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ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

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TELEGRAPH SWITCHING GENERAL

SIGNALLING CONDITIONS TO BE APPLIED IN THE INTERNATIONAL TELEX SERVICE

ITU-T Recommendation U.1

(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.1 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 Similarly, in this reform process, the CCIR and the IFRB have been replaced by the Radiocommunication Sector.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

	<i>Page</i>
1 Signalling types.....	1
2 Free line condition.....	4
3 Call	4
4 Call-confirmation signal.....	4
5 Signals preceding selection	4
5.1 Proceed-to-select signal	4
5.2 Proceed-to-transmit signal	5
6 Selection signals.....	5
7 Call-connected signal	5
8 Idle circuit condition	6
9 Clearing	6
9.1 Clearing signal	6
9.2 Clear-confirmation signal	6
9.3 Guard delay.....	7
10 Service signals.....	7
10.1 Signals for ineffective calls.....	7
10.2 Waiting signals	8
10.3 Service-connected signal	9
10.4 Backward busying signal.....	9
10.5 Retest signal.....	9
11 Setting-up time	10
12 Both-way working.....	10
13 Transit working	10
References	11

Recommendation U.1**SIGNALLING CONDITIONS TO BE APPLIED
IN THE INTERNATIONAL TELEX SERVICE**

(Former CCIT Recommendation E.1, Arnhem, 1953; amended at Geneva, 1956, New Delhi, 1960, Geneva, 1964, Mar del Plata, 1968, Geneva, 1972, 1976, 1980, Malaga-Torremolinos, 1984; Melbourne, 1988 and Helsinki, 1993)

The CCITT,

considering

- (a) that signalling conditions in the international telex service require accurate definition of the signals to be used on international telex circuits in putting through, supervising, clearing, and charging for international telex calls;
- (b) that these signals must be such as to take into account that there are some fairly important differences in makeup between the telex networks of different countries. In some countries, selection is done by dialling, in others by means of start-stop signals. Some networks use direct selection while others use register translators. Between some networks, subscriber automatic selection is used whilst, in relations with other networks, semi-automatic or manual selection is still being used;
- (c) that hence it has not been possible to lay down uniform signals for all international telex relations. While, for certain signals, it has been possible to lay down rules valid for all relations, for others the choice has been left between two types of signals known as type A and type B, within each type it has sometimes been necessary to provide alternative forms for certain signals. The signals with regard to which there is a choice are described in Tables 1a, 1b and 2 below;
- (d) that it is intended that the signalling with which this Recommendation deals should apply as far as possible when telex circuits make use of transmission devices having multiplex and signal regeneration facilities. In the case of operation over error-corrected radio circuits, Recommendation U.20 lays down the conditions for adapting the signalling defined in this Recommendation. In the case of operation over channels using synchronous multiplex equipment in accordance with Recommendation R.44, Recommendation U.24 lays down the conditions for adapting the signalling defined in this Recommendation. When the signals defined in this Recommendation are transmitted via code and speed dependent systems in accordance with Recommendation R.101, Recommendation U.25 lays down the permitted variations to the signals defined in this Recommendation. When the signals defined in this Recommendation are transmitted via regenerative repeaters the signals received from these transmission devices may lie outside the tolerances stated in this Recommendation, and the permitted variations are shown in Recommendation U.5;
- (e) that additional signalling standards (types C and D) have been defined for use on international telex networks. Details of these methods of signalling are laid down in Recommendations U.11 and U.12;
- (f) that it has been necessary to define the rules for interworking Type D signalling with Types A, B and C signalling in Recommendation U.15,

unanimously declares the view

1 Signalling types

1.1 In general, as far as signalling over international telex circuits is concerned, the outgoing country should conform to the signalling requirements of the incoming country. Nevertheless, when in the case of fully automatic service this requirement would entail considerable difficulty, alternative arrangements may be adopted by agreement between the two Administrations concerned.

1.2 The signals shown in clauses 2 to 10 below shall be employed under the conditions indicated.

NOTE – Both the forward and backward path signals are described at the moment of their emission on the international circuit.

1.3 The characteristics of the signals defined in clauses 4, 5, 7 and 10 below can be divided into two basic groups-type A and type B – as given in Tables 1a, 1b and 2.

TABLE 1a/U.1

**International telex circuits terminated on distant automatic switching equipment
with semi-automatic working to subscribers**

Signal	Type A	Type B
Call-confirmation (see clauses 4 and 5.1)	Permanent stop polarity	25-ms pulse of stop polarity (between 17.5 and 35 ms)
Proceed-to-select (see subclause 5.1)	Teleprinter signal(s)	25-ms pulse of stop polarity (between 17.5 and 35 ms)
Selection (see clause 6)	Teleprinter signal(s)	Dial pulses, or teleprinter signals
Call-connected (see clause 7)	Teleprinter signals (Note 1)	Stop polarity for at least two seconds
Busy (see subclause 10.1)	Teleprinter signals followed by clearing signal	i) 165-260-ms pulse of stop polarity followed by start polarity for 1500 ms (tolerance $\pm 30\%$) (Note 2) ii) 165-260-ms pulse of stop polarity followed by teleprinter signals and start polarity for 1500 ms (tolerance $\pm 20\%$) (Note 2)
Out-of-order, number changed, number unobtainable, etc. (see subclause 10.1)	Clearing signal normally preceded by teleprinter signals	i) Permanent start polarity ii) 165-260-ms pulse of stop polarity followed by start polarity for 1500 ms (tolerance $\pm 30\%$) (Note 2) iii) 165-260-ms pulse of stop polarity followed by teleprinter signals and start polarity for 1500 ms (tolerance $\pm 20\%$) (Note 2)
NOTES 1 The teleprinter signals may be preceded by a 150-ms (± 11 ms) pulse of start polarity. 2 This sequence of signals may be repeated until a clearing signal is sent over the forward signalling path. However, with transmission systems having significant propagation delay, e.g. satellite or multiplex systems, it may be preferable to prevent such repetitions.		