INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

U.81

(03/93)

TELEGRAPH SWITCHING

TELEX STORE AND FORWARD

INTERNATIONAL TELEX STORE-AND-FORWARD – DELIVERY TO A TELEX SUBSCRIBER

ITU-T Recommendation U.81

(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.81 was revised 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 Similarly, in this reform process, the CCIR and the IFRB have been replaced by the Radiocommunication Sector.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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CONTENTS

		Page
1	Scope	1
2	Definitions	2
3	Telex message forwarding procedures	2
4	Notification procedures	4
	4.1 General	4
5	Delivery re-attempt procedures	8
	5.3 Recorded message from called subscriber	9

INTERNATIONAL TELEX STORE-AND-FORWARD – DELIVERY TO A TELEX[1] SUBSCRIBER

(Malaga-Torremolinos, 1984; amended at Melbourne, 1988, and at Helsinki, 1993)

The CCITT,

considering

(a) that telex store and forward units exist and are being introduced increasingly into national networks;

(b) that delivery procedures differ significantly between different units;

(c) that a standard delivery procedure would be desirable for international working,

unanimously declares the view

that the international telex delivery procedure described in this Recommendation should be adopted for all future telex store and forward units.

1 Scope

1.1 This Recommendation outlines procedures for the delivery of international telex messages by a store and forward unit (SFU).

1.2 The Recommendation comprises the following:

1.2.1 Message forwarding procedure.

1.2.2 Delivery re-attempt.

1.2.3 Notification procedure.

1.3 The procedures detailed in this Recommendation specify the minimum requirement that should be provided by the telex SFU.

1.4 The procedures should apply to all classes of message delivery.

1.5 The priority and time of message delivery should be the responsibility of the telex SFU that has accepted the input message for delivery.

In the case of international interworking between telex SFUs, the priority and time of message delivery may be controlled by the originating or destination SFU, subject to bilateral agreement between the Administrations concerned.

1.6 This Recommendation is one of a series which defines telex store and forward services. These Recommendations are:

- Recommendation F.72 *The international telex service – General principles and operational aspects of a store-and-forward facility*.
- Recommendation U.80 *International telex store-and-forward – Access from a telex subscriber*.
- Recommendation U.81 *International telex store-and-forward – Delivery to a telex subscriber*.

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[1] Throughout this Recommendation, the term "telex" should be interpreted as referring exclusively to "the international telex service" as described in Recommendations F.59 and F.60.

2 Definitions

2.1 The term **delivery of messages** applies to the forwarding of messages input into a telex SFU by an originating telex subscriber to a destination telex subscriber over an international telex network.

2.2 The term **notification** applies to the forwarding of an advice of delivery/non-delivery of a message to the originating telex subscriber over an international telex circuit.

3 Telex message forwarding procedures

3.1 The sequence of the message forwarding procedure components are illustrated in Figures 1 and 2.

3.2 The components of message forwarding procedures are as follows:

3.2.1 Call set-up

Call set-up is the establishment of a connection by an SFU over the telex network up to and including the receipt of the call connect signal.

In the event of an unsuccessful call set-up attempt, action shall be taken in accordance with clause 5.

3.2.2 Called subscriber answerback validation

3.2.2.1 To ensure security of delivery the answerback of the called subscriber should be compared with the anticipated answerback of the called subscriber, if supplied by the originating telex subscriber.

3.2.2.2 The evaluation procedure is given in Recommendation U.75.

3.2.3 Store and forward unit identification

The telex SFU identification shall comprise:

- the service code CI;
- an indication that the call is from a telex SFU;
- the date and time of transmission (optional).

3.2.4 Message identification

The telex SFU should transmit to the called subscriber a message identification sequence comprising:

a) the message reference as allocated and advised to the originating subscriber at the time of input of the telex message for onward delivery;

b) the date and time of message input as issued to the originating telex subscriber in accordance with Recommendation U.80.

3.2.5 Answerback of originating telex subscriber

The telex SFU shall transmit to the called subscriber the answerback of the originating subscriber as received at the time of message input.

3.2.6 Message text

3.2.6.1 The telex SFU should transmit to the called subscriber any message header information together with the stored message in the format in which it was originated by the calling subscriber.

3.2.6.2 The EOM/EOT separators and WRU signal shall not be transmitted.

3.2.6.3 If any signal is received on the backward path during the message text delivery, transmission of the message text shall be stopped for 2 seconds. If during that time further signals or a clearing condition is received, the call shall be cleared and the message delivery deemed unsuccessful, and action taken in accordance with 5.4. If no further signals are seen on the backward path during that time, transmission of the message text shall be resumed.

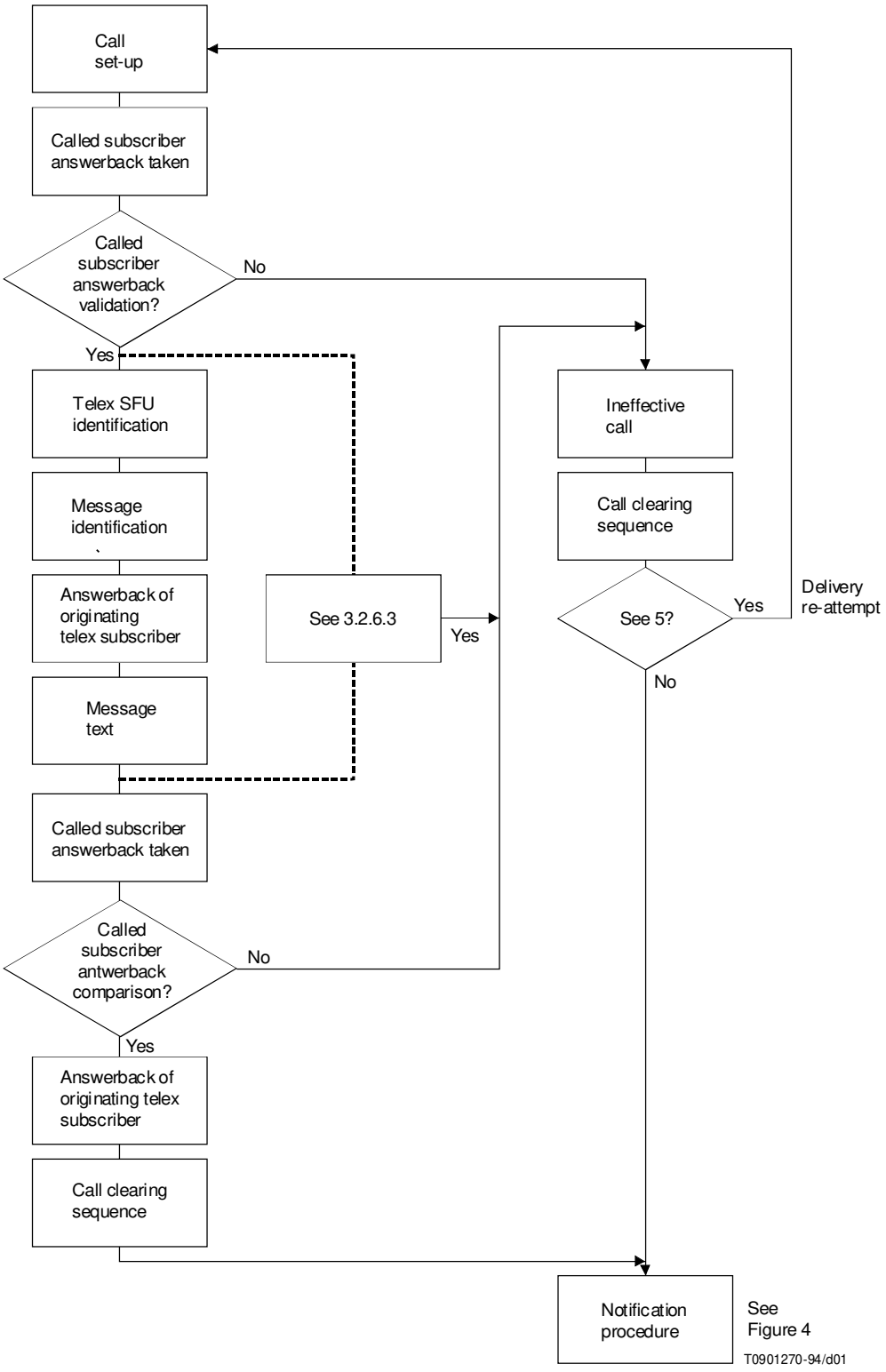
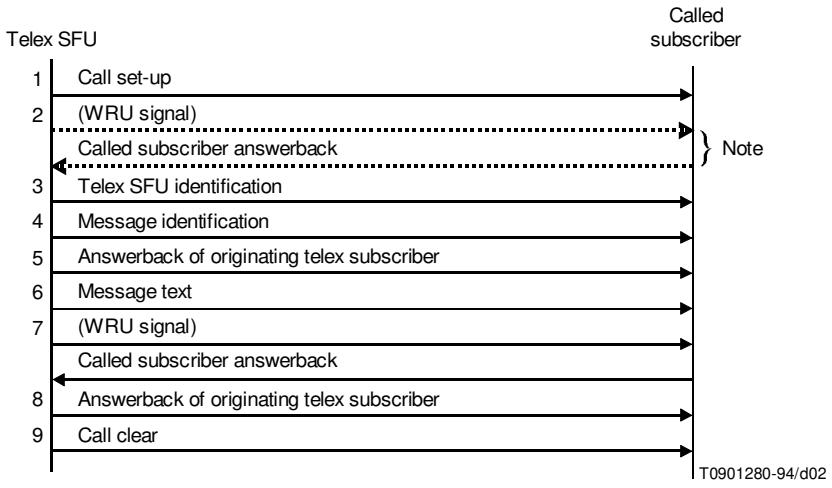


FIGURE 1/U.81

Telex message forwarding procedure



NOTE – Optional answerback capture if not available from Step 1.

FIGURE 2/U.81

Sequence of events for telex message forwarding procedure

3.2.7 Called subscriber answerback comparison

3.2.7.1 The answerback of the called subscriber shall be taken and compared with that received at the start of message delivery.

3.2.7.2 In the event of a mismatch of answerbacks, the answerback of the called subscriber shall be taken once again, and if there is a match with that received at the start of message delivery, the delivery of the message shall be deemed successful. If there is a second mismatch, the delivery of the message shall be considered as unsuccessful, and further delivery attempts shall be made in accordance with 5.4.

3.2.8 Answerback of originating telex subscriber

The answerback of the originating subscriber, as per 3.2.5, shall then be sent to the called subscriber.

3.2.9 Call clearing sequence

The SFU should clear the call using normal telex clearing procedures.

4 Notification procedures

4.1 General

4.1.1 The advice of non-delivery shall be provided. It should preferably include the list of addresses rejected at the time of address validation.

4.1.2 The advice of delivery over an international telex circuit may be provided subject to bilateral agreement between the Administrations concerned.

4.1.3 Information concerning delivery/non-delivery of messages should be stored and kept available for enquiries from the originator for a pre-defined period of at least 72 hours.

4.1.4 Notification of message delivery/non-delivery may be on a “per message” or “per address” basis.

This Recommendation assumes that notification will be returned on a “per message” basis.

The provision of a periodic (e.g. daily) notification or journal shall be considered an acceptable form of notification. For a typical, acceptable journal format see Figure 3.

4.2 The sequence of notification forwarding procedure components are illustrated in Figures 4 and 5.

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421000Z UIT CH

CI SFU CH

TO: 421000 UIT CH

HERE IS YOUR JOURNAL FOR 09 APR 1992

REF	CALLED	ANSWERBACK	TOD	DURATION
12345	080271666	71666 HKTEL HX	1005	3.1
12987	051261848	261848 THQPH G	1043	2.1
36365	07222500	KDD TOKYO J22500	1240	1,8
36365	0230652464	TRANS A LSA	1240	1.9
36365	02105827847	CDN MARCO MTL	2045	1.8
36365	423635	423635 HERTZ CH	–ABW	CANCELLED
41696	07514899	14899 CWI HQ PS	1633	6.0
89635	090522222		–ABS	PENDING
89777	023232323	232323 RCAEX UR	1731	1.6
89900	02105566412		–DER	CANCELLED
23451	FAX 33173701660		1010	3.0
				————
TOTAL MINS				21.3

TOD 1992 04 10 0401

SFU CH ✠

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FIGURE 3/U.81

Typical journal format

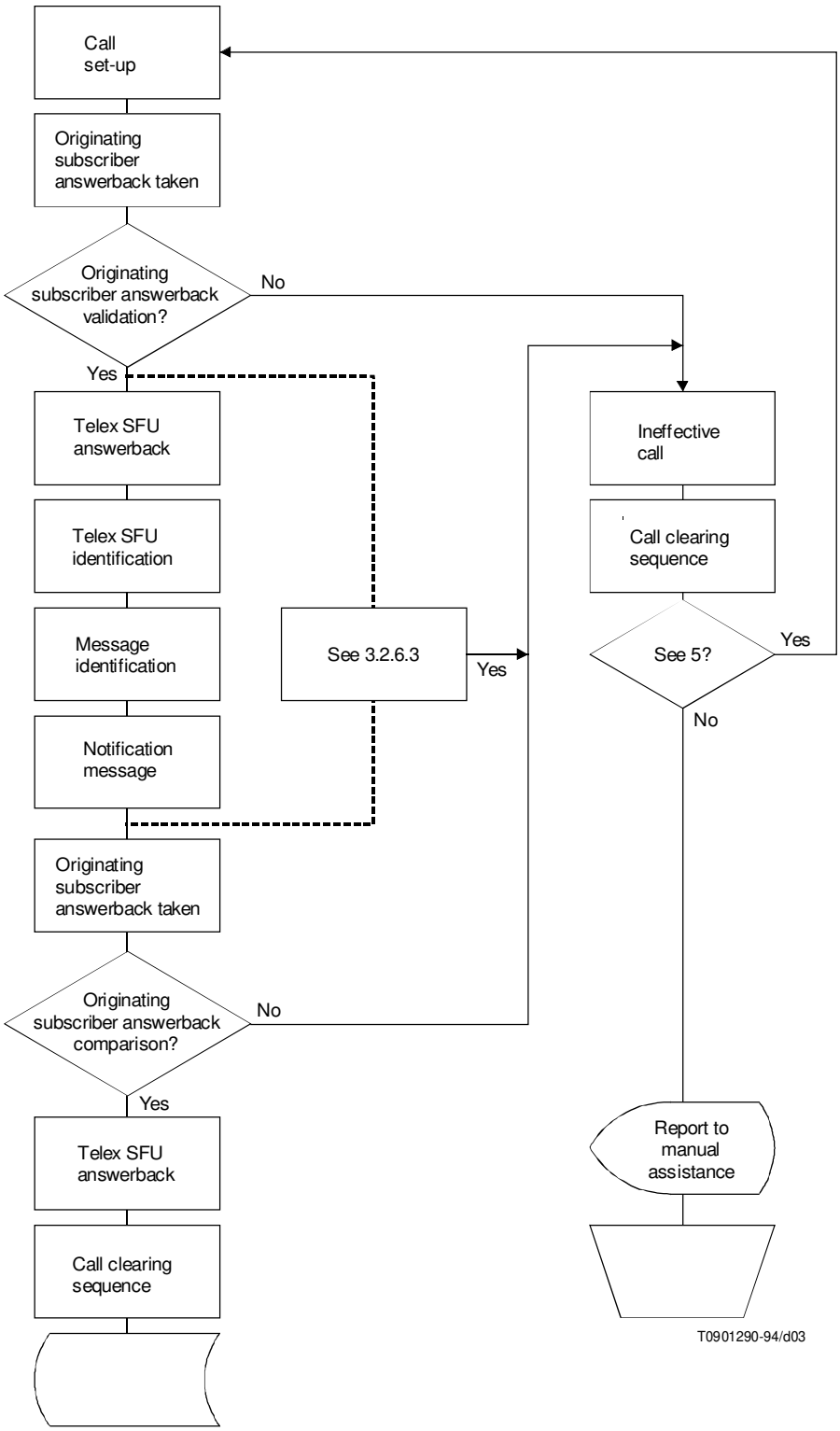
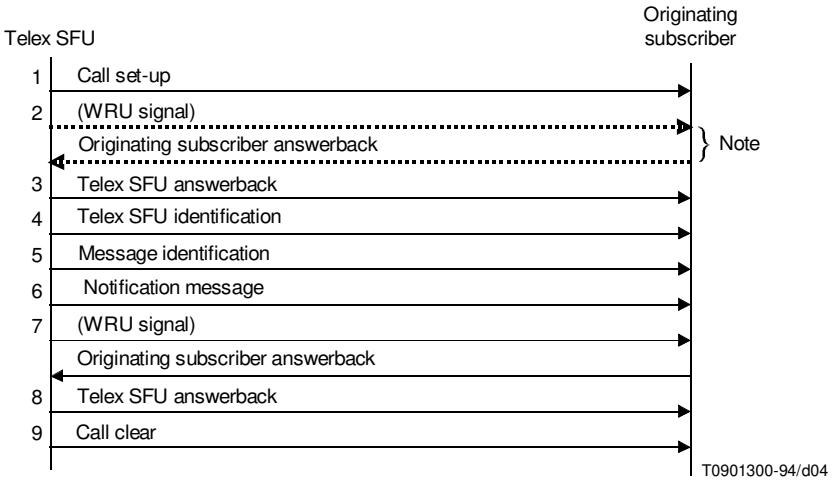


FIGURE 4/U.81

Notification procedure



NOTE – Optional answerback capture if not available from Step 1.

FIGURE 5/U.81

Sequence of events for notification procedure

4.3 The components of notification forwarding procedure are as follows:

4.3.1 Call set-up

The call set-up should be in accordance with 3.2.1.

4.3.2 Originating subscriber answerback validation

4.3.2.1 To ensure security of delivery of the notification, the answerback of the originating telex subscriber is taken and compared with the answerback taken from the subscriber at the time of message input.

4.3.2.2 The evaluation procedure is given in Recommendation U.75.

4.3.3 Store and forward unit answerback

The answerback of the telex SFU shall be transmitted to the called subscriber.

4.3.4 Store and forward unit identification

The telex SFU identification shall be transmitted as per 3.2.3.

4.3.5 Message identification

The telex SFU shall transmit to the called subscriber the message identification sequence issued at the time of input of the message.

The format of the message identification should be in accordance with 3.2.4.

4.3.6 Notification message

The notification advice may comprise for each applicable address of a single or multi-address message the following:

(See Figure 6 for example of suggested format.)

Example of Delivery Advice		
5519751	19751 MIPEN DK	Address – Expected A/B
DELIVERED	19751 MIPEN DK	Advice – Received A/B
18:00	01M 20S	Time of Delivery – Duration
Example of Non-Delivery		
5519751	19751 MIPEN DK	Address – Expected A/B
NOT DELIVERED		Advice – Received A/B
		(See Note)
OCC	4	Reason – No. of Attempts.

NOTE – Only used if incorrect answerback is reason for non-delivery.

FIGURE 6/U.81

4.3.6.1 Non-delivery advice

- Selection information (telex address).
- Expected answerback (as provided at message input).
- Notification, i.e. “NOT DELIVERED”.
- Received answerback (if applicable).
- Reason for non-delivery.
- Number of attempts.

4.3.6.2 Delivery advice

- Selection information (telex address).
- Expected answerback (as provided at message input).
- Notification, i.e. “DELIVERED”.
- Received answerback.
- Date and time of delivery.
- Duration of call.

4.3.7 Called subscriber answerback validation

4.3.7.1 Answerback comparison of the called subscriber shall be in accordance with 3.2.7.

4.3.8 Telex SFU answerback

The answerback of the SFU shall be transmitted to the called subscriber.

4.3.9 Call clear

The calling telex SFU should clear the call using normal telex procedures.

5 Delivery re-attempt procedures

5.1 The principles of Recommendation U.40 shall be applied for all delivery/notification re-attempt requirements.

5.2 If the service signal RDI or NCH is received during call set-up more than once in any one message delivery/notification attempt cycle, the message shall be considered undeliverable.

5.3 Recorded message from called subscriber

5.3.1 If the recorded message is followed by clear, the message shall be considered undeliverable.

5.3.2 Action to be taken by the telex SFU if the recorded message is not followed by clear, needs further study.

5.4 In the failure of an established connection per cases mentioned in 3.2.6.3 or 3.2.7.2 above, one further attempt to deliver the message may be made after an interval of at least 3 minutes; in this case the message text shall be preceded by POSSIBLE DUPLICATE MESSAGE.

5.5 The action to be taken when a notification cannot be delivered should be the responsibility of the Administration offering the telex SFU service and is a national matter.