INTERNATIONAL TELECOMMUNICATION UNION

ITU-T Q.108

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

GENERAL RECOMMENDATIONS ON TELEPHONE SWITCHING AND SIGNALLING

CLAUSES APPLICABLE TO ITU-T STANDARD SYSTEMS

ONE-WAY OR BOTH-WAY OPERATION OF INTERNATIONAL CIRCUITS

ITU-T Recommendation Q.108

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation Q.108 was published in Fascicle VI.1 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.108

1.8 ONE-WAY OR BOTH-WAY OPERATION OF INTERNATIONAL CIRCUITS

1.8.1 *One-way operation*

In order to have as simple as possible equipment in international exchanges and to avoid double seizures, System No. 4 has been designed in 1949-1954 for one-way operation of international circuits in semi-automatic and automatic working.

1.8.2 *Both-way operation*

1.8.2.1 These advantages of one-way operation naturally hold good in the case of long international (intercontinental) circuits. However, for these circuits the following considerations have been determining factors in providing both-way circuit operation:

a) When a group of circuits is composed of a small number of circuits, the increase in efficiency due to both-way operation is obviously very important. Moreover, long international (intercontinental) circuits are very costly. Finally, the increase in the cost of terminal equipment which results from both-way operation is small compared with the considerable economic advantage derived from this mode of operation.

b) The two ends of a long international (intercontinental) group of circuits may belong to two time zones which are very far apart and, depending on the difference in time, this is likely to result in important and variable differences between the traffic in the two directions.

1.8.2.2 All circuits in System No. 5 and the speech circuits in Systems No. 6 and 7 should be equipped to work in both-way operation. Nevertheless, the both-way method of operation would be applied only if it offered a considerable economic advantage. Hence in the case of large groups (for example, more than 40 circuits in each direction), the possibility of maintaining one-way operation might be considered, because of the extra reliability of this type of operation. If, in circumstances necessitating the use of large groups, there are great differences between the busy hours at each end, it would be advisable, if it were desired to maintain one-way operation, to arrange that the circuits be used successively in one or the other direction according to the time of day. This availability of the circuits for routing traffic from country A to country B or vice versa would be arranged by a convenient method.

In certain cases another solution is worthy of consideration. This consists of setting up three groups of circuits, two operated one-way and the third both-way, it being understood that the latter would be used as an overflow route for calls which could not be routed on the first two groups.

1.8.2.3 Attention is drawn to the conditions which should be introduced to avoid double seizing and false blocking on both-way international circuits. In addition, attention is drawn to the fact that in semi-automatic working, as in automatic working, access to the circuits at both ends should be automatic.

In semi-automatic operation, in the event of double seizing, automatic selection of a new circuit should be preferred to the operator's setting up the call again, so that the operator does not become aware of the double seizing. In automatic operation, automatic selection of a new circuit should naturally be the rule.

The necessary arrangements have been made in the specifications of the systems concerning simultaneous seizing in both-way operation.

1.8.2.4 The digital circuits in System R2 and the circuits in System R1 may be equipped to work in both-way operation.