

ANNEX 4

Compatibility Analyses

SECTION A: Compatibility analysis for DVB-T interfered with by analogue television

- 1 Following a request for the coordination of a proposed analogue station, a compatibility analysis should be undertaken to assess the impact on DVB-T services. Such a proposal may consist of:
 - 1.1 a new analogue station, or
 - 1.2 a modification of an analogue station.
- 2 The propagation prediction method described in Annex 1, Section 2, which is based on Rec. ITU-R P.370, should be used unless agreed otherwise.
- 2.1 If a propagation prediction method based on Rec. ITU-R P.370 is not used, the administrations concerned should decide on the calculation method used to determine if the interference resulting from the proposed station is acceptable.

- 3 In the case of a low power DVB-T station to be protected (less than 10 Watts e.r.p.); and
- 3.1 if special treatment is required, for instance because of geographical conditions, or in the case of relay receivers,
- 3.2 treatment should be on a case by case basis in which more detailed calculation methods may be used.
- 4 The following calculations should be made to determine:
- (a) the location of the test points.
- With regard to affected DVB-T stations not resulting from the conversion of an analogue station into digital according to Annex 6, the method described in Annex 1, Section 6.7.2, is to be used, or
 - with regard to affected DVB-T stations resulting from the conversion of an analogue station into digital according to Annex 6, the method described in Annex 1, Section 6.7.2 is to be used, or
 - with regard to affected analogue stations that may be converted into digital in the future, the method described in Annex 1, Section 6.7.2 is to be used.
- and
- (b) the reference usable field strengths.
- The reference value at each test point is the calculated usable field strength according to Annex 1, Section 6.7.2. The reference date for the reference value is 25 July 1997 or, for a new station, the date at which it is entered in the Plan.
- and
- (c) the resulting usable field strength in the case of a new analogue station.
- This is found from the power summation at each test point of the reference value in 4(b) and the nuisance field strength of the proposed station artificially converted to digital by subtracting 7 dB from the e.r.p.
- and
- (d) the resulting usable field strength in the case of a modified analogue station.
- This is found from the power summation at each test point of the reference value in 4(b) with the contribution of the original station suppressed, and the nuisance field strength of the modified station artificially converted to digital by subtracting 7 dB from the e.r.p.
- 5 If the difference 4(c) minus 4(b), in the case of a new analogue station and if the difference 4(d) minus 4(b) in the case of a modified analogue station is not more than 0.3 dB at any test point the request should normally be accepted. The station is then considered to be compatible.
- 5.1 If in special cases (e.g. topographical conditions; many previous small increases of interference) an increase of 0.3 dB or less is not acceptable, or
- 5.2 the increase is more than 0.3 dB at one or more test points, or
- 5.3 the criteria defined by the Administrations according to 2.1 or 3.2 are not satisfied,
- 5.4 the consulted administration should consider if the proposed station is nevertheless acceptable, taking into account practical circumstances, for example in cases where the usable field strength is near the minimum usable field strength, and therefore compatible.
- 5.5 If the considerations in 5.4 indicate that the increase of interference is not acceptable, the station is considered to be incompatible.

SECTION B: Compatibility analysis for Analogue television interfered with by DVB-T

- 1 Following a request for the coordination of a proposed DVB-T station or SFN, a compatibility analysis should be undertaken to assess the impact on analogue television services. Such a proposal may consist of:
 - 1.1 a new DVB-T station or SFN, or
 - 1.2 a modification of a DVB-T station or SFN, or
 - 1.3 a conversion of an analogue television station, if the conditions of Annex 6 are not fulfilled.
- 2 The propagation prediction method described in Annex 1, Section 2 which is based on Rec. ITU-R P.370, should be used unless agreed otherwise.
 - 2.1 If a propagation prediction method based on Rec. ITU-R P.370 is not used, the administrations concerned should decide on the calculation method used to determine if the interference resulting from the proposed DVB-T station or SFN is acceptable.
- 3 In the case of a low power analogue station to be protected (less than 100 Watts e.r.p.); and
 - 3.1 if special treatment is required, for instance because of geographical conditions, or in the case of relay receivers,
 - 3.2 treatment should be on a case by case basis in which more detailed calculation methods may be used.
- 4 The following calculations should be made to determine:
 - (a) the location of the test points.
The method described in Annex 1, Section 6.7.1 is to be used.

and
 - (b) the reference usable field strengths.
The reference value at each test point is the calculated usable field strength according to Annex 1, Section 6.7.1. The reference date for the reference value is 25 July 1997 or, for a new station, the date at which it is entered in the Plan.

and
 - (c) the resulting usable field strength in the case of a new DVB-T station or SFN.
This is found from the power summation at each test point of the reference value in 4(b) and the nuisance field strength of the proposed DVB-T station or SFN.

and
 - (d) the resulting usable field strength in the case of a modified DVB-T station or SFN.
This is found from the power summation at each test point of the reference value in 4(b), with the contribution of the original station or SFN suppressed, and the nuisance field strength of the modified station or SFN.

and
 - (e) the resulting usable field strength in the case of a conversion from an analogue station if the conditions of Annex 6 are not fulfilled.
This is found from the power summation at each test point of the reference value in 4(b) with the contribution of the original station suppressed and the nuisance field strength of the station or SFN resulting from the conversion.
- 5 If the difference 4(c) minus 4(b), in the case of a new DVB-T station or SFN and if the difference 4(d) minus 4(b) in the case of a modified DVB-T station or SFN and if the difference 4(e) minus 4(b) in the case of a conversion from an analogue station when the conditions of Annex 6 are not fulfilled, is not more than 0.3 dB at any test point, the request should normally be accepted. The station or SFN is then considered to be compatible.

- 5.1 If in special cases (e.g. topographical conditions; many previous small increases of interference) an increase of 0.3 dB or less is not acceptable, or
- 5.2 the increase is more than 0.3 dB, or
- 5.3 the criteria defined by the Administrations according to 2.1 or 3.2 are not satisfied,
- 5.4 the consulted administration should consider if the proposed station is nevertheless acceptable, taking into account practical circumstances, and therefore compatible.
- 5.5 If the considerations in 5.4 indicate that the increase of interference is not acceptable, the station is considered to be incompatible.

SECTION C: Compatibility analysis for DVB-T interfered with by DVB-T

- 1 Following a request for the coordination of a proposed DVB-T station or SFN, a compatibility analysis should be undertaken to assess the impact on DVB-T services. Such a proposal may consist of:
 - 1.1 a new DVB-T station or SFN, or
 - 1.2 a modification of a DVB-T station or SFN, or
 - 1.3 a conversion of an analogue television station, if the conditions of Annex 6 are not fulfilled.
- 2 The propagation prediction method described in Annex 1, Section 2, which is based on Rec. ITU-R P.370, should be used unless agreed otherwise.
- 2.1 If a propagation prediction method based on Rec. ITU-R P.370 is not used, the administrations concerned should decide on the calculation method used to determine if the interference resulting from the proposed DVB-T station or SFN is acceptable.
- 3 In the case of a low power DVB-T station to be protected (less than 10 Watts e.r.p.); and
 - 3.1 if special treatment is required, for instance because of geographical conditions, or in the case of relay receivers,
 - 3.2 treatment should be on a case by case basis in which more detailed calculation methods may be used.
- 4 The following calculations should be made to determine:
 - (a) the location of the test points.
 - With regard to affected DVB-T stations not resulting from the conversion of an analogue station into digital according to Annex 6, the method described in Annex 1, Section 6.7.2 is to be used, or
 - with regard to affected DVB-T stations resulting from the conversion of an analogue station into digital according to Annex 6, the method described in Annex 1, Section 6.7.2 is to be used, or
 - with regard to affected analogue stations that may be converted into digital in the future, the method described in Annex 1, Section 6.7.2 is to be used.and
 - (b) the reference usable field strengths.

The reference value at each test point is the calculated usable field strength according to Annex 1, Section 6.7.2. The reference date for the reference value is 25 July 1997 or, for a new station, the date at which it is entered in the Plan.and
 - (c) the resulting usable field strength in the case of a new DVB-T station or SFN.

This is found from the power summation at each test point of the reference value in 4(b) and the nuisance field strength of the proposed station or SFN.

and

(d) the resulting usable field strength in the case of a modified DVB-T station or SFN.

This is found from the power summation at each test point of the reference value in 4(b) with the contribution of the original station or SFN suppressed and the nuisance field strength of the modified DVB-T station or SFN.

and

(e) the resulting usable field strength in the case of a conversion from an analogue station if the conditions of Annex 6 are not fulfilled.

This is found from the power summation at each test point of the reference value in 4(b) with the contribution of the original station suppressed and the nuisance field strength of the station or SFN resulting from the conversion.

- 5 If the difference 4(c) minus 4(b), in the case of a new DVB-T station or SFN and if the difference 4d) minus 4b) in the case of a modified DVB-T station or SFN and if the difference 4e) minus 4b) in the case of a conversion of an analogue station when the conditions of Annex 6 are not fulfilled, is not more than 0.3 dB at any test point the request should normally be accepted. The station or SFN is then considered to be compatible.
- 5.1 If in special cases (e.g. topographical conditions; many previous small increases of interference) an increase of 0.3 dB or less is not acceptable, or
- 5.2 the increase is more than 0.3 dB at one or more test points, or
- 5.3 the criteria defined by the Administrations according to 2.1 or 3.2 are not satisfied,
- 5.4 the consulted administration should consider if the proposed station is nevertheless acceptable, taking into account practical circumstances, for example in cases where the usable field strength is near the minimum usable field strength and therefore compatible.
- 5.5 If the considerations in 5.4 indicate that the increase of interference is not acceptable, the station is considered to be incompatible.

SECTION D: Compatibility analysis for services other than broadcasting having primary status interfered with by DVB-T.

- 1 Following a request for the coordination of a proposed DVB-T station or SFN, a compatibility analysis should be undertaken to assess the impact on services other than broadcasting having primary status. Such a proposal may consist of:
- 1.1 a new DVB-T station or SFN, or
- 1.2 a modification of a DVB-T station or SFN, or
- 1.3 a conversion of an analogue television station.
- 2 The propagation prediction method described in Annex 1, Section 2 which is based on Rec. ITU-R P.370 or free-space, as appropriate, should be used unless agreed otherwise.
- 2.1 If a propagation prediction method based on Rec. ITU-R P.370 or free-space, as appropriate, is not used, the administrations concerned should decide on the calculation method used to determine if the interference resulting from the proposed DVB-T station or SFN is acceptable.
- 3 The nuisance field strength of the proposed DVB-T station or SFN should be calculated, using the protection criteria specified in Annex 5, Section 2, at each of the test points specified for the station of the other service (see Annex 1, Section 6.7.3).
- 4 If the nuisance field strength in 3) at any test point is not more than the field strength to be protected as defined in Annex 5, Section 2 the request should normally be accepted. The station is then considered to be compatible.

- 4.1 In the case of a conversion of an analogue station, if the nuisance field strength calculated in 3) at any test point is not more than the nuisance field strength of the original analogue station the station is considered to be compatible.
- 5 If the nuisance field strength is more than the field strength to be protected at one or more test points, or
- 5.1 the criteria defined by the Administrations according to 2.1 are not satisfied,
- 5.2 the consulted administration should consider if the proposed station is nevertheless acceptable, taking into account practical circumstances, and therefore compatible.
- 5.3 If the considerations in 5.2 indicate that the interference is not acceptable, the station is considered to be incompatible.

SECTION E: Compatibility analysis for DVB-T interfered with by services other than broadcasting having primary status

- 1 Following a request for the coordination of a proposed station of a service other than broadcasting having primary status, a compatibility analysis should be undertaken to assess the impact on DVB-T services. Such a proposal may consist of:
 - 1.1 a new station, or
 - 1.2 a modification of a station.
- 2 The propagation prediction method described in Annex 1, Section 2, which is based on Rec. ITU-R P.370 or free-space, as appropriate, should be used unless agreed otherwise.
- 2.1 If a propagation prediction method based on Rec. ITU-R P.370 or free-space, as appropriate, is not used, the administrations concerned should decide on the calculation method used to determine if the interference resulting from the proposed station is acceptable.
- 3 In the case of a low power DVB-T station to be protected (less than 10 Watts e.r.p.); and
 - 3.1 if special treatment is required, for instance because of geographical conditions, or in the case of relay receivers,
 - 3.2 treatment should be on a case by case basis in which more detailed calculation methods may be used.
- 4 The following calculations should be made to determine:
 - (a) the location of test points.
 - With regard to affected DVB-T stations not resulting from the conversion of an analogue station into digital according to Annex 6, the method described in Annex 1, Section 6.7.3 for a noise limited coverage, is to be used, or
 - with regard to affected DVB-T stations resulting from the conversion of an analogue station into digital according to Annex 6, the method described in Annex 1, Section 6.7.3, for noise limited coverage, is to be used.
 - with regard to affected analogue stations that may be converted into digital in the future, the method described in Annex 1, Section 6.7.3 is to be used.
 - and
 - (b) the nuisance field strengths.
 - The nuisance field strength of the proposed station of the service other than broadcasting should be calculated at each of these test points .
- 5 If the nuisance field strength 4(b) at any test point is not more than the minimum median equivalent field strength of the DVB-T service as specified in Annex 1, Section 8 the request should normally be accepted. The station is then considered to be compatible.
 - 5.1 if the nuisance field strength is more than the minimum median equivalent field strength at one or more test points, or

- 5.2 the criteria defined by the Administrations according to 2.1 or 3.2 are not satisfied,
- 5.3 the consulted administration should consider if the proposed station is nevertheless acceptable, taking into account practical circumstances, and therefore compatible.
- 5.4 If the considerations in 5.3 indicate that the interference is not acceptable, the station is considered to be incompatible.