INTERNATIONAL TELECOMMUNICATION UNION

ITU-T Q.478

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

SPECIFICATIONS OF SIGNALLING SYSTEM R2

SIGNALLING PROCEDURES

RELAY AND REGENERATION OF R2 INTERREGISTER SIGNALS BY AN OUTGOING R2 REGISTER IN A TRANSIT EXCHANGE

ITU-T Recommendation Q.478

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation Q.478 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.

5.6 RELAY AND REGENERATION OF R2 INTERREGISTER SIGNALS BY AN OUTGOING R2 REGISTER IN A TRANSIT EXCHANGE

When the overall multi-link connection is divided into end-to-end signalling sections, regeneration of R2 interregister signals is required by either an outgoing international R2 register or an outgoing R2 register (see Recommendation Q.440).

There are three possible procedures for relaying interregister signals by an outgoing R2 register:

a) the outgoing R2 register acknowledges each signal received over the incoming link by transmitting the appropriate backward signal; this operation is independent of the operations entailed in retransmitting on the outgoing link;

b) the forward address signal with rank $n + 1$ is acknowledged on the incoming link as soon as the forward address signal with rank n is acknowledged on the outgoing link,

c) as soon as a forward signal is received on the incoming link, a signal is sent on the outgoing link; the acknowledgement signal is sent on the incoming link only when such a signal has been received on the outgoing link.

Methods *a)* and *b)* provide the most rapid transfer of information and are therefore the preferable methods of relaying the information necessary for setting up the call. It is essential, however, that the outgoing R2 register be provided with adequate storage capacity in the case of method *a)*.

Method *b)* can only be applied after method a).

Method *c)* should be used for relaying information relating to the procedures for the termination of interregister signalling.

The changeover from method *a)* or *b)* to method *c)* may require transmission of an address-complete signal A-3 in pulse form as indicated in Recommendation Q.442 (see Figure 21/Q.478).

The procedure for disconnecting the multifrequency combination receivers and setting-up speech conditions for each link, incoming and outgoing, is given in Recommendation Q.475.

When method *a)* or *b)* is used, the time-outs of the R2 registers associated with the first signalling section may expire if the signalling on the second signalling section is too slow. Relatively long time-outs are recommended (see Recommendation Q.476).

Note - The use of signal A-3 on circuits with very long transmission delay, e.g. satellite circuits, for relaying such information (method c) may result in premature release in certain incoming local exchanges with very short time guard. The problem may be avoided if the outgoing R2 register immediately following the satellite link uses signal A-5 to obtain the calling party's category information previously to the receipt of signal A-3 from those incoming local exchanges.

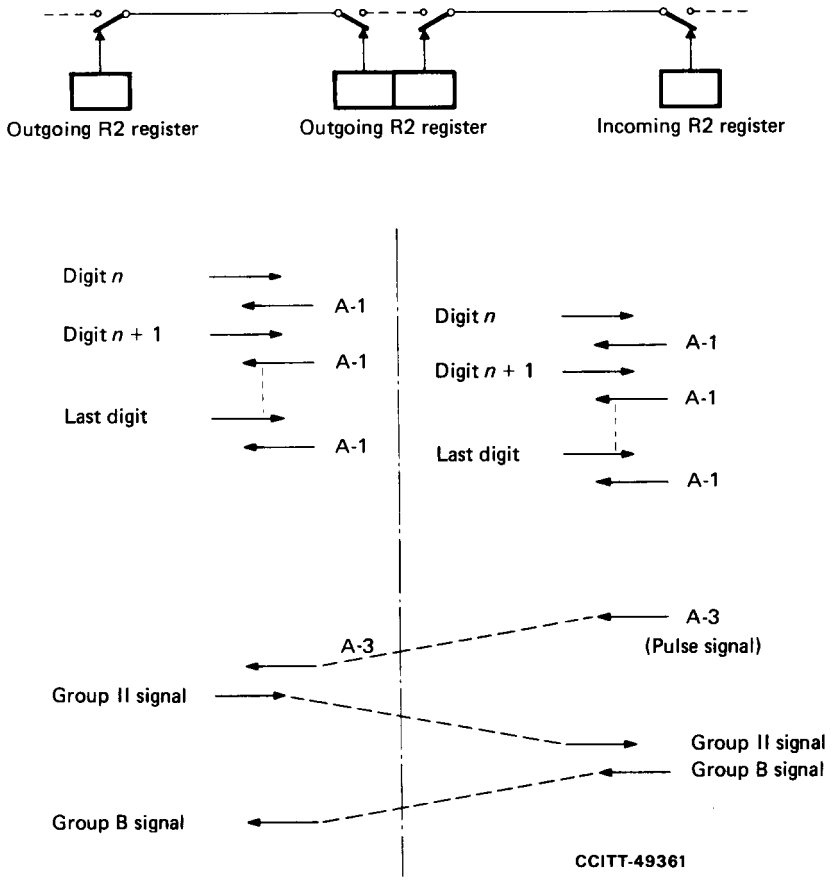

FIGURE 21/Q.478

Sequence of interregister signals in an outgoing R2 register when the incoming link employs System R2