

plan originally proposed by the Commission, as well as those recently filed with the Commission, would lead to use of railroad channels by non-railroad users, with a very high likelihood of interference and channel blockage that will create an unsafe operating environment on railroad rights-of-way throughout the United States. The consequent threat to public safety clearly outweighs any of the perceived benefits. The Commission must, therefore, preserve the current eligibility restrictions set forth in Section 90.91 of the rules and allow the Railroad Radio Service to remain intact.

Respectfully submitted,

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## Appendix-A. Recommended Data Elements for Automated Modeling, Simulation, and Spectrum Management of Wireless Communications Systems

The following information is required to facilitate Spectrum Management. Sufficient information is required to calculate the Effective Radiated Power (ERPd) relative to a half wave dipole and the required signal levels for the minimum reliability for the Criterion Channel Performance (CCP) over the Protected Service Area. The existing systems must also be defined so that a bidirectional evaluation can be performed. The existing system(s) will be comprised of co-channel licensees, adjacent channel(s) and potentially alternate and second alternate channels for cases where a wide bandwidth channel is being utilized against narrow bandwidth channels.

### Parameters of the Transmitter, [proposed].

1.1	Site Latitude dd, mm, ss N/S	
1.11	Site Longitude ddd, mm, ss W/E	
1.2	Power supplied to the antenna	dBm
1.3	Antenna model and manufacturer	
13.1	Maximum Antenna Gain	dBd
1.3.2	Azimuth of directional gain if applicable	° from True North
1.3.3	Maximum Effective Radiated Power	dBd
1.4	Antenna Height Above Ground Level	(m) HAGL
1.5	Site Elevation, Height Above Mean Sea Level	(m) HAMSL
1.6	Tower Height	m
1.7	Modulation Type	table 4
1.7.1	Vocoder type	
1.7.2	Adjacent Channel Power SPD histogram	dBm/bin
1.8	Bandwidth	kHz
1.9	Frequency	MHz

Antenna Pattern - Provide manufacturer and model number so that an antenna pattern can be obtained. Leaving 1.3.2 blank implies omnidirectional and eliminates the requirement for an antenna pattern.

### Parameters of the Receiver [proposed].

2.1	Reference Static Sensitivity rel to 12 dBS or 5% BER	dBm
2.2	Receiver Effective Noise Bandwidth (ENBW)(table6)	kHz
2.3	Criterion Channel Performance, faded CM or % BER	table 4
2.3.1	Usage Losses (in car or in building loss)	dB
2.4	Antenna Gain (include pattern and polarization losses)	dBd
2.4.1	Cable Loss	dB
2.5	Antenna Height Above Ground Level (HAGL)	m
2.6	Minimum Reliability for CCP at Service Area boundary	%
2.7	Frequency	MHz
2.8	Service Area definition	note
2.9	Voting or Diversity? V(voting), DX (x branches)	
2.10	Simplex operation of mobile units? Y/N	

Service area definition is required to determine where the mobile radios operate. It can be defined by:

- A radius around the site or a specific latitude/longitude.
- A rectangle with the opposite corners defined by latitude/longitude.
- Political boundary such as city, county, state.

- A political boundary plus an additional distance of “X” miles.
- A set of latitude/longitudes ordered in a counter clockwise direction so that when the points are connected, the resulting irregular polygon defines the required service area.

Simplex operation impacts adjacent channel reuse distance because of mobile to mobile potential interference.

**Parameters for the Transmitter [existing]**

<b>3.1</b>	<b>Site Latitude dd, mm, ss N/S</b>	
<b>3.11</b>	<b>Site Longitude ddd, mm, ss W/E</b>	
<b>3.2</b>	<b>Power supplied to the antenna</b>	<b>dBm</b>
<b>3.3</b>	<b>Antenna model and manufacturer</b>	
<b>3.3.1</b>	<b>Maximum Antenna Gain</b>	<b>dBd</b>
<b>3.3.2</b>	<b>Azimuth of directional gain if applicable</b>	<b>° from True North</b>
<b>3.3.3</b>	<b>Maximum Effective Radiated Power</b>	<b>dBd</b>
<b>3.4</b>	<b>Antenna Height Above Ground Level</b>	<b>(m) HAGL</b>
<b>3.5</b>	<b>Site Elevation, Height Above Mean Sea Level</b>	<b>(m) HAMSL</b>
<b>3.6</b>	<b>Tower Height</b>	<b>m</b>
<b>3.7</b>	<b>Modulation Type</b>	<b>table 4</b>
<b>3.7.1</b>	<b>Vocoder type</b>	
<b>3.7.2</b>	<b>Adjacent Channel Power SPD histogram</b>	<b>dBm/bin</b>
<b>3.8</b>	<b>Bandwidth</b>	<b>kHz</b>
<b>3.9</b>	<b>Frequency</b>	<b>MHz</b>

Antenna Pattern - Provide manufacturer and model number so that an antenna pattern can be obtained. Leaving 3.3.2 blank implies omnidirectional and eliminates the requirement for an antenna pattern.

**Parameters of the Receiver [existing].**

<b>4.1</b>	<b>Reference Static Sensitivity rel to 12 dBs or 5% BER</b>	<b>dBm</b>
<b>4.2</b>	<b>Receiver Effective Noise Bandwidth (ENBW)(table6)</b>	<b>kHz</b>
<b>4.3</b>	<b>Criterion Channel Performance, faded CM or % BER</b>	<b>table 4</b>
<b>4.3.1</b>	<b>Usage Losses (in car or in building loss)</b>	<b>dB</b>
<b>4.4</b>	<b>Antenna Gain (include pattern and polarization losses)</b>	<b>dBd</b>
<b>4.4.1</b>	<b>Cable Loss</b>	<b>dB</b>
<b>4.5</b>	<b>Antenna Height Above Ground Level (HAGL)</b>	<b>m</b>
<b>4.6</b>	<b>Minimum Reliability for CCP at Service Area boundary</b>	<b>%</b>
<b>4.7</b>	<b>Frequency</b>	<b>MHz</b>
<b>4.8</b>	<b>Service Area Definition</b>	
<b>4.9</b>	<b>Voting or Diversity? V(voting), DX (x branches)</b>	
<b>4.10</b>	<b>Simplex operation of mobile units? Y/N</b>	

Service area definition is required to determine where the mobile radios operate. It can be defined by:

- A radius around the site or a specific latitude/longitude.
- A rectangle with the opposite corners defined by latitude/longitude.
- Political boundary such as city, county, state.
- A political boundary plus an additional distance of “X” miles.
- A set of latitude/longitudes ordered in a counter clockwise direction so that when the points are connected, the resulting irregular polygon defines the required service area.

Simplex operation impacts adjacent channel reuse distance because of mobile to mobile potential interference.

The evaluation will be made bidirectional, proposed to existing and existing to proposed, in the talk-out direction only, utilizing the worst case based on service area definitions.

## CERTIFICATE OF SERVICE

I, **Bridget Y. Monroe**, hereby certify that on this 16th day of January, 1996, copies of the foregoing "Reply Comments of the Association of American Railroads" were mailed, first class postage prepaid to the following:

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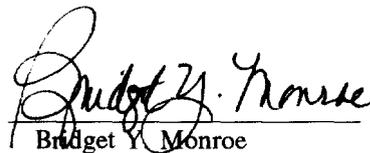
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