

**Implementation of  
ISO/IEC 10021-3:1990**

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

**Part 3: Abstract Service Definition  
Conventions**

UDC 681.3:621.39

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## National foreword

This British Standard reproduces verbatim ISO/IEC 10021-3:1990, including Technical Corrigendum 1 and implements it as the UK national standard.

This British Standard is published under the direction of the Information Systems Technology Standards Policy Committee whose Technical Committee IST/18 has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international committee any enquiries on interpretation, or proposals for change, and keep UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

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### Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the ISO/IEC title page, pages ii to iv, pages 1 to 27 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

# INTERNATIONAL STANDARD

# ISO/IEC 10021-3

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

### Part 3: Abstract Service Definition Conventions

*Technologies de l'information — Communication de texte — Systèmes d'échange  
de texte en mode message —*

*Partie 3: Conventions relatives à la définition de service abstrait*



Reference number  
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**Descriptors:** Data processing, information interchange, network interconnection, open systems interconnection, data transmission, text communication, messages, definitions.

## 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 10021-3 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

ISO/IEC 10021-3 consists of the following parts, under the general title: *Information technology — Text Communication — Message-Oriented Text Interchange Systems (MOTIS)* —

- *Part 1: System and Service Overview;*
- *Part 2: Overall Architecture;*
- *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.*

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



# Section 1. Introduction

## 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 Message Handling System made possible by these International Standards is a complex distributed information processing task, many of whose components themselves have these characteristics.

This part of ISO/IEC 10021 specifies the conventions for defining the distributed information processing tasks of Message Handling and may also be useful for other applications.

The text of this part of ISO/IEC 10021 is the subject of joint CCITT-ISO agreement. The corresponding CCITT specification is Recommendation X.407.

## 1 Scope

This part of ISO/IEC 10021 specifies the conventions used to specify the distributed information processing tasks that arise in Message Handling.

This part of ISO/IEC 10021 is structured as follows. Section 1 is this introduction. Section 2 specifies the conventions for defining a distributed information processing task abstractly. Section 3 gives principles for realizing the communication aspects of such tasks concretely, such as by Open Systems Interconnection (OSI) protocols. Annexes provide important supplemental information.

There are no requirements for conformance to this part of ISO/IEC 10021.

## 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.

ISO 7498:1984, *Information processing systems — Open Systems Interconnection — Basic Reference Model*.

ISO 8649:1988, *Information processing systems — Open Systems Interconnection — Service definition for the Association Control Service Element*.

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 9072:1989, *Information processing systems — Text communication — Remote operations — Part 1: Model notation and service definition*.

## 3 Definitions

For the purposes of this part of ISO/IEC 10021, the definitions given in Annex E and the following definitions apply.

This part of ISO/IEC 10021 is based upon the concepts developed in ISO 7498 and uses the following terms defined in it:

- a) abstract syntax;
- b) Application Layer;
- c) application protocol data unit (APDU);
- d) application protocol;
- e) application service element (ASE);
- f) concrete transfer syntax;
- g) distributed information processing task;
- h) layer service;
- i) layer;

- j) open system;
- k) Open Systems Interconnection (OSI); and
- l) real open system.

This part of ISO/IEC 10021 makes use of the following terms defined in ISO 8824:

- a) Abstract Syntax Notation One (ASN.1);
- b) (data) type;
- c) (data) value;
- d) import;
- e) Integer;
- f) macro;
- g) module;
- h) Object Identifier; and
- i) tag.

This part of ISO/IEC 10021 makes use of the following term defined in ISO 8825:

- a) Basic Encoding Rules.

This part of ISO/IEC 10021 makes use of the following term defined in ISO 8649:

- a) application context (AC).

This part of ISO/IEC 10021 makes use of the following terms defined in ISO/IEC 9072-1:

- a) bind operation;
- b) error;
- c) linked;
- d) operation;
- e) Remote Operation Service (ROS);
- f) Remote Operations; and
- g) unbind operation.

## 4 Abbreviations

For the purposes of this part of ISO/IEC 10021, the abbreviations given in Annex E apply.

## 5 Conventions

This part of ISO/IEC 10021 uses the descriptive conventions identified below.

### 5.1 ASN.1

This part of ISO/IEC 10021 uses for the indicated purposes the following ASN.1-based descriptive conventions:

- a) To define the OBJECT, PORT, and REFINE macros, the ASN.1 macro notation of ISO 8824.
- b) To define the ABSTRACT-BIND, -UNBIND, -OPERATION, and -ERROR macros, the BIND, UNBIND, OPERATION, and ERROR macros of ISO/IEC 9072-1.
- c) To specify the abstract syntax of information objects in the example of Annex A, ASN.1 itself.
- d) To specify various *abstract models* in the example of Annex A, the OBJECT, PORT, and REFINE macros of clause 7.
- e) To specify various *abstract services* in the example of Annex A, the ABSTRACT-BIND, -OPERATION, and -ERROR macros of clause 8.

ASN.1 appears both in the body of this part of ISO/IEC 10021 to aid the exposition and again, largely redundantly, in annexes for reference. If differences are found between the two, a specification error is indicated.

Note that ASN.1 tags are implicit throughout the ASN.1 modules in the annexes; the modules are definitive in that respect.

## 5.2 Terms

Throughout this part of ISO/IEC 10021, terms are rendered in **bold** when defined, in *italic* when referenced prior to their definitions, without emphasis upon all other occasions.

Terms that are proper nouns are capitalized, generic terms are not.