INTERNATIONAL TELECOMMUNICATION UNION

ITU-T Q.266

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

SPECIFICATIONS OF SIGNALLING SYSTEM No. 6

SIGNALLING PROCEDURES

BLOCKING AND UNBLOCKING SEQUENCES AND CONTROL OF QUASI - ASSOCIATED SIGNALLING

ITU-T Recommendation Q.266

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation Q.266 was published in Fascicle VI.3 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.

4.6 BLOCKING AND UNBLOCKING SEQUENCES AND CONTROL OF QUASI-ASSOCIATED SIGNALLING

4.6.1 *Blocking and unblocking sequences*

The blocking (unblocking) signal is provided to permit the switching equipment or maintenance personnel to remove from (and return to) traffic the distant terminal of a circuit because of a fault or to permit testing. It is also used in connection with the continuity check of the speech path as described in Recommendation Q.261, § 4.1.4, and in Recommendation Q.271.

Since the circuits served by System No. 6 have both-way capability, the blocking signal can be originated by either exchange. The receipt of the blocking signal will have the effect of prohibiting calls outgoing from that exchange until an unblocking signal is received, but will not in itself prohibit calls incoming to that exchange. Acknowledgement sequences are always required for both the blocking and unblocking signals, using the blocking-acknowledgement signal, and the unblocking-acknowledgement signal, respectively. The acknowledgement is not sent until the appropriate action, either blocking or unblocking, has been taken. The clear-forward signal should not override the blocking signal and return circuits to service which might be faulty. The blocked circuit will be returned to service on transmission of the unblocking-acknowledgement signal at one exchange and on receipt of the unblocking-acknowledgement signal at the other exchange.

In the event of the receipt of a blocking signal:

- after an initial address message has been sent, and
- before a backward signal relating to that call has been received,

an automatic repeat attempt will be made on another circuit. The exchange receiving the blocking signal should clear forward the original attempt in the normal manner after sending the blocking-acknowledgement signal.

If the blocking signal is sent while the speech circuit is engaged on a call and after at least one backward signal relating to that call has been sent, steps will be taken by the exchange receiving the signal to prevent the circuit being seized for subsequent calls outgoing from that exchange.

The fact that the circuit is engaged on a call will not delay transmission of the blocking (unblocking)-acknowledgement signal.

If a blocking signal is sent and subsequently an initial address message is received in the opposite direction, the following action is taken:

- for test calls, the call should be accepted, if possible. In the case where the test call cannot be accepted, the blocking signal must be repeated;
- for calls other than test calls, the blocking signal must be repeated.

Blocking of a circuit by use of the blocking signal should not exceed 5 minutes, after which an alarm should be given at each terminal of the circuit. Should a call be in progress on the circuit involved, the 5 minutes time will commence when that call is cleared. If the work on the circuit must exceed 5 minutes, the circuit should be withdrawn from service by the Circuit Control Station.

4.6.2 *Control of quasi-associated signalling*

4.6.2.1 *Transfer-prohibited signal*

When a signal transfer point is unable to transfer quasi-associated signals for a particular group of circuits, this signal transfer point sends a *transfer-prohibited signal* for each affected band to the exchange or signal transfer point concerned. Since this signal refers to a group of 16 circuits, the band number of the relevant group is sufficient. (See Recommendation Q.260, § 3.4.3.2.)

The transfer-prohibited signal may have the effect at the receiving exchange or signal transfer point of re-routing quasi-associated signals via another signalling path.

4.6.2.2 *Transfer-allowed signal*

When the signal transfer point is once more able to transfer signals, it sends a *transfer-allowed* signal to each exchange or signal transfer point concerned for each band that is allowed. The transfer-allowed signal will have the same band number as the transfer-prohibited signal. Following the transmission of the transfer-allowed signal, the signalling will be restored to the normal route.

On receipt of a transfer-allowed signal, the receiving exchange or signal transfer point will return a *transfer-allowed-acknowledgement* signal, and restore signalling for the circuits assigned to that band.

The signal transfer point will repeat the transfer-allowed signals at periods of 4 to 15 seconds until a transfer-allowed-acknowledgement signal is received. If a transfer-allowed-acknowledgement signal is not received within one minute of sending a transfer-allowed signal, the repetition of the transfer-allowed signal is ceased and maintenance personnel alerted.

4.6.2.3 *Message-refusal signal*

If a telephone message is received by a signal transfer point intended for a destination for which the signalling route set has failed, a *message-refusal signal* shall be returned to the exchange or signal transfer point from which this telephone message was received. The message-refusal signal uses the label of the circuit concerned. In addition a transfer-prohibited signal, using the same band number as that of the circuit label, is transmitted after the message-refusal and on the same link set.

On receipt of a message-refusal signal at a signal transfer point, the signal is passed on in the normal way.

On receipt of a message-refusal signal at the terminal exchange of the circuit identified in the label, that exchange will, if possible, retransmit the most recent signal message in memory associated with the affected circuit. In the case of an outgoing call in the process of being established, a clear forward should be sent and an automatic repeat attempt made. The repeated signal or call will be routed in the normal manner, except where a transfer-prohibited signal received from the signal transfer point has already indicated a permanent signalling reconfiguration.

4.6.3 *Signalling route set failure*

A signalling route set is considered to have failed when all signalling routes comprising the signalling route set have failed due to link set failure or receipt of transfer prohibited signals on the signalling routes for the band(s) concerned. Where the signalling route set terminates on the originating exchange, all free speech circuits should be removed from service. Where the signalling route set terminates on an STP or exchange acting as STP for the band(s) concerned, transfer prohibited signals should be sent on all signalling routes of the opposite signalling route set [see Recommendation Q.292, § 8.4.4 b)] as specified in § 4.6.2.1.

On restoration of the signalling route set, all free circuits may be returned to service and transfer allowed signals are sent on the opposite signalling route set as specified in § 4.6.2.2.