INTERNATIONAL TELECOMMUNICATION UNION

# ITU-T U.206

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

(03/93)

## TELEGRAPH SWITCHING
## INTERNATIONAL TELEX SERVICE

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# TECHNICAL REQUIREMENTS FOR INTERWORKING BETWEEN THE INTERNATIONAL TELEX SERVICE AND THE VIDEOTEX SERVICE

## ITU-T Recommendation U.206

(Previously "CCITT Recommendation")

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

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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 Similarly, in this reform process, the CCIR and the IFRB have been replaced by the Radiocommunication Sector.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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# TECHNICAL REQUIREMENTS FOR INTERWORKING BETWEEN THE INTERNATIONAL TELEX SERVICE AND THE VIDEOTEX SERVICE

*(Helsinki, 1993)*

## 1 Introduction

**1.1** This Recommendation defines the technical requirements for interworking between the International Telex Service and the Videotex service, using a Telex/Videotex Conversion Facility (VTXCF).

**1.2** Other relevant Recommendations are:

- F.59, F.60, F.69 and other F-Series Recommendations on the International Telex Service aspects;
- F.80 on general service aspects for interworking with the International Telex Service;
- F.300 on Videotex service aspects;
- U.200 on general technical aspects for interworking with the International Telex Service;
- other U-, R- and S-Series Recommendations on switching, terminal and transmission aspects of the International Telex Service;
- T-Series Recommendations on Videotex technical aspects.

## 2 Basic interworking service

### 2.1 General

Interworking between the telex and the Videotex service requires storage in both directions. The location of the storage, necessary for interworking is a national matter.

The telex-to-Videotex direction is described in clause 3 and the Videotex-to-telex direction is described in clause 4.

### 2.2 Access methods for interworking

The following methods to access the Videotex service from the telex service can be provided:

a) one-stage selection is described in 3.1;

b) two-stage selection is described in 3.2.

**2.3** The method of interworking is in the telex-to-videotex direction normally based on store-and-retrieve principles.

For calls in the Videotex-to-telex direction store-and-forward principles apply.

**2.4** It is the responsibility of the VTXCF to perform the following conversions:

- service procedures;
- transmission rate;
- code (see Note);
- line length;
- insertion of necessary control characters (figure-shift, letter-shift, carriage return, line feed).

NOTE – In the videotex-to-telex direction, the videotex terminal (or the user) shall restrict each message to the character repertoire of ITA2. However, where the VTXCF receives characters out of the ITA2 repertoire, these characters shall be converted in accordance with Recommendation S.18.

**2.5** The service requirements are described in Recommendation F.86.

# 3 Telex-to-Videotex direction

## 3.1 One-stage selection

The procedure to be used is the same as for a normal telex call.

Figure 1 and the appending notes show the procedure in detail.

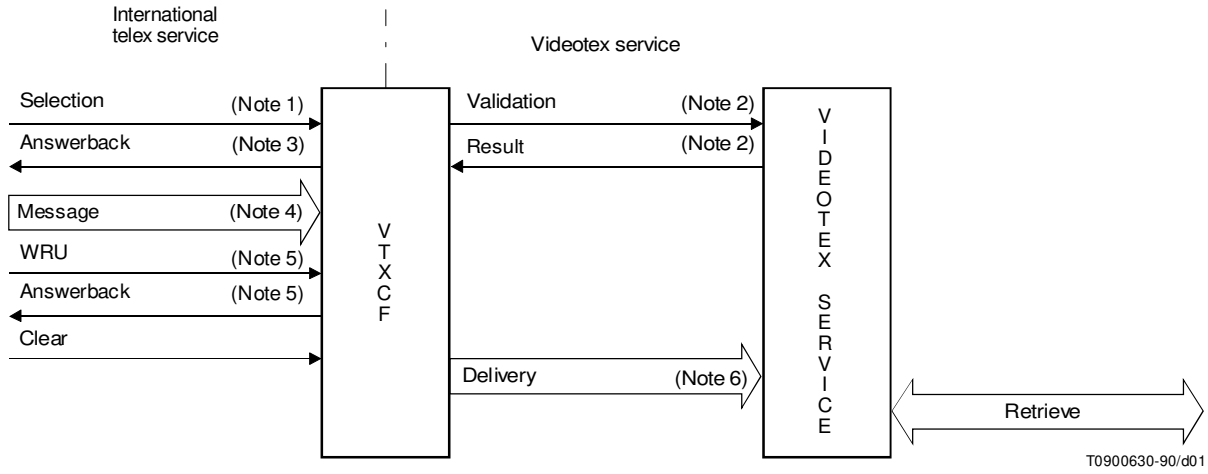


FIGURE 1/U.206

**One-stage selection procedure**

### 3.1.1 Note 1 to Figure 1

The total selection information (including the F.69 destination code and a possible national CF-prefix) for the videotex address shall not consist of more than 12 digits.

This requires the registration of each videotex user who wants to communicate with telex subscribers and assign to him a telex number.

### 3.1.2 Note 2 to Figure 1

Validation is done in the videotex service or in the VTXCF (at the point of registration) to get the following information:

- if the selection corresponds to a videotex user;
- status of the videotex user (could be "ABS" on a registration basis).

If the validation fails, the VTXCF shall return the service signal NP and clear the call.

In case the videotex user is in a registered "not ready" condition, the VTXCF shall return the appropriate service signal (in accordance with Recommendation U.45) to the calling telex subscriber and clear the call.

A positive validation result provides the necessary information for the individual videotex users answerback.

### 3.1.3 Note 3 to Figure 1

The answerback code allocated to the videotex user shall be in accordance with Recommendation F.74 and shall contain the complete national call number.

The "abbreviated name" of the answerback could be either:

– registered for each videotex user; or

– "VTX".

### 3.1.4 Note 4 to Figure 1

After provision of the called answerback the caller may commence transmission. See Annex A (abnormal conditions) for the reaction of the VTXCF to characters and character strings which are not possible to be displayed on the videotex side.

### 3.1.5 Note 5 to Figure 1

If the telex subscriber sends a WRU signal in any stage of the message input the VTXCF shall return the answerback allocated to the videotex user as in 3.1.3 above.

### 3.1.6 Note 6 to Figure 1

After reception of the clearing signal (normal clearing procedures), the VTXCF makes the message available for retrieval.

A notification with the information about the presence of a received telex message should be provided to the videotex user as soon as he logs-in to this service.

### 3.1.7 Note 7 to Figure 1

The VTXCF may be part of the Videotex service.

## 3.2 Two-stage selection

Interworking in the telex-to-videotex direction, using two-stage selection, is described in Figure 2 and the appending notes.

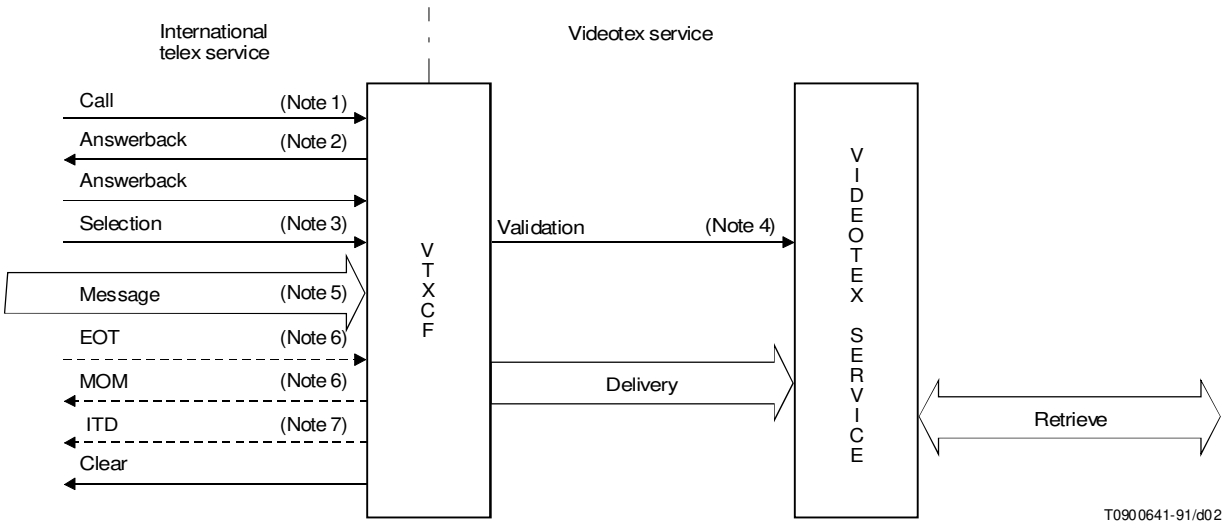


FIGURE 2/U.206

**Two-stage selection access to a Telex/Videotex Conversion Facility (VTXCF)**

### 3.2.1 Note 1 to Figure 2

Normal telex procedures apply for call set-up.

### 3.2.2 Note 2 to Figure 2

Coding of the VTXCF answerback is the following:

"Figs", "CR", "LF", VTXCF National Number, "Lttrs","SP",VTXCF, "SP", 0

0 means the TNIC, e.g. "A" for Austria.

To be filled with "Lttrs" according to Recommendation F.60.

Example: 751200 vtxcf a.

If the national telex number of the VTXCF exceeds 6 or 7 digits, the mnemonic part of the answerback may be reduced to VTX.

A WRU signal may be sent in accordance with Recommendation S.23.

### 3.2.3 Note 3 to Figure 2

The preferred selection input format is:

"CR","LF",National address of the videotex user,"+".

"CR","LF" is optional input.

If selection input does not commence within three seconds the VTXCF shall return the service code GA.

### 3.2.4 Note 4 to Figure 2

Validation is done by confirming the existence of the called address. The maximum duration for this validation is three seconds.

A positive validation result is not reflected to the telex subscriber.

### 3.2.5 Note 5 to Figure 2

The telex subscriber should start the message input after the address input. If the validation result (see 3.2.4) is negative, the VTXCF shall stop the message input by sending a sequence of "TTT..." characters, followed by an "NP" service signal. If the telex subscriber does not stop transmission, the VTXCF shall disconnect.

See Annex A (abnormal conditions) for the situation where text input does not commence or is interrupted, and for the reaction of the VTXCF to characters or character strings which are not possible to be displayed on the videotex side.

### 3.2.6 Note 6 to Figure 2

The VTXCF should consider a sequence of four times "+" (++++) as End of Transaction (EOT).

Alternatively, the telex subscriber should exchange answerbacks and clear.

### 3.2.7 Note 7 to Figure 2

In case the telex subscriber used EOT, an ITD in the form of "ITD – MESSAGE STORED" is sent to the telex subscriber after completion of the transaction to the videotex data base.

## 4 Interworking in the Videotex-to-telex direction

The videotex service user may send a message to a terminal connected to the telex network in accordance with the principles contained in Recommendation F.300. The method of depositing a message on the part of the videotex service user for delivery to telex is a national matter.

### 4.1 Delivery procedure to telex from a one-stage Telex/Videotex Conversion Facility (VTXCF)

A message, received from a videotex user, shall appear like a normal telex message to the telex subscriber.

Figure 3 and the appending notes show the procedure in detail.

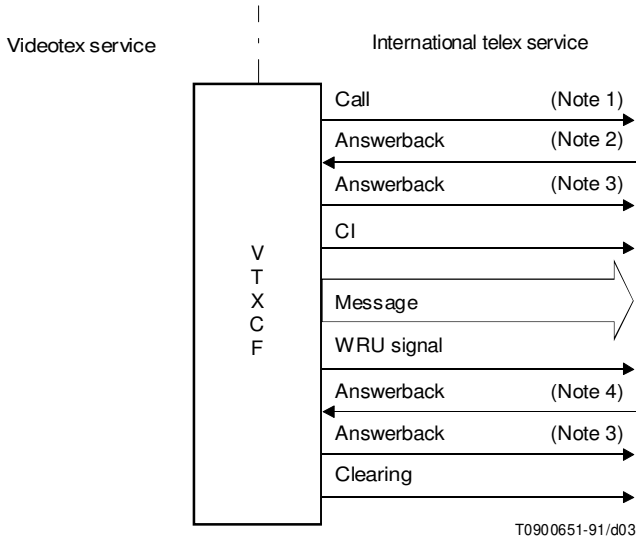


FIGURE 3/U.206

**Delivery procedure to telex from a one-stage Telex/Videotex Conversion Facility (VTXCF)**

#### 4.1.1 Note 1 to Figure 3

Call establishment is done using normal telex procedures.

#### 4.1.2 Note 2 to Figure 3

The telex answerback shall be evaluated in accordance with Recommendation U.75.

If the evaluation leads to a negative result, the VTXCF shall disconnect and consider the delivery attempt as unsuccessful.

If the call is unsuccessful, reattempts shall be made in accordance with Recommendation U.40, up to a limit of two hours total.

#### 4.1.3 Note 3 to Figure 3

See 3.1.3.

#### 4.1.4 Note 4 to Figure 3

The answerback received shall be compared with the one in Note 2. In case of a mismatch, a second WRU signal is sent to receive the answerback of the called subscriber again. If there is again a mismatch, the delivery attempt is considered as unsuccessful.

A header "POSSIBLE DUPLICATE MESSAGE" shall be added to the message for subsequent delivery:

- if interruption occurred during transmission of the message;
- if backward keying occurred during transmission of the message;
- if the final answerback was different from the one received at the beginning of the call.

### 4.2 Delivery procedure to telex from a two stage Telex/Videotex Conversion Facility (VTXCF)

The procedure is the same as described in 4.1 with the following exceptions:

- the answerback provided to the telex side shall be the VTXCF answerback as escribed in 3.2.1;
- a herald, indicating the source of the message and the recall address should be added at the beginning of the message in accordance with Recommendation F.86.

### 4.3 Notifications to the Videotex user

**4.3.1** The VTXCF shall generate notifications and shall make them ready for retrieval by the Videotex user in both cases:

- successful delivery;
- unsuccessful delivery.

**4.3.2** Notification messages should include at least the following information

- message reference number;
- date/time of notification;
- requested telex address (selection);
- received telex answerback (also, if applicable, in case of non-delivery);
- expected telex answerback;
- date/time of delivery or date/time of final delivery attempt, as relevant;
- duration and charge (optional);
- reason for non-delivery of telex message, if applicable (e.g. received telex service signal, answerback check failure).

**4.3.3** The format of the notification and the method of the return to the videotex user is a national matter.

## Annex A

## Reactions to abnormal conditions during text input from telex

(This annex forms integral part of this Recommendation)

### A.1 The telex subscriber pauses during input of address information (applicable for two-stage access only)

If there is a delay greater than 15 seconds before starting the address input or between any characters within the address input, the VTXCF shall return an "NP" service message and clear.

### A.2 The telex subscriber pauses during or before input of his message

a) If there is a delay greater than 30 seconds before starting the message input the VTXCF shall send a "GA" prompt to the telex subscriber. If there is no text input for another 30 seconds the VTXCF shall clear the call with the service code BK.

b) If there is a pause of 30 seconds within the message input the VTXCF shall send a "GA" prompt to the telex subscriber. If there is no further text input for another 30 seconds the VTXCF shall clear the call in the telex direction with the service code BK and make the message ready for retrieval.

### A.3 The telex subscriber sends a WRU signal to the VTXCF during text input

a) In case of one-stage access this is not considered as an abnormal condition (see 3.1.5).

b) In case of two-stage access, the VTXCF shall return its own answerback. The WRU signal and the VTXCF answerback shall not be part of the message, made ready for retrieval.

### A.4 The telex subscriber sends text after an End Of Transaction (EOT) signal (applicable for two-stage access only)

Any characters received after the End Of Transaction (EOT) signal will be ignored. The VTXCF shall use the "TTT..." characters to stop the telex transmission,

- if the telex subscriber stops input, the VTXCF shall send the Input Message Acknowledgement (IMA) signal followed by clearing;
- if the telex subscriber does not stop input, the VTXCF shall clear.

In both cases the message shall be made ready for retrieval.

### A.5 The telex subscriber clears after an End Of Transaction (EOT) signal before he receives the Input Message Acknowledgement (IMA) signal (applicable for two-stage access only)

The message shall be made ready for retrieval.

### A.6 The telex subscriber sends combinations 6, 7 or 8 in figure case

The VTXCF shall either:

- ignore these characters; or
- replace them by non-ITA2 characters (e.g. "*").

The choice between these two options is a national matter.

### A.7 The telex subscriber sends combination 10 in figure case ("BELL")

The VTXCF shall either:

- ignore, in case other characters follow; or
- return a "CI".

## A.8 Storage capacity overflow in the VTXCF

a) In order to avoid memory overflow during message input, a guaranteed message length of 24,000 characters is defined.

b) The VTXCF shall disconnect (returning an "NC" service signal when possible) if less than 24,000 characters of memory are available for this message.

c) If a message exceeds 24,000 characters the VTXCF shall continue acceptance if storage is available.

d) If the number of characters received by the VTXCF during a message input exceeds the available storage, the VTXCF shall discard the excess characters. The VTXCF shall attempt to stop further input by sending "TTT..." characters,

- if the telex subscriber stops transmission the VTXCF shall return "LDE" (followed by "IMA" in case of two-stage access);
- if the telex subscriber does not stop transmission, the VTXCF shall clear.

In both cases the VTXCF shall make the message ready for retrieval.