INTERNATIONAL TELECOMMUNICATION UNION

ITU-T Q.442

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

SPECIFICATIONS OF SIGNALLING SYSTEM R2

INTERREGISTER SIGNALLING

PULSE TRANSMISSION OF BACKWARD SIGNALS A-3, A-4, A-6 OR A-15

ITU-T Recommendation Q.442

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation Q.442 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.

4.3 PULSE TRANSMISSION OF BACKWARD SIGNALS A-3, A-4, A-6 OR A-15

Under certain conditions it may prove necessary or desirable to send one of the *signals A-3, A-4, A-6 or A-15* without prior reception of a forward signal. This can occur when the incoming R2 register, after acknowledging a recognized forward signal, is unable to complete the call (for example during congestion) and the next forward signal does not appear on the line; or when the address-complete signal must be sent after the last forward address signal has been acknowledged. It may be desirable to deliberately suspend compelled signalling by acknowledging the last address digit, and signal I-15 if received, with signal A-1 to avoid prolonging the transmission time of certain interregister signals. Such a course should certainly be considered when there is a possibility that a relatively long period may elapse between reception of the last digit and detection of the condition of the called subscriber's line. The average duration of such periods during the busy hour must be limited to 3 seconds in view of the load on the carrier systems in the case of international calls.

The following conditions must be observed in transmitting pulsed interregister signals (see Figure 14/Q.442):

- the minimum delay between the end of transmission of the last signal of the compelled cycle and the start of transmission of the pulse signal must be 100 ms;
- the pulse duration must be 150 ± 50 ms.

Reception of a pulse signal must cause interruption of any forward signal in course of transmission at the outgoing R2 register. It is sometimes impossible, however, to prevent a forward signal from being sent by the outgoing R2 register at the very moment when one of the backward signals A-3, A-4, A-6 or A-15 is sent in pulse form by the register at the incoming end.

To reduce the operating difficulties which may result, the incoming R2 register must be so designed that no forward multifrequency combination can be recognized during and after the transmission of signals A-4, A-6 or A-15 in pulse form or during 300 ± 100 ms from the start of transmission of the address-complete signal A-3 in pulse form (900 ± 180 ms when signal A-3 is transmitted over a satellite link) (see Figures 14/Q.442 and 15/Q.442). When the end of a pulse signal A-3 has been recognized in the outgoing R2 register, a Group II signal must be sent forward. The incoming R2 register will acknowledge this signal by a Group B signal.

On recognizing signal A-4, A-6 or A-15 no forward signal is sent by the outgoing R2 register. The end of these backward signals must cause the dismissal of the outgoing and incoming R2 registers in accordance with Recommendation Q.475.

The conditions under which pulse transmission of the backward signals A-3, A-4, A-6 or A-15 apply are specified in Section 5.

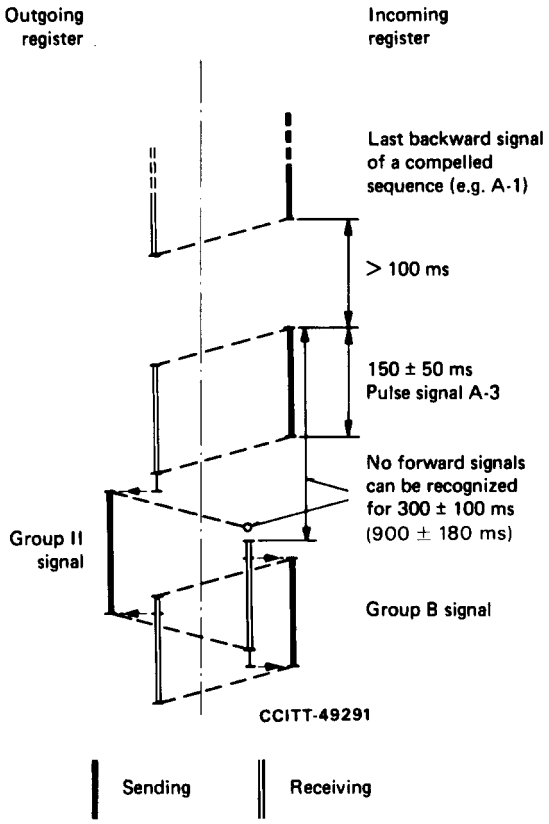

FIGURE 14/Q.442
Pulse transmission of signal A-3

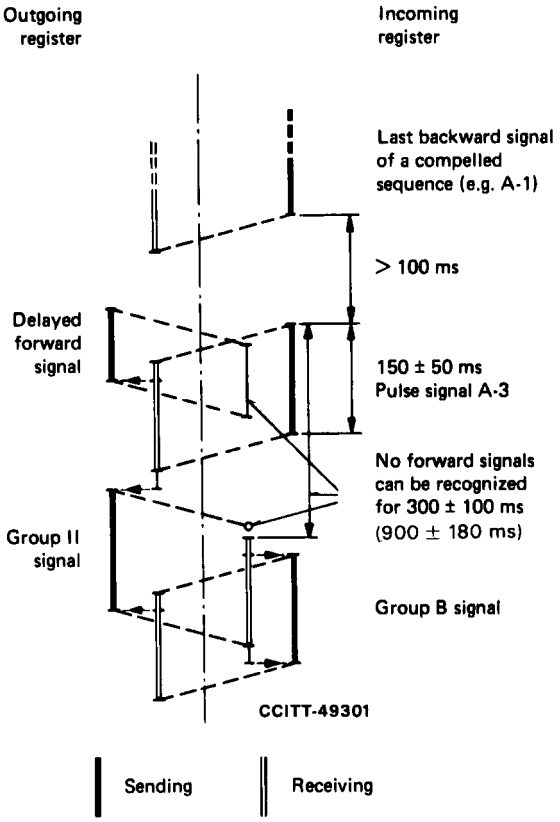

FIGURE 15/Q.442
Pulse transmission of signal A-3 when delayed forward signal appears