by a message store (MS). The MTS comprises a number of message transfer agents (MTAs) which collectively perform the store-and-forward message transfer function.

This part of ISO/IEC 10021 specifies the overall architecture of the MHS and serves as a technical introduction to it.

The text of this part of ISO/IEC 10021 is the subject of joint CCITT-ISO agreement. The corresponding CCITT specification is Recommendation X.402.

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[ISO/IEC 10021-2:1990](#)

<https://standards.iteh.ai/catalog/standards/sist/07327f6a-c4dd-41e1-9c90-56e34c469c5d/iso-iec-10021-2-1990>

**Information technology - Text Communication -
Message-Oriented Text Interchange Systems (MOTIS) -
Part 2 : Overall Architecture**

Section one - Introduction

1 Scope

This part of ISO/IEC 10021 defines the overall architecture of the MHS and serves as a technical introduction to it.

Other aspects of Message Handling are specified in other parts of ISO/IEC 10021. A non-technical overview of Message Handling is provided by ISO/IEC 10021-1. The conventions used in the definition of the abstract services provided by MHS components are defined in ISO/IEC 10021-3. The abstract service the MTS provides and the procedures that govern its distributed operation are defined in ISO/IEC 10021-4. The abstract service the MS provides is defined in ISO/IEC 10021-5. The application protocols that govern the interactions of MHS components are specified in ISO/IEC 10021-6. The Interpersonal Messaging System, an application of Message Handling, is defined in ISO/IEC 10021-7.

The ISO International Standards and CCITT Recommendations on Message Handling are summarized in Table 1.

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ISO/IEC 10021-2:1990
Table 1
Specifications for Message Handling Systems
<https://standards.iteh.ai/catalog/std/char/sist/0732786a-c4dd-41e1-9c90-56e34c469c5d/iso-iec-10021-2-1990>

ISO/IEC CCITT SUBJECT MATTER		
Introduction		
10021-1	X.400	Service and system overview
10021-2	X.402	Overall architecture
Various Aspects		
-	X.403	Conformance testing
10021-3	X.407	Abstract service definition conventions
-	X.408	Encoded information type conversion rules
Abstract Services		
10021-4	X.411	MTS Abstract Service definition and procedures for distributed operation
	X.413	MS Abstract Service definition
Protocols		
10021-6	X.419	Protocol specifications
Interpersonal Messaging System		
10021-7	X.420	Interpersonal Messaging System
-	T.330	Telematic access to IPMS

The Directory, the principal means for disseminating communication-related information among MHS components, is defined in ISO/IEC 9594, as summarized in Table 2.

Table 2
Specifications for Directories

ISO/IEC	CCITT	SUBJECT MATTER
9594-1	X.500	Overview
9594-2	X.501	Models
9594-3	X.511	Abstract service definition
9594-4	X.518	Procedures for distributed operation
9594-5	X.519	Protocol specifications
9594-6	X.520	Selected attribute types
9594-7	X.521	Selected object classes
9594-8	X.509	Authentication framework

The architectural foundation for Message Handling is provided by other International Standards. The OSI Reference Model is defined in ISO 7498. The notation for specifying the data structures of abstract services and application protocols, ASN.1, and the associated encoding rules are defined in ISO 8824 and 8825. The means for establishing and releasing associations, the ACSE, is defined in ISO 8649 and 8650. The means for reliably conveying APDUs over associations, the RTSE, is defined in ISO/IEC 9066. The means for making requests of other open systems, the ROSE, is defined in ISO/IEC 9072.

The ISO International Standards and CCITT Recommendations which form the foundation for Message Handling are summarized in Table 3.

iTeh STANDARD PREVIEW
Specifications for MHS Foundations
(standards.iteh.ai)

ISO	CCITT	SUBJECT MATTER
Model		
7498	X.200	ISO/IEC 10021-2:1990 OSI Reference Model
8824	X.208	Abstract syntax notation
8825	X.209	Basic encoding rules
Association Control		
8649	X.217	Service definition
8650	X.227	Protocol specification
Reliable Transfer		
9066-1	X.218	Service definition
9066-2	X.228	Protocol specification
Remote Operations		
9072-1	X.219	Service definition
9072-2	X.229	Protocol specification

This part of ISO/IEC 10021 is structured as follows. Section one gives a general overview. Section two presents abstract models of Message Handling. Section three specifies how one can configure the MHS to satisfy any of a variety of functional, physical, and organizational requirements. Section four describes the naming and addressing of users and distribution lists and the routing of information objects to them. Section five describes the uses the MHS may make of the Directory. Section six describes how the MHS is realized by means of OSI. Annexes provide important supplemental information.

No requirements for conformance to this part of ISO/IEC 10021 are imposed.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 10021. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO/IEC 10021 are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of ISO and IEC maintain registers of currently valid International Standards.

2.1 Open Systems Interconnection

This part of ISO/IEC 10021 and others in the set cite the following OSI specifications:

- ISO 7498:1984, *Information processing systems - Open Systems Interconnection - Basic Reference Model.*
- ISO 7498-2:1989, *Information processing systems - Open Systems Interconnection - Basic Reference Model - Part 2: Security Architecture.*
- ISO 8649:1988, *Information processing systems - Open Systems Interconnection - Service definition for the Association Control Service Element.*
- ISO 8650:1988, *Information processing systems - Open Systems Interconnection - Protocol specification for the Association Control Service Element.*
- ISO 8822:1988, *Information processing systems - Open Systems Interconnection - Connection oriented presentation service definition.*
- ISO 8824:1990, *Information processing systems - Open Systems Interconnection - Specification of Abstract Syntax Notation One (ASN.1).*
- ISO 8825:1990, *Information processing systems - Open Systems Interconnection - Specification of Basic Encoding Rules for Abstract Syntax Notation One (ASN.1).*
- ISO/IEC 9066:1989, *Information processing systems - Text communication - Reliable Transfer Part 1: Model and service definition.
Part 2: Protocol specification.*
Part 1: Model and service definition.
Part 2: Protocol specification.
- ISO/IEC 9072:1989, *Information processing systems - Text communication - Remote operations Part 1: Model, notation and service definition.
<https://standards.iteh.ai/catalog/standards/sist0732/16a-c4dd-41e1-9c90-56e34c469c5d/iso-iec-10021-2-1990>
Part 2: Protocol specification.*

2.2 Directory Systems

This part of ISO/IEC 10021 and others in the set cite the following Directory System specifications:

- ISO/IEC 9594:1990, *Information technology - Open Systems Interconnection - The Directory*
 - Part 1: Overview of concepts, models, and services.*
 - Part 2: Models.*
 - Part 3: Abstract service definition.*
 - Part 4: Procedures for distributed operation.*
 - Part 5: Protocol specifications.*
 - Part 6: Selected attribute types.*
 - Part 7: Selected object classes.*
 - Part 8: Authentication framework.*

2.3 Message Handling Systems

This part of ISO/IEC 10021 and others in the set cite the following Message Handling System specifications:

ISO/IEC 10021:1990, *Information technology - Text communication - Message-Oriented Text Interchange Systems (MOTIS) -*

Part 1: Service and system overview.

Part 3: Abstract service definition conventions.

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.

CCITT T.330:1988, *Telematic access to IPMS.*

CCITT X.403:1988, *Message handling systems: Conformance testing.*

CCITT X.408:1988, *Message handling systems: Encoded information type conversion rules.*

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This part of ISO/IEC 10021 cites the following Country Code specification:

ISO/IEC 10021-2:1990

ISO 3166:1988, *Codes for the representation of names of countries* 56e34c469c5d/iso-iec-10021-2-1990

3 Definitions

For the purposes of this part of ISO/IEC 10021 and others in the set, the following definitions apply.

3.1 Open Systems Interconnection

This part of ISO/IEC 10021 and others in the set make use of the following terms defined in ISO 7498, as well as the names of the seven layers of the Reference Model:

- a) abstract syntax;
- b) application entity (AE);
- c) application process;
- d) application protocol data unit (APDU);
- e) application service element (ASE);
- f) distributed information processing task;
- g) layer;
- h) open system;
- i) Open Systems Interconnection (OSI);

- j) peer;
- k) presentation context;
- l) protocol;
- m) Reference Model;
- n) transfer syntax; and
- o) user element (UE).

This part of ISO/IEC 10021 and others in the set make use of the following terms defined in ISO 8824 and 8825, as well as the names of ASN.1 data types and values:

- a) Abstract Syntax Notation One (ASN.1);
- b) Basic Encoding Rules;
- c) explicit;
- d) export;
- e) implicit;
- f) import; **iTeh STANDARD PREVIEW
(standards.iteh.ai)**
- g) macro;
- h) module; [ISO/IEC 10021-2:1990](#)
- i) tag; <https://standards.iteh.ai/catalog/standards/sist/07327f6a-c4dd-41e1-9c90-56e34c469c5d/iso-iec-10021-2-1990>
- j) type; and
- k) value.

This part of ISO/IEC 10021 and others in the set make use of the following terms defined in ISO 8649:

- a) application association; association;
- b) application context (AC);
- c) Association Control Service Element (ACSE);
- d) initiator; and
- e) responder.

This part of ISO/IEC 10021 and others in the set make use of the following terms defined in ISO/IEC 9066-1:

- a) Reliable Transfer (RT); and
- b) Reliable Transfer Service Element (RTSE).

This part of ISO/IEC 10021 and others in the set make use of the following terms defined in ISO/IEC 9072-1:

- a) argument;