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SECTION 2

INTERNATIONAL TELEVISION TRANSMISSIONS

2.1 International television transmissions — Definitions and responsibilities

Recommendation N.51

DEFINITIONS FOR APPLICATION TO INTERNATIONAL TELEVISION TRANSMISSIONS

The following definitions apply to the maintenance of international television transmissions. Other definitions are used for other purposes, e.g. an international television link and international multiple destination television link as defined in §§ 11 and 12 respectively below, are within the definition of an international television circuit as defined by the CMTT.

Note 1 — It is intended that the definitions given in Recommendations N.1 and N.51 should remain identical, so far as is practical, by use of only simultaneous amendments.

Note 2 — A television circuit section, circuit, link or connection is considered to be permanent for maintenance purposes if it is always available for use when required, whether or not it is continuously in use. Such a circuit may be used for the purposes of occasional transmission, i.e. transmissions of short duration (e.g. less than 24 hours) or it may be used for a long duration, i.e. one day or more. A permanent television connection between broadcasting organizations’ premises may be used at any time, except only for periods of maintenance as agreed between the Administrations and broadcasting organizations concerned.

A television circuit section, circuit, link or connection is considered to be temporary for maintenance purposes when it has no existence outside the period of transmission (including line-up and testing time) for which it is required.

1 international television transmission

The transmission of video signals over the international telecommunication network for the purpose of interchanging television material between broadcasting organizations in different countries.

2 broadcasting organization

A broadcasting organization is an organization which is concerned with either or both sound and television broadcasting. Most of the customers ordering facilities for sound-programme and television transmission are broadcasting organizations; for convenience, the term broadcasting organization is used to denote the activity of any user or customer and, where so used, it is equally applicable to any other customer requiring sound-programme or television

In general, for CCIR Recommendations concerning television, see CCIR Vol. XII, ITU, Geneva, 1986.

transmissions.

3 broadcasting organization (send)

The broadcasting organization at the sending end of an international television transmission.

4 broadcasting organization (receive)

The broadcasting organization at the receiving end of an international television transmission.

5 international television centre (ITC)

A centre at which at least one international television circuit (see § 9) terminates and in which international television connections (see § 13) can be made up by the interconnection of international and national television circuits.

6 national television centre (NTC)

A centre at which two or more national television circuits terminate and at which national television circuits may be interconnected.

7 television circuit section

The unidirectional national or international television transmission path between two stations at which the programme is accessible at video frequencies. The transmission path may be established via terrestrial or single destination satellite routing. (See Note 2 above and Figures 1/N.51 and 3/N.51.)

8 international multiple destination television circuit section

The unidirectional television transmission path from one frontier station to two or more of the frontier stations at which interconnection is made at video frequencies. (See Note 2 above and Figure 4/N.51.)

9 international television circuit

The transmission path between two ITCs which comprises one or more television circuit sections (national or international) together with any necessary video equipment. The transmission path may be established via terrestrial or single destination satellite routing. (See Note 2 above and Figures 1/N.51 and 3/N.51.)

10 international multiple destination television circuit

The unidirectional transmission path from one ITC to two or more other ITCs comprising television circuit sections (national or international) one of which is an international multiple destination circuit section, together with any necessary video equipment. (See Note 2 above and Figure 4/N.51.)

11 international television link

The unidirectional transmission path between the ITCs of the two terminal countries involved in an international television transmission. The international television link comprises one or more international television circuits (see Figures 1/N.51 and 3/N.51) interconnected at intermediate ITCs. It can also include national television circuits in transit countries. (See Note 2 above and Figure 2/N.51.)

12 international multiple destination television link

The unidirectional transmission path between the ITCs of the terminal countries involved in an international multiple destination television transmission. The international multiple destination television link comprises international television circuits, one of which is an international multiple destination television circuit. (See Note 2 above and Figure 5/N.51.)

13 international television connection

The unidirectional transmission path between the broadcasting organization (send) and the broadcasting organization (receive) comprising the international television link extended at its two ends over national television circuits to the broadcasting organization. (See Note 2 above and Figure 2/N.51.)

14 international multiple destination television connection

The unidirectional transmission path between the broadcasting organization (send) and two or more broadcasting organizations (receive) comprising the international multiple destination television link extended at its end over national television circuits to the broadcasting organizations. (See Note 2 above and Figure 5/N.51.)

15 send reference station

The transmit sub-control station of an international multiple destination television circuit section (see § 8), circuit (see § 10) or link (see § 12). (See Figures 4/N.51 and 5/N.51.)

16 programme originator

A customer at a transmitting country needing up-linking of a transmission to television receive-only stations (TVROs) not related to an ITC (see Figure 6/N.51).

17 international satellite transmission centre (ISTC)

A centre at a transmitting country responsible for the national extension and up-link to satellite. This term is applicable only for transmission to TVROs not related to an ITC (see Figure 6/N.51).

18 television receive-only station (TVRO)

An earth station which is used only for reception (see Figure 6/N.51). In this respect the term is used to denote any TVRO whose owner is authorized to receive the programme material.

19 fault reporting centre (FRC)

A centre at a receiving country dealing with enquiries and fault reports concerning transmission to TVROs not related to an ITC. (See Figure 6/N.51.)

Figure 1/N.51, p. 1

Figure 2/N.51, p. 2

Figure 3/N.51, p. 3

Figure 4/N.51, p. 4

Figure 5/N.51, p. 5

Figure 6/N.51, p. 6

Recommendation N.52

MULTIPLE DESTINATION TELEVISION TRANSMISSIONS AND | fR COORDINATION CENTRES

A multiple destination television transmission occurs when the same signals are transmitted to more than one broadcasting organization.

If the branching point of the signals is at the origin of the programme or in the national co-ordination centre or in the ITC of the originating country, each undirectional path to a receiving broadcasting organization is considered to be an individual television connection.

Otherwise, the term *derived television transmission* is used. Such transmissions are characterized by the use of branching points in the national coordination centres and/or the ITCs of countries other than the originating country. The branching points will be sub-control stations. The telecommunications Administrations concerned should agree on the choice of a control station. Recommendation N.55 details the duties of the control and sub-control stations.

For such television transmissions, the broadcasting organizations will normally designate an international coordination centre, *for each region concerned* , to perform the following functions in its region:

— coordinate the requests made by the broadcasting organizations wishing to participate in the transmission concerned;

— make all necessary enquiries as to the availability of television circuits for use by broadcasting organizations;

— draw up the plan of the network of television- and sound-programme circuits required for the transmission in question;

— ensure that the television transmission proceeds normally over the international television connections;

— locate, by means of enquiries to the national coordination centres (or another international coordination centre), the faulty connection(s) in the event of breakdown or complaints concerning the transmission;

— arrange via the national coordination centres (or another international coordination centre) for any fault to be reported to the receiving ITC and, where possible, the replacement of any faulty circuit by the ITCs concerned.

Recommendation N.54

DEFINITION AND DURATION OF THE LINE-UP PERIOD AND THE PREPARATORY PERIOD

1 Definition

For each international television transmission a distinction is made between:

— **line-up period**

The period during which the telecommunication Administrations line up the international television link before handing it over to the broadcasting organizations; and

— **preparatory period**

The period during which the broadcasting organizations carry out their own adjustments, tests, etc., before the television transmission itself commences.

The exact time at which the preparatory period begins (point *H* on Figure 1/N.54) is determined by the broadcasting organizations.

2 Line-up period

It is provisionally recommended that, in principle, the duration of the line-up period should nominally be 30 minutes, subdivided into two periods, for the operations described below (see Figure 1/N.54).

figure 1/N.54 p.

H | (em30 to H | (em15: Concurrent lining-up of the national and international circuit sections that will be used to constitute the international television circuit. The international circuit sections may or may not include a communications satellite. The tests to be made are those given in Recommendation N.62. Tests between the earth stations of a communications satellite circuit section are not the responsibility of the CCITT but these tests also should be completed by time *H | (em15* .

H | (em15 to H: Interconnection of the circuit sections to be used, confirmation that the international television circuit is continuous between the terminal ITCs and overall tests between the control ITC and the sub-control ITC. The tests to be made are those given in Recommendation N.62

The above periods *H | (em30 to H | (em15* and *H | (em15 to H* are indicated for guidance only. Their duration is based on an estimate of the time necessary to perform the tests in Recommendation N.62 with a reasonable allowance for adjustments. No allowance is included for the removal of fault conditions on the circuit sections or on the complete circuit link.

According to the definitions given in Recommendation N.51 in this particular case, the international television circuit is also an international television link.

These periods also assume a configuration of the international television circuit consisting of one international circuit section extended at each end by one national circuit section. In the case of television transmissions involving more than two countries, either or both of the nominal periods *H | (em30 to H | (em15* and *H | (em15 to H* may have to be increased. On the other hand, in particular cases, either or both of these nominal periods may be reduced, by agreement between the Administrations concerned, provided the line-up is properly carried out. This may be possible, for example, when there are two successive international television transmissions on the same route, and the second involves extending the international television circuit or link already lined-up for the first.

During the last few minutes of the nominal period *H | (em15 to H* , when the above tests have been completed, the control and sub-control ITCs should put the link through to the broadcasting organization at each end and should confirm that the complete connection is continuous. It should be verified that the link satisfactory for transmitting the programme, and that the quality and level are acceptable.

By agreement between the telecommunication Administration and the sending broadcasting organization, it might be desirable, during these last few minutes before the end of the line-up period, to transmit live pictures. This would be of particular use when adjusting standards converters. The transmission of live pictures during the line-up period does not, however, alter the telecommunication Administrations' responsibility with regard to the quality of transmission required. This responsibility begins only at time *H* , when the line-up period ends and the preparatory (service) period begins, and when the link is handed over to the broadcasting organizations.

3 Preparatory period

No definite duration is recommended by the CCITT for the preparatory period. This duration is determined by the broadcasting organizations, but a typical duration is 15 minutes. During this period, the tests to be made are also left to the discretion of the broadcasting organizations, but they must not be such as to depart from CCITT recommendations in respect of signal level (see Recommendations N.60 and N.63). The broadcasting organizations may, on occasion, omit the preparatory period and begin the actual transmission at time *H* .

See the comment in Recommendation N.62 concerning the difficulties involved in making overall tests on circuits that include a standards converter.

See Recommendation N.55 for definition of control and sub-control ITCs.

Recommendation N.55

ORGANIZATION, RESPONSIBILITIES AND FUNCTIONS OF CONTROL AND SUB-CONTROL ITCs AND CONTROL AND SUB-CONTROL STATIONS FOR INTERNATIONAL TELEVISION CONNECTIONS, LINKS, CIRCUITS

AND CIRCUIT SECTIONS

1 Organization

1.1 The international television link is in all cases the sole responsibility of the telecommunication Administrations involved.

1.2 The national television circuits at the ends of the link may be the responsibility of either the telecommunication Administration or the broadcasting organization or the two together, depending on local arrangements in each particular country.

1.3 The ITC at the receiving end (country C in Figure 2/N.51) is normally the control station for both the international television link and the international television connection and is referred to as the control ITC. The choice of the station which is to have this function is left to the discretion of the Administration concerned.

1.4 The intermediate ITCs, where the international circuit appears at video frequencies, are sub-control stations for the international television link and are referred to as intermediate sub-control ITCs.

1.5 Circuit sections, including satellite sections, also have control and sub-control stations. From the standpoint of overall control arrangements for an international television link, a station controlling a circuit section is referred to herein as an intermediate sub-control station.

1.6 The ITC at the sending end (country A in Figure 2/N.51) is normally the sub-control station for both the international television link and the international television connection. It is also referred to as the terminal sub-control ITC. However, the choice of the station which is to have this function is left to the discretion of the Administration concerned.

2 Responsibilities

2.1 The control ITC is responsible to the broadcasting organization (receive) for the satisfactory performance of the overall international television connection. When an international television connection does not include a satellite section, the control ITC should exert control through intermediate sub-control ITCs, and stations, on that portion of the international television connection extending from the terminal sub-control ITC to the broadcasting organization (receive). When an international television connection does include a satellite section, the control ITC should exert control through intermediate sub-control ITCs, and stations, on that portion of the international television connection extending from the transmitting earth station to the broadcasting organization (receive).

2.2 When an international television connection does not include a satellite section, control of that portion of the international television connection extending from the broadcasting organization (send) to the terminal sub-control ITC should be exerted through the terminal sub-control ITC. When an international television connection does include a satellite section, control of that portion of the international television connection extending from the broadcasting organization (send) to the transmitting earth station should be exerted through the terminal sub-control ITC. In each case, the terminal sub-control ITC is, in turn, responsible for the satisfactory performance of that portion of the connection over which the terminal sub-control ITC has control responsibility; the terminal sub-control ITC should coordinate the activities of any intermediate sub-control ITCs, and stations, both prior to and during the transmission, thus assisting the control ITC and keeping that office informed of developments.

2.3 The receive earth station is the control station for the satellite circuit section. Reference to the control station for the satellite circuit section is intended to apply to the station, or portion of the station, manned by personnel of the satellite operator.

2.4 Any intermediate sub-control ITCs, and other intermediate sub-control stations, are responsible for the satisfactory performance of their respective circuits and circuit sections. In the operation of an international television connection, any sub-control ITCs and stations which are intermediate are responsible to either the terminal sub-control ITC or the control ITC, depending upon their location in the overall connection.

3 Functions

3.1 All stations which are designated as control and sub-control stations on an international television connection should perform the following functions:

— ensure that sections under each respective control are conditioned for service and connected into the international television connection at the appropriate time;

— time the start and conclusion of the transmission in accordance with § 5 below;

— keep complete and accurate records of all station activities pertaining to the international television transmission. This should include timing and recording service impairment observed or reported, and taking corrective action under the direction of the control or terminal sub-control ITC;

— prepare and forward prescribed reports.

3.2 Control and terminal sub-control ITCs on an international television connection should perform the following additional functions:

— verify the scheduling of the television transmission and the availability of information necessary to furnish it;

— perform and coordinate, as required, prescribed pre-transmission line-up tests;

— check the satisfactory receipt, by the broadcasting organization (receive), of the test programme originated by the broadcasting organization (send);

— ensure that the international television connection is handed over to the broadcasting organizations at the scheduled time.

3.3 In order to perform the above functions satisfactorily it is essential that adequate and direct communications be available between terminal ITCs during the line-up and service periods. It is preferable that such communications be provided by direct service circuits (as those specified in Recommendation M.100 [1]), the requirement for television being analogous to the requirements for the service circuits of the telephone and telex networks. In those instances where permanent direct service circuits are not provided and the television service is of an infrequent nature, it will be the responsibility of the control ITC to initiate action for the provision of an adequate means of communications. Use of the public telephone network or telex network should be encouraged in such instances.

4 Pre-transmission procedures

4.1 At some time prior to the scheduled start of television transmission, preferably the day before but not less than two hours prior to the start of service, the control ITC should contact the terminal sub-control ITC and the appropriate intermediate sub-control ITCs or stations, over which it exercises control and confirm that they have the transmission schedule and sufficient information to furnish the service. Similarly, the terminal sub-control ITC should contact the intermediate sub-control ITCs or stations over which it exercises control to verify their readiness.

4.2 The control and sub-control ITCs should initiate circuit section line-up tests for which they are directly responsible. The tests should be completed far enough in advance of the scheduled time at which the connection is to be handed over to the broadcasting organization (point *H* in Figure 1/N.54) to assure completion by that time of the operations given in § 4.3. During this same period the control station for any satellite circuit section should perform line-up tests as prescribed by the responsible authority. The tests recommended for terrestrial circuit sections and ITC-to-ITC links are those detailed in Recommendation N.62.

4.3 Immediately upon conclusion of the circuit section tests, the control ITC, with the cooperation of the terminal sub-control ITC, should verify that the international television link is continuous between these terminal ITCs and should then proceed to perform overall line-up tests as detailed in Recommendation N.62.

4.4 Upon completion of the overall tests, and if possible 2 or 3 minutes prior to the scheduled start of the transmission from the broadcasting organization (send), the control and sub-control ITCs should establish the connection to the broadcasting organizations and check the test programme between them. Checking the test programme consists of verifying the satisfactory receipt, from the standpoints of quality and level, by the broadcasting organization (receive) of test material originated by the broadcasting organization (send). The sub-control ITC should request this transmission of test material from the broadcasting organization (send), as necessary, and should verify that the material is of suitable quality and level at its location. The control ITC should also check for suitable quality and level at its location. After it is determined that the test programme check is satisfactory, the connection should be handed over to the broadcasting organizations.

5 Timing the international television transmission

5.1 The control ITC and terminal sub-control ITC of the international television connection should record the times of start and conclusion of the transmission, in Coordinated Universal Time (UTC).

5.2 The starting time-of-day of the service may be the scheduled time shown on the service order, or the time at which the broadcasting organizations commence to use the service, whichever is earlier. If the connection is not ready for use on schedule, and is handed over to the broadcasting organizations after the scheduled time of start shown on the service order, then the start of service is the time-of-day at which the connection is handed over to the broadcasting organizations.

5.3 The concluding time of the service is the time at which the connection is released by the broadcasting organization (receive) (end of chargeable duration — sometimes called the *Good-night time*).

The conditions for the provision and lease of circuits for television transmissions are given in Recommendation D.180 [2].

6 Monitoring

6.1 The control ITC should monitor in connection with the pre-transmission check of test television programmes and continuously thereafter until the conclusion of the transmission. Continuous monitoring at other stations is not required, except as directed by their respective Administrations, and as required to discharge their responsibilities with regard to fault location.

7 Fault location and handling

7.1 The control and sub-control ITCs and stations are responsible for recording times-of-day and details of service impairments observed and/or reported to them and for initiating corrective actions. However, except when the impairment has rendered the programme unusable, no action which would interrupt the transmission path should be taken except at the direction of the control ITC.

7.2 Although composed of a variety of national and/or international circuits and circuit sections, an overall international television connection without a satellite section may be divided into two segments:

a) the terrestrial facilities between the broadcasting organization (send) and the terminal sub-control ITC;

b) the terrestrial facilities between the terminal sub-control ITC and the broadcasting organization (receive).

When an overall international television connection includes a satellite section the connection may be divided into three major segments:

i) the terrestrial facilities between the broadcasting organization (send) and the transmitting earth station;

ii) the satellite circuit section between earth stations;

iii) the terrestrial facilities between the receiving earth station and the broadcasting organization (receive).

7.3 Faults encountered during service will be observed by the broadcasting organization (receive) and reported to the control ITC or observed by the control ITC, or both.

7.4 Normal fault sectionalization for an overall connection without a satellite section, should be as follows:

— The control ITC shall immediately check the television signal at its location to determine if the fault lies between the broadcasting organization (receive) and the control ITC. If the signal is satisfactory at the control ITC, further sectionalization is carried out by the control ITC, directly or via sub-control stations should they exist, between the control ITC and the broadcasting organization (receive).

— If the signal is unsatisfactory as it appears incoming to the control ITC, the control ITC shall determine from the terminal sub-control ITC whether the signal is satisfactory as it arrives at the terminal sub-control ITC. If the signal incoming to the terminal sub-control ITC is unsatisfactory, the terminal sub-control ITC shall further sectionalize the fault between the broadcasting organization (send) and the terminal sub-control ITC. Such sectionalization shall begin by checking the television signal at its source.

— If the signal incoming to the terminal sub-control ITC is satisfactory, the control ITC should further sectionalize the fault via the appropriate intermediate sub-control ITCs, or stations, and take whatever corrective action is indicated.

7.5 Normal fault sectionalization for an overall international connection containing a satellite section, should be as follows:

— The control ITC shall immediately check the television signal at its location to determine if the fault lies between the broadcasting organization (receive) and the control ITC. If the signal is satisfactory at the control ITC, further sectionalization is carried out by the control ITC, directly or via sub-control stations should they exist, between the control ITC and the broadcasting organization (receive).

— If the signal is unsatisfactory as it appears incoming to the control ITC, the control ITC shall determine from the terminal sub-control ITC whether the signal is satisfactory as it arrives at the terminal sub-control ITC. If the signal incoming to the terminal sub-control ITC is unsatisfactory, the terminal sub-control ITC shall further sectionalize the fault between the broadcasting organization (send) and the terminal sub-control ITC. Such sectionalization shall begin by checking the television signal at its source.

— If the signal incoming to the terminal sub-control ITC is satisfactory, the terminal sub-control ITC should contact the transmitting earth station to determine if the signal is unsatisfactory incoming to that station; simultaneously, the control ITC should contact the receiving earth station to determine if the signal is satisfactory incoming to the receiving earth station.

— If the fault is located between the terminal sub-control ITC and the transmitting earth station, the terminal sub-control ITC shall contact the appropriate intermediate sub-control ITCs or stations, to further sectionalize the fault and take whatever corrective action is indicated.

— If the fault is located in the satellite circuit section, the control ITC should request the receiving earth station (satellite section control) to take corrective action.

— If the fault is located between the receiving earth station and the control ITC, the control ITC should contact the appropriate intermediate sub-control ITCs or stations, to further sectionalize the fault and take whatever corrective action is indicated.

7.6 Intermediate sub-control ITCs and stations should keep the ITCs, to which they are subordinate in the provision of the television service, informed of the status of the fault investigation. Similarly, the control ITC should keep the broadcasting organization (receive) informed. In so doing these stations and ITCs should exchange times-of-day at which faults are encountered, and should attempt to reconcile any differences.

8 Record keeping and monitoring for charging purposes

8.1 The several telecommunication Administrations will prescribe the reports required from their respective stations and the distribution to be made of these reports. To a considerable extent, however, the subject content of these reports will be essentially the same. The following paragraphs will suggest the records of television transmissions to be kept by the stations, and to some extent the information from which the prescribed reports can be prepared.

8.2 The reports prepared by the control ITC normally will provide the information from which bills rendered to the broadcasting organizations will be prepared, including any credit allowances for any transmission interruptions or other serious impairments experienced. Usually a carefully kept and detailed log record in itself will constitute a satisfactory source for this purpose.

8.3 The terminal sub-control ITC and the intermediate sub-control ITCs and stations should also keep detailed log records of their activities in connection with each television transmission. Thus, whether or not these stations are required by their Administrations to submit reports, any needed information will be available to satisfy inquiries or investigations which may arise subsequent to transmissions.

8.4 The following paragraphs suggest the nature and extent of the log record detail. Times-of-day should be shown to the second, in UTC; the record should be kept chronologically from the beginning of service preparations to the final exchange of times-of-day and comments. Abbreviations and condensations should be used carefully and discreetly;

initials or names should identify the recorder.

8.5 Record exchanges and discussions with other stations and with broadcasting organizations. These records should include initials, names or other identification of the individuals contacted.

8.6 Record the results of pre-transmission tests, including the test programme check.

8.7 The technical staff of the designated ITC should come to an agreement among themselves so that at the end of the television transmission they have accurate knowledge of:

a) the time of handing over the television link to the broadcasting organization (beginning of chargeable duration);

b) the time at which the television link is released by the broadcasting organization (end of chargeable duration);

c) where appropriate, the times and duration of every interruption or incident which may have occurred (in order that the operating services can determine whether a rebate is due and, if so, its amount).

The times of the beginning and of the end of the chargeable duration, as well as the time of occurrence and duration of any breakdowns which may occur, are entered on a daily report. This daily report is sent on the same day to the service responsible for coordinating all the details necessary for the establishment of the international accounts.

8.8 In recording the times of programme start and conclusion, indicate when agreement is reached with other stations or with broadcasting organizations with respect to these times. Where discrepancies cannot be reconciled, record the differing times with suitable identification of each.

8.9 For any period of impairment, record the time it began, its duration, the time it was reported, and the nature and degree of the impairment, and note whether in the opinion of the broadcasting organization the programme was rendered unusable.

8.10 Record the quality assessment of the overall transmission given by the broadcasting organization (receive), using the quality assessment scale (see Recommendation N.64 for Impairment and Quality Scales).

8.11 The log record of each station at which the transmission was monitored continuously should include the assessment of the overall transmission by the attendant at that station using the quality assessment scale.

9 Responsibilities of control and sub-control stations for multiple destination transmissions

9.1 International multiple destination transmissions on communications satellite systems differ in a number of respects from those routed on terrestrial systems. A common transmitting path extends from the terminal ITC sub-control station through the transmitting earth station to a satellite repeater and separate receiving paths extend from the satellite repeater through the applicable receiving earth station to a number of terminal ITC control stations (Figure 5/N.51). Operations on the common path will affect transmission to all the receiving stations whereas operations on any receiving path will only affect transmission to the terminal ITC control station on the particular path concerned. To coordinate the setting-up, lining-up and maintenance of a multiple destination transmission on a communications satellite system, it is recommended that a send reference station be designated for each multiple destination circuit section, circuit and link.

The responsibilities of a send reference station are given in § 9.2 below. The additional responsibilities and functions of control stations for a multiple destination television transmission are contained in § 9.3 below.

9.2 *Send reference stations*

i) The send reference station for a multiple destination television circuit section is the intermediate circuit sub-control station, at the transmitting earth station (R in Figure 4/N.51).

ii) The send reference station for a multiple destination television circuit and link is the terminal sub-control station for the circuit and link respectively (R‘ and R" in Figure 5/N.51).

In addition to the normal control and sub-control station responsibilities specified in this Recommendation, stations designated as send reference stations are required to perform the following functions:

a) coordinate the setting-up, and lining-up, of the multiple destination circuit section, circuit or link;

b) coordinate maintenance action on the multiple destination circuit section, circuit or link when requested by the control stations;

c) keep records of measurements made during the initial line-up of the multiple destination circuit section, circuit or link and incidents reported by the control stations during transmissions.

9.3 *Additional responsibilities of control stations*

In addition to the control station responsibilties in §§ 1 to 8 above, the control stations of multiple destination circuit sections, circuits or links, having a designated send reference station should perform the following functions:

a) report to the appropriate send reference station the results of line-up measurements made on the multiple destination circuit section, circuit or link;

b) report any incidents observed during transmissions to the appropriate send reference station.

c) cooperate with the appropriate send reference station in locating fault conditions.

10 International television transmissions for television receive-only stations (TVROs) not related to an ITC

For international television transmissions for TVROs not related to an ITC (see Figure 6/N.51), a fault reporting centre (FRC) should perform the following functions:

— Deal with enquiries concerning service performance and fault reports.

— Deal with general enquiries from other TVROs/FRCs.

— Make contact with the ISTC (see below) in the originating country for fault reporting and general service liaison.

In an originating country the Administration concerned should nominate an international satellite transmission centre (ISTC) for every transmitted service. Where possible, all services transmitted by an Administration shall be handled by the same ISTC.

The ISTC should perform the following functions:

— To be a contact point for FRCs and for the programme originators making enquiries concerned with service continuity.

— To liaise with the transmitting earth station and any intermediate sub-control station for fault investigations and technical coordination.

— To monitor transmissions from programme originators’ premises and to have the capability to monitor the transmission from the satellite.

In the case where programme material is received by TVROs in the country of origination, the ISTC and the FRC should be co-located where possible and the duties combined.

References

[1] CCITT Recommendation *Service circuits* , Vol. IV, Rec. M.100.

[2] CCITT Recommendation *Occasional provision of circuits for international sound- and television-programme transmissions* , Vol. II, Rec. D.180.

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