



Recommendation WG3.20.003

Content of Direct Interference Case Reports

Subject Area: Coordination

1. Background

Responses to prior coordination notifications that include potential direct interference cases vary throughout the industry in their format and technical content. With multiple configurations operating and planned on a given path, it is difficult or impossible to correlate between interference analyses and the reported cases when complete technical details and calculations are not provided. All technical data items necessary to perform the interference calculation, as well as items useful in reviewing the cases, should be provided for the paths and stations involved. These are specified in revised WG3-86-002.

2. Recommendation

Frequency protectors should provide complete technical details of direct interference cases in response to prior coordination notifications.

Case report information

While the format of individual case reports is left to the frequency protector, all reported cases should contain a minimum set of information so that the coordinating party can process it.

- **Administrative Information**
 - o **Frequency Coordination Number**
 - o **PCN Date**
 - o **PCN Path Owner**
 - o **Case Report Identifier**
 - o **Case Path Owner**

Microwave-to-Microwave Interference Cases

The case report format should include both sites for microwave paths and clearly identify the Interferer and Victim sites.

- **Site Data**
 - o **Station Name**
 - o **Owner Name**
 - o **Latitude and Longitude [DMS]**
 - o **Callsign, if existing**
 - o **Ground Elevation [AMSL-ft/m]**

- **Antenna Data**

- **Antenna Make**
- **Antenna Model**
- **Gain [dBi]**
- **Beamwidth [°]**
- **Antenna Centerline [AGL-ft/m]**
- **Line Loss Cm, Tx, Rx [dB]**

- **Radio Data**

- **Radio Make**
- **Radio Model**
- **Modulation**
- **Emission Designator**
- **Rx Threshold [dBm]**, for Victim only
- **Power [dBm]**, for Interferer only

PCNs coordinated with ATPC should be analyzed using the ATPC Coordinated Power. Any responses not using the ATPC Coordinated Power should list the specific reason for rejecting the ATPC advantage.

- **RSL [dBm]**, for Victim only

- **Case Data**

The case report format should clearly identify the Interferer and Victim data.

- **Identification of case as Direct, Over Horizon (OH), or Indirect (buckng)**
- **Interfering Frequency, Polarization**
- **Victim Frequency, Polarization**
- **Frequency Separation [MHz]**
- **Victim T/I Objective [dB]** (if victim is digital)

○ **Propagation Loss**, including Long-Term and Short-Term where appropriate
Interference analysis of PCNs should use terrain-based propagation loss methods, with NSMA OH Loss being the recommended method. Any responses not using terrain-based propagation loss should list the specific reason for not considering terrain to calculate interference.

- **Indication whether case is due to Long- or Short-Term OH Loss calculations**
- **Indication whether case is to Victim Main or Diversity Antenna**
- **Path of interference length [mi/km]**
- **Path of interference azimuth at the interferer and victim site [°]**
- **Antenna Discrimination Angle [°]**

Discrimination angles should take vertical discrimination into account, using methods described in TIA Std 10 RevE 4.16.

- **Antenna Discrimination Values [dB]**
- **Interference Objective Level [dBm]**
- **Calculated Interference Level [dBm]**
- **Calculated C/I Level [dBm]**
- **Interference Margin [dB]**

Earth Station-into-Microwave and Microwave-into-Earth Station Interference Cases

The case report format should clearly identify the Interferer and Victim. Interference calculations into earth stations do not take ATPC Coordinated Power into account. Cases involving no overlap between the Microwave and Earth Station bandwidths should not be reported.

- Microwave Path Data

- **Site Data** as listed above for both sites
- **Antenna Data** as listed above for the Victim/Interferer site
- **Radio Data** if Microwave is Interferer
 - **Radio Make**
 - **Radio Model**
 - **Emission Designator**
 - **Frequency [MHz]**
- **Max Power [dBm]**

- Earth Station Data

- **Site Data** as listed above
- **Antenna Data**
- **Transmitter Power [dBW/4KHz]** if Earth Station is Interferer
- **Emission Designator**
- **Frequency Range [MHz]**

- Case Data

- **Propagation Loss**, including Long-Term and Short-Term OH Loss where appropriate
Interference analysis of PCNs should use terrain-based propagation loss methods, with NSMA OH Loss being the recommended method. Any responses not using terrain-based propagation loss should list the specific reason for not considering terrain to calculate interference.
 - **Indication whether case is due to Long- or Short-Term OH Loss calculations**
 - **Indication whether case is to Main or Diversity Antenna for microwave victim**
 - **Interfering Path Discrimination Angle [°]**
 - **Antenna Discrimination Angle [°]**
Discrimination angle of microwave antenna should take vertical discrimination into account, using methods described in TIA Std 10 RevE 4.16.
 - **Antenna Discrimination Values [dB]**
 - **Horizon Gain (dB)**
 - **Interference Objective Level [dBm]**
 - **Calculated Interference Level [dBm]**
 - **Interference Margin [dB]**

Adaptive Modulation case handling

Interference into microwave paths using adaptive modulation will be calculated into the most sensitive highest order modulation state or the mode with the most transmission capacity. For microwave-to-microwave interference, interference from adaptive modulation paths will be calculated based on the highest Coordinated Power across all modulations.

Renewal/Growth channel handling

For consistency with recent FCC rulings, coordinated frequencies older than 6 months should be treated as growth channels. Aging of PCN paths is determined from the date when the path was last issued as a “New” or “Major Modification” PCN. This date should be included on the path data sheet of PCNs.

Incoming parties with an immediate need may request that the original owner relinquish the unused renewal/growth channels. For renewal channels that have aged for more than 18 months, the incoming party may assume immediate relinquishment and proceed with timely applications. However, NSMA recommends that for renewal channels that have not yet aged 18 months, the original owner should be allowed 10 days to file applications on their channels after they receive a request to relinquish frequencies. After the 10-day grace period, the incoming party may assume relinquishment and proceed with timely applications. Any competing applications will be assessed for licensing or dismissal by the FCC.

Reinstatement PCNs for licensed paths that have failed to meet the construction deadline may be treated as growth channels if the current licensee cannot demonstrate significant progress toward construction or provide an adequate justification for the construction delay. If the licensee demonstrates significant progress or provides adequate justification, their frequencies will be protected for two months. If the licensee does not re-apply for the frequencies within 2 months of re-instatement, they will lose their protected status and incoming parties may treat these frequencies as growth channels.

Case Response Handling

Cases reported into the coordinating party's paths may be assumed to be accepted by the coordinating party if no response is received by incumbent party reporting them.

Similarly, after clarifying case resolution information is transmitted to the objecting party, the coordinating party can proceed without further delay if they are willing to assume the risk of potential further objections. Responses from the coordinating party to reported interference cases may also specify a requested reply date for the objecting party's review. Any further objection on these cases should be transmitted by the requested date.

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