INTERNATIONAL TELECOMMUNICATION UNION

CCITT

THE INTERNATIONAL
TELEGRAPH AND TELEPHONE
CONSULTATIVE COMMITTEE

F.420

(08/92)

MESSAGE HANDLING SERVICE

OPERATIONS AND DEFINITION OF SERVICE

MESSAGE HANDLING SERVICES: THE PUBLIC INTERPERSONAL MESSAGING SERVICE

Recommendation F.420

FOREWORD

The CCITT (the International Telegraph and Telephone Consultative Committee) is a permanent organ of the International Telecommunication Union (ITU). CCITT is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The Plenary Assembly of CCITT which meets every four years, establishes the topics for study and approves Recommendations prepared by its Study Groups. The approval of Recommendations by the members of CCITT between Plenary Assemblies is covered by the procedure laid down in CCITT Resolution No. 2 (Melbourne, 1988).

Recommendation F.420 was revised by Study Group I and was approved under the Resolution No. 2 procedure on the 4th of August 1992.

CCITT NOTES

1) In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication Administration and a recognized private operating agency.

2) A list of abbreviations used in this Recommendation can be found in Annex A.

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Recommendation F.420

MESSAGE HANDLING SERVICES:
THE PUBLIC INTERPERSONAL MESSAGING SERVICE

(revised, 1992)

The establishment in various countries of message handling services in association with public networks creates the need to produce Recommendations covering the aspects of public message handling services.

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1 Purpose and scope

1.1 *General*

This Recommendation specifies the general, operational and quality of service aspects of the public international Interpersonal Messaging service. Interpersonal messaging services provided by Administrations belong to the group of telematic services defined in the F-Series Recommendations.

This type of Message Handling service is an international telecommunication service offered by Administrations, enabling subscribers to send a message to one or more recipients and to receive messages via telecommunication networks using a combination of store-and-forward, and store-and-retrieve techniques.

Locally provided functions, for which communication with other subscribers is not required, are not covered by CCITT Recommendations.

The Interpersonal Messaging (IPM) service enables subscribers to request a variety of features to be performed during the handling and exchange of messages.

Some features are inherent in the basic IPM service. Other non-basic features may be selected by the subscriber, either on a per-message basis or for an agreed contractual period of time, if they are provided by Administrations.

Basic features have to be made available internationally by Administrations. Non-basic features, visible to the subscriber, are classified as either essential or additional. Essential optional features must be made available internationally by Administrations. Additional optional features may be made available by some Administrations for national use and internationally on the basis of bilateral agreement. Non-basic features are called *optional user facilities*.

IPM service may be provided using any physical network. IPM service may be offered separately or in combination with various telematic or data communication services. It can be obtained by making appropriate arrangements.

Technical specifications and protocols, to be used in the IPM service, are defined in the X.400-Series Recommendations, in Recommendation T.330 and in Recommendation U.204.

This service definition is contained in § 2. Requirements for intercommunication between subscribers are described in §§ 3 and 4. Section 5 describes naming and addressing, while §§ 6, 7 and 8 describe the operation of the service, quality of service, tariff and accounting principles. Network requirements are given in § 9. The provision of subscriber information is in § 10, and § 11 contains information on the use of IPM service within CCITT defined telematic services.

1.2 *Message handling systems used in the provision of IPM service*

1.2.1 *1984 and 1992 implementations*

This Recommendation assumes that the message handling systems implemented to provide the service outlined herein are based on the 1992 version of the X.400-Series of technical Recommendations. It is recognized however, that for some time after the publication of this Recommendation, several implementations of Message Transfer (MT) service will still be based on the 1984 X.400-Series of Recommendations.

1.2.2 *1988 and 1992 implementations*

Minor revisions between 1988 and 1992 Message Handling (MH) service Recommendations are referenced in Annex C of Recommendation F.400. All revisions introduced are classified as optional additional user facilities. The Quality of Service time targets should be supported as detailed in Recommendation F.410.

Administrations are encouraged to adopt the latest CCITT Recommendations.

1.2.3 *Interworking*

In order to protect the investment of Administrations who have implemented previous systems for the provision of MH services, 1992 Administration management domain (ADMD) implementations shall be able to interwork to 1984 and 1988 ADMDs (see Note). Interworking from 1992 ADMDs to private management domains (PRMDs), which support previous versions is a local matter.

Note – A future version of this Recommendation will make support for the interworking with 1984 ADMDs optional.

2 IPM service

2.1 *General service requirements*

2.1.1 The fundamental ability of the IPM service is to provide a public interface between originators and recipients to enhance their means of communication especially where there is no immediate or convenient direct telecommunication service available between subscriber's equipment or the telecommunication services available are incompatible.

This service may also provide features available for the preparation and the presentation of the messages.

2.1.2 The IPM service will be provided by Administrations using the message transfer service defined in Recommendation F.410, and by systems that conform to the X.400-Series Recommendations.

Management domains (MDs) are defined for the purpose of responsibility boundaries. The MD managed by an Administration is called an Administration management domain (ADMD). The MD managed by an organization is called a private management domain (PRMD).

2.1.3 International exchange of messages are performed between Administration management domains through CCITT-standardized public data transmission services.

2.1.4 Different body part types of messages may be exchanged through this service. The various body part types are listed in § 3.

2.1.5 An Administration may provide subscribers with different methods of access to the IPM service. The possible methods are:

1) directly from the user's terminal;

2) via a private message handling system.

2.1.6 Each Administration is responsible for the national access to its management domain.

2.1.7 The characteristics of the interfaces and access methods used between terminals and the IPM service are a national matter, although they may follow various CCITT-standardized services such as telex, teletex, facsimile, videotex or data transmission services. However, the IPM service optional user facilities offered are defined and are independent of the access method and user's terminal.

2.1.8 The national implementation of the IPM service may provide intercommunication with existing services such as telex, teletex, facsimile and videotex. When implemented, the interfaces between the IPM and the other services shall be according to relevant CCITT Recommendations.

2.1.9 As the service is providing indirect communication, cases of non-delivery of the message to the intended recipient may occur. The IPM service provides for non-delivery notification and, as optional user facilities, for delivery, receipt and non-receipt notifications.

2.1.10 Due to the intermediate storage of the message, the service may provide conversion optional user facilities: speed, access procedures, networks, and coding of message contents.

2.1.11 The message belongs to the originator until delivery has taken place. After delivery, the message belongs to the recipient.

2.1.12 Where a sender and recipient have different and conflicting requirements, the sender's requirements shall take precedence (e.g., body type conversion or redirection control).

2.2 *IPM service features*

2.2.1 *Introduction*

Recommendation F.400, § 19, defines elements of service which are available in the IPM service and are classified as either belonging to the basic service or as IPM optional user facilities. Elements of service comprising the basic IPM service are inherently part of the service and are always provided and available. The optional user facilities that are classified as essential are always provided and those classified as additional may be available nationally, or internationally on the basis of bilateral agreement.

2.2.2 *Basic IPM service*

A set of elements of service comprises the basic IPM service. This set is defined in Recommendation F.400, and listed in Table 10/F.400. The basic IPM service, which is built upon the MT service, enables a user to send and receive interpersonal (IP) messages. A user prepares IP-messages with the assistance of his user agent (UA). User agents, which are a set of computer application processes, cooperate with each other to facilitate communication

between their respective users. To send an IP-message, the originating user makes a request of his UA, specifying the name or address of the recipient who is to receive the IP-message. The IP-message, which has an identifier conveyed with it, is then sent by the originator's UA to the recipient's UA via the Message Transfer service.

Following a successful delivery to the recipient's UA, the IP-message can be received by the recipient. To facilitate meaningful communication, a receiving user may specify the encoded information type(s) that can be contained in IP-messages delivered to him, as well as the maximum length of a message he is willing to have delivered to him. The original encoded information type(s) and an indication of any conversions that may have been performed and the resulting encoded information type(s) are supplied with each delivered IP-messages. In addition, the submission time, delivery time and other capabilities are supplied with each IP-message. Non-delivery notification is provided with the basic service.

2.2.3 *IPM optional user facilities*

A set of the elements of services of the IPM service are optional user facilities. The optional user facilities which may be selected on a per-message basis or for an agreed contractual period of time, are listed in Tables 11/F.400 and 12/F.400, respectively. Local user facilities may be usefully provided in conjunction with some of these user facilities.

The optional user facilities of the IPM service that are selected on a per-message basis are classified for both origination and reception by UAs. If an Administration provides the IPM service and offers these optional user facilities for origination by UAs, then a user is able to create and send IP-messages according to the procedures defined for the associated element of service. If an Administration provides the IPM service and offers these optional user facilities for reception by UAs, then the receiving UA will be able to receive and recognize the indication associated with the corresponding element of service and to inform the user of the requested optional user facility. Each optional user facility is classified as additional or essential for UAs from these two perspectives.

Note – With the access protocol described in Recommendation T.330, teletex terminals are able to make use of the basic IPM service as well as of the optional user facilities provided by the Message Handling service.

2.2.4 *Local functions*

The message handling system (MHS) may perform many local functions for its subscribers in addition to providing IPM features. For example, to assist subscribers in preparing and editing IP-messages, MHS may provide an editing capability. This editor could operate on a single line of text at a time, or it could permit the display and alteration of a page at a time. A subscriber may have to access MHS frequently to determine if new messages have arrived. Alternatively, the MHS could alert the subscriber when new messages have arrived (for example, by setting a message light on his telephone, or by his displaying on his desktop terminal the originator's name and subject of all unread messages or by computer-initiated voice indication).

The MHS may provide local database controls to help the subscriber find previously received and filed IP-messages (for example, to find the message from Mr. Jones delivered sometime in August on the subject of *teleconferencing*). A subscriber on vacation may request the MHS to automatically forward all his IP-messages to his delegate, or define rules for which IP-messages should not be auto-forwarded (for example, personal messages).

Local services such as those above, while perhaps utilizing some of the IPM features, do not require coordination or cooperation with other subscribers. Thus, they do not impact the communication protocols associated with MHS. Therefore, local functions that may be provided by Administrations are outside the scope of CCITT.

2.3 *Responsibility boundaries*

The purpose of the MHS is to allow messages to be submitted for transfer to the destination and to be delivered to a UA/MS whose address is specified by the originator.

A user interacts with his UA on the sending and on the receiving side. On his request, a message is submitted to the message transfer system (MTS). He is also able to retrieve a received message from his UA or message store (MS).

The responsibility for the message rests in the MHS when the originating user gives the command to send the message. The responsibility for a message is turned over to the receiving UA/MS after successful delivery. If the UA or MS is provided by an Administration, the responsibility for the message is taken over by the user when he reads the message.

As a basic feature, a non-delivery notification is created by the MHS when delivery to the receiving UA/MS is not possible. The conditions applied to this criteria may also depend on optional user facilities, e.g. conversion prohibition. An originating user may, for a particular message, specifically request a delivery notification, and/or a receipt notification, and/or a non-receipt notification.

In the case of telematic and telex access units, a delivery notification is created when the message is transmitted to the receiving terminal. The responsibility of the MHS ends when the message is received by the terminal. After delivery to a document store, or a message store, responsibility turns over to the user after having read the message once. When leaving the message in the store, the responsibility will be defined by the service provider.

Loss of information may occur through the process of conversion as long as the conversion is not explicitly prohibited by the originating user.

The responsibility of messages transferred through MDs starts at the moment of entering the domain and ends when leaving the domain; however, a later audit must be possible.

When an ADMD interacts with a PRMD, the ADMD takes responsibility for the actions of the PRMD which are related to the interaction. In addition to ensuring that the PRMD properly provides the MT service, the ADMD is responsible for ensuring that the accounting, logging, quality of service and other related operations of the PRMD are correctly performed. An ADMD acts as the naming authority for the associated PRMDs.

2.4 *Message store*

Administrations may optionally provide MS to permit delivery of messages so that the recipient's UA does not have to be on line continuously. This is described in Recommendation F.400, § 7.4. A message delivered to an MS is deemed delivered by MHS. Messages delivered to an MS can be retrieved by the recipient at his convenience and various optional user facilities can be provided to allow for retrieval for listing, fetching, and deletion of messages. When subscribing to an MS, all messages destined to the UA are delivered to the MS, and if the UA is on line, an alert will be sent to the UA (from the MS) to inform the user of the fact that a message just arrived.

2.5 *Use of directory*

By making use of directory systems, IPM users will be able to address recipients by using directory names or distribution list names, which are more user friendly than originator/recipient (O/R) addresses. The MHS will be able to access a directory system and find out the O/R address(es) corresponding to a given directory name or distribution list name, for delivery of a message. This capability is described in Recommendation F.400, § 14.

2.6 *Security*

Administrations may optionally provide security mechanisms as outlined in Recommendation F.400, § 15, to counter the various security threats mentioned. This capability relies on a directory system storing certified copies of public keys for MHS users.

2.7 *Distribution lists*

A group whose membership is stored in the directory can be used as a distribution list (DL). The originator simply supplies the name of the list on submission of a message, and the MHS can obtain the directory names (and then the O/R addresses) of the individual recipients, by consulting the directory. Upon receipt of a message addressed to a distribution list, the recipient can determine through which DL the message arrived. An originator can prohibit the expansion of the distribution if one of the recipients specified refers to a distribution list. Recommendation F.400, § 14, outlines the full capabilities available to DL users.

If a user unknowingly sends a message to a DL, he may incur charges for multiple deliveries that he was not expecting. Because of this, names of distribution lists should be indicative of the fact that what is being named is a DL. Owners of DLs should also insure that they respect a potential member's wishes about being a member and the rules of the country of the member that may prohibit inclusion without prior agreement.

2.8 *Intercommunication with physical delivery services*

The intercommunication with the physical delivery (PD) services is an optional capability of the IPM service that allows for the sending of a message from an IPM user to a recipient via physical means, such as the traditional postal service. To invoke the capability, the originating user shall use the requested delivery method element of service on submission of his message, specifying physical delivery. The message may be addressed using the postal O/R address, or the directory name of the intended recipient, in which case the MHS will consult the directory system to determine the postal O/R address, The use of MH/PD service intercommunication by IPM users is described in Recommendation F.415 and Recommendation F.400, § 10.

3 Types of body parts

Messages sent and received in the IPM service can be composed of one or more body parts. Applicable body part types are defined in Recommendation X.420 and comprise the following:

- International Alphabet No. 5 (IA5) text,
- voice,
- Group 3 (G3) facsimile,
- Group 4 (G4) class 1 facsimile,
- teletex,
- videotex,
- encrypted,
- message (e.g. for a forwarded message),
- mixed mode,
- bilaterally defined,
- nationally defined,
- externally defined,
- general text,
- file transfer.

4 Conversion between different encoded information types

The MTS provides conversion functions to allow IPM users to input messages in one encoded format, called encoded information type (EIT), and have them delivered in another EIT to cater to users with different terminal types. This capability is inherent in the IPM service, and increases the possibility of delivery by tailoring the message to the recipient's terminal capabilities. The EITs supported for the IPM service are defined in Recommendation X.420. IPM users have some control over the conversion process through various elements of service as described in Recommendation F.400, Annex B. These include the ability for a user to explicitly request the conversion required or, as a default, to let the MTS determine the need for, and type of, conversion performed. Users also have the ability to request that conversion not be performed or that conversion not be performed if loss of information will result. The definition of loss of information is given in Recommendation X.408.

When the MTS performs conversion on a message, it informs the UA to whom the message is delivered that conversion took place and what the original EIT was.

The conversion process for IP-messages can be performed on specific body parts if they are present in a message. The general aspects of conversion and the specific conversion rules for conversion between different EITs in the IPM service are detailed in Recommendation X.408.

5 Naming and addressing in general

In MHS, the principal entity that requires naming is the user (the originator and recipient of messages). In addition, distribution lists (DLs) have names for use in MHS. Users of MHS and DLs are identified by O/R names. O/R names are comprised of directory names and/or O/R addresses, all of which are described in this section. Recommendation F.401 provides more detail on naming and addressing for public message handling services, including naming restrictions and responsibilities of Administrations.

5.1 *Directory names*

Users of MHS service, and DLs, may be identified by a name, called a directory name. A directory name has to be looked up in a directory to find out the corresponding O/R address. The structure and components of directory names are described in the X.500-Series Recommendations.

A user may access a directory system directly to find out the O/R address of a user or O/R addresses of the members of a DL (both of which are outside the scope of these Recommendations). As an alternative, a user may use the directory name and have the MHS access the directory to resolve the corresponding O/R address or addresses automatically.

Every MHS user or DL will not necessarily have a directory name, unless they are registered in a directory. As directories become more prevalent, it is expected that directory names will be the preferred method of identifying MHS users to each other.

5.2 *O/R names*

Every MHS user or DL will have an O/R name. An O/R name comprises a directory name, an O/R address, or both. The directory name unambiguously identifies an MHS user but not necessarily uniquely. The O/R address uniquely identifies an MHS user.

Either or both components of an O/R name may be used on submission of a message. If only the directory name is present, the MHS will access a directory to attempt to determine the O/R address, which it will then use to route and deliver the message. If the directory name is absent, it will use the O/R address, as given. When both are given on submission, the MHS will use the O/R address, but will carry the directory name and present both to the recipient. If the O/R address is incorrect, it will then attempt to use the directory name as above.

5.3 *O/R addresses*

An O/R address contains information that enables the MHS to uniquely identify a user to deliver a message or return a notification to him. (The prefix “O/R” recognizes the fact that the user can be acting as either the originator or recipient of the message or notification in question).

Various forms of O/R addresses are currently defined, each serving its own purpose. These forms and their purpose are as follows:

- *Mnemonic O/R address:* Provides a user-friendly means of identifying users in the absence of a directory. It is also used for identifying a distribution list.
- *Terminal O/R address:* Provides a means of identifying users with terminals belonging to various networks.
- *Numeric O/R address:* Provides a means of identifying users with numeric keypads.
- *Postal O/R address:* Provides a means of identifying originators and recipients of messages and notifications, for physical delivery.

An O/R address is made up of a collection of information called attributes. These attributes as used in each of the O/R address forms above are detailed in Recommendation F.401.

Management domains shall allow their users to originate messages using any of the above forms. The form in which names are input by or presented to the subscriber is a national matter (as for example the use of distribution lists or of friendly ways of identifying user agents).

Each Administration is responsible for the unique identification of each user agent in its management domain.

6 Operation of the service

6.1 *General*

6.1.1 The IPM service provides that messages can be sent, transferred, delivered and received, using fully automatic procedures.

Note – Manual receipt and sending of messages can be provided in the case of interworking with postal systems.

6.1.2 Messages are prepared in, sent from, and delivered to a memory. These memories are part of the user agent/MS functionality and are under control of the subscriber.

6.1.3 The transfer of messages between management domains will be in accordance to the Message Transfer service as described in Recommendation F.410.

6.1.4 Each Administration providing the IPM service should validate the subscribers identities, at the time of access.

Note – Further study is needed in the case of auto-receipt.

6.1.5 It is a national matter whether to allow private messaging systems to connect to the public IPM service, in order to allow users of these systems to exchange messages. If these interconnections are provided, they should take place between Administration management domains in accordance with CCITT Recommendations.

6.1.6 When implicit conversion is provided by the Administration via the message transfer service, the message will be converted if necessary, unless prohibited by the originator. The conversion will be in accordance to the rules specified in Recommendation X.408. See also § 4 of this Recommendation.

6.1.7 Deferred delivery shall be provided by the management domain of the originator, which is responsible for the storage of the message until the date and time specified for intended delivery. Therefore the element of service, deferred delivery, should not be used across international links.

6.2 *Message handling phases*

6.2.1 *General*

The IPM service has different message handling phases visible to the user.

6.2.2 *Preparation phase*

In this phase, messages are prepared by making use of the user agent functionality (e.g. editing and filing). The way in which these functions are performed is outside the scope of this Recommendation.

6.2.3 *Sending phase*

In this phase, the originator may request the user agent or message store to send a prepared message to one or more recipients and to request certain optional user facilities.

6.2.4 *Receipt phase*

In this phase, the subscriber can receive delivered messages and notifications from his user agent or message store. The receipt phase can be initiated by the service (auto-receipt) or by the subscriber for message reception. The operation of the user agent receiving messages is specified in Recommendation X.420.

Subscribers using terminals without user agent functionality may register for a contractual period of time during which they will receive delivered messages automatically from their user agent to a terminal, if the Administration provides for this alternative. Normally the user agent is called to receive incoming messages.

In the case of auto-receipt, the MHS will initiate a call to the subscriber's terminal. In the other case, the subscriber shall initiate a call to the MHS at a time convenient to the subscriber.

The body parts of the message will be received by the subscriber in the form in which the originator has sent it, unless conversion has been performed.

For messages delivered to a teletex access unit, Recommendation T.330 defines the optional means by which the subscriber may receive or retrieve delivered messages.

The indication of the optional user facilities requested by the originator are presented by the user agent to the recipient in a form convenient to him.

Notifications: four notifications can be received:

– non-delivery notification;

– delivery notification;

– receipt notification;

– non-receipt notification.

Non-delivery notification and delivery notification (if requested) are automatically generated by the MTS, while receipt and non-receipt notification depend on the action of the recipient UA/recipient.

7 Quality of Service

7.1 *Message status*

The unique identification of each IP-message enables the system to provide information about, e.g., the status of an IP-message.

In the event of system failure, all accepted and non-delivered messages should be traceable. If messages cannot be delivered, the originator must be informed by a non-delivery notification.

7.2 *Support by Administrations*

Administrations should provide assistance to their subscribers, with regard to non-delivery notifications not being received in due time, as far as public system components are concerned. Additional provision on support of status and tracing of messages may be provided under national responsibility.

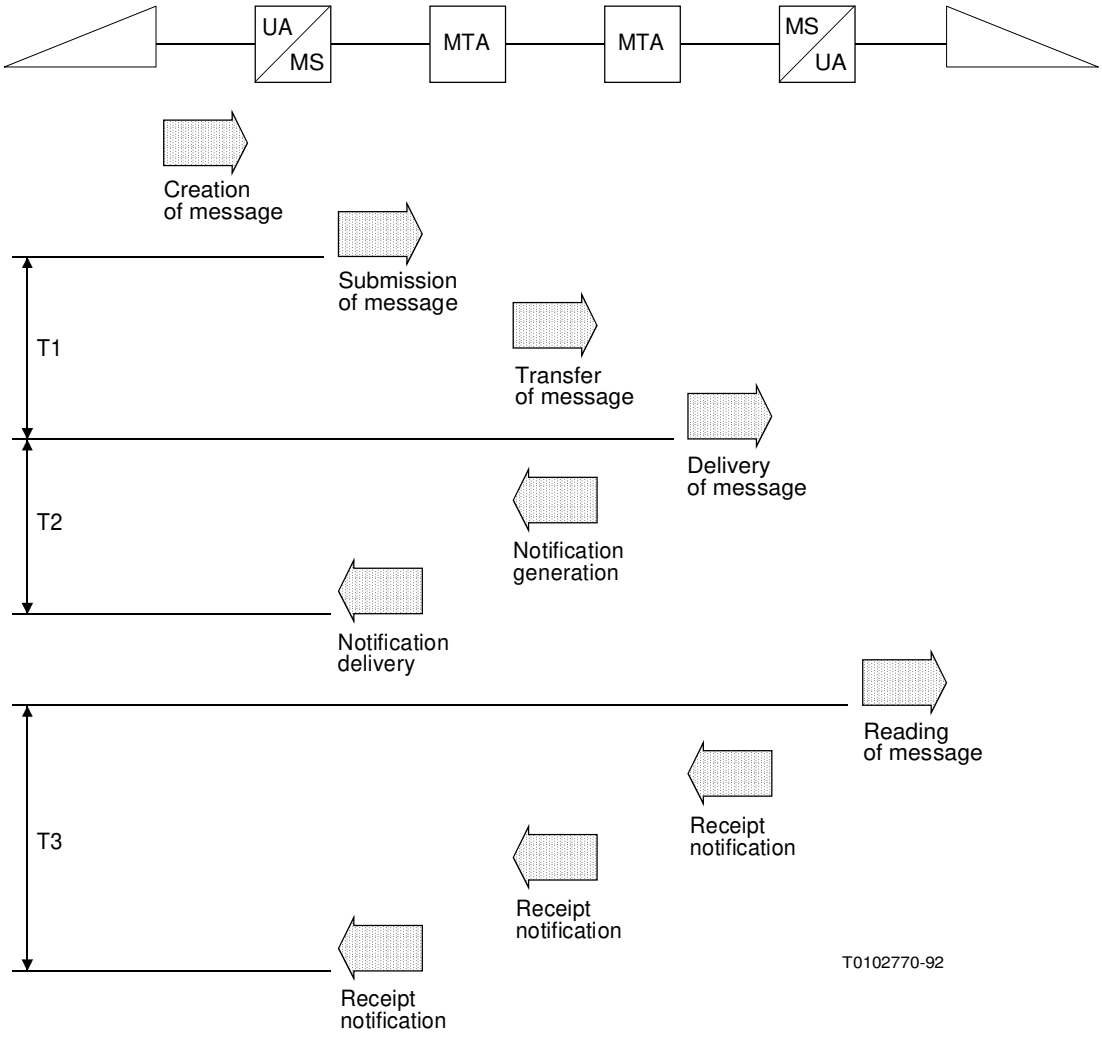
When the user agent is provided by an Administration, additional functionality should be provided in order to minimize cases of not reading messages within a certain period of time (the definition of this period is for further study). This functionality could be, for example, alert messages sent to an automatic reception terminal.

7.3 *Model of delivery and notification times*

See Figure 1/F.420.

7.4 *Message delivery time targets*

The management domain of the recipient UA should force non-delivery notification if the message has not been delivered before *x* hours after submission (or after date and time indicated for deferred delivery), the value of *x* being dependent on the grade of delivery requested by the originator. (See Recommendation F.410, § 4.4.)



T1 Delivery time
T2 Delivery notification time
} For more details, see Recommendation F. 410.
T3 Receipt notification time

Note 1 – Starting time of T3 corresponds to the time the message is displayed to the user and and Receipt Notification is actioned by the user.

Note 2 – Ending time of T3 is the time that the Receipt Notification is made available to the user through the UA or MS.

Note 3 – Similar considerations apply to Non-receipt Notifications.

FIGURE 1/F.420
Notification time model

7.5 *Delivery notification time targets*

Non-delivery notifications or requested delivery notifications should be returned on a per-recipient basis, in order not to delay notifications for those messages in a multi-addressed message which have already been delivered, to enable the originating management domain either to return per-recipient notifications or to batch notifications to its subscribers. (See Recommendation F.410, § 4.5.)

7.6 *Receipt notifications and non-receipt notifications*

Non-receipt notifications are generated automatically by the receiving UA.

Time targets for receipt notifications in the first place depend on local arrangements. When receipt notifications or non-receipt notifications are initiated by the receiving UA/user, they have the same time targets as the messages that cause them to occur (see Table 1/F.420).

TABLE 1/F.420

Receipt and non-receipt notification time targets

Grade of delivery (of the referred message)	95% delivered within
Urgent	0.25 hours
Normal	1.0 hour
Non-urgent	4.0 hours

Note – It is expected that PRMDs will abide by these notification time targets.

7.7 *Error protection*

Error protection on transmission is provided by the MHS and underlying protocols used in the provision of the IPM service.

7.8 *Availability of service*

In principle, the IPM service should be available continuously. The user agent should be available for submission or delivery continuously (unless hold for delivery is invoked). In cases where the UA is not available for delivery continuously, a message store should be used.

7.9 *Minimum storage capacity*

The storage capacity of a user agent and message store shall be sufficient to provide a high grade of service.

Note – This is for further study.

8 Tariff and accounting principles

See D-Series Recommendations, specifically;

– D.35 – General charging principles in the international public message handling services and associated applications (1992)

– D.36 – General accounting principles applicable to message handling services (1991).

9 Network requirements

The IPM service is network independent, that is, the basic service and the essential optional user facilities are provided independently of the type of network used for service access. Additional optional user facilities chosen by an Administration to offer may vary.

10 User information and support

A directory shall be provided by each Administration for its domain. The directory can be hard copy or preferably electronic form.

The directory shall at least contain the following:

a) how to use the directory and the service;

b) list of O/R addresses of subscribers belonging to the Administration's domain;

c) list of standardized abbreviations for O/R address attributes;

d) list of country and Administration management domain names reachable by the public IPM service.

11 Use of the IPM service within CCITT-defined telematic services

See relevant F-Series Recommendations.

ANNEX A

(to Recommendation F.420)

Alphabetical list of abbreviations used in this Recommendation

A	Additional optional user facility
ADMD	Administration management domain
DL	Distribution list
E	Essential optional user facility
EIT	Encoded information type
G3	Group 3 (facsimile)
G4	Group 4 (facsimile)
IA5	International Alphabet No. 5
IP	Interpersonal
IPM	Interpersonal messaging
MD	Management domain
MH	Message Handling
MHS	Message handling system
MS	Message store
MT	Message Transfer
MTA	Message transfer agent
MTS	Message transfer system
N/A	Not applicable
O/R	Originator/recipient

PD	Physical delivery
PDN	Public data network
PDS	Physical delivery system
PRMD	Private management domain
TTXAU	Teletex access unit
UA	User agent

Note 1 – For a glossary of terms, see Annex A to Recommendation F.400.

Note 2 – For references, see Recommendations F.400 and F.401.

ANNEX B

(to Recommendation F.420)

Subscriber access and terminal requirements

B.1 *General*

Various types of terminals may be used for accessing the service. These terminals are functionally divided into two categories: those without user agent functionality, and those with user agent functionality. The telematic terminals assume a special user agent. Telex terminals belong to that first category.

B.2 *Terminals without UA functionality*

Terminals in this category require additional functions to be provided by MHS to enable their participation in the IPM service.

B.2.1 *Telex terminals*

Telex terminals shall conform to the relevant technical Recommendations, and be based on the relevant service Recommendations.

B.2.2 *Teletex terminals*

Teletex terminals shall conform to Recommendations T.60 and T.61. Documents which are exchanged between teletex terminals and the IPM service shall be in conformance to Recommendation F.200.

The access procedures for submission and delivery of documents shall conform to Recommendation T.330.

Note – The use of the interactive session protocol for submission and delivery is for further study. The ability to provide IPM service for documents using teletex standardized options is for further study.

B.2.3 *Facsimile terminals*

Group 3 and Group 4 facsimile terminals should have access to the IPM service.

Note – Access procedures are for further study.

B.2.4 *Videotex terminals*

These terminals shall conform to Recommendation F.300.

Note – Access procedures are for further study. Eventual subset of Recommendation F.300 needs to be considered.

B.2.5 *IA5 terminals*

The IA5 terminals are terminals able to send and receive messages encoded by characters chosen from the International Alphabet No. 5 (Recommendation T.50). The access procedures shall be based on one of the applicable procedures specified in Recommendations X.20 to X.32. These procedures describe the possibility for access to public data networks (PDNs) for data transmission.

Note – Additional procedures are for further study.

B.3 *Terminals with UA functionality*

These terminals shall, as a minimum, have the capabilities to:

1) provide the capabilities to subscribers of the basic features defined in § 2;

2) make use of the IPM protocol specified in Recommendation X.420;

3) use the submission and delivery protocol specified in Recommendation X.419;

4) use the remote operation procedures specified in Recommendation X.419.

These terminals shall be able to handle at least one EIT as defined in Recommendation X.408 (e.g. IA5, teletex, etc.).

APPENDIX I

(to Recommendation F.420)

Errata to Recommendations F.421 and F.422, in Fascicle II.6 CCITT Blue Book 1989

I.1 *Errata to Recommendation F.421*

(Page 128). In the first line of the first sentence *change* "message handling service" to "message handling services".

(Page 131, § 4.2.2.5). In the first sentence *change* "or and end" to "or an end"

(Page 131, § 4.2.2.5). In the first sentence *change* "transmission" to "transaction".

(Page 135, Annex A). The abbreviation for "Initials" should be "INI".

(Page 135, Annex A). The name for "EOT" should be "End of Transaction".

(Page 137, Annex B). In Table B-1 entry B.80 *change* "Sensibility" to "Sensitivity" in the second column.

(Page 137, Annex B). In Table B-1 entry B.80 *delete* text in third column and replace with "National Matter".

(Page 137, Annex B). In Table B-1 entry B.89 *add* "indication" to end of element of service name in second column.

I.2 *Errata to Recommendation F.422*

(Page 142, § 2.2.1). In the second sentence *change* "may" to "should".

(Page 144, Table 1). In entry B.54, Column 4 *add* "X".

(Page 144, Table 1). In entry B.56, column 2 change "request" to "requested".