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OPERATIONS AND QUALITY OF SERVICE

MESSAGE HANDLING SERVICES

MESSAGE HANDLING SERVICES: INTERCOMMUNICATION BETWEEN THE IPM SERVICE AND THE TELEX SERVICE

ITU-T Recommendation F.421

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation F.421 was published in Fascicle II.6 of the *Blue Book*. This file is an extract from the *Blue Book*. While the presentation and layout of the text might be slightly different from the *Blue Book* version, the contents of the file are identical to the *Blue Book* version and copyright conditions remain unchanged (see below).

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

Recommendation F.421[1)]

MESSAGE HANDLING SERVICES:
INTERCOMMUNICATION BETWEEN THE IPM SERVICE
AND THE TELEX SERVICE

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

The CCITT,

considering

(a) the need for public message handling services;

(b) the strategic and commercial importance of standardization of message handling services;

(c) the urgent need for intercommunication arrangements for existing telematic services, and other services with public message handling services;

(d) the need for a clear distinction between the responsibilities to be allocated to service providers and those of subscribers and/or users;

(e) the need for establishing international compatibility between different messaging systems;

(f) the growth of the installed base of terminals and personal computers with the ability to access message handling systems;

(g) that several F-series Recommendations describe public message handling services;

(h) that certain X, T and U-series Recommendations cover relevant aspects of systems used for the provision of messaging services;

(i) that Recommendations F.60 and F.69 define the service requirements for the telex service;

(j) that Recommendation F.72 defines international telex store-and-forward;

(k) that the U-series Recommendations define the technical requirements for the telex service;

(l) that Recommendation U.204 defines the technical requirements for the intercommunication between the IPM service and the telex service;

unanimously declares

that operational procedures for intercommunication between the public interpersonal messaging service and the telex service shall be in accordance with this Recommendation.

CONTENTS

[1)] This Recommendation is the same as Recommendation F.75 of which only the title appears in Fascicle II.4.

Annex A – Abbreviations

Annex B – Actions to be taken by the PTLXAU/examples

Annex C – IPM message to telex

Annex D – Telex message to IPM

1 Scope

1.1 This Recommendation describes the general, operational and service procedures for the provision of intercommunication between the public interpersonal messaging service and the telex service.

1.2 The intercommunication is based on store-and-forward principles which allow users of one service to exchange messages with the users of the other service.

2 Introduction

The IPM service is a messaging service which may be provided on a variety of networks and allows several forms of addresses, whereas the telex service provides direct connection between subscribers in the telex network.

Therefore, to match dissimilar characteristics of the two services, it is necessary to provide intercommunication via a public telex access unit (PTLXAU). In both IPM service to telex service, and telex service to IPM service directions, the complete message is deposited in the PTLXAU for onward transmission.

In general the selection procedures for the telex subscriber will be two-stage; however, where the destination IPM service user is assigned a numeric address that is part of the national telex numbering plan of the destination country, one-stage selection procedures may be used.

3 Service outline

3.1 Communication between subscribers of the telex service and the IPM service is on store-and-forward basis; thus conversational mode interworking between users is not applicable.

3.2 Public access to the IPM service for telex subscribers and delivery of messages to telex subscribers from IPM service users is provided by means of a PTLXAU.

3.3 The PTLXAU belongs to the IPM service.

3.4 In the IPM service to telex service direction, the IPM service retains the responsibility for the message until delivery to the telex subscriber has been completed.

3.5 In the telex service to IPM service direction, the IPM service is responsible for the delivery of the message to the IPM service user, once the input is completed under normal conditions.

3.6 In both IPM service to telex service direction and telex service to IPM service direction, the international connection should be via the international telex network, as shown in Figure 1/F.421.

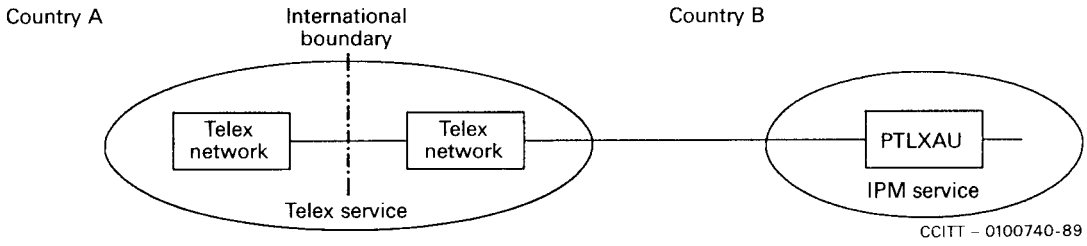


FIGURE 1/F.421

Model for service intercommunication

3.7 Where two Administrations offer an IPM service, the international boundary may be placed within the IPM service by bilateral agreement. In this configuration, however, international telex connections should continue to be established via the international telex network.

4 Operational procedures

4.1 *IPM service to telex service direction*

4.1.1 Messages from an IPM service user to a telex subscriber are sent as normal IP-message with the appropriate IPM elements of service, in accordance with Recommendation F.420.

4.1.2 When a message is received by the PTLXAU, the message content will be converted into the format and character repertoire defined for the telex service. This may result in loss of information if the IPM service user does not conform to these defined rules.

Note – The conversion process may take place in the message transfer system (MTS) associated with the PTLXAU.

4.1.3 The PTLXAU shall be responsible for the action to be taken for IPM elements of service received in accordance with Recommendation F.420. Annex B shows examples of IPM elements of service together with proposed actions to be taken by the PTLXAU.

4.1.4 Call establishment by and delivery of the message to the telex subscriber should be in accordance with Recommendations F.72 and U.204.

4.1.5 The IP-message sent to the called telex subscriber shall be preceded by a PTLXAU identification. The content of this identification is a national matter but should include the service code "CI", the code expression "IPM", and the telex network identification code in accordance with Recommendation F.69, e.g. "CI IPM CH".

4.1.6 A general layout of an IP-message delivered to the telex service is shown in Annex C.

4.1.7 The elements of service related to the IP-message heading shall be converted into printable text. The language of this text is a national matter. The PTLXAU shall transmit the originator O/R address to the called telex subscriber in the form necessary for recall, in accordance with the indications of Table 2/F.421 (see example in Annex C).

4.1.8 In order to help the telex recipients to recall the originator, the PTLXAU could transmit, as the first element of the message heading, some information as guidance. The contents of this field is a national matter, but when used should be called "FOR RECALL" (see Annex C).

4.1.9 Upon delivery of the message to the telex subscriber, a delivery notification should be sent back to the originating IPM service user if requested. In the event of non-delivery of the message to the telex subscriber, a non-delivery notification shall be sent back to the IPM service user (unless the IPM user has requested prevention of non-delivery notification).

4.2 *Telex service to IPM service direction*

In this direction, Administrations may implement either or both one-stage and two-stage call set-up procedures.

4.2.1 *One-stage selection*

4.2.1.1 Where one-stage call set-up procedures are used, the number assigned to a user in the IPM service must appear to be part of the national telex numbering plan.

4.2.1.2 The length of the number assigned to the IPM service user shall be in accordance with the relevant U-series signalling Recommendations.

4.2.1.3 The procedures for message transfer within the IPM service, e.g. mapping of the assigned number to an O/R address, are a national matter and not covered by this Recommendation.

4.2.1.4 The call shall be established using normal telex call set-up procedures.

4.2.1.5 The telex number received by the PTLXAU from the telex network shall be verified by the IPM service as being proper to a registered IPM service user. If the verification fails:

a) where the PTLXAU is provided by the Administration which also provides all or part of the telex network, the service signal NP may be returned;

b) where the PTLXAU is not provided by the Administration which also provides all or part of the telex network, the procedures to be applied shall be in accordance with Recommendation F.74.

4.2.1.6 The answerback returned to the calling telex subscriber at call establishment and also during the text input stage shall contain the national telex number assigned to the IPM service user.

4.2.1.7 The call shall be cleared using normal telex call clearing procedures.

4.2.1.8 When the message cannot be delivered to the IPM service user, a non-delivery notification shall be returned to the telex subscriber. The procedures for establishing the calling telex address are specified in Recommendation U.204.

4.2.1.9 The non-delivery notification returned to the originating telex subscriber should contain a reference consisting of the telex address of the IPM service user and time and date of submission to the PTLXAU.

4.2.1.10 The action to be taken when a non-delivery notification cannot be returned to the calling telex subscriber is for further study.

4.2.1.11 The format of notifications and the procedures for their delivery should be in accordance with Recommendation U.204.

4.2.1.12 The use of IPM elements of service by the telex subscriber is for further study.

4.2.2 *Two-stage selection*

4.2.2.1 The telex subscribers shall use normal telex call procedures to access the PTLXAU which is allocated a telex number that is part of the national telex numbering plan of the country in which the PTLXAU is located.

4.2.2.2 Procedures for access to the PTLXAU shall follow Recommendation U.204.

4.2.2.3 A service identifier may be input before the O/R address(es) of the first message. It may allow the Administrations to provide intercommunication with several services through only one PTLXAU (see Tables 1/F.421, 3/F.421 and Annex D).

4.2.2.4 The PTLXAU shall be able to accommodate the following O/R address forms:

- Mnemonic O/R address;
- Terminal O/R address;
- Numeric O/R address;

as specified in Recommendation F.401. The O/R address should be input in accordance with the requirements of Recommendation U.204.

It is the responsibility of the originating telex subscriber to be aware of the required attributes specific to the domain of the called IPM service user. Each attribute of the O/R address shall be identified and delimited. The complete O/R address shall be terminated with an end-of-address (EOA) indicator.

The structure of the service identifier and the address input is shown in Table 1/F.421.

Each attribute of the address structure shall be contained in one line.

Each address attribute and the service shall be identified by a code expression according to Tables 2/F.421 and 3/F.421.

4.2.2.5 Under normal conditions, the message input will be terminated by an end of message (EOM) or and end of transmission (EOT) signal. In case where no EOM or EOT signal is received, the PTLXAU shall forward any input received prior to call disconnect with the added text “THIS MESSAGE MAY BE INCOMPLETE”. Annex D shows a general layout applicable in case of submission of message(s) to the PTLXAU by the telex subscriber.

4.2.2.6 Except as defined in 4.2.2.5 above, the action to be taken when abnormal conditions are encountered during message input shall be in accordance with Recommendation U.204.

TABLE 1/F.421

Telex service to IPM service address structure

Service identifier
Address attribute identifier <value>
.
.
.
Address attribute identifier <value>
End of single O/R address (+)
[Next O/R address(es)]
[Request for IPM elements of service]
End of address(es) (BT)
[Request for delivery notification]

Note – [ ] indicates optional attributes.

TABLE 2/F.421

Code expressions for address attribute identifiers

Address attribute	Format
Country name	CTN <value>
Administration domain name	ADM <value>
Private domain name	PRI <value>
Organization name	ORG <value>
Organisation unit name(s)	OUN <value>
Personal name	
– Surname	SUR <value>
– Given name	GIV <value>
– Initials	INI <value>
– Generation qualifier	GEN <value>
– Common name	COM <value>
Numeric user identifier	NUS <value>
Terminal type and network address	
for telex	TLX <value>
teletex	TTX <value>
fascimile	FAX <value>
videotex	VTX <value>
Domain defined attribute(s)	
– Type	DDT <value>
– Value	DDV <value>

Note 1 – The symbol equals a space .

Note 2 – Allowed attribute values are specified in Recommendation F.401.

TABLE 3/F.421

Code expression for the service identifier

Service	Format
Interpersonal messaging service	IPM

4.2.2.7 During the input stage of the address, the PTLXAU shall validate, as a minimum, the following O/R address formats, as specified by the domain:

- The existence of mandatory attributes.
- The existence of non-allowed attributes.
- The minimum and maximum allowed number of characters in each attribute.
- The existence of non-allowed characters in an attribute.

Where applicable, the existence/non-existence of non-significant character(s) preceding or following the attribute values shall not prevent validation.

Despite the acceptance by the PTLXAU of the submitted O/R address, there is no guarantee that the message will be subsequently delivered and, in this case, the originating telex subscriber will be charged for a message which was not delivered. It is therefore desirable that a means of verifying the existence of the O/R adress be provided and the method of achieving this is left for further study.

4.2.2.8 The service principles for delivery and non-delivery notifications should be in accordance with Recommendation F.72. The format of the notification messages is defined in Recommendation U.204. Delivery notification may be requested as a code expression following the end of address signal.

4.3 *Construction of the IP-message*

The message received by the PTLXAU shall be delivered to the IPM user(s) in accordance with following rules.

4.3.1 *P2 body part*

The received message, excluding the recipient address(es), shall form the body of the IP-message. All the received characters shall be delivered except the WRU signals.

4.3.2 *Recipient O/R address*

All recognized O/R addresses shall be assumed as primary recipients. By default, these primary recipients will not be disclosed to each other.

4.3.3 *Originator indication*

The calling telex subscriber address shall be converted by the PTLXAU into the format of a terminal O/R address and shall be placed in the originator indication element of service field.

4.3.4 *Subject indication*

The PTLXAU shall generate the element of service which will cause TELEX to appear in the subject indication element of service field.

4.3.5 *IP-message identification*

The content of the message reference information returned to the calling telex subscriber shall also be used as the unique identifier in the IP-message identification element of service field.

4.3.6 *Grade of delivery selection*

The PTLXAU shall set the grade of delivery selection element of service to the value URGENT.

4.3.7 *Conversion prohibition in case of loss of information*

The use of the element of service – conversion prohibition in case of loss of information – is for further study.

4.3.8 *Disclosure of other recipients*

This element of service shall be set by the PTLXAU when the originating telex subscriber requests the disclosure of other recipients. The procedures for requesting this disclosure are defined in Recommendation U.204.

4.3.9 *Deferred delivery*

This element of service shall be set by the PTLXAU when the originating telex subscriber requests deferred delivery of his message. The procedures for requesting deferred delivery are defined in Recommendation U.204.

Note – The code expressions to be used for the selection of the elements of service described in §§ 4.3.8 and 4.3.9 by the telex subscriber, are shown in Table 4/F.421.

TABLE 4/F.421

Code expressions for the use of IPM elements of service

IPM element of service	Format
Disclosure of other recipients	DUR
Deferred delivery	DEF <value>
Delivery notification	BT, ACK[a)]

a) The request for delivery notification may be given together with the code for end of adresse (es) (BT) if delivery notification is required.

Note – The symbol equals a space.

4.3.10 *Other elements of service*

Elements of service of the basic IPM service other than those specified above shall be set by the PTLXAU in accordance with the requirements of the domain to which it belongs.

ANNEX A

(to Recommendation F.421)

Abbreviations

A/B	Answerback
ACK	Request for Delivery Notification Signal
ADM	Administration Management Domain
BT	End of Address(es) Signal
CI	Conversation Impossible
COM	Common Name
CTN	Country Name
DDT	Domain Defined Attribute Type
DDV	Domain Defined Attribute Value
DEF	Deferred Delivery
DUR	Disclosure of other Recipients
EOA	End of Address
EOM	End of Message
EOT	End of Transaction
FAX	Facsimile
GEN	Generation Qualifier
GIV	Given Name
I	Initials
IP	Interpersonal
IPM	Interpersonal Messaging
MT	Message Transfer
MTS	Message Transfer System
NP	The called party is not, or no longer, a subscriber
NUS	Numeric User Identifier
O/R	Originator/Recipient
ORG	Organization Name
OUN	Organization Unit Name(s)
P2	IPM Protocol
PRI	Private Domain Name
PTLXAU	Public Telex Access Unit
SUR	Surname
TID	Terminal Identifier
TLX	Telex
TTX	Teletex
UTC	Universal Coordinated Time
VTX	Videotex
WRU	Who Are You
+	End of Single O/R Address signal
→	Space

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

Note 2 – For references see Recommendation F.400.

ANNEX B

(to Recommendation F.421)

Actions to be taken by the PTLXAU/examples

Basic IPM elements of service and essential optional IPM user facilities which have to be processed by the PTLXAU in the case where a message is sent from the IPM service to the telex service direction (Table B-1/F.421).

TABLE B-1/F.421

Reference Rec. F.400 Annex B	Elements of service	Action to be taken	Examples
B.5	Authorizing users indication	Display in message heading	Authority : → <value>
B.6	Auto-forwarded indication	Ignore	
B.8	Blind copy recipient indication	Display the O/R descriptor information of the blind copy recipient(s)	BCC → <value>
B.9	Body part encryption indication	The PTLXAU shall send a non-delivery notification to the originator	
B.12	Content type indication	National matter for content types different than P2	
B.13	Conversion prohibition	If ITA2, ignore. Otherwise the PTLXAU generates a non-delivery notification	
B.15	Converted indication	Ignore	
B.18	Cross referencing indication	Display in message heading	Reference → <value>
B.21	Delivery notification	The PTLXAU shall send a delivery notification to the originator	
B.22	Delivery time stamp indication	Ignore	
B.25	Disclosure of other recipients	Disclose all recipients	
B.26	DL expansion history indication	Ignore	
B.29	Expiry date indication	Display in message heading	Message invalid after : → <value>
B.31	Forwarded IP-message indication	the PTLXAU shall build a message heading for each IP-message contained in the body part	
B.32	Grade of delivery selection	National matter	
B.34	Implicit conversion	Convert to telex according to Rec. X.408	
B.35	Importance indication	Display in message heading	Message importance: → <value>
B.37	IP-message identification	display in message heading	Message reference: → <value>
B.38	Language indication	Ignore	
B.39	Latest delivery designation	National matter	

TABLE B-1/F.421 *(cont.)*

References Rec. F.400 Annex B	Elements of message	Action to be taken	Examples
B.41	Message identification	Ignore	
B.45	Multi-destination delivery	Deliver the message to all recipients	
B.46	Multi-part body	Messages containing not supported body parts are not delivered. Send back a non-delivery notification to the originator	
B.47	Non-delivery notification	The PTLXAU shall generate a delivery report	
B.48	Non-receipt notification request	Ignore	
B.52	Obsoleting indication		Obsoletes: <value>
B.54	Original encoded information types indication	Ignore	
B.55	Originator indication	Ignore	
B.56	Originator request alternate recipient	National matter	
B.62	Primary and copy recipients indication	Display the O/R descriptor information of the recipient(s) in the message heading	TO: <value> TO: <value> CC: <value> CC: <value>
B.63	Probe	National matter	
B.67	Receipt notification request indication	Ignore	
B.72	Reply request indication	Display in message heading	Reply requested by sender
B.73	Replying IP – message indication	Display in message heading	Reply to message: <value>
B.80	Sensibility indication	Display in message heading just above text of body	
B.88	Subject indication	Display in message heading just above text of body	Subject: <value>
B.89	Submission time stamp	Display in message heading	Submitted: <value> UTC
B.90	Typed body	Ignore	

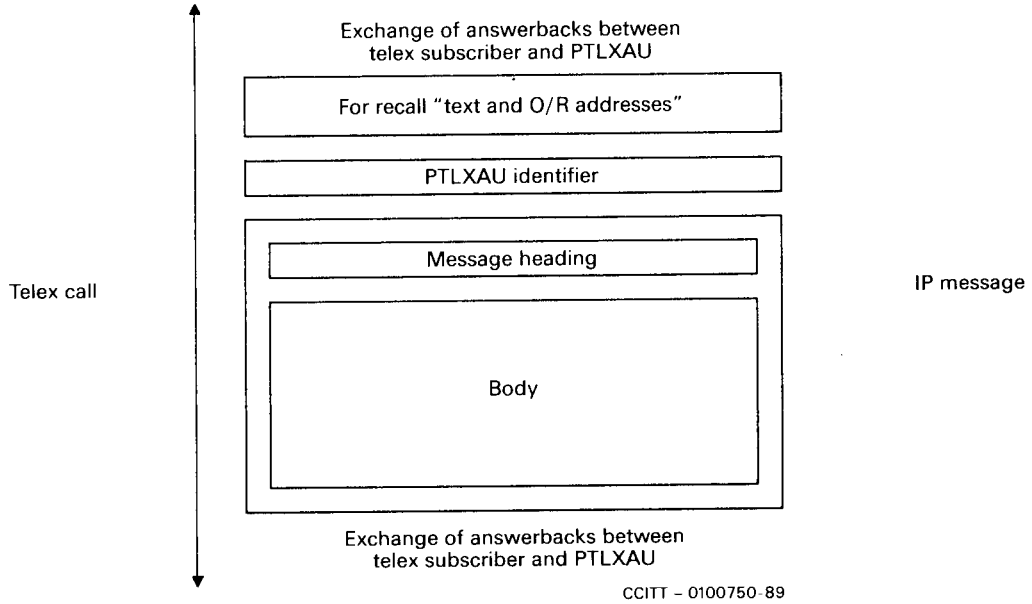
Note – The symbol equals a space.

ANNEX C

(to Recommendation F.421)

IPM message to telex

General layout of a message originated by an IPM service user and delivered by the PTLXAU to a telex subscriber.



Display of the originator O/R address related information to the telex user in the message heading:

a) Two-stage selection:

FROM: GIVfrancois
SURmaurer
ORGswissptt
ADMarcom400
CTNch

b) One-stage selection:

FROM:(F.74 A/B)

ANNEX D

(to Recommendation F.421)

Telex message to IPM

(Two-stage selection)

General layout of a message originated by a telex subscriber using the two-stage selection, submitted to the PTLXAU for delivery to the IPM service.