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**ITU-T**

**N.5**

TELECOMMUNICATION  
STANDARDIZATION SECTOR  
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**MAINTENANCE OF INTERNATIONAL  
SOUND - PROGRAMME AND TELEVISION  
TRANSMISSION CIRCUITS**

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**SOUND-PROGRAMME CONTROL,  
SUB-CONTROL AND SEND  
REFERENCE STATIONS**

**ITU-T Recommendation N.5**

(Extract from the *Blue Book*)

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## NOTES

1 ITU-T Recommendation N.5 was published in Fascicle IV.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.

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## **Recommendation N.5**

### **SOUND-PROGRAMME CONTROL, SUB-CONTROL AND SEND REFERENCE STATIONS**

#### **1 Responsibilities of control and sub-control stations**

1.1 For a unidirectional international sound-programme circuit, the receiving end terminal ISPC is normally the control station. The other terminal ISPC is a terminal sub-control station. The functions of the control and sub-control stations are the same as for ordinary telephone circuits. (See Recommendations M.80 [1] and M.90 [2].)

*Note* – In the case of a reversible sound-programme circuit, setting-up reference measurements and maintenance measurements are carried out for each direction of transmission.

1.2 The international sound-programme link is in all cases the sole responsibility of the telephone Administrations. If the international sound-programme link passes through one or more transit countries, an intermediate sub-control station is also designated for each transit country.

1.3 The national sound-programme circuits at the ends of the link may be the responsibility of either the Administrations or the broadcasting organizations or the two together depending on local arrangements in each particular country.

1.4 The receiving ISPC stations on multiple destination sound-programme circuits or links act as control stations for the circuit or link in accordance with Recommendations M.80 [1] and M.90 [2]. In this case the following additional responsibilities should apply:

- a) reporting to the appropriate send reference station (see § 2) the results of measurements made on the circuit and link and the quality assessments observed on the link;
- b) reporting fault conditions to the circuit or link send reference station (see § 2).

1.5 The intermediate ISPCs are intermediate sub-control stations for the international sound-programme link.

1.6 The ISPC or the repeater station at the sending end (country A in Figures 2/N.1 and 5/N.1) is a terminal sub-control station for the international sound-programme connection. When a send reference station (see § 2) is associated with a multiple destination communications-satellite link, it has the following responsibilities:

- a) coordination of lining up the multiple-destination sound-programme circuit sections, circuits and links, respectively;
- b) keeping a record of the measurements made during the lining-up period of the circuit section, circuit or link, and recording the quality assessments observed at control stations during the lining-up of the link;
- c) relevant maintenance action for the sub-control and control stations at the request of one of these stations.

However, the choice of the station nominated as the terminal sub-control station is left to the discretion of the Administration concerned.

1.7 Exchange of contact point information on sound-programme transmission should be made in accordance with Recommendation M.93 [3].

#### **2 Send reference stations**

Sound-programme transmissions provided on a multiple destination basis using a communication satellite system, differ from those using only terrestrial facilities in that the common transmitting path extends through the transmitting earth station to the satellite. The receiving paths extend from the satellite through the receiving earth stations concerned to the terminal ISPC control stations.

Operations on the common path of the connection affect all receiving stations, whereas on any of the other paths the operations affect only the one receiving terminal station involved. These distinctive features of a multiple destination sound-programme transmission provided in the above manner require the assistance of certain stations designated as send reference stations.

Send reference stations are situated along the common path of the sound-programme circuit or link and are identified as follows:

- a) a sub-control station located at the transmitting terminal of the circuit section containing the space segment;
- b) the terminal sub-control stations for the circuit and link containing the space segment.

Figure 4/N.1 shows the basic composition for a multiple destination sound-programme circuit routed via a communication satellite system. The send reference stations are shown as R and R' for the multiple destination circuit section and circuit respectively.

Figure 5/N.1 shows the basic composition for a multiple destination sound-programme link and connection routed via a communication satellite system. The send reference stations are shown as R' and R'' for the multiple destination circuit and link respectively.

### **References**

- [1] CCITT Recommendation *Control stations*, Vol. IV, Rec. M.80.
- [2] CCITT Recommendation *Sub-control stations*, Vol. IV, Rec. M.90.
- [3] CCITT Recommendation *Exchange of contact point information for the maintenance of international services and the international network*, Vol. IV, Rec. M.93.