Recommendation WG3.19.002

The Contents of Prior Coordination Notifications for Fixed Microwave Services

Subject Area: Notification-Response Procedures

1. Introduction

Section 101.103(d)(2)(ii) of the FCC Rules specifies necessary coordination data for fixed microwave services. Each Prior Coordination Notice (PCN) must specify the items required by FCC Rule section 101.103(d)(2)(ii). Additional items are also recommended to facilitate processing of PCNs and accurate assessment of the potential for interference.

2. Identification and purpose of the PCN

The following items should be included in a PCN to identify it:

- **Type of PCN**

  NEW: New path(s) that have not been coordinated within the last 6 months.
  MAJOR MODIFICATION: Path(s) with major modifications to data from a previous coordination. The previous coordination may be current or may be an older coordination that was applied for or licensed.
  MINOR MODIFICATION / INFORMATIONAL: Path(s) being modified with minor changes that do not increase interference potential into other systems, provided for information only. Multiple minor changes MAY be considered Major if their cumulative effect is Major. Any issuance of a Minor Mod PCN will be treated as renewing the usage for another 6 months after the PCN date.
  RENEWAL: Path(s) being renewed for another 6 month coordination period.

  A minor modification is defined with the parameters of rule section 47CFR1.929, "Classification of filings as major or minor", in mind. However, the goal here is to define the criteria for minor changes that do not increase a coordinated path's effect on the surrounding environment. If a change creates or exacerbates an interference situation, it should not be considered as minor, even if it technically meets the requirements listed below. If interference is predicted above what was predicted on the previous PCN, then objections may be made and must be resolved.
  A coordination may normally be issued as an Informational Only minor modification if changes meet the following requirements:

- Location latitude and/or longitude coordinates change less than 5 seconds
- Transmit antenna azimuth change < 1 degree
- No increase in bandwidth
- EIRP (Power + Tx Antenna Gain – Tx Loss – Common Loss) increase < 3 dB
- Tx antenna height (Ground Elevation + Tx Antenna Centerline) increase < 3 meters
- No change in frequency
- No change in polarization

A major modification would then include:

- Any change in coordinates >= 5 seconds
- Any transmit antenna azimuth change >= 1 degree
- Any increase in antenna beamwidth
- Any increase in radio bandwidth
- Any increase in EIRP >= 3 dB
- Any increase in Tx Antenna Height >= 3 meters
- Any change in frequency
- Change or addition of polarization

- **Frequency Coordination Number**
  All New PCNs should be assigned a unique frequency coordination number. This will be used to identify responses and any subsequent modifications or renewals to the PCN.
- **PCN Date**
  The PCN date should accurately indicate the date on which the current PCN is issued to affected parties.
- **Response Date**
  The requested Response Date should be provided for New and Major Modification PCN types. Renewal and Minor Modification/Informational PCNs should indicate that no response is required.
- **Owner Name**
- **FRN** (if available)

3. Path data

The following items should be included to describe site data:

- **Station Name**
- **County and State**
- **City** (optional)
- **Latitude and Longitude** [DMS]
- **Ground Elevation** [AMSL-ft/m]
- **Callsign**, if existing
- **Antenna Structure Registration number**, if available
- **Path Azimuth** [°]
- **Path Length** [mi/km]
- **Free Space Loss** (optional**) [dB]**

The following items identify antenna data:

- **Make**
- **Model**
- **Diameter** [ft/m]

The diameter of the antenna should be specified since it is needed for Near Field calculations for "bucking".

- **Gain** [dBi]
- **Beamwidth** [°]
- **Antenna Centerline** [AGL-ft/m]
- **Tilt (Vertical Angle)** [°]

The following identify radio equipment parameters and usage:

- **Make**
- **Model**
- **Stability** [%]
- **Modulation**
- **Emission Designator**
- **Data Rate** [Mbps]
- **Receive Threshold** [dBm]
- **Power**
  For non-ATPC:
  - **Power** [dBm]
  - **EIRP** [dBm]
  - **Receive Signal Level**, optional [dBm]
  - **ACM Coordinated Power** (if path qualifies for a coordination advantage), [dBm]

  For ATPC:
  - **Nominal, Coordinated, Maximum Powers** [dBm]
  - **Max EIRP** [dBm]
  - **Coordinated Receive Signal Level,** (required for Highest Modulation State – Optional for others) [dBm]
  - **ATPC Trigger Level** [dBm]
    The ATPC Trigger Level is required to determine validity of Coordinated Power settings.
    ACM Coordinated Power (if path qualifies for a coordination advantage), [dBm]
- **Losses**
  - A combination of **Common Loss**, **Tx, Rx, Div Loss** (if diversity antenna exists) [dB]
    Common Loss is assumed to apply to all antennas, including Diversity. Any additional Tx/Rx/Div Losses are to be added to the Common Loss for each type of antenna specified.
- **Frequency** [MHz]
- **Polarization**
  - H – Horizontal
  - V – Vertical
  - S - Horizontal and Vertical
  - G - Growth Horizontal
  - U - Growth Vertical
  - B – Growth Horizontal and Vertical

The following should be included to specify Adaptive Coding Modulation parameters for all modulations:

- **Modulation**
- **Emission Designator**
- **Data Rate** [Mbps]
- **Receive Threshold [dBm] for highest modulation state**

- **Power, EIRP** for non-ATPC, or **Nom/Coord/Max Power, Max EIRP** for ATPC [dBm]

The parameters of the highest modulation coordinated must be listed on the main data sheet of the path.

4. Additional Information

To limit the number of successive modifications issued, PCNs should be issued only after a proper analysis is performed to choose interference-free frequencies. This will limit the number of change Notices needed for unforeseen modifications.

For superseding PCNs, such as Modifications or Minor Modifications, any changes to path data should be highlighted or underlined in some fashion to point out the changes being made to each path.

If requested, clarification of PCN data, such as antenna pattern requests or radio technical specifications, should be provided promptly.

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