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

**iTeh STANDARD PREVIEW**  
**Part 5:**  
**Message Store: Abstract Service Definition**  
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ISO/IEC 10021-5:1990 — *Technologies de l'information — Communication de texte — Systèmes d'échange de texte en mode message*  
Partie 5: Dépôt de message: Définition de service abstrait



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# ISO/IEC 10021-5 : 1990 (E)

## 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 10021-5 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

ISO/IEC 10021-5 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*

Annexes A, B, C and D form an integral part of this part of ISO/IEC 10021. Annexes E, 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 Standard for Message Oriented Text Interchange System (MOTIS)).

MOTIS 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).

This part of ISO/IEC 10021 defines the Message Store abstract-service (MS abstract-service) which supports message-retrieval from a Message Store (MS) and indirect-message-submission through the MS in a Message Handling System (MHS). The MS abstract-service also provides message-administration services, as defined by the Message Transfer System (MTS) abstract-service.

This International Standard has been produced by joint CCITT-ISO/IEC agreement. The corresponding CCITT Recommendation is X.413 (1988). Annex G list the differences between the two documents.

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

## Part 5: Message Store: Abstract Service Definition

### Section one - General

#### 1 Scope

This part of ISO/IEC 10021 defines the Message Store abstract-service. This abstract-service is provided by the Message Store access-protocol (specified in ISO/IEC 10021-6) in conjunction with the MTS abstract-service (defined in ISO/IEC 10021-4), together with the Remote Operations Service Element (ROSE) services (defined in ISO/IEC 9072-1). The abstract-syntax-notation for the application-layer protocols used in this part of ISO/IEC 10021 is defined in ISO 8824.

Other parts of ISO/IEC 10021 define other aspects of the MHS. ISO/IEC 10021-1 defines the user-oriented services provided by the MHS. ISO/IEC 10021-2 provides an architectural overview of the MHS. ISO/IEC 10021-3 provides a description of the abstract-service definition conventions used in MHS. ISO/IEC 10021-7 defines the abstract-service for interpersonal messaging and defines the format of interpersonal-messages.

Section two of this part of ISO/IEC 10021 contains the Message Store abstract-service definition. Clause 6 describes the MS model. Clause 7 specifies the abstract-syntax-notation for the abstract-bind and the abstract-unbind-operations. Clause 8 specifies the abstract-syntax-notation for the operations of the abstract-service. Clause 9 specifies the abstract-syntax-notation for the errors of the abstract-service.

Section three of this part of ISO/IEC 10021 defines the general-attribute-types and general-auto-action-types related to the MS. Clause 10 contains an overview. Clause 11 specifies the abstract-syntax-notation for the general-attribute-types. Clause 12 specifies the abstract-syntax-notation for the general-auto-action-types.

Section four of this part of ISO/IEC 10021 describes the procedures for Message Store and the ports realization. Clause 13 contains an overview. Clause 14 describes how the Message Store abstract-service is supplied. Clause 15 describes how the Message Transfer System abstract-service is consumed. Clause 16 describes how the MS ports are realized.

No requirement is made 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 the 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 IEC and ISO maintain registers of currently valid International Standards.

### 2.1 Reference Model references

This part of ISO/IEC 10021 cites the following reference model related documents

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

### 2.2 Presentation references

This part of ISO/IEC 10021 cites the following presentation related documents

ISO 8824:1987, *Information processing systems - Open Systems Interconnection - Specification of Abstract Syntax Notation One (ASN.1).*

ISO 8824:1987/Add.1: <sup>1)</sup> *Information processing systems - Open Systems Interconnection - Specification of Abstract Syntax Notation One (ASN.1) - Addendum 1: ASN.1 Extensions.*

### 2.3 Remote Operations references

This part of ISO/IEC 10021 cites the following remote operations related document

ISO/IEC 9072-1:1989, *Information processing systems - Text Communication - Remote Operations Part 1: Model, Notation and Service Definition.*

### 2.4 Directory References

This part of ISO/IEC 10021 cites the following directory related documents

ISO/IEC 9594-1: <sup>1)</sup> *Information processing systems - The Directory - Overview of Concepts, Models and Services.*

ISO/IEC 9594-2: <sup>1)</sup> *Information processing systems - The Directory - Models.*

ISO/IEC 9594-3: <sup>1)</sup> *Information processing systems - The Directory - Abstract Service Definition.*

ISO/IEC 9594-4: <sup>1)</sup> *Information processing systems - The Directory - Procedures for Distributed Operation.*

ISO/IEC 9594-5: <sup>1)</sup> *Information processing systems - The Directory - Protocols Specifications.*

ISO/IEC 9594-6: <sup>1)</sup> *Information processing systems - The Directory - Selected Attribute Types.*

<sup>1)</sup> To be published



- ISO/IEC 9594-7: 1) *Information processing systems - The Directory - Selected Object Classes.*  
 ISO/IEC 9594-8: 1) *Information processing systems - The Directory - Authentication Framework.*

## 2.5 Message Handling references

This International Standard cites the following ISO/IEC message handling documents

- ISO/IEC 10021-1:1989 *Information processing systems - Text Communication - Message Oriented Text Interchange System (MOTIS) - Part 1: System and Service Overview.*
- ISO/IEC 10021-2:1989 *Information processing systems - Text Communication - Message Oriented Text Interchange System (MOTIS) - Part 2: Overall Architecture.*
- ISO/IEC 10021-3:1989 *Information processing systems - Text Communication - Message Oriented Text Interchange System (MOTIS) - Part 3: Abstract Service Definition Conventions.*
- ISO/IEC 10021-4:1989 *Information processing systems - Text Communication - Message Oriented Text Interchange System (MOTIS) - Part 4: Message Transfer System - Abstract Service Definition and Procedures.*
- ISO/IEC 10021-6:1989 *Information processing systems - Text Communication - Message Oriented Text Interchange System (MOTIS) - Part 6: Protocol Specifications.*
- ISO/IEC 10021-7:1989 *Information processing systems - Text Communication - Message Oriented Text Interchange System (MOTIS) - Part 7: Interpersonal Messaging System.*

1) To be published

### 3 Definitions

#### 3.1 Common Definitions for MHS

For a list of the common definitions for MHS refer to ISO/IEC 10021-2.

#### 3.2 Message Store Definitions

For the purpose of this part of ISO/IEC 10021 the following definitions apply

- 3.2.1 abstract-association:** An abstract binding between two communication partners, in this part of ISO/IEC 10021 the binding between a UA and an MS for the provision of the MS abstract-service, or between an MS and an MTA for the provision of the MTS abstract-service.
- 3.2.2 abstract-bind-parameters:** Parameters defined in this part of ISO/IEC 10021 which are contained in the abstract-bind operation.
- 3.2.3 abstract-unbind-parameters:** Parameters defined in this part of ISO/IEC 10021 which are contained in the abstract-unbind operation.
- 3.2.4 Administration Port:** The port offering the administration (for MTS) set of abstract-services within the MS abstract-service.
- 3.2.5 Alert abstract-operation:** An abstract-operation which allows the MS to signal, based on selection criteria, to the UA that messages or reports are waiting in the MS. Can only be issued on an existing abstract-association.
- 3.2.6 attribute:** The information of a particular type appearing in an entry in an information-base.
- 3.2.7 attribute-type:** That component of an attribute which indicates the class of information given by that attribute.
- 3.2.8 attribute-value:** A particular instance of that class of information indicated by an attribute type.
- 3.2.9 attribute-value-assertion:** A proposition, which may be true, false, or undefined, concerning the values of attributes in an entry.
- 3.2.10 auto-action:** Actions, that can be performed automatically by the MS, based on previously registered information from the MS-owner via the UA.
- 3.2.11 auto-action-type:** An auto-action-type is used to indicate the type of auto-action, e.g. Alert.
- 3.2.12 auto-alert:** Auto-alert is the auto-action within the MS, which triggers an Alert abstract-operation or another action by the MS.
- 3.2.13 auto-forward:** Auto-forward is the auto-action within the MS, which triggers a message to be auto-forwarded to another recipient (or other recipients) by the MS.

- 3.2.14 child-entry:** An entry, other than the main-entry in an information-base. The parent-entry for a child-entry can be either the main-entry or another child-entry, depending on the number of entry levels in each case.
- 3.2.15 child-sequence-number:** A sequence-number in a parent-entry pointing to a child-entry. A parent-entry can have more than one child-sequence-number value, depending on the number of child-entries.
- 3.2.16 conditional (C) component:** An ASN.1 element which shall be present in an instance of its class as dictated by this International Standard.  
See **grade**.
- 3.2.17 content-length:** An attribute which gives the length of the content of a delivered-message (or returned-content).
- 3.2.18 content-returned:** An attribute which signals that a delivered-report (or a delivered-message) contained a returned content.
- 3.2.19 converted EITs:** An attribute identifying the encoded-information-types of the message content after conversion.
- 3.2.20 creation-time:** An attribute which gives the creation-time (by the MS) of an entry.
- 3.2.21 Delete abstract-operation:** An abstract-operation used to delete one or more entries from an information-base.
- 3.2.22 delivered-EITs:** A multi-valued attribute giving information about EITs in a delivered-message.
- 3.2.23 delivered-message entry:** An entry in the stored-messages information-base resulting from a delivered-message.
- 3.2.24 delivered-report entry:** An entry in the stored-messages information-base resulting from a delivered-report.
- 3.2.25 entry:** An information set in an information-base.  
See main-entry, parent-entry and child-entry for further classification of entries.
- 3.2.26 entry-information:** A parameter, used in abstract-operations, which conveys selected information from an entry.
- 3.2.27 entry-information-selection:** A parameter, used in abstract-operations, which indicates what information from an entry is being requested.
- 3.2.28 entry-status:** An attribute giving information about the processing status of that entry. Possible values are new, listed or processed.
- 3.2.29 entry-type:** An attribute which signals if an entry is associated with a delivered-message or a delivered-report.
- 3.2.30 Fetch abstract-operation:** An abstract-operation which allows one entry to be fetched from the stored-messages information-base.

- 3.2.31 fetch-restrictions:** Restrictions, imposed by the UA, on what kind of messages it is prepared to receive as a result of fetch. The possible restrictions are on message-length, content-types and EITs.
- 3.2.32 filter:** A parameter, used in abstract-operations, to test a particular entry in an information-base and is either satisfied or not by that entry.
- 3.2.33 filter-item:** An assertion about the presence or value(s) of an attribute of a particular type in an entry under test. Each such assertion is either true or false.
- 3.2.34 forwarding-request:** This is a parameter that may be present in a Message-submission abstract-operation, invoked by the UA, to request that a message is forwarded from the MS.
- 3.2.35 general-attribute:** A set of MS attributes which are valid for all types of messages and reports, independent of content-type.  
Only these MS attributes are explicitly defined in this part of ISO/IEC 10021.
- 3.2.36 general-auto-action:** Auto-actions which are valid for all types of messages and reports, independent of content-type.  
Only these auto-actions are explicitly defined in this part of ISO/IEC 10021.
- 3.2.37 grade:** Defined in ISO/IEC 10021-2.
- 3.2.38 Indirect-submission Port:** The port offering the Indirect-submission abstract-service within the MS abstract-service.  
The Indirect-submission abstract-service offers the same services as the Message-submission abstract-service (from the MTS abstract-service) with the added functionality of forwarding messages residing in the MS.
- 3.2.39 information-base:** Objects within the MS which store information relevant to the MS abstract-service, e.g. the stored-messages information-base, which stores the messages and reports that have been delivered into the MS.
- 3.2.40 information-base-type:** The type of information-base, e.g. the stored-messages.
- 3.2.41 limit:** A component in the selector parameter which identifies the maximum number of selected entries to be returned in the result of an abstract-operation.
- 3.2.42 list abstract-operation:** An abstract-operation which allows a selection of entries from an information-base and requested attribute information to be returned for those entries.
- 3.2.43 listed:** An entry-status value.
- 3.2.44 macro:** See ISO 8824.
- 3.2.45 main-entry:** For each successful abstract-operation which creates information-base entries, there is always one main-entry. Further, or more detailed, information resulting from the same abstract-operation can be stored in child-entries.
- 3.2.46 mandatory (M) component:** An ASN.1 element which shall always be present in an instance of its class.  
See **grade**.

- 3.2.47 matching:** The process of comparing the value supplied in an attribute-value-assertion with the value of the indicated attribute-type stored in the MS or deciding whether the indicated attribute-type is present.
- 3.2.48 Message Retrieval Service Element (MRSE):** The application-service-element by means of which a receiving UA effects retrieval of messages from an MS, or any of various related tasks.
- 3.2.49 MS:** Message Store, also used as a shorter form for "MS abstract-service-provider".
- 3.2.50 MS abstract-service:** The set of capabilities that the MS offers to its users by means of its ports.
- 3.2.51 MS abstract-service-user:** The user of the MS abstract-service.  
This is the UA.
- 3.2.52 MS abstract-service-provider:** The MS which provides the MS abstract-service.
- 3.2.53 MS-user:** A shorter form for "MS abstract-service-user".
- 3.2.54 Message-submission abstract-operation:** An abstract-operation which allows the UA to submit a message to the MTS via the MS, and/or to forward a message from the MS to the MTS.
- 3.2.55 multi-valued attribute:** An attribute which can have several values associated with it.
- 3.2.56 new:** An entry-status value.
- 3.2.57 optional (O) component:** An ASN.1 element which shall be present in an instance of its class at the discretion of the object (e.g. user) supplying that instance.  
See **grade**.
- 3.2.58 original-EITs:** An attribute identifying the original encoded-information-types of the message content.
- 3.2.59 override:** A component of the selector parameter indicating that the previously registered-restrictions for this abstract-operation should not apply for this instance of this abstract-operation.
- 3.2.60 parent-entry:** A parent-entry has one or more child-entries, which were created as a result of the same abstract-operation.  
If a parent-entry is not a child-entry of another parent-entry, it is a main-entry.
- 3.2.61 parent-sequence-number:** A sequence-number in a child-entry pointing to its parent-entry.  
There can only be one parent-sequence-number in a child-entry.
- 3.2.62 partial-attribute-request:** A component of the entry-information-selection which enables the return of only selected values of a multi-valued attribute.
- 3.2.63 position:** Positions are parameters used to specify a bound of a range.
- 3.2.64 processed:** An entry-status value.
- 3.2.65 range:** A parameter, used in abstract-operations, to select a contiguous sequence of entries from an information-base.

- 3.2.66 Register-MS abstract-operation:** An abstract-operation which allows the UA to register certain information, relevant to the UA-MS interworking, in the MS .
- 3.2.67 registration:** Information which is registered in the MS and stored (until changed by the Register-MS abstract-operation) between abstract-associations.  
See Register-MS abstract-operation.
- 3.2.68 registration-identifier:** An identifier for one particular set of registration-parameters for an auto-action-type.
- 3.2.69 Retrieval Port:** The port offering the retrieval set of abstract-services within the MS abstract-service.
- 3.2.70 returned-content entry:** An entry-type in the stored-messages information-base which contains the returned content from a previously submitted message.
- 3.2.71 selector:** A parameter, used in abstract-operations, to select entries from an information-base.
- 3.2.72 sequence-number:** An attribute which uniquely identifies an entry.  
Sequence-numbers are allocated in ascending order.
- 3.2.73 single-valued attribute:** An attribute which can only have one value associated with it.
- 3.2.74 span:** A component in the Summarize abstract-operation result containing the lowest and highest sequence-numbers of the entries that matched the selection criteria.
- 3.2.75 stored-messages:** The most important information-base in this part of ISO/IEC 10021, used to store entries containing messages and reports delivered by the MTS to the MS.
- 3.2.76 subscription:** A long-term agreement between the MS supplier or administrator and the MS customers (MS-owners) on the availability and use of optional MS features such as optional services and attributes.  
This part of ISO/IEC 10021, assumes that such a mechanism is provided, but does not prescribe or offer any standardized method for how to provide this.
- 3.2.77 substring:** A filter-item used to specify a string of characters which appear (in the same given order) in a value of an attribute.
- 3.2.78 Summarize abstract-operation:** An abstract-operation which allows a quick overview of the kind and number of entries which are currently stored in an information-base.
- 3.2.79 synopsis:** A content specific attribute that may be used to show how child-entries, containing parts of the content, are related to each other and the main-entry.  
The attribute has to be specified in the International Standard, which describes the content-type, e.g. see IPM-synopsis defined in ISO/IEC 10021-7.

## 4 Abbreviations

<b>ASN.1:</b>	Abstract Syntax Notation One
<b>C:</b>	conditional
<b>DL:</b>	distribution-list
<b>EIT:</b>	encoded-information-type(s)
<b>M:</b>	mandatory
<b>M:</b>	multi-valued
<b>MASE:</b>	Message Administration Service Element
<b>MDSE:</b>	Message Delivery Service Element
<b>MH:</b>	Message Handling
<b>MHS:</b>	Message Handling System
<b>MOTIS:</b>	Message Oriented Text Interchange System
<b>MRSE:</b>	Message Retrieval Service Element
<b>MS:</b>	Message Store
<b>MT:</b>	Message Transfer
<b>MTS:</b>	Message Transfer System
<b>N:</b>	no
<b>O:</b>	optional
<b>O/R:</b>	originator/recipient
<b>P:</b>	present
<b>ROSE:</b>	Remote Operations Service Element
<b>S:</b>	single-valued
<b>UA:</b>	User Agent
<b>UTC:</b>	Universal Co-ordinated Time
<b>Y:</b>	yes

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