INTERNATIONAL TELECOMMUNICATION UNION

# ITU-T

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STANDARDIZATION SECTOR
OF ITU

# T.30

**Amendment 2**
(11/2000)

SERIES T: TERMINALS FOR TELEMATIC SERVICES

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# Procedures for document facsimile transmission in the general switched telephone network

## Amendment 2

ITU-T Recommendation T.30 – Amendment 2

(Formerly CCITT Recommendation)

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**ITU-T Recommendation T.30**

# Procedures for document facsimile transmission in the general switched telephone network

AMENDMENT 2


## Summary

This amendment covers the introduction of the following features:

- definition of new values of the K factor to reflect the introduction of higher resolutions;
- a new bit in DIS/DCS to indicate connection to a 3rd Generation Mobile Network;
- a new bit in DIS/DCS to indicate Internet aware capabilities associated with the use of ITU-T 38;
- flow control capabilities;
- use of ANSam with phase reversals;
- new Annex K on extended negotiations.



## Source

Amendment 2 to ITU-T Recommendation T.30 was prepared by ITU-T Study Group 16 (2001-2004) and approved under the WTSA Resolution 1 procedure on 17 November 2000.

## FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. 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 Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

## NOTE

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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As of the date of approval of this Recommendation, ITU had received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementors are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database.

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- a new bit in DIS/DCS to indicate connection to a 3rd Generation Mobile Network;
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- flow control capabilities;
- use of ANSam with phase reversals;
- new Annex K on extended negotiations.

## 1) Amend Table 2 as follows:

## 1.1) Add new bits as shown below:

| Bit No. | DIS/DTC | Note | DCS | Note |
|---|---|---|---|---|
| 4 | ~~Reserved~~ 3rd Generation Mobile Network | ~~1~~A | ~~Reserved~~ 3rd Generation Mobile Network | ~~1~~A |
| X | Flow Control Capability for T.38 communication | B,C | Flow Control Capability for T.38 communication | B,C |
| X+1 | K>4 | D | K>4 | D |
| X+2 | Internet aware T.38 mode fax device capability | E | Internet aware fax device operating in T.38 mode | F,G |
| 116 | T.45 (run length colour encoding) | AA | T.45 (run length colour encoding) | AA |
| 117, 118 | SharedDataMemory capacity | 70 | SharedDataMemory required | 70 |
| (0,0) | Not available | | Not Used | |
| (0,1) | Level 1 = 1.0 Mbytes | | Level 1 = 1.0 Mbytes | |
| (1,0) | Level 2 = 2.0 Mbytes | | Level 2 = 2.0 Mbytes | |
| (1,1) | Level 3 = unlimited (i.e. ≥32 Mbytes) | | Level 3 = unlimited (i.e. ≥32 Mbytes) | |
| y, y+1, y+2 | T.89 (Application profiles for ITU-T T.88) | AA, BB | T.89 (Application profiles for ITU-T T.88) | AA, AB |
| (0,0,0) | Not used | | Not used | |
| (0,0,1) | Profile 1 | | Profile 1 | |
| (0,1,0) | Profile 2 | | Profile 2 | |
| (0,1,1) | Profile 3 | | Profile 3 | |
| (1,0,0) | Profiles 2 and 3 | | Invalid | |
| (1,0,1) | Reserved | | Reserved | |
| (1,1,0) | Reserved | | Reserved | |
| (1,1,1) | Reserved | | Reserved | |

**1.2) Add new Notes to read as follows:**

A: Bit 4 set to "1" indicates 3rd Generation Mobile Network Access to the GSTN Connection. Bit 4 set to "0" conveys no information about the type of connection.

B: Bit X can only be set in the communication through the T.38 gateway to cope with delay of network.

C: T.x timer (12±1 sec) should be used after emitting RNR or TNR, however, after receiving PPS signal in ECM mode, T.5 timer should be used.

D: For resolutions greater than 200 lines/25.4 mm, 4.2.1.1/T.4 specifies the use of specific K factors for each standardized vertical resolution. To ensure backward compatibility with earlier versions of ITU-T T.4, bit X+1 indicates when such K factors are being used.

E: This bit should be set to "1" if the fax device is an Internet-Aware Fax Device as defined in ITU-T T.38 and if it is not affected by the data signal rate indicated by the DIS and DTC signals when communicating with another Internet-Aware Fax Device operating in ITU-T T.38 mode. This bit shall not be used in the GSTN mode.

F: This bit should be set to "1" if the fax device elects to operate in an Internet-Aware Fax mode as defined in ITU-T T.38 in response to a device which has set the related DIS bit to "1".

G: When this bit is set to "1", the data signal rate of the modem (bits 11-14) should be set to "0".

AA: In a DIS/DTC frame, bit 116 is valid only when:

1) bit 68 is set to "1" (i.e. JPEG);

2) the value of bits 92 through 94 is set to "4" or greater (i.e. unconstrained colour T.44 "Mixed Raster Content (MRC)" Mode 4 is available); and

3) the value of bits y through y + 2 is set to 2 or 4 (i.e. JBIG2 Profile 2 is available).

The value of bits 117 through 118 is typically non-zero (i.e. SharedDataMemory is available for symbol dictionaries). In a DCS frame, bit 116 is valid only when:

1) the value of bits 92 through 94 is set to "4" or greater (i.e. unconstrained colour MRC Mode 4 is being used);

2) the value of bits y through y + 2 is set to 2 (i.e. JBIG2 Profile 2 is being used); and

3) the value of bits 117 through 118 is typically non-zero (i.e. the data stream requires SharedDataMemory for storage of symbol dictionaries).

BB: In a DIS/DTC frame, setting the value of bits y through y + 2 to "0" indicates that the called terminal does not have the capability to accept T.89 profiles of JBIG2 (ITU-T T.88). Setting the value of bits y through y + 2 to non-zero (>0) indicates that the called terminal does have the capability to accept JBIG2 encoded pages. Each of the non-zero values of bits y through y + 2 represents a different level of JBIG2 profile support. Support for Profile 1 is mandatory for all JBIG2 implementations. In other words, implementations of profile(s) greater than Profile 1 will also include support for Profile 1, although the Profile 1 bit is not activated. Interpretation of the profiles is defined in ITU-T T.89 (Application Profiles for ITU-T T.88). Bits y through y + 2 are valid only when bits 92 through 94 comprise a value equal or greater than "4" (i.e. ITU-T T.44 or ITU-T Annex H/T.4 "Black-and-White Mixed Raster Content Profile (MRCbw)" provision and Mode 4 or greater of each is available). The value of bits 117 through 118 is typically non-zero (i.e. >0). In a DCS frame, setting the value of bits y through y + 2 to "0" indicates that the calling terminal does not transmit JBIG2 encoded pages. Setting the value of bits y through y + 2 to non-zero (i.e. >0) indicates that the calling terminal transmits JBIG2 encoded pages. The non-zero value of bits y through y + 2 identifies the profile of T.89 that is used during the transmission. Bits y through y + 2 are valid only when bits 92 through 94 comprise a value equal or greater than "4". The value of bits 117 through 118 is typically non-zero (i.e. >0). The calling terminal shall not transmit a dictionary

(e.g. symbol or halftone pattern dicitonaries) or a collection of dictionaries that result in outstanding dictionary memory requirement (i.e. sum of all transmitted dictionaries for which a forget disposition has not been issued) greater than the capacity indicated by the value of DIS/DTC bits 117 through 118.

### 1.3) Amend Notes 33, 64, 65 and 70 to read as follows:

NOTE 33 – When the modulation system defined in ITU-T V.34 is used or Internet-Aware Fax Device in DCS (Bit X + 2) is set to "1", bits 11 – 14 in DCS are invalid and should be set to "0".

NOTE 64 – In a DIS/DTC frame, setting bit 110 to "0" indicates that the called terminal does not have the capability to accept 600 pels/25.4 mm × 600 lines/25.4 mm resolutions for colour/gray-scale images or T.44 Mixed Raster Content (MRC) mask layer. Setting bit 110 to "1" indicates that the called terminal does have the capability to accept up to 600 pels/25.4 mm × 600 lines/25.4 mm resolutions for colour/gray-scale images and MRC mask layer. The acceptable resolution values are determined by the DIS resolution bit settings. Bit 110 is valid only when bits 68 and 105 (600 pels/25.4 mm × 600 lines/25.4 mm) are set to 1. In a DCS frame, setting bit 110 to 0 indicates that the calling terminal does not use 600 pels/25.4 mm × 600 lines/25.4 mm resolutions for colour/gray-scale images and mask layer. Setting bit 110 to "1" indicates that the calling terminal uses 600 pels/25.4 mm × 600 lines/25.4 mm resolutions for colour/gray-scale images and MRC mask layer. Bit 110 is valid only when bits 36 or 68 and 105 (600 pels/25.4 mm × 600 lines/25.4 mm) are set to "1".

NOTE 65 – In a DIS/DTC frame, setting bit 111 to "0" indicates that the called terminal does not have the capability to accept 1200 pels/25.4 mm × 1200 lines/25.4 mm resolutions for colour/gray-scale images or T.44 Mixed Raster Content (MRC) mask layer. Setting bit 111 to "1" indicates that the called terminal does have the capability to accept up to 1200 pels/25.4 mm × 1200 lines/25.4 mm resolutions for colour/gray-scale images and MRC mask layer. The acceptable resolution values are determined by the DIS resolution bit settings. Bit 111 is valid only when bits 68 and 106 (1200 pels/25.4 mm × 1200 lines/25.4 mm) are set to 1. In a DCS frame, setting bit 111 to 0 indicates that the calling terminal does not use 1200 pels/25.4 mm × 1200 lines/25.4 mm resolutions for colour/gray-scale images and mask layer. Setting bit 111 to "1" indicates that the calling terminal uses 1200 pels/25.4 mm × 1200 lines/25.4 mm resolutions for colour/gray-scale images and MRC mask layer. Bit 111 is valid only when bits 36 or 68 and 106 (1200 pels/25.4 mm × 1200 lines/25.4 mm) are set to "1".

NOTE 70 – SharedDataMemory is the memory used by a decoder to store data that is typically used more than once in the decoding of a data stream. In a DIS/DTC frame, setting the value of bits 117 through 118 to "0" indicates that the called terminal does not have ~~the capability to provide notification of its~~ SharedDataM~~m~~emory capacity. Setting the value of bits 117 through 118 to non-zero (>0) indicates that the called terminal does have ~~the capability to provide notifications of its~~ SharedDataMemory capacity. In a DCS frame, setting the value of bits 117 through 118 to "0" indicates that the data stream~~sending terminal~~ does not require use of ~~the~~ SharedDataM~~m~~emory ~~consuming function~~. Setting the value of bits 117 through 118 to non-zero (>0) indicates that ~~the sending terminal is using~~ the data stream does require use of SharedDataM~~m~~emory ~~consuming function~~. Each value of the three non-zero values of bits 117 through 118 represents a different level of receiver SharedDataM~~m~~emory capacity or SharedDataM~~m~~emory ~~consumed~~ required in decoding the data stream.

**2) Add the following new flow diagrams to 5.2**

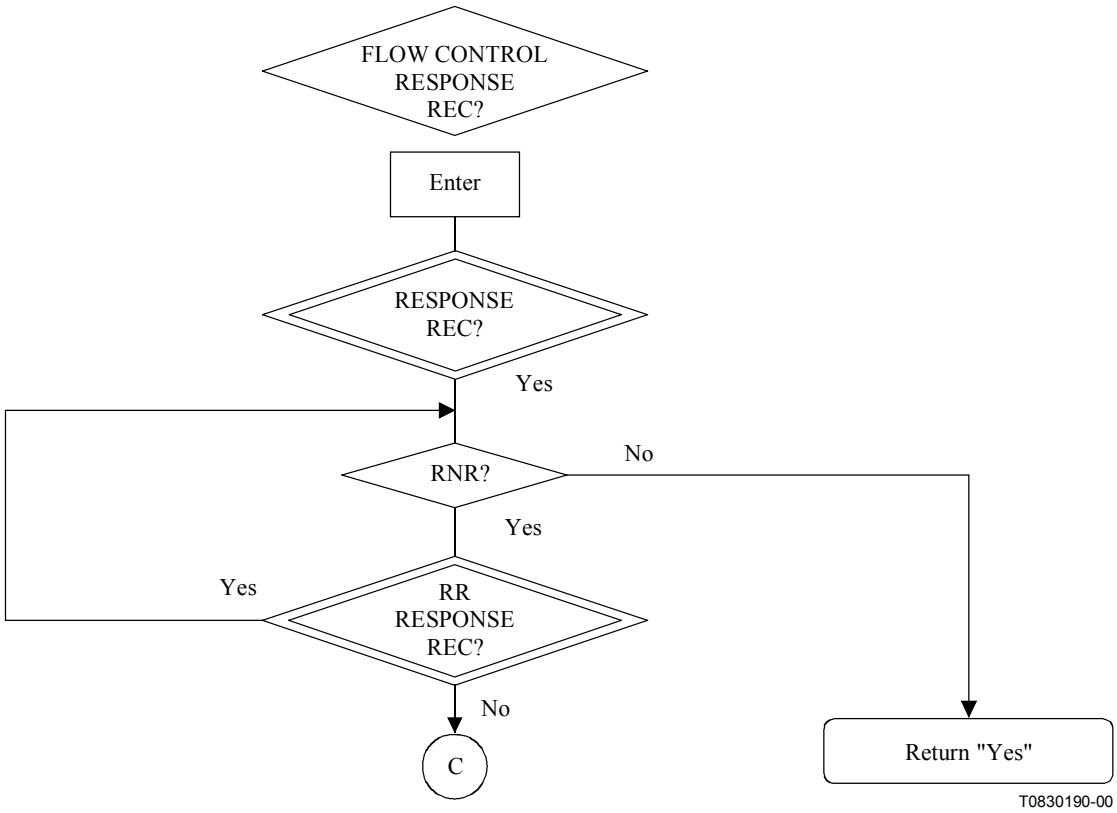


**Figure 5-2w/T.30 – Response received in the optional flow control mode**

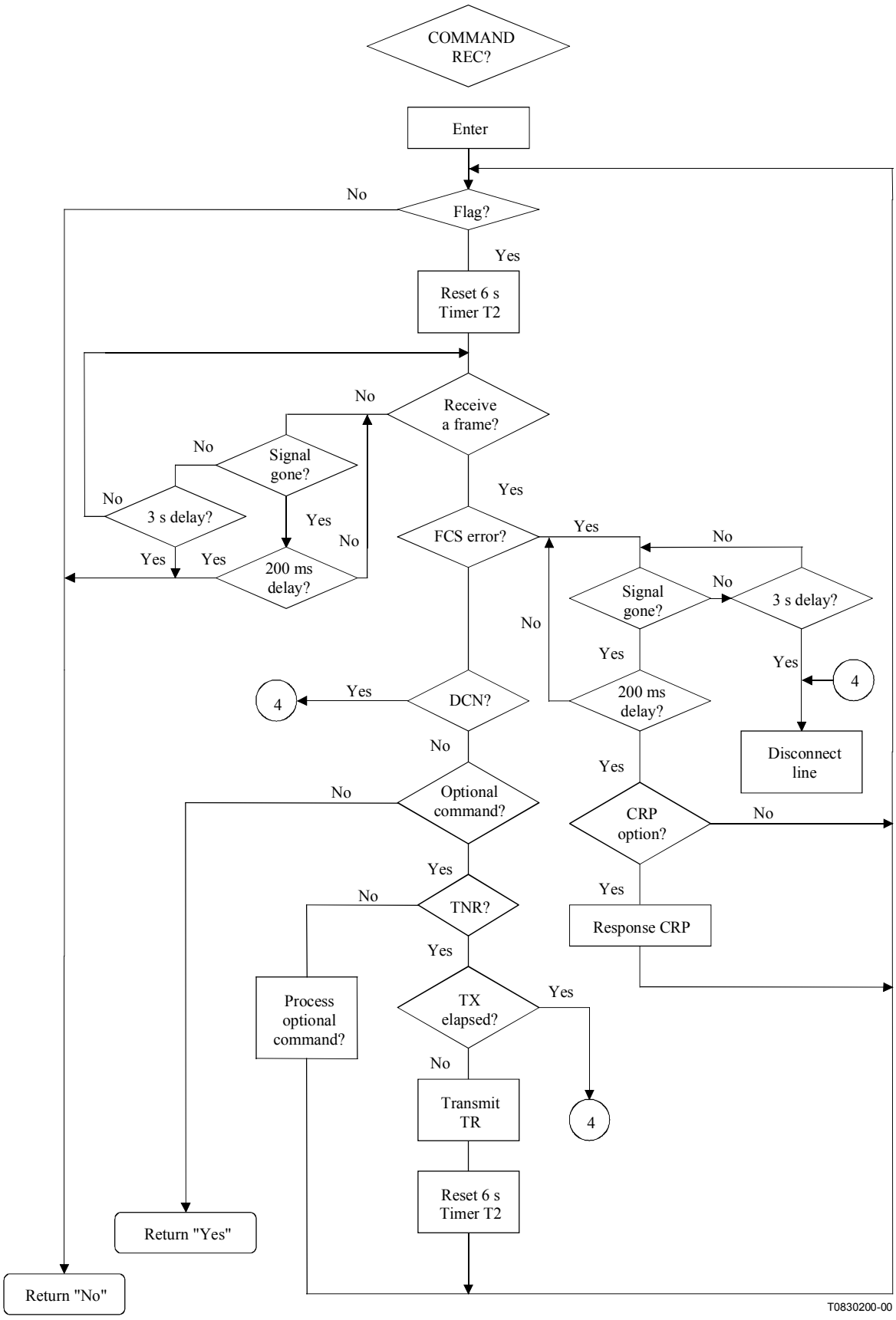


**Figure 5-2x/T.30 – Command receive in optional flow control mode**

**3) Amend 5.3.6.1.6 10) to read as follows:**

10) *Receive ready (RR*) – This digital command is only used in the optional T.4 error correction mode or optional flow control mode. With respect to the optional T.4 error correction mode, see item 3) of A.4.3.

**4) Amend 5.3.6.1.7 7) to read as follows:**

7) *Receive not ready (RNR)* – This digital response is only used in the optional T.4 error correction mode or optional flow control mode. With respect to the optional T.4 error correction mode, see item 2) of A.4.4.

**5) Add the following text to 5.3.6.1.8:**

4) *Transmit not ready (TNR)* – This optional command is used to indicate that the transmitter is not ready to transmit.

Format: X101 0111

5) *Transmit ready (TR)* – This optional response is used to ask for the status for transmitter.

Format: X101 0110

NOTE – TNR, TR are applicable only to the optional flow control mode. The transmitter can send TNR instead of any commands after exchanging DIS/DTC and DCS signals.

**6) Add the following new Figures to Appendix IV:**

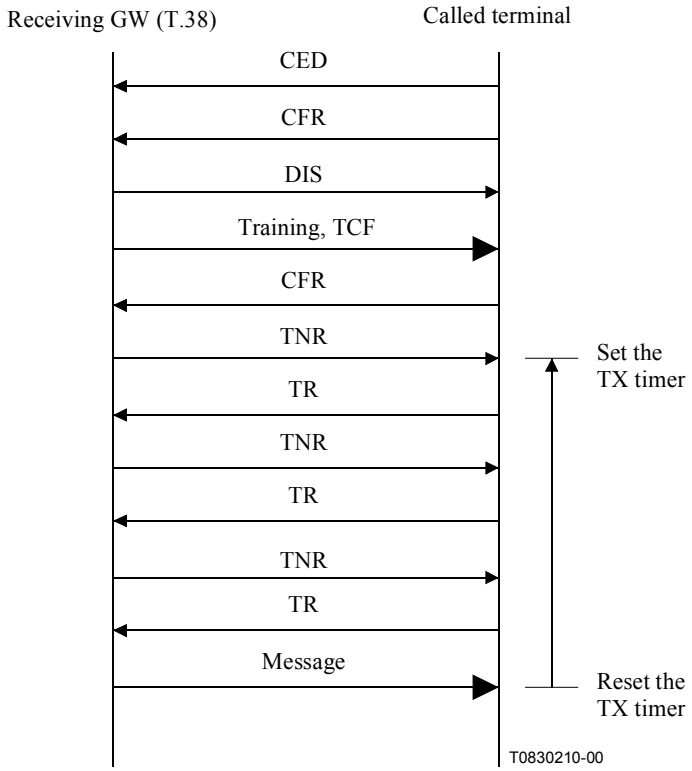


**Figure IV.13/T.30**

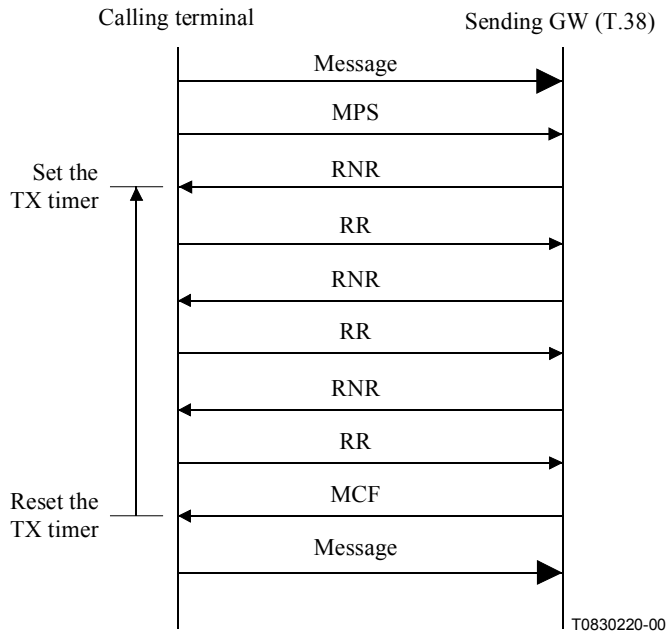


**Figure IV.14/T.30**

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