INTERNATIONAL TELECOMMUNICATION UNION

ITU-T S.4

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

(03/93)

TELEGRAPHY

ALPHABETICAL TELEGRAPH TERMINAL EQUIPMENT

SPECIAL USE OF CERTAIN CHARACTERS OF THE INTERNATIONAL TELEGRAPH ALPHABET No. 2

ITU-T Recommendation S.4

(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 S.4 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 Similarly, in this reform process, the CCIR and the IFRB have been replaced by the Radiocommunication Sector.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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SPECIAL USE OF CERTAIN CHARACTERS OF THE INTERNATIONAL TELEGRAPH ALPHABET No. 2

(former CCIT Recommendations C.7, C.8 and C.12;
modified at New Delhi, 1960, Geneva, 1964, 1972, 1976, 1980,
Malaga-Torremolinos, 1984, Melbourne, 1988, and Helsinki, 1993)

1 Sequences of combinations used for special purposes

As quoted in Recommendations F.1, F.30, R.79, S.11, S.15, U.21, U.22, U.43, U.44 and U.46, certain sequences of combinations from the International Telegraph Alphabet No. 2 are devoted to special purposes (see Table 1) and they should not be used for other purposes when the equipment on such networks introduces special facilities for which these sequences are reserved.

NOTE – The sequences of secondaries of these combinations - although they are not to be used for the purposes devoted to these sequences - are subject to the same restrictions in use, unless otherwise indicated, the equipment having to recognize only the sequence of combinations.

1) **ZCZC** (combination Nos. 26, 3, 26, 3), start-of-message signal in retransmission systems using perforated tape or equivalent devices;

2) + + + + (combination Nos. 26, 26, 26, 26), end-of-input signal or end of transaction signal;

3) **NNNN** (combination Nos. 14, 14, 14, 14), end-of-message signal, a switching signal in switching systems using perforated tape or equivalent devices for retransmission. In the store-and-forward and interworking environment this signal indicates a follow-on message or call. This sequence is also used for restoring the waiting signal device in accordance with Recommendation U.22;

4) **CCCC** (combination Nos. 3, 3, 3, 3), for switching into circuit, by remote control, a reperforator (or equivalent device);

5) **SSSS** (combination Nos. 19, 19, 19, 19), for switching into circuit data transmission equipment, in accordance with Recommendation S.15. In addition, this sequence may be used for switching into circuit, by remote control, equipment operating with a nationally standardized alphabet;

6) **FFFF** (combination Nos 6, 6, 6, 6), for switching out of circuit, by remote control, a reperforator (or equivalent device);

7) **KKKK** (combination Nos. 11, 11, 11, 11), ready-for-test signal, for automatic tests of transmission quality, in accordance with Recommendation R.79;

8) **KLKL** (combination Nos. 11, 12, 11, 12), for switching into circuit, by remote control, a reader (or equivalent device);

9) **XXXXX** (combination Nos. 24, 24, 24, 24, 24), error signal when using automatic error correction devices (see Recommendation F.1);

10) the line-feed signal (combination No. 28) followed by four carriage-return signals (combination No. 27) for the operator-recall signal on a telex connection made over a radiotelegraph circuit (see Recommendation U.21);

11) **HHHH** (combination Nos. 8, 8, 8, 8), to prevent transmission of the delay signals described in Recommendation U.22 made up from combination No. 32 as described in clause 2 below;

12) **TTT ...** (combination Nos. 20, 20, 20, ...), to stop transmission from the distant terminal as described in Recommendations F.60 and U.46;

13) Ω ... (combination Nos. 30, 10, ...), one or more combinations No. 10 in figure-shift after the call is established could trigger the transmission of a “conversation impossible” “CI” sequence of signals and/or a prerecorded message from distant terminal (it should be noted that the combination No. 10 in figure-shift could also be used to attract the operator's attention).

14) **MMMM** (combination Nos. 13, 13, 13, 13), during a broadcast call, to signal the desire of the calling party to know those parties who cleared prematurely. See Recommendations U.44 and S.20.

NOTE – This sequence is to be recognized in letter shift mode only. A minimum of 4 Ms would clear a telex broadcast call, usage of a fifth or more Ms is a national matter.

15) **LLLL** (combination Nos. 12, 12, 12, 12), to signal the desire of the calling party to terminate the present call and to make a follow-on call as described in Recommendation U.43. Usage of a fifth or more Ls is a national matter.

This combination should be recognized in letter shift mode only.

2 Use of combination No. 32

In addition to the purposes described in Recommendation S.1, combination No. 32 can be used for the following purposes:

2.1 Combination No. 32, repeated at intervals of 1.2 seconds, can be used as a delay signal to indicate that the error-correcting device is controlling a repetition.

2.2 Combination No. 32, repeated at intervals of 5 seconds, can be used as a delay signal to indicate that the storage device is not yet empty.

2.3 The reception of combination No. 32 shall not cause any spacing of the paper on tape-printing or page-printing teleprinters.

NOTE – Clause 1, 10) and 1,11) as well as 2.1 and 2.2 apply directly only to start-stop equipment operating at 50 bauds, since this is the modulation rate for telex. However, in the event of suitable synchronous error-correcting systems being used for the interconnection of start-stop circuits that operate at higher modulation rates, similar facilities might be desirable and could be provided by similar means.

TABLE 1/S.4

The use of various sequences of combinations for special purpose

Purpose of sequence	Sequence of combinations recommanded	Method of operation			
		Point-to-point operation	Through switching (without message storage)	Message switching (including storage)	IWU/SFU
Start of message	26 3 26 3	Not ordinarily required	Could be useful in special cases	Required in most systems	Not normally used
Suppression of delay signals	8 8 8 8	Not required on public systems (delay signal not envisaged)	Required for some types of message (e.g. cypher) when routed over synchronous error-corrected radiotelegraph channels	Not required (delay signal not envisaged)	Not required
End of input	26 26 26 26	Not ordinarily required	Could be useful in special cases	Could be useful in special cases	Used in some cases (e.g. U.201 + U.206)
End of message	14 14 14 14	Not ordinarily required	Required only when it is necessary positively to reconnect delay signal facility after use of suppression of delay signals facility	Essential in most systems to separate individual message at relay centres and to control message switching	Used in most cases to signal a follow-on call or message
Connection of reperforator (or equivalent device) Disconnection at distance of reperforator (or equivalent device)	3 3 3 3 6 6 6 6	Could be useful for special purposes; requires special equipment at point of reception	Could be useful for special purposes; requires special equipment at point of reception	Not normally used (as storage is incorporated in the system): could be used for connection and disconnection of a supplementary storage device	Not normally used
Connection of data equipment	19 19 19 19	Could be useful for special purposes	Used for switching into data transmission equipment in association with telex networks	Not normally used	Not used
Ready for test	11 11 11 11	Could be useful for special purposes	Used for automatic maintenance of telex circuits	Not required	Not used
Connection of a reader (or equivalent device)	11 12 11 12	Could be useful for special purposes	Could be useful for special purposes	Not normally used	Not normally used
Error signal	24 24 24 24 24	Could be useful for special purposes; requires special equipment at point of reception	Used for automatic correction of operator errors	Not required	Not normally used

TABLE 1/S.4 (*cont.*)

The use of various sequences of combinations for special purpose

Purpose of sequence	Sequence of combinations recommanded	Method of operation			
		Point-to-point operation	Through switching (without message storage)	Message switching (including storage)	IWU/SFU
Interruption of automatic transmission	20 20 20 ...	Required	Required	Required	Required
Triggering a pre-recorded message	10 10 10 ...	Not required	Required	Not required	Not normally used
Information about premature clearing in a broadcasting call	13 13 13 13	Not required	Required	Required	Not normally used
Following-on call	12 12 12 12	Not required	Required	Required	Not required