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

Part 1:
System and Service Overview

AMENDMENT 1: Message Store Extensions

Technologies de l'information — Communication de texte — Systèmes d'échange de texte en mode message (MOTIS) —

Partie 1: Présentation générale du système et des services

AMENDEMENT 1: Extensions de dépôt de message

Reference number
ISO/IEC 10021-1:1990/Amd.1:1994(E)

Foreword

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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.

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

Part 1:
System and Service Overview

AMENDMENT 1: Message Store Extensions

0 Introduction

This clause provides an introduction to this amendment. The text in this clause is not intended for inclusion in ISO/IEC 10021-1.

The elements of service provided by the Message Store Abstract-service defined in CCITT Rec. X.413 (1992) | ISO/IEC 10021-1:1990 are limited to the storage of delivered messages and their subsequent retrieval by the MS-user. This document proposes extensions to the elements of service offered by the general Message Store and the IPMS Message Store to equip them to satisfy a broader range of service requirements. These include the provision of services for the storage of submitted messages, the correlation of replies and IPNs, the modification by the MS-user of certain attributes of stored messages, and the logging of submission and delivery operations.

7.1 Description of the MHS Model

In existing clause 7.1, replace the second last paragraph with the following:

The message store (MS) is an optional general purpose capability of MHS that acts as an intermediary between the UA and the MTA. The MS is depicted in the MHS Functional Model as shown in Figure 1. The MS is a functional entity whose primary purpose is to store delivered, and, optionally, submitted messages and permit their retrieval by the MS-user (UA). The MS also allows for submission from, and alerting to the MS-user.

7.4 The Message Store

Replace existing clause 7.4 (up to 7.4.1) with the following:

Remote UAs can be implemented on a wide variety of equipment, including personal computers of varying capabilities. The MS service can complement a remote UA by providing continuously available storage and delivery services on behalf of a user, for example.

One MS acts on behalf of only one user, i.e. it does not provide a common or shared MS capability to several users. See also PRMD 3 of Figure 5.

The MS will store delivered messages and reports. As an option it may also store submitted messages, submitted probes, and draft messages. The MS may also keep a history of messages by storing extracts of previously and currently stored messages in logs. Messages may be grouped in a user-defined and potentially hierarchical structure.

The MS retrieval capability provides users who subscribe to an MS with basic message retrieval capabilities potentially applicable to all information held by the MS. Figure 6 shows the delivery, and subsequent retrieval of messages that are delivered to an MS, and the submission of messages via the MS.

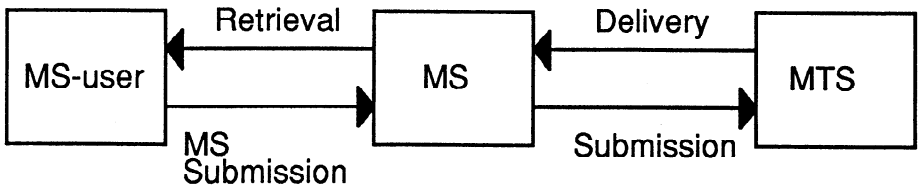

Figure 6 - Submission and Delivery with an MS

When a user subscribes to an MS, all messages destined for the user are delivered to the MS only. The MS-user, if on line, may receive Alerts that announce the delivery of certain messages to the MS. Messages delivered to an MS are considered delivered from the MTS perspective.

The basic MS is independent of application specific services (see 8.7) and may store messages with all types of content, the type of content being dependent on the type of service. However, it may provide additional capabilities depending on the type of content.

When an MS-user submits a message, the MS conveys the submission request to the MTS and reports the outcome returned by the MTS to the MS-user. If requested by the MS-user, the MS may expand the message by forwarding parts of delivered or submitted messages that are currently stored in the MS before conveying the submission to the MTS. The MS may also store a copy of the message submitted to the MTS if the submission is successful. The MS service allows the user to transfer a message to the MS for storage as a draft message. The draft message may subsequently be retrieved, or the MS may include its body-parts in a message submitted to the MTS when requested in a message submitted by the MS-user.

The MS-user may be provided with the capability to request the MS service to forward selected messages automatically upon delivery. The MS may also provide automatic deletion of messages after a user specified period of time, or when the message expires, or when the message is rendered obsolete by another message.

The MS may automatically attach information to a previously submitted message concerning its delivery or non-delivery. The MS may also generate content-specific notifications, acknowledging receipt or acceptance when requested by the user or when the user has retrieved the message.

The elements of service describing the features of the MS are defined in Annex B and classified in clause 19. Users are provided with the capability based on various criteria, to get counts and lists of messages, to fetch messages, and to delete messages, currently held in the MS.

Figure 6A depicts a simplified model of the information types stored in the MS, and the functions the MS fulfils.

The scope of the MS services defined in CCITT Rec. F.400 (1988) and (1992) | ISO/IEC 10021-1:1990 was mainly limited to the storage of delivered messages and reports and their subsequent retrieval by the MS-user. The 1994 version of this part of ISO/IEC 10021 defines new extensions to provide a broader range of service facilities. These enhanced facilities particularly apply in those environments where the MS is used as a personal data base to store, retrieve, modify, and classify a user's messages, often with frequent and long-lasting interaction between the MS-user and MS. Examples of such environments might be found in local area networks, or in environments where the user employs different User Agent implementations at different locations to access one MS. In other environments where the MS is used mainly as a temporary storage system, to take delivery of messages and reports and provide for their retrieval by infrequent and short-lasting interactions, these enhanced facilities may not be required. In this latter case, some enhanced facilities may be provided locally by the MS-user itself.

Consequently, the basic and essential optional requirements defined for the MS in this this part of ISO/IEC 10021 are the same as those defined in versions published prior to 1994.

Insert a new Figure 6A:

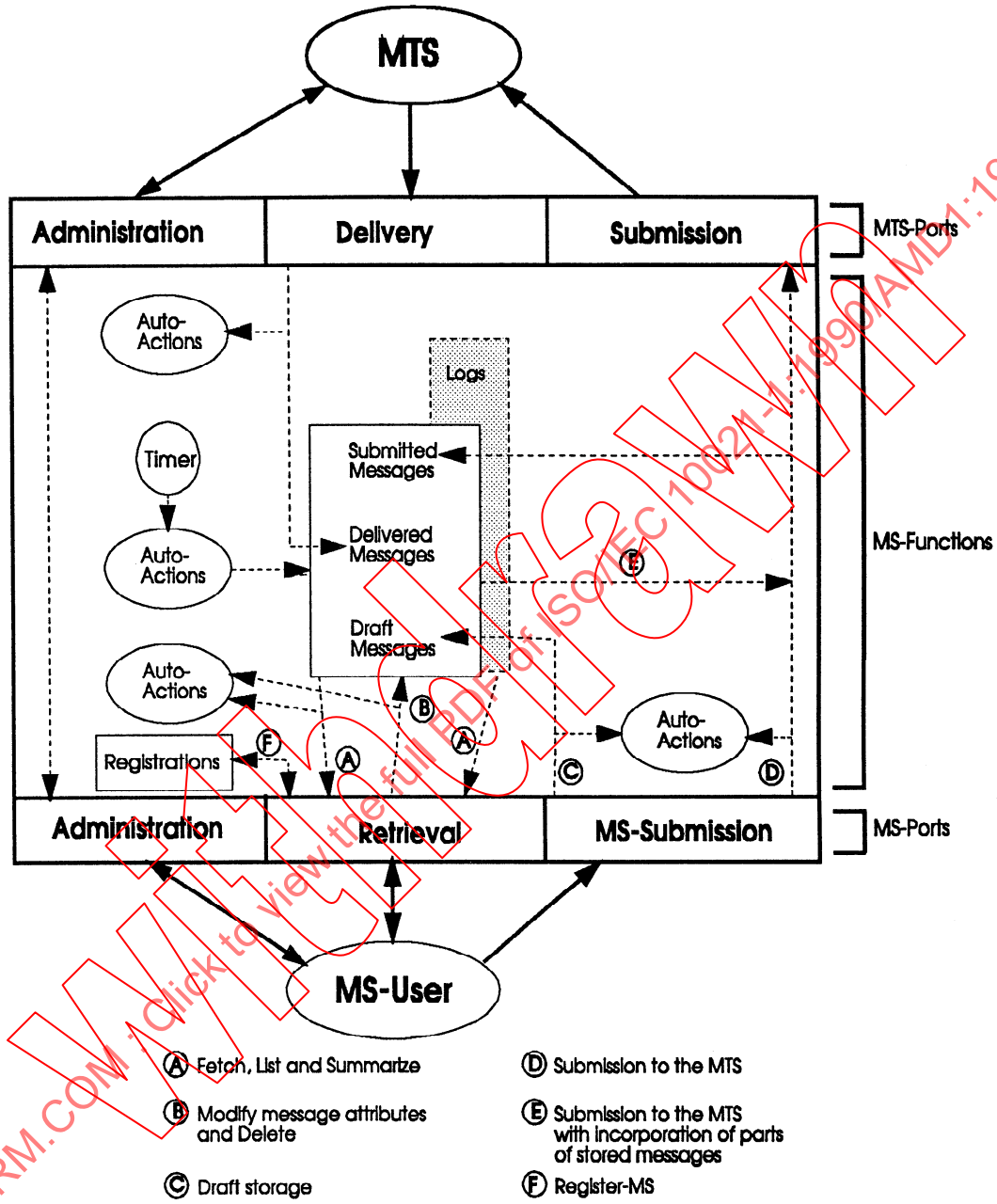

Figure 6A - Message Store Functional Model

8.5 Message Store

Replace the last sentence of 8.5 with the following:

The user may submit messages through the MS, and retrieve messages that have been either delivered to the MS, or submitted by the user.

18 Purpose

Replace the last paragraph of clause 18 ("Table 3 lists all the elements of service") with the following:

Table 3 lists all the Elements of Service available in MHS, shows what services they are associated with of the presently defined services, MT Service, IPM Service, PD Service, and MS Service, and gives the corresponding reference number to the definition in Annex B. Elements of Service relevant to the IPM Message Store are marked on both the IPM and MS columns.

In the following two amendments, the "X" in each row is placed in the "IPM" and "MS" columns as indicated.

In Table 3, replace the existing row ending with "B.83" with the following:

	MT	*IPM*	*PD*	*MS*	
Auto-forwarding of IP-messages		X		X	B.83

Add the following rows to Table 3, preserving alphabetic order:

Auto-acknowledgement of IP-messages		X	X	B.96
Auto-action Log			X	B.97
Auto-assignment of Annotations			X	B.98
Auto-assignment of Group Names			X	B.99
Auto-assignment of Storage Period			X	B.100
Auto-correlation of IP-messages		X	X	B.101
Auto-correlation of IP-notifications		X	X	B.102
Auto-correlation of Reports			X	B.103
Auto-deletion after Storage Period			X	B.104
Auto-discarding of IP-messages		X	X	B.105
Delivery Log			X	B.106
IP-message Action Status		X	X	B.107
Storage of Draft Messages			X	B.108
Storage on Submission			X	B.109
Storage Period Assignment			X	B.110
Stored Message Annotation			X	B.111
Stored Message Grouping			X	B.112
Submission Log			X	B.113
Submission of IP-messages Incorporating Stored Messages		X	X	B.114

19.6 Base Message Store

Replace the last sentence of the first paragraph in 19.6 with the following:

When an MS is provided, each Element of Service shown in Table 8 shall be supported for every type of message (delivered-message, submission-log, draft-messages etc.) stored in the MS to which that Element of Service is applicable.

19.7 MS Optional User Facilities

Replace existing Table 9 with the following:

Table 9 - MS Optional User Facilities

Elements of Service	Classification	Annex B Reference
Auto-action Log	A	B.97
Auto-assignment of Annotations	A	B.98
Auto-assignment of Group Names	A	B.99
Auto-assignment of Storage Period	A	B.100
Auto-correlation of Reports	A	B.103
Auto-deletion after Storage Period	A	B.104
Delivery Log	A	B.106
Storage of Draft Messages	A	B.108
Storage on Submission	A	B.109
Storage Period Assignment	A	B.110
Stored Message Alert	A	B.82
Stored Message Annotation	A	B.111
Stored Message Grouping	A	B.112
Submission Log	A	B.113

19.9 IPM Service Optional User Facilities

Insert the following rows in Table 11, preserving alphabetic order:

Storage of Draft Messages	N/A	A	B.108
Storage on Submission	N/A	A	B.109
Storage Period Assignment	N/A	A	B.110
Stored Message Annotation	N/A	A	B.111
Stored Message Grouping	N/A	A	B.112
Submission of IP-messages Incorporating Stored Messages	N/A	A	B.114

In Table 12, replace the existing row ending with "B.83" with the following:

Auto-forwarding of IP-messages	A	B.83

Insert the following rows in Table 12, preserving alphabetic order:

Auto-acknowledgement of IP-messages	A	B.96
Auto-action Log	A	B.97
Auto-assignment of Annotations	A	B.98
Auto-assignment of Group Names	A	B.99
Auto-assignment of Storage Period	A	B.100
Auto-correlation of IP-messages	A	B.101
Auto-correlation of IP-notifications	A	B.102
Auto-correlation of Reports	A	B.103
Auto-deletion after Storage Period	A	B.104
Auto-discarding of IP-messages	A	B.105
Delivery Log	A	B.106
IP-message Action Status	A	B.107
Submission Log	A	B.113

Annex B
Definitions of Elements of Service

In Annex B, append the following to the NOTE:

(1994) This element of service was not defined in versions of this part of ISO/IEC 10021 published prior to 1994.

In Annex B, replace clause B.83 with the following:

B.83 Auto-forwarding of IP-messages IPM MS

This element of service enables an MS-user to instruct the MS to auto-forward selected IP-messages that are delivered to it. The MS-user may specify through registration several sets of criteria chosen from the attributes available in the MS, and IP-messages meeting each set of criteria will be auto-forwarded to one or more users or DLs. If requested by the message originator, a non-receipt notification is generated indicating that the IP-message was auto-forwarded, even if the MS retains a copy of the forwarded message. For each set of selection criteria, a body part may be specified, to be included as a 'cover-note' with each auto-forwarded IP-message.

NOTE - In versions of this part of ISO/IEC 10021 published prior to 1994, this element of service was named Stored Message Auto-forward, and classified as a general MS optional user facility; it has since been classified as IPM-specific.

In Annex B, insert the following sentence after the first sentence of clause B.84:

Subject to subscription, deletion may be restricted to messages meeting certain criteria, e.g., messages stored for longer than an agreed period of time.

In Annex B (as modified by Technical Corrigendum 1), replace clause B.4n with the following:

B.4n MS Register MS

This element of service enables an MS-user to register various items of information with the MS in order to modify certain aspects of its behaviour, such as:

1. the performance of automatic actions;
2. the default set of information retrieved when using the Stored Message Fetching and Stored Message Listing elements of service. One set of information may be registered per UA employed by the user;
3. the credentials used by the Message Store to authenticate the MS-user.

If a user employs more than one UA implementation, then as a subscription option the MS may store a separate set of registration information for each UA. The user may retrieve the registered information from the MS.

NOTE - The capability to store separate sets of registration information and to retrieve registered information was not defined in versions of this part of ISO/IEC 10021 published prior to 1994.

Insert the following clauses (B.96 – B.114) at the end of Annex B:

B.96 Auto-acknowledgement of IP-messages IPM MS (1994)

This element of service enables an MS-user to instruct the MS to generate a receipt notification automatically for each IP-message containing a receipt notification request which is delivered to the MS. The receipt notification is sent when the complete IP-message has been retrieved by the user or when the user indicates to the MS that he regards the message as having been retrieved.

B.97 Auto-action Log MS (1994)

This element of service enables an MS-user to access a log that records details of selected auto-action executions performed by the MS. The MS-user is able to retrieve information from the Auto-action Log by means of the Stored Message Listing

and Stored Message Fetching elements of service. The ability to delete Auto-action Log entries is subject to subscription. This log of information is available if and only if this element of service is subscribed to by the user of the MS. Support for an element of service which comprises an auto-action does not require support for the Auto-action Log element of service. For each type of auto-action that may generate log entries, it is a subscription option whether all auto-action executions are logged, or only those executions that result in an error, or no executions are logged for that auto-action.

B.98 Auto-assignment of Annotations MS (1994)

This element of service enables an MS-user to instruct the MS to attach annotations to a selected message automatically, when the message is stored in the MS and satisfies specified criteria. The MS-user may specify, through registration, several sets of selection criteria each of which may indicate the attachment of a different value of annotation. Subscription to this element of service requires subscription to the Stored Message Annotation element of service.

B.99 Auto-assignment of Group Names MS (1994)

This element of service enables an MS-user to instruct the MS to assign group-names to a selected message automatically, when the message is stored in the MS and satisfies specified criteria. The MS-user may specify, through registration, several sets of selection criteria each of which may indicate the assignment of a different group-name. The MS will verify that only registered group-names are assigned to messages. Subscription to this element of service requires subscription to the Stored Message Grouping element of service.

B.100 Auto-assignment of Storage Period MS (1994)

This element of service enables an MS-user to instruct the MS to assign a storage period to a selected message automatically, when the message is stored in the MS and satisfies specified criteria. The MS-user may specify, through registration, several sets of selection criteria each of which may indicate the attachment of a different value of storage period. Subscription to this element of service requires subscription to the Storage Period Assignment element of service.

B.101 Auto-correlation of IP-messages IPM MS (1994)

This element of service enables an MS-user to retrieve information, automatically generated by the MS, concerning the correlation between various related IP-messages. The following types of messages may be correlated:

1. IP-messages received in reply to, or sent in reply to an IP-message;
2. the IP-messages which forwarded (or auto-forwarded) one or more messages;
3. the received or submitted IP-messages that obsolete an IP-message;
4. the received or submitted IP-messages that indicate that they are related to an IP-message.

Besides identifying each IP-message related to a given message in the ways indicated, the MS provides a summary of all such responding IP-messages.

B.102 Auto-correlation of IP-notifications IPM MS (1994)

This element of service enables an MS-user to retrieve information, automatically generated by the MS, concerning the IP-notifications that have been received in response to a previously submitted IP-message. Information may also be retrieved concerning IP-notifications sent by the MS-user or the MS in response to delivered IP-messages. The MS identifies each IP-notification related to a given submitted or delivered message, and for submitted messages it also provides a summary of received IP-notifications. This enables the MS-user to access this information directly rather than perform an exhaustive search of all entries that could hold the information. This element of service is effective only if the submitted or delivered message that an IP-notification refers to is stored in the MS, or is recorded in the Submission Log or Delivery Log. Provision for the storage of submitted messages, and maintenance of the Submission Log and the Delivery Log are supported by separate elements of service.

B.103 Auto-correlation of Reports MS (1994)

This element of service enables an MS-user to retrieve information, automatically generated by the MS, concerning the delivery and non-delivery reports that have been received in response to a previously submitted message. Successful cancellations of deferred delivery for submitted messages are also recorded. In addition to identifying each report related to a given submitted message, the MS provides a summary of these reports. This enables the MS-user to access this information directly rather than perform an exhaustive search of all entries that could hold the information. This element of service requires that at least one of the Submission Log or Storage on Submission elements of service has also been subscribed to.

B.104 Auto-deletion after Storage Period MS (1994)

This element of service enables an MS-user to instruct the MS to delete automatically any stored message whose storage period has elapsed. This registration remains in force until disabled by a subsequent registration. Messages that have not been listed or processed are not subject to auto-deletion. Equally, entries of the Submission Log, Delivery Log, and Auto-action-log are not subject to auto-deletion. Other content-specific message handling Specifications may lay down additional rules for the performance of this element of service. Subscription to this element of service requires subscription to the Storage Period Assignment element of service.

B.105 Auto-discarding of IP-messages IPM MS (1994)

This element of service enables an MS-user to instruct the MS to discard stored IP-messages automatically, if they satisfy criteria registered by the MS-user. An IP-message becomes a candidate for auto-discarding if a subsequently delivered IP-message renders it obsolete, or if it contains an Expiry Time that has been reached. The MS-user may control whether auto-discarding occurs for such IP-messages by specifying additional conditions which the IP-message must satisfy, e.g., that the message has been fetched by the MS-user, or that the obsoleting IP-message has the same originator as the obsoleted IP-message. Where the message has not been fetched by the MS-user before being auto-discarded, a non-receipt notification is generated if requested in the discarded IP-message.

B.106 Delivery Log MS (1994)

This element of service enables an MS-user to access a log that records details of the messages and reports delivered to the MS; these records persist even after the messages and reports have been deleted. A Delivery Log entry contains a subset of the information that may be stored for a delivered message. The quantity of information stored in the Delivery Log for each message is specified at subscription time. The MS-user is able to determine whether the delivered message corresponding to a Delivery Log entry has been deleted. The MS-user is able to retrieve information from the Delivery Log by means of the Stored Message Listing, Stored Message Fetching and Stored Message Summary elements of service. The ability to delete Delivery Log entries is subject to subscription, and may be restricted to messages meeting certain criteria, e.g., messages stored longer than an agreed period of time.

B.107 IP-message Action Status IPM MS (1994)

This element of service enables an MS-user to determine whether a reply or a receipt notification has been requested of the user in an IP-message which the user has received. It allows the user to record in the MS (and subsequently retrieve the information) that the reply (or IP-notification) has been sent. In addition, the user may set a reminder that a reply is intended even if no reply was explicitly requested.

B.108 Storage of Draft Messages MS (1994)

This element of service enables an MS-user to store draft messages in the MS. The user may obtain summaries of draft messages and may access a draft message by means of the Stored Message Listing and Stored Message Fetching elements of service.

B.109 Storage on Submission MS (1994)

This element of service enables an MS-user to instruct the MS to store a copy of a message upon its submission, either by the MS-user or as a result of the performance of an auto-action. Storage of a submitted message is conditional upon the success of the submission. The user may instruct the MS to store all submitted messages, or may control storage on a per message basis.

B.110 Storage Period Assignment MS (1994)

This element of service enables an MS-user to assign a storage period to a stored message. The storage period indicates the period of time for which the user anticipates the message should be retained in the MS; this may be expressed as a period of time (from the start of storage), or as an absolute date and time. This element of service must be subscribed to if the Auto-deletion after Storage Period or Auto-assignment of Storage Period elements of service are subscribed to.

B.111 Stored Message Annotation MS (1994)

This element of service enables an MS-user to attach one or more textual annotations to a stored message. Annotations apply to the complete message and may not be applied selectively to different parts of the message. Annotations are local to the MS and MS-user and are not transmitted through the MTS in any message. The 'cover note' described in B.83 is not related to message annotations.

B.112 Stored Message Grouping MS (1994)

This element of service enables an MS-user to attach group-names to messages stored in the MS. A message can have zero, one, or more group-names associated with it that can subsequently be used for selection purposes. Each message group-name comprises a sequence of components which may be regarded as modelling a storage hierarchy. The setting, changing, or deletion of the group-names attached to a message can be performed by the MS-user.

The UA indicates to the MS, through registration, the name of each distinct group which the UA will employ to label each group of related messages. Each group-name may be assigned a descriptive text registered together with the group-name. The MS will verify that the group-names subsequently employed by the user belong to the registered set of group-names, and will prevent the user from deregistering group-names which are currently attached to stored messages, or which are registered for use by the Auto-assignment of Group Names element of service. A group-name remains valid until it is deregistered. The MS will prohibit an attempt to register the same group-name twice.

B.113 Submission Log MS (1994)

This element of service enables an MS-user to access a log that records details of the messages submitted from the MS to the MTS. These records are generated regardless of whether a copy of the submitted message is stored by means of the Storage on Submission element of service. Even where a copy is stored, the corresponding Submission Log entry may persist after the message has been deleted. Both successful and unsuccessful submissions are recorded. A Submission Log entry contains a subset of the information that may be stored for a submitted message. The quantity of information stored in the Submission Log for each message is specified at subscription time. The MS-user is able to determine whether the submitted message corresponding to a Submission Log entry has been deleted. The MS-user is able to retrieve information from the Submission Log by means of the Stored Message Listing, Stored Message Fetching and Stored Message Summary elements of service. The ability to delete Submission Log entries is subject to subscription, and may be restricted to messages meeting certain criteria, e.g., messages stored longer than an agreed period of time.

B.114 Submission of IP-messages Incorporating Stored Messages IPM MS (1994)

This element of service enables an MS-user to instruct the MS to incorporate parts of one or more stored messages as body parts of a submitted IP-message. The submitted IP-message may also contain body parts supplied in the submission from the MS-user.

The stored message which is the source of a body part may be a delivered, submitted or draft message. Individual body parts or the whole content of a stored IP-message may be incorporated. When the content is incorporated it will form a Forwarded IP-message. Delivery-information may also be incorporated from delivered messages when the content is incorporated.

The MS may optionally support the forwarding of body parts from messages which are not IP-messages. In this case, only body parts whose definition is compatible with IPM (or for which rules of conversion into IPM body parts are defined) may be forwarded. The complete content of a message cannot be forwarded if the message is not an IP-message.

The message submitted to the MTS, incorporating the stored messages or body parts may be stored in the MS if the user subscribes to the Storage on Submission element of service. An extract of the message will also be stored in the Submission Log if this element of service is subscribed to.

Append the following to existing Annex C:

C.7 Elements of Service introduced in 1994

Elements of service	MT	IPM	PD	MS	Annex B Reference
Auto-acknowledgement of IP-messages		X		X	B.96
Auto-action Log				X	B.97
Auto-assignment of Annotations				X	B.98
Auto-assignment of Group Names				X	B.99
Auto-assignment of Storage Period				X	B.100
Auto-correlation of IP-messages		X		X	B.101
Auto-correlation of IP-notifications		X		X	B.102
Auto-correlation of Reports				X	B.103
Auto-deletion after Storage Period				X	B.104
Auto-discarding of IP-messages		X		X	B.105
Delivery Log				X	B.106
IP-message Action Status		X		X	B.107
Storage of Draft Messages				X	B.108
Storage on Submission				X	B.109
Storage Period Assignment				X	B.110
Stored Message Annotation				X	B.111
Stored Message Grouping				X	B.112
Submission Log				X	B.113
Submission of IP-messages Incorporating Stored Messages		X		X	B.114

C.8 Classification of New Elements of Service in 1994

The new elements of service that were added to ISO/IEC 10021:1990 to create ISO/IEC 10021:1994 are all classified as additional optional user facilities.