INTERNATIONAL TELECOMMUNICATION UNION

CCITT

THE INTERNATIONAL
TELEGRAPH AND TELEPHONE
CONSULTATIVE COMMITTEE

S.4

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SERIES S: TELEGRAPH SERVICES TERMINAL EQUIPMENT

Start-stop terminals

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

Reedition of CCITT Recommendation S.4 published in the Blue Book, Fascicle VII.1 (1988)

NOTES

1 CCITT Recommendation S.4 was published in Fascicle VII.1 of the *Blue Book*. This file is an extract from the *Blue Book*. While the presentation and layout of the text might be slightly different from the *Blue Book* version, the contents of the file are identical to the *Blue Book* version and copyright conditions remain unchanged (see below).

2 In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

Recommendation S.4

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 and Melbourne, 1988)

1 Sequences of combinations used for special purposes

As quoted in Recommendations F.1, F.30, R.79, S.11, S.15, U.21 and U.22, certain sequences of combinations from International Telegraph Alphabet No. 2 are devoted to special purposes (see Table 1/S.4) and they should not be used for other purposes when the equipment on such networks introduces special facilities for which these sequences are reserved. These are:

1) **ZCZC** start-of-message signal in retransmission systems using perforated tape or equivalent devices;

2) + + + + end-of-input signal;

3) **NNNN** end-of-message signal, a switching signal in switching systems using perforated tape or equivalent devices for retransmission; also used for restoring the waiting signal device in accordance with Recommendation U.22 ;

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

5) **SSSS** 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** for switching out of circuit, by remote control, a reperforator (or equivalent device);

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

8) **KLKL** for switching into circuit, by remote control, a reader (or equivalent device);

9) **XXXXX** error signal when using automatic error correction devices (see Recommendation F.1]).

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, the equipment having to recognize only the sequence of combinations. In international services these sequences are:

+ : + :	corresponding to **ZCZC**	(combinations Nos. 26, 3, 26, 3),
ZZZZ	corresponding to + + + +	(combinations Nos. 26, 26, 26, 26),
, , , ,	corresponding to **NNNN**	(combinations Nos. 14, 14, 14, 14),
: : : :	corresponding to **CCCC**	(combinations Nos. 3, 3, 3, 3),
' ' ' '	corresponding to **SSSS**	(combinations Nos. 19, 19, 19, 19),
((((	corresponding to **KKKK**	(combinations Nos. 11, 11, 11, 11),
( ) ( )	corresponding to **KLKL**	(combinations Nos. 11, 12, 11, 12),
/ / / / /	corresponding to **XXXXX**	(combinations Nos. 24, 24, 24, 24, 24).

10) the line-feed signal (combination No. 28) followed by 4 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** to prevent transmission of the delay signals described in Recommendation U.22 made up from combination No. 32 as described in § 2 below.

12) **TTT** . . . to stop transmission from the distant terminal as described in Recommendation F.60.

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

14) **MMMM** during a broadcast call, to signal the desire of the calling party to know those parties who cleared prematurely. See Recommenations 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 5th or more Ms is a national matter.

15) **LLLL** 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 5th or more Ls is a national matter.

This combination should be recognized in letter shift mode only.

TABLE 1/S.4

The use of various sequences of combinations for special purposes

Purpose of sequence	Sequence of combinations recommended	Method of operation		
		Message switching (including storage)	Through switching (without message storage)	Point-to-point operation
Start of message	26 3 26 3	Required in most systems	Could be useful in special cases	Not ordinarily required
Suppression of delay signals	8 8 8 8	Not required (delay signal not envisaged)	Required for some types of message (e.g. cypher) when routed over synchronous error-corrected radiotelegraph channels	Not required on public systems (delay signal not envisaged)
End of input	26 26 26 26	Could be useful in special cases	Could be useful in special cases	Not ordinarily required
End of message	14 14 14 14	Essential in most systems to separate individual message at relay centres and to control message switching	Required only when it is necessary positively to reconnect delay signal facility after use of suppression of delay signals facility	Not ordinarily required
Connection of reperforator (or equivalent device)	3 3 3 3	Not normally used (as storage is incorporated in the system); could be used for connection and disconnection of a supplementary storage device	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
Disconnection at distance of reperforator (or equivalent device)	6 6 6 6			
Connection of data equipment	19 19 19 19	Not normally used	Used for switching into data transmission equipment in association with telex networks	Could be useful for special purposes
Ready for test	11 11 11 11	Not normally used	Used for automatic maintenance of telex circuits	Could be useful for special purposes
Error signal	24 24 24 24 24	Not required	Used for automatic correction of operator errors	Could be useful for special purposes; requires special equipment at point of reception
Interruption of terminals	20 20 20 ...			

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 – §§ 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.

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