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OF ITU

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TELEGRAPH SWITCHING

INTERNATIONAL TELEX SERVICE

THE INTERNATIONAL TELEX SERVICE – GENERAL TECHNICAL REQUIREMENTS FOR INTERWORKING

ITU-T Recommendation U.200

(Previously “CCITT Recommendation”)

FOREWORD

The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of the International Telecommunication Union. The ITU-T 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 World Telecommunication Standardization Conference (WTSC), which meets every four years, established the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

ITU-T Recommendation U.200 was prepared by the ITU-T Study Group IX (1988-1993) and was approved by the WTSC (Helsinki, March 1-12, 1993).

NOTES

1 As a consequence of a reform process within the International Telecommunication Union (ITU), the CCITT ceased to exist as of 28 February 1993. In its place, the ITU Telecommunication Standardization Sector (ITU-T) was created as of 1 March 1993. Similarly, in this reform process, the CCIR and the IFRB have been replaced by the Radiocommunication Sector.

In order not to delay publication of this Recommendation, no change has been made in the text to references containing the acronyms "CCITT, CCIR or IFRB" or their associated entities such as Plenary Assembly, Secretariat, etc. Future editions of this Recommendation will contain the proper terminology related to the new ITU structure.

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

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THE INTERNATIONAL TELEX SERVICE – GENERAL TECHNICAL REQUIREMENTS FOR INTERWORKING

(Helsinki, 1993)

Definitions

non-telex terminal: Within this Recommendation the term "non-telex terminal" is used for any terminal which does not belong to the international telex service or is not connected to the international telex service directly, but can be accessed via the international telex service.

Abbreviations

ACK	Request for positive delivery notification
ADD	Please input your international telex number
AU	Access Unit[DD3]
BK	I cut off
BMC	No end of message or end of transmission received, therefore message cancelled
BT	End of address/Begin text signal
CF	Conversion Facility
COM	Connected [PAD service signal (see Recommendation X.28)]
DTE	Data Terminal Equipment
EOI	End of Input[DD4]
EOT	End of Transaction[DD5]
FAXIWF	Telex/Facsimile Interworking Function[DD6]
GA	You may transmit/May I transmit?
IMA	Input Message Acknowledgement[DD7]
ISDN	Integrated Services Digital Network
ITD	Input Transaction accepted for Delivery
ITL	I Transmit Later
IWF	Interworking Function[DD8]
MOB	Mobile
MOM	Wait/waiting
MSSFU	Maritime Satellite Store-and-Forward Unit[DD9]
ODA	On-line Delivery Acknowledgement[DD10]
O/R	Originator/Recipient[DD11]
PDN	Positive Delivery Notification[DD12]
PSPDN	Packet Switched Public Data Network
PSTN	Public Switched Telephone Network
PTLXAU	Public Telex Access Unit[DD13]
SEF	Status Enquiry Function[DD14]
SFU	Store-and-Forward Unit
TAED	Telex Automatic Emitting Device[DD15]
TPIWF	Telex Packet Interworking Function[DD16]
VTXCF	Telex/Videotex Conversion Facility[DD17]

1 Scope

1.1 This Recommendation defines the technical interworking principles with the international telex service.

Interworking as defined in this Recommendation is considered:

i) between the international telex service and other CCITT defined services; or

ii) between terminals of the international telex service and non-telex terminals connected to other networks; or

iii) between two dissimilar networks providing the international telex service.

Interworking between telex signalling Types A, B, C and D is described in Recommendation U.15.

1.2 The objectives of this Recommendation are:

– to specify in a generic form the access protocol from the telex network to the interworking function and vice-versa;

– to specify in a generic form the different text transfer modes, applicable to interworking;

– to indicate the applicability of user and exchange facilities in the case of interworking;

– to indicate the degree of conformance with the basic characteristics of the international telex service resulting from the interworking scenario;

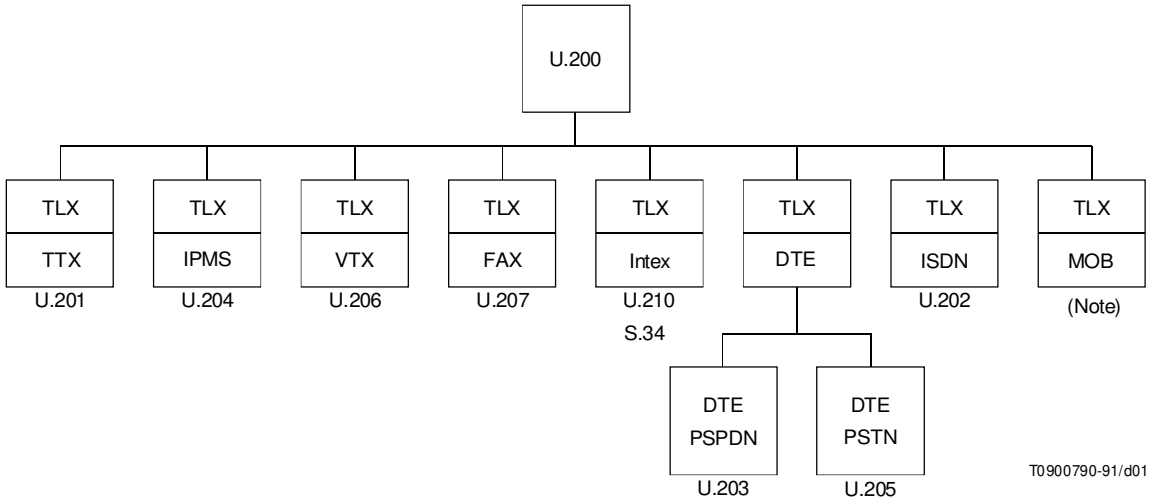
– to define a preferred access protocol for new interworking scenarios;

– to give an overview of all relevant interworking Recommendations.

1.3 The rapid evolution of data transmission and Telematic services has resulted in a large number of international standards in this field. The increasing complexity of the totality of these standards creates a need to standardize interworking procedures with the international telex service.

The telex service may be provided in the future by different types of public networks. As a result there may be a demand to interconnect these networks in order for a telex terminal on one network to communicate in a standardized way with a telex terminal on the same network, or on another network, or with a non-telex terminal of a network of another type.

This Recommendation is the first of a family of interworking Recommendations. Figure 1 and Table 1 give a summary of the relevant interworking Recommendations.



NOTE – U.208 Inmarsat-C/One-stage.

FIGURE 1/U.200

Organization of telex interworking Recommendations

TABLE 1/U.200

Family of interworking Recommendations relation to the international telex service

Title of the technical Recommendation	Tehcnical Rec.	Service Rec.	Interworking Type[a)]
The international telex service – General technical requirements for interworking	U.200	F.80	I, II, III
Interworking between the Teletex service and the international telex service	U.201	F.81/F.201	I
Technical requirements to be met in providing the international telex service within an Integrated Services Digital Network	U.202	F.59/F.60	III
Technical requirements to be met when providing real-time bothway communications between terminals of the international telex service and data terminal equipments on a PSPDN or via the PSTN	U.203	F.83	II
Interworking between the international telex service and the public interpersonal messaging service	U.204	F.84/F.421	I
Store-and-retrieve facility for the delivery of messages from a terminal of the international telex service to a data terminal equipment which connects to a packet-switched public data network over the public switched telephone network	U.205	F.83	II
Technical requirements for interworking between the international telex service and the Videotex service	U.206	F.86	I
Technical requirements to be met for the transfer of messages between terminals of the international telex service and Group 3 facsimile terminals connected to the PSTN	U.207	F.87	I
The international telex service – Interworking with the INMARSAT C system using one-stage selection	U.208	F.127	II
Intex service – Network requirements to effect interworking with the international telex service[b)]	U.210	F.82	I
The international telex service – Technical requirements for a Status Enquiry Function in an interworking scenario	U.220	F.89	I, II
Intex terminals – Requirements to effect interworking with the international telex service[b)]	S.34	F.82	I

a) As defined in 1.1.

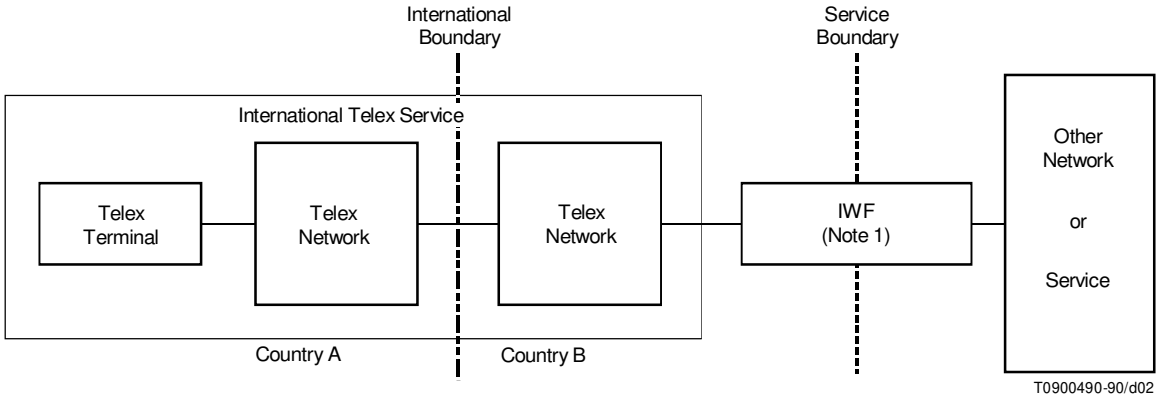
b) Intex – Provisional name.

2 General interworking scenario

The operational procedures and full range of facilities available for each interworking case are described in Recommendation F.80 and other associated F-Series Recommendations.

The interworking capability shall be established by the provision of an Interworking Function (IWF). The method of implementation of an IWF in any physical unit is a national matter.

To avoid accounting problems on international interworking relations, the point of interworking between the two networks should always be in the country where the terminal connected to the other network and/or participating on the other service is located. Therefore the international connection should be via the telex network as shown in Figure 2. However, there are exceptions defined in the relevant F-Series Recommendations (e.g. Recommendation F.201).



NOTES

1 Within this Recommendation the term "Interworking Function" or "IWF" includes the following functions used in other U.200-Series Recommendations:

– CF (U.201)
– AU (U.202)
– IWF (U.202)
– TPIWF (U.203)
– PTLXAU (U.204)
– VTXCF (U.206)
– FAXIWF (U.207)
– MSSFU (U.208)

2 If the destination country does not provide the IWF between the telex network and the network to which the requested terminal is connected, the IWF may be provided by the originating network.

FIGURE 2/U.200

Basic model for international interworking between the international telex service and other networks and services

3 Tasks of the IWF

Depending on the application the IWF is responsible for the following tasks:

- mapping of the signalling events;
- receipt of characters from the telex network, and conversion for forward transmission;
- receipt of characters of the other network, and conversion of them to start-stop characters for forward transmission to the telex network;
- code conversion in accordance to the relevant CCITT Recommendations;
- alignment of the "shift" conditions on either side of the IWF;
- handling of the WRU signal and answerback codes;
- mapping of telex service signals;
- handling of characters received on the backward signalling path while forward transmission is in progress;
- mapping of clearing signals from either network;
- relevant procedures on the other network/service;
- packetizing – when required – in accordance with the prescribed conditions.

4 Access to an IWF from the telex network

Two basic procedures should be provided by the IWF to allow access from the telex subscriber:

a) interactive operation, primarily to cater for manually calling telex terminals; in this procedure the Interworking Function may return prompt signals;

b) non-interactive operation, to cater for access from Telex Automatic Emitting Devices (TAEDs). In this procedure prompt signals must not be returned.

The following methods of accessing an IWF from the telex side may be employed:

i) interworking with one-stage selection;

ii) interworking with two-stage selection.

Accessing the IWF by two-stage selection method is necessary in the following cases:

– the called address does not form a part of the telex numbering plan, e.g. Recommendations E.163 and X.121 (not all cases), O/R address;

– multi-address calls;

– follow-on calls;

– request for positive delivery notification;

– use of service parameters, e.g. delayed delivery.

4.1 One-stage selection

In the one-stage selection procedure the called party will be assigned a telex number that is part of the national numbering plan.

This procedure requires the registration of each non-telex terminal that wants to communicate with telex subscribers and the assignment of a telex number to it.

It is the responsibility of the IWF to translate, where neccessary, this assigned number to the relevant call number of the requested terminal.

Where, however, the destination country has implemented an integrated national numbering plan, then the assigned national number of the non-telex terminal may be used by the calling telex subscriber provided this does not lead to an international telex address consisting of more than 12 digits to allow accommodation within the international telex signalling requirements.

Figure 3 shows the elements of the access procedure, Table 2 shows how these elements are implemented in the different interworking scenarios and Annex A shows a general scheme for access protocols.

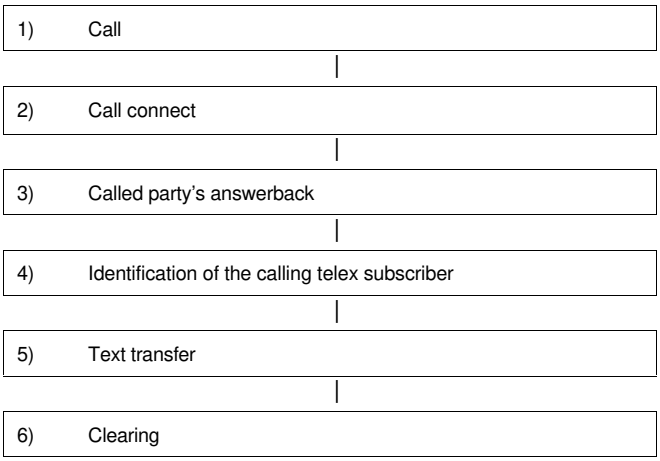


FIGURE 3/U.200

Elements of the telex access procedure (one-stage selection)

TABLE 2/U.200

Implementation of the elements of the telex access procedure to a one-stage IWF

Element	General Scheme	U.201	U.202	U.203	U.204	U.205	U.206	U.207	U.208	U.210
(1) Call (2) Call connect	Normal telex procedures									
(3) Called party's answerback	F.60 or F.74	F.74	F.60	F.74	F.74	F.74	F.74	F.74	F.74	F.60 (Note 1)
(3a) Validation of called party	As relevant	Validation call	Call set-up	Call set-up	Data base	Data base	Data base	Data base	Data base	Call set-up
(4) Identification of the calling telex subscriber	a) Optional, in accord with Rec. S.23 b) As in 4.3.1	a)	a)	a)	b)	a)	a)	a)	b)	a)
(5) Text transfer	As relevant	Store/ Forward	Real-time	Real-time	Store/ Forward	Store/ Retrieve	Store/ Retrieve	Store/ Forward	Store/ Forward	Real-time
(5a) Timeout in text transfer	If applicable, GA after 30 seconds, after further 30 seconds BK and disconnect	Applicable	Not applicable	Not applicable	Applicable	Not applicable	Applicable	Applicable	Applicable	Not applicable
(6) Clear	Normal clearing procedures	EOI							EOT	

NOTES

1 For details, see Recommendation F.150.

2 See 4.3 for Notes.

4.1.1 Procedure

The procedures to be used shall generally conform to the provisions of Recommendation F.60.

The telex number received by the IWF shall be verified as being proper to a registered non-telex terminal. The method of effecting this verification is a national matter. If the verification fails and both the telex network and the IWF are operated by the same administration, the IWF should clear backwards with the service signal NP.

If the called party is a non-telex terminal the answerback of the called terminal to be returned to the calling telex subscriber at any stage of the call shall be formatted in accordance with Recommendation F.74. This indicates to the calling telex subscriber that he has in effect left the telex service.

NOTE – The IWF shall be prepared to accept a WRU signal from the calling telex subscriber at any stage following the call connect and shall always reply with the called party's answerback.

4.2 Two-stage selection

Two-stage selection can be applied when the Interworking Function is located in either the originating or destination country.

The originating telex subscriber shall use normal telex procedures to access the IWF which shall be allocated a telex number that is part of the telex national numbering plan of the country in which the IWF is located.

In the two-stage selection procedure the called party's address is given in a second stage of selection after a telex connection has been established between the originating telex subscriber and the IWF.

Where the IWF is located in the destination country two-stage selection might be considered disadvantageous for the calling telex subscriber (e.g. charging for unsuccessful calls). However, two-stage selection can be used to allow unlimited access to all subscribers of a destination network or service without necessity of any registration for the potential destination subscribers. For example, a telex subscriber can send a message to a fax terminal, using the full E.163 address of that terminal (see Recommendation U.207).

Figure 4 shows the elements of the access procedure, Table 3a and Table 3b show how these elements are implemented in the different interworking scenarios and Annex A shows a general scheme for access protocols.

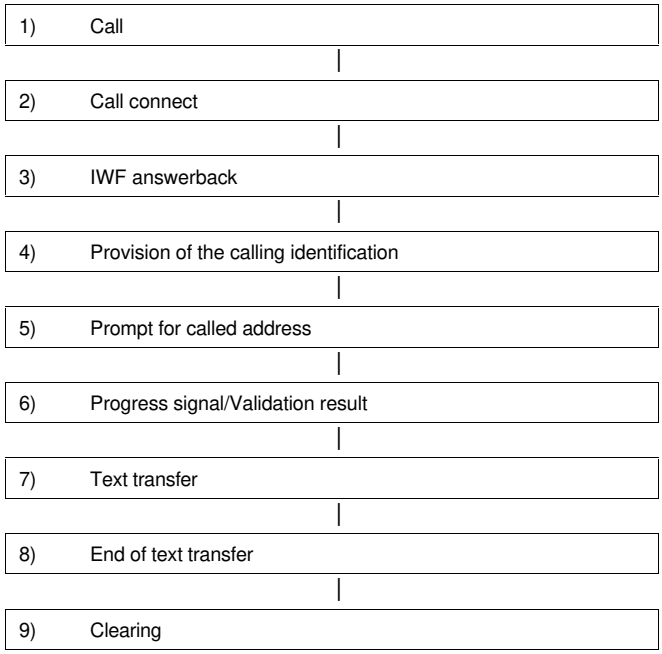


FIGURE 4/U.200

Elements of the telex access procedure (two-stage selection)

TABLE 3a/U.200

Implementation of the elements of the telex access procedure to a two-stage IWF or SFU

Element	General Scheme if text transfer is: Store/Forward Store/Retrieve	General Scheme if text transfer is: Real-time	U.80	U.201	U.203	U.204	U.206	U.207
(1) Call (2) Call connect	Normal telex procedures							
(3) IWF answerback	F.60			Different		Not defined		
(4) Provision of the calling identification	S.23			After address input				
(4a) Calling address – ADD prompt	See 4.3.1			ADD – Proceed if no address	Not defined		Not defined	
(4b) Provision of the calling telex address	Telex address, followed by 2 × CR, LF			Telex address followed by +			Not relevant	
(5) Prompt for called address	GA after 3 seconds			No prompt				No prompt
(5a) Timeout in address-input	Send NP after 15 seconds and clear the call			Clear after 15 seconds				

TABLE 3a/U.200 *(end)*

Element	General Scheme if text transfer is: Store/Forward Store/Retrieve	General Scheme if text transfer is: Real-time	U.80	U.201	U.203	U.204	U.206	U.207
(5b) Called address format For Options, see Table 3b	Complete international address, as applicable, followed by + Options as applicable		Options	Alternate national number only Options	Options	IPM O/R address Options	National address may contain figures, letters	Options
(6) Progress Signal/Validation Result		GA		Different, as in Rec. F.201	COM			
(7) Text transfer	As applicable	Real-time	Store/Forward	Store/Forward	Real-time	Store/Forward	Store/Retrieve	Store/Forward
(7a) Timeout in text transfer	GA after 30 seconds After further 30 seconds BK and clear the call	Not applicable	GA after 30 seconds, after further 30 seconds 1) or 2) 1) BMC and disconnect 2) BK and clear the call					
(8) End of text transfer	++++ (EOT)	Not applicable		++++ (EOI)			Optional	
(8a) Optional end of message	Where a follow-on-facility is provided: NNNN or NNNNACK plus IMA		Provided			Provided		Provided
(9) Clearing	ITD and clear by IWF, preceded by MOM when ODA is provided	Normal clearing procedures		IMA and clear by CF. Options: ODA, ITL, folllow-on			MOM, ITD, answerback, clear by VTXCF	ITD, answerback, clear by FAXIWF
NOTE – See 4.3 for Notes.								

4.3 Notes to Table 2 and Table 3a

4.3.1 Note 1

The answerback of the calling telex subscriber is captured in accordance with Recommendation S.23 and processed in accordance with Recommendation U.74. If the answerback is not processable, the IWF (or SFU) waits five seconds to enable the telex subscriber to provide his telex address. After this five seconds the IWF (or SFU) sends an ADD prompt. If the telex subscriber does not provide his telex address within 15 seconds, the IWF (or SFU) sends another ADD prompt. If the telex subscriber fails again to input his telex address, the IWF (or SFU) disconnects.

When the calling telex subscriber provided his telex address he shall start to input the called address(es). If he does not start, the IWF (or SFU) sends a GA prompt after three seconds of idle condition.

4.3.2 Note 2

The column "General Scheme" contains the application of the elements of the access procedure for the majority of interworking situations. However, there are deviations, applicable to the specific service (or network). These deviations are listed in the columns for the single Recommendations.

It shall be noted that these deviations are necessary to interwork with the specific destination service (or network) and shall not be considered as violation of a general preferred method.

TABLE 3b/U.200

Optional address attributes for use with a two-stage IWF

Element	U.80	U.201	U.203	U.204	U.206	U.207
Multi-address	Yes	Yes		Yes		Yes
Service Identifier	e.g. TTX, VTX, ...					FAX
Expected answerback provision	Yes	TTX mnemon				
Attention information	Yes					Yes
Delayed Delivery Indication	Yes + Amount			Yes		
PDN request ('ACK)	Per address Per message	Per address		Per message		Per message
Disclosure of Recipient				Yes		
Call user data			Yes			

4.4 Use of a Status Enquiry Function

The procedure for the use of a Status Enquiry Function (SEF) is described in Recommendation U.220.

5 Text transfer

Due to the different network and service characteristics of the non-telex subscribers, three text transfer modes exist.

5.1 Description of text transfer modes

5.1.1 Real time

This mode applies for

- telex terminals connected to an ISDN (see Recommendation U.202);
- DTEs connected to a PSPDN (see Recommendation U.203);
- Intex (see Recommendations U.210 and S.34).

Unlike others, this type of interworking allows a conversational mode to be established between the connected terminals.

5.1.2 Store-and-forward

This mode applies for

- Teletex (see Recommendation U.201);
- Facsimile Group 3 (see Recommendation U.207).

The telex user sends his complete message to the IWF. As soon as the IWF recognizes the end of the message, the first forward attempt will be made. Conversational mode is not possible.

5.1.3 Store-and-retrieve

This mode applies for

- IPMS (see Recommendation U.204);
- DTEs connected to a PSTN (see Recommendation U.205);
- Videotex (see Recommendation U.206).

The telex user sends his complete message to the IWF. As soon as the IWF recognizes the end of the message, the message will be stored for the disposal of the addressee. Conversational mode is not possible.

5.2 Text transfer in a packet switched environment

A description of the text transfer between the international telex service and a packet switched environment can be found in the relevant U.200-Series Recommendations.

5.3 End of text transfer

See Table 2 and Table 3a.

6 Conformance to the international telex service

Details of compliance with the basic characteristics of the international telex service, as defined in Recommendation F.59, in the different interworking cases are listed in Table 4.

TABLE 4/U.200

Compliance with the characteristics of the international telex service in the different interworking cases

Reference in Rec. F.59		Communication from the international telex service to destination service/terminal via an IWF										
		Mode	Real-time mode				Store-and-forward mode			Store-and-receive mode		
		Destination service/terminal	TLX	DTE (PSPDN)	Intex	INM A/B	(TTX)	FAX	INM C	DTE (PSTN)	IPMS	VTX
		Applicable Recommendations	F.60 U.202	F.83 U.203	F.82 U.210	F.125 F.126	F.81 U.201	F.87 U.207	F.127 U.208	F.83 U.205	F.84 U.204	F.86 U.206
Telex characteristics	2	1. Direct communication between terminals	Y	Y	Y	Y	N	N	N	N	N	N
	2.1	2. Transmitted and received messages identical	Y	N (Note 1)	Y	Y	Y (Note 2)	Y	N (Note 1)	N (Note 1)	N (Note 1)	N (Note 2)
	2.2	3. ITA2-69 spacing characters/line	Y	N (Note 1)	Y	Y	Y (Note 2)	Y	N (Note 1)	N (Note 1)	N (Note 1)	N (Note 2)
	2.3	4. Half-duplex communication; distant terminal can interrupt transmission	Y	N (Note 1)	Y	Y	N	N	N	N	N	N
	2.6	5. Terminals continuously ready to receive	Y	N	N (Note 1)	Y	Y	N	N	N	N	N
	2.6	6. Printout in unattended mode	Y	N	N (Note 1)	Y	N	N	N	N	N	N
	2.7	7. Exchange of terminal identification at any stage of the call	Y	N (Note 3)	Y	Y	N	N	N	N (Note 3)	N	N
	2.8	8. Automatic printout on continuous paper at both ends	Y	N	N (Note 1)	Y	N	N	N	N	N	N
	2.9	9. Conversation character-by-character	Y	N (Note 4)	Y	Y	N	N	N	N	N	N
	3.4	10. Terminal identification protected from user access	Y	N (Note 3)	Y	Y	Y	N (Note 3)	N (Note 3)	N	N	N
	3.4	11. Chronological printout of answerback exchange with message	Y	N	N (Note 1)	Y	Y	N	N	N	N	N

Y Comply N Does not comply INM Inmarsat TTX Teletex FAX Group 3 facsimile
IPMS Interpersonal Messaging Service VTX Videotex DTE Data terminal equipment

NOTES

1 No CCITT definition of this terminal characteristic currently exists.

2 CCITT definition of terminal characteristic does exist. The telex subscriber can structure his message according to this definition. Deviations from telex characteristics are defined, namely, pagination and representation of ITA2 combinations 4 and 10 in figure case.

3 Provided by the IWF.

4 Text transfer takes place in packets.

7 Access to telex from other networks/services

7.1 Call set-up

If the calling non-telex terminal tries to communicate in real time mode with a telex terminal, it should be noted that some network providers may implement procedures which limit the time during which the calling terminal is awaiting the connect signal. This period is considered to be a national matter. Consequently, if such a non-telex terminal initiates a call attempt to a telex destination which does not return the call connect signal within this timeout period, then all call attempts to this destination will fail.

7.2 Text Transfer Phase

7.2.1 Real time

This mode applies to terminals connected to other networks, or users of other services, accessing terminals of the international telex service, as follows:

- Telex terminals connected to an ISDN (see Recommendation U.202);
- Intex terminals (see Recommendation U.210);
- DTEs connected to a PSPDN (see Recommendation U.203) or PSTN (see Recommendation U.203).

In the first two cases, text is transferred character-by-character; in the latter case, text is transferred character-by-character from the TPIWF towards the telex terminal following depacketizing of the data packets received from the PSPDN. Conversational mode is thus possible.

7.2.2 Store-and-forward

This mode applies in the case of message transfer from the following service users to terminals of the international telex service:

- Teletex terminals (see Recommendation U.201);
- IPM service users (see Recommendation U.204);
- Videotex service users (see Recommendation U.206).

In this scenario, the other service user sends his complete message to the IWF. At end of message detection, the IWF will establish the call to the addressed telex subscriber and deliver the complete message. Conversational mode is not possible.

Appended to the message will be a herald indicating the originating service and the recall address. This information is automatically provided by the IWF (see 7.3.2.3).

7.3 Handling of recall address

7.3.1 One-stage IWF

7.3.1.1 Telex-to-telex

In the case of one-stage IWF, the answerback sequence to be forwarded to the called telex subscriber at any stage of the call shall be the calling party's answerback formatted in accordance with Recommendation F.60.

7.3.1.2 Non-telex-to-telex

In the case of one-stage IWF, the answerback sequence to be forwarded to the called telex subscriber at any stage of the call shall be the calling party's answerback formatted in accordance with Recommendation F.74.

7.3.2 Two-stage IWF

7.3.2.1 Real time

7.3.2.1.1 Answerback

The answerback provided in response to a WRU signal in any phase of the call shall be either:

- the IWF answerback (according to Recommendation F.60) where the network does not provide the calling party's address; or
- the identification of the non-telex terminal (according to the relevant F-Series Recommendations). This is only possible when the network provides the calling party's address and consists of not more than 20 characters.

7.3.2.1.2 Recall address

The recall address consists of two parts:

- the telex address of the IWF, as part of a herald if necessary;
- the address of the originating non-telex terminal, as part of a herald if necessary.

NOTE – The address of the originating non-telex terminal may not be available in all networks.

7.3.2.2 Store-and-forward

7.3.2.2.1 Answerback

The answerback provided in response to a WRU signal in any phase of the call shall be the IWF answerback.

7.3.2.2.2 Recall address

The recall address consists of two parts:

- the telex address of the IWF;
- the address of the originating non-telex terminal, as part of a herald.

NOTE – The address of the originating non-telex terminal may not be available in all networks.

7.3.2.3 Heralds

Where a herald is to be provided to the telex side it shall contain:

- the text FOR RECALL, followed by the service address;
- the IWF answerback.

8 Clearing

The clearing procedures to be applied between the IWF and the telex network shall conform to the relevant U-Series Recommendations. It should be recognized however, that some clearing methods used by the non-telex terminal may introduce a probability of loss of characters. However, the IWF should be organized in such a way as to ensure as far as is practicable no degradation in the Quality of Service expected by the telex subscriber. In particular when clearing from the telex subscriber, the IWF should operate in such a manner as to ensure that all outstanding telex characters are forwarded.

The clearing methods to be applied when interworking with a packet switched environment are described in Recommendation U.203.

9 Notifications, Journals, Advise of Status

Where Notifications, Journals or Advise of Status are provided, the information to be given to the telex subscriber by the IWF or the SEF shall be in accordance with Recommendations F.80 and F.89.

10 Ineffective call attempts

The reaction of the IWF to ineffective call attempts shall be in accordance with the relevant U.200-Series Recommendations.

11 Reaction to abnormal conditions

The application of flow control and interruption of transmission in the international telex service shall be in accordance with Recommendations U.46 and S.4 respectively.

The reaction of the IWF to other abnormal conditions shall be in accordance with the relevant U.200-Series Recommendations.

12 Interworking by the use of a telex store-and-forward unit

Where a telex store-and-forward unit is provided, this unit may also accept addresses of non-telex terminals using the normal access protocol as defined in Recommendation U.80. A general model is shown in Figure 5.

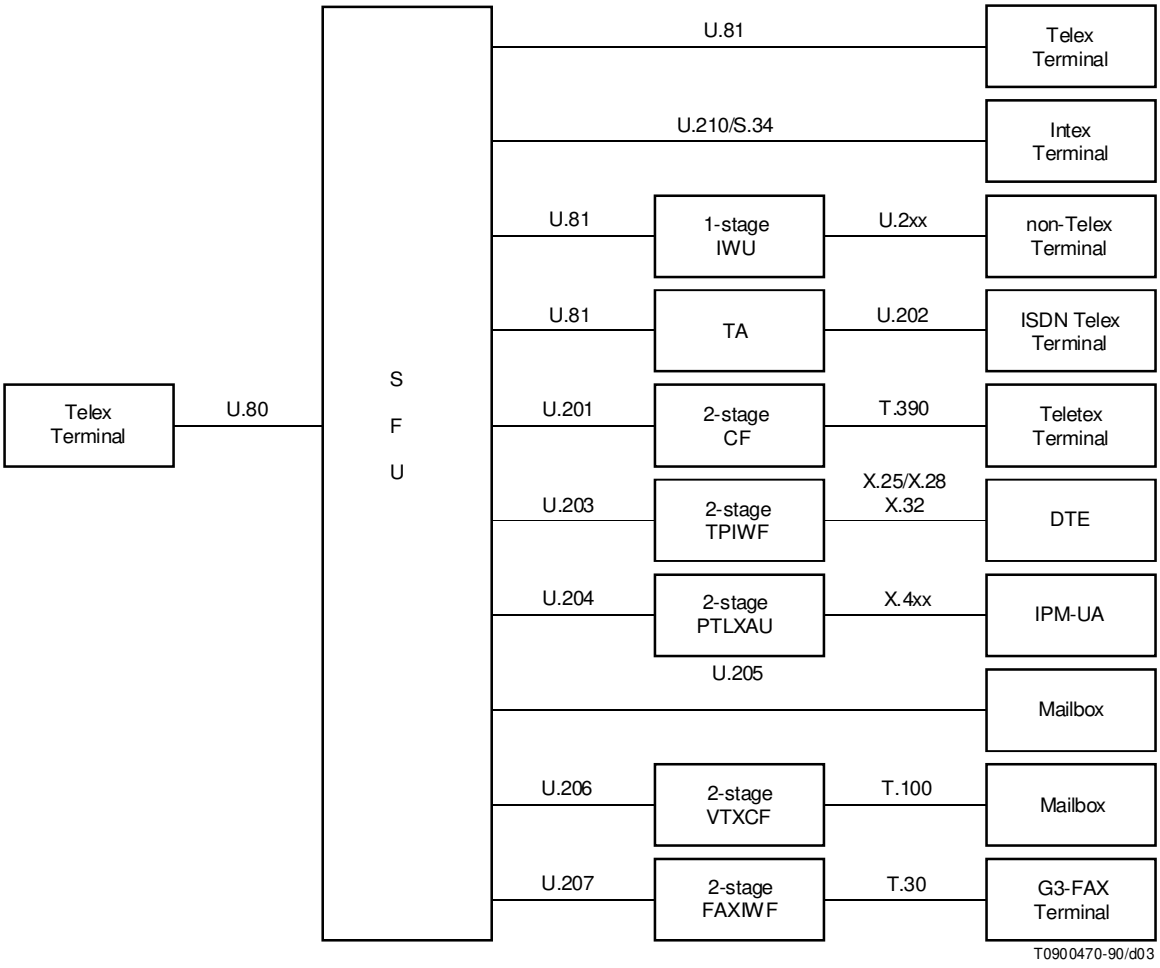


FIGURE 5/U.200

General model for the use of a telex store-and-forward unit for interworking

Annex A

General scheme for access protocols

(This annex forms an integral part of this Recommendation)

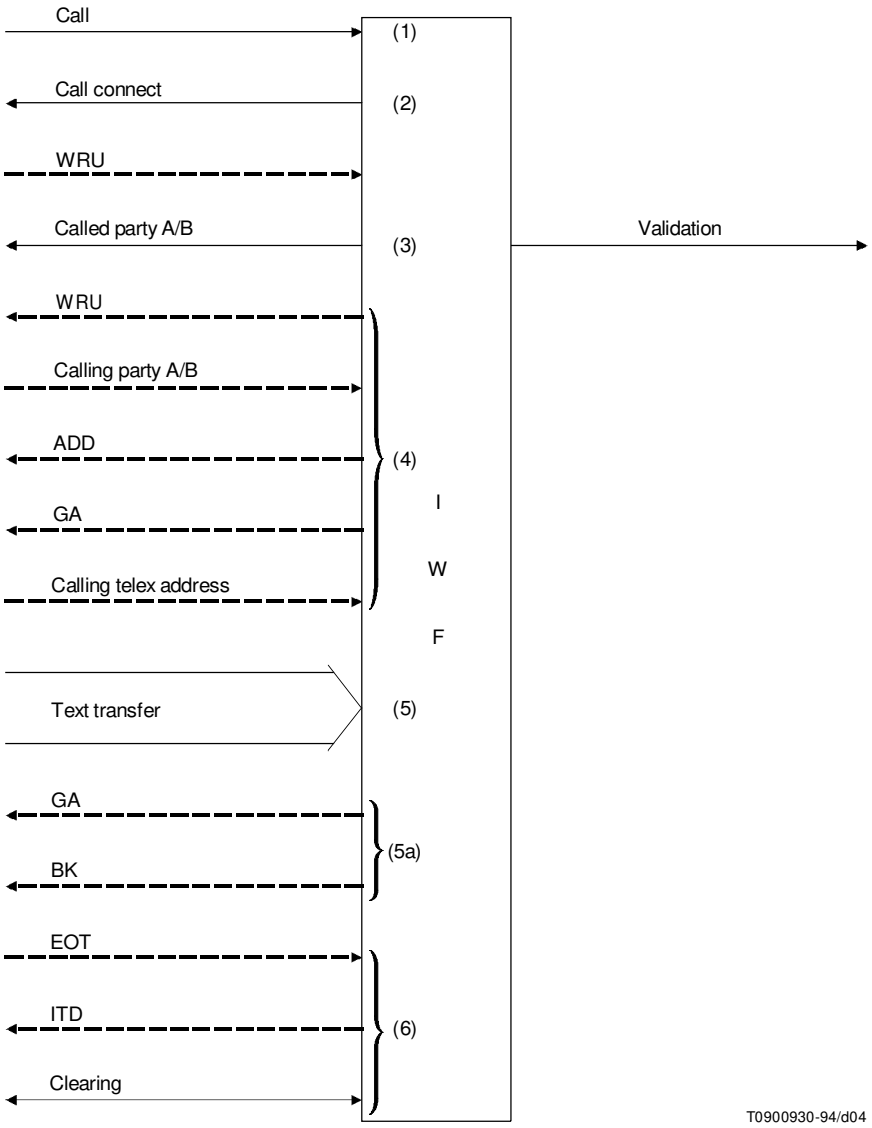


FIGURE A.1/U.200

General scheme for message transfer via a one-stage IWF

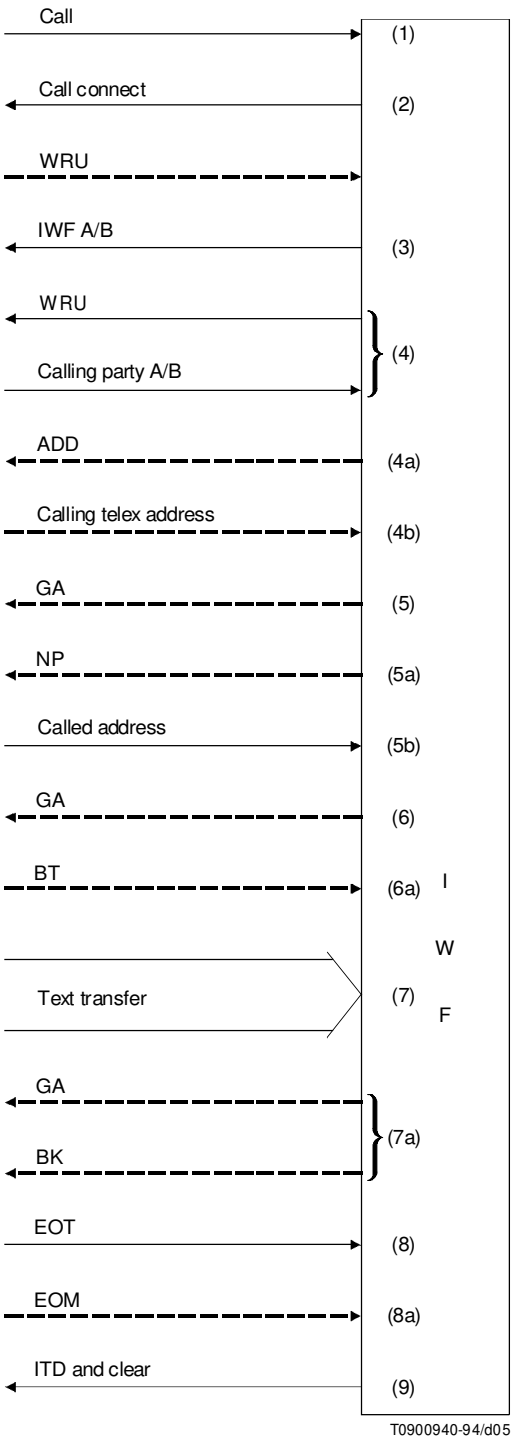


FIGURE A.2/U.200

General scheme for message transfer via a two-stage IWF