



INTERNATIONAL TELECOMMUNICATION UNION

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TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

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**SPECIFICATIONS OF SIGNALLING SYSTEM No. 6
FUNCTIONAL DESCRIPTION OF THE SIGNALLING
SYSTEM**

**ASSOCIATION BETWEEN SIGNALLING AND
SPEECH NETWORKS**

ITU-T Recommendation Q.253

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation Q.253 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.

1.3 ASSOCIATION BETWEEN SIGNALLING AND SPEECH NETWORKS

1.3.1 Definitions

The signals pertaining to a given group of speech circuits between two exchanges utilizing a common channel signalling system can be transferred in the following ways:

1.3.1.1 associated mode of operation

In the associated mode of operation, the signals are transferred between the two exchanges over a common signalling link which terminates at the same exchanges as the group of speech circuits to which the signalling link has been assigned.

1.3.1.2 non-associated mode of operation

In a non-associated mode of operation, the signals are transferred between the two exchanges over two or more common signalling links in tandem, the signals being processed and forwarded through one or more intermediate *signal transfer points* (see § 1.3.3 below). Following this definition, there may be a range of non-associated modes of operation which vary in the degree of rigidity imposed on the choice of the path utilized by the signals pertaining to the speech circuit. The ends of this range can be described as fully dissociated mode and quasi-associated mode of operation.

a) fully dissociated mode of operation

The fully dissociated mode of operation is the extreme case of the non-associated mode. It is assumed that there is an established network of common signalling links and signal transfer points which may have its own routing principles.

In the fully dissociated mode of operation, the signals are transferred between the two exchanges via any available path in the signalling network according to the rules of that network.

b) quasi-associated mode of operation

The quasi-associated mode of operation is the limited form of the non-associated mode. The common signalling links to be used are generally each operating in the associated mode with a group of circuits.

In the quasi-associated mode of operation the signals are transferred between the two exchanges over two or more common signalling links in tandem, but only over certain predetermined paths and through predetermined signal transfer points.

1.3.2 Association methods provided by the System No. 6

Signalling System No. 6 is designed to provide associated and quasi-associated modes of operation as defined in §§ 1.3.1.1 and 1.3.1.2, b) above, e.g. as shown in Figure 4/Q.253.

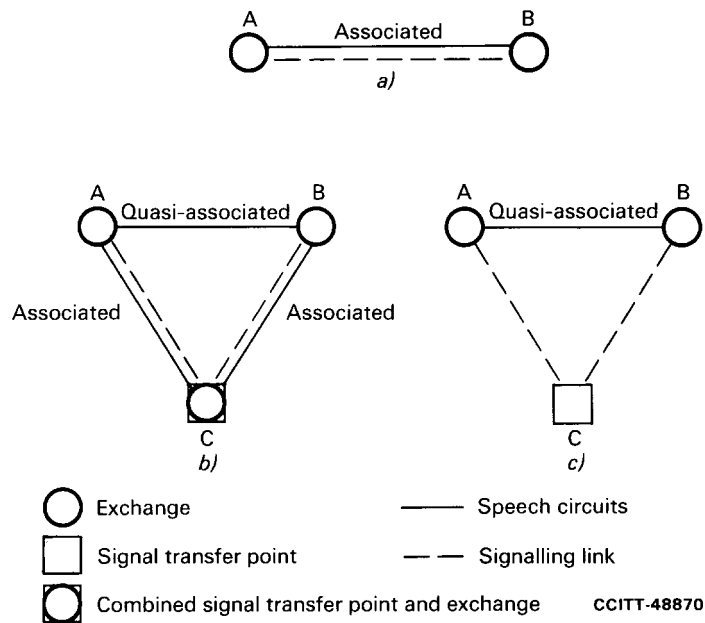


FIGURE 4/Q.253

Example of associated and quasi-associated modes of operation

As far as quasi-associated structures are concerned, the number of signal transfer points in the signalling path for a group of speech circuits between the two System No. 6 exchanges should be kept as low as practicable. Normally, one such signal transfer point should suffice. However, there may be groups of circuits without associated common signalling links which will need more than one signal transfer point to handle the signalling traffic.

Attention is drawn to the fact that the addition of a signal transfer point involves the handling time at that point and one additional signal transfer time. Extensive use of signal transfer points will reduce some of the advantages of the signalling speed of System No. 6.

Note - It should be noted that where a speech circuit group has an associated signalling link, dependability requirements may be met with economically, by using quasi-associated operation under breakdown condition when the associated signalling link is non-operative.

1.3.3 signal transfer point

1.3.3.1 Definition

A signal transfer point is a signal relay centre handling and forwarding telephone signals from one signalling link to another in case of signalling in a non-associated mode of operation as defined in § 1.3.1.2 above.

Note - Following this definition there is no need for a signal transfer point to have any connection with, or relation to, a switching centre.

However, in the case of a quasi-associated mode of operation as defined in § 1.3.1.2 b) above, it is obvious that a signal transfer point may coincide with the System No. 6 exchange where the signalling links terminate and that the equipment may be incorporated into the signalling equipment of that System No. 6 exchange.

1.3.3.2 *Functions of a signal transfer point*

a) The equipment at a signal transfer point has to analyze the label and telephone signal information of every telephone signal message received in order to offer the message to the proper outgoing signalling channel, taking account of its priority, if any.

b) In doing so, it may be necessary to change the label of the received telephone signal message according to some preset rules. However, the telephone signal information included in the message will never be changed by the equipment of a signal transfer point.

c) If for some reason a signal transfer point is unable to transfer signal messages, a procedure is provided to notify the preceding exchange(s) so that signal messages may be sent via reserve routes if available.

Note - The fact mentioned under b) above and the fact that the analysis of the received message will never be accompanied by the switching of speech circuits provide a distinction between a signal transfer point and a transit exchange. In general, a transit exchange will be designed to perform both the normal transit exchange functions and the signal transfer point functions.