INTERNATIONAL TELECOMMUNICATION UNION

ITU-T Q.310

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

SPECIFICATIONS OF SIGNALLING SYSTEM R1

DEFINITION AND FUNCTION OF SIGNALS

ITU-T Recommendation Q.310

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation Q.310 was published in Fascicle VI.4 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 Q.310

1. DEFINITION AND FUNCTION OF SIGNALS [1)]

1.1 **connect (seizing) signal** (sent in the forward direction)

This line signal is transmitted at the beginning of a call to initiate circuit operation at the incoming end of the circuit to busy the circuit and to seize equipment for switching the call.

1.2 **delay-dialling signal** (sent in the backward direction)

This line signal is transmitted by the incoming exchange following the recognition of the connect (seizing) signal to verify receipt of the connect (seizing) signal and to indicate that the incoming register equipment is not yet attached or ready to receive address signals.

1.3 **start-dialling (proceed-to-send) signal** (sent in the backward direction)

This line signal is sent from the incoming exchange subsequent to the sending of a delay-dialling signal to indicate that the incoming register equipment has been connected and is ready to receive address signals.

1.4 **KP (start-of-pulsing) signal** (sent in the forward direction)

This register signal is sent subsequent to the recognition of a start-dialling signal and is used to prepare the incoming multifrequency register for the receipt of subsequent interregister signals.

1.5 **address signal** (sent in the forward direction)

This register signal is sent to indicate one decimal element of information (digit 1, 2, ..., 9 or 0) about the called party's number. For each call a succession of address signals is sent.

1.6 **ST (end-of-pulsing) signal** (sent in the forward direction)

This register signal is sent to indicate that there are no more address signals to follow. The signal is always sent in semi-automatic as well as automatic working.

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1) In this part the North American designation for line signals is used. The designation of the signal in System No. 5 which most nearly corresponds to a particular North American signal is shown in parentheses. There is not always exact correspondence in function, e.g. the ring-forward signal can only be effective when a connection has been established through an incoming operator.

1.7 **answer signal** (sent in the backward direction)[2) ,3)]

This line signal is sent to the outgoing exchange to indicate that the called party has answered.

In semi-automatic working, the signal has a supervisory function.

In automatic working, it is used:

- to start metering the charge to the calling subscriber;
- to start the measurement of call duration for international accounting purposes, if this is desired.

1.8 **hang-up (clear-back) signal** (sent in the backward direction)[2)]

This line signal is sent to the outgoing exchange to indicate that the called party has cleared. In the semi-automatic service it performs a supervisory function.

In automatic working, arrangements are made to clear the connection, stop the charging, and stop the measurement of call duration if within 10 to 120 seconds[4)] after recognition of the hang-up signal, the calling subscriber has not cleared. Clearing of the connection should preferably be controlled from the point where the charging is carried out.

1.9 **ring-forward (forward-transfer) signal** (sent in the forward direction)

This line signal is initiated by an operator to recall an operator at a point further ahead in the connection.

1.10 **disconnect (clear-forward) signal** (sent in the forward direction)

This line signal is sent in the forward direction at the end of a call when:

a) in semi-automatic working, the operator at the outgoing exchange withdraws the plug from the jack, or when an equivalent operation is performed;

b) in automatic working, the calling party hangs up, or when the time-out period of 10 to 120 seconds as discussed in § 1.8 above occurs.

1.11 *Diagrams showing signal sequence*

Typical sequences of signals in semi-automatic and automatic working are shown in Annex A to these Specifications of Signalling System R1.

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2) Notes on the answer and hang-up (clear-back) signals. - See corresponding notes in Recommendation Q.120, § 1.8, Volume VI-2 of the *Green Book.*

3) See Recommendation Q.27 for the actions to be taken to assure that answer signals, both national and international, are transmitted as quickly as possible.

4) In word numbering Zone 1, 13 to 32 seconds is used.