



INTERNATIONAL TELECOMMUNICATION UNION

**ITU-T**

TELECOMMUNICATION  
STANDARDIZATION SECTOR  
OF ITU

**S.12**

**TELEGRAPHY**

**ALPHABETICAL TELEGRAPH TERMINAL  
EQUIPMENT**

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**CONDITIONS THAT MUST BE SATISFIED  
BY SYNCHRONOUS SYSTEMS OPERATING  
IN CONNECTION WITH STANDARD 50-BAUD  
TELEPRINTER CIRCUITS**

**ITU-T Recommendation S.12**

(Extract from the *Blue Book*)

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## NOTES

1 ITU-T Recommendation S.12 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.12

### CONDITIONS THAT MUST BE SATISFIED BY SYNCHRONOUS SYSTEMS OPERATING IN CONNECTION WITH STANDARD 50-BAUD TELEPRINTER CIRCUITS

*(former CCIT Recommendation C.23, Geneva, 1956;  
amended at New Delhi, 1960 and Geneva, 1980)*

The CCITT,

*considering, on the one hand,*

(a) that the receiving portion of the sending end of the synchronous system can be linked to a start-stop receiver operating at the nominal modulation rate of 50 bauds,

*unanimously declares the view*

(1) that the receiving portion of the sending end of the synchronous system shall satisfy the conditions laid down for 50-baud operation in §§ 1.6 and 3.1 of Recommendation S.3, being understood that start-stop signals would be received from a source complying with §§ 1.1, 1.2 and 1.3 of Recommendation S.3;

*considering, on the other hand,*

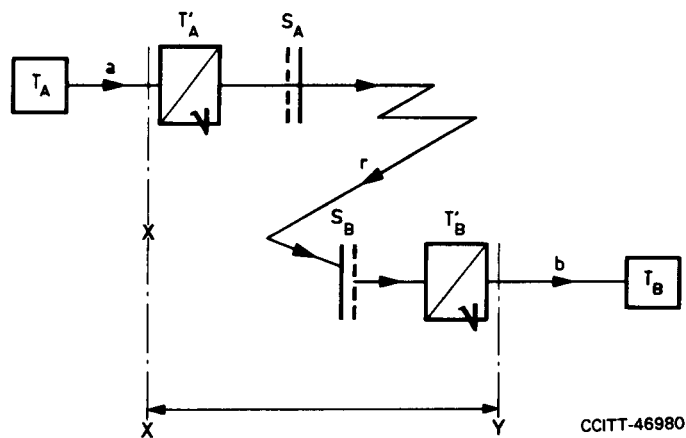
(b) that the retransmitting portion of the receiving end of the synchronous system can be linked to a start-stop transmitter having special characteristics, because of the high speed stability of synchronous systems;

*unanimously declares the view*

(2) that the start-stop signals provided by the retransmitting portion of the receiving termination of the synchronous system shall have the following characteristics:

- a) nominal modulation rate, 50-bauds;
- b) gross start-stop distortion of the signals, less than 5%;
- c) interval between the beginning of successive start elements,  $145 \frac{5}{6}$  milliseconds with a tolerance of  $\pm 1/10^6$ .

*Note* – For a better understanding of the Recommendation, the general arrangement of a communication system involving transmission over a synchronous channel is shown in Figure 1/S.12.



In this diagram:

$T_A$  and  $T_B$  are start-stop teleprinters.

$T'_A$  and  $T'_B$  are repeaters with or without storage.

$a$  and  $b$  represent the networks connecting teleprinters  $T_A$  and  $T_B$  to the repeaters  $T'_A$  and  $T'_B$ . These networks may comprise any number of channels in tandem, relays or regenerative repeaters.

$S_A$  and  $S_B$  are the distributors of the synchronous system, the complexity of which it is not necessary to state.

$r$  denotes a synchronous radiotelegraph channel.

It is agreed that, for the study of this question, the synchronous system includes all the equipment shown between lines  $X$  and  $Y$  on the diagram.

The input and output of the synchronous system are thus directly connected to the start-stop networks.

FIGURE 1/S.12  
Synchronous system