Wireless Coverage Maps

These files contain the geographic shape data of polygons representing wireless propagation. Accordance with the following data specification will improve the efficiency of staff review, but is optional.

Data Format

Each wireless coverage map should be submitted in ESRI Shapefile format and should contain polygons representing planned geographic coverage of fixed wireless deployments for each particular service milestone. The data associated with each polygon should indicate the performance tier's upstream and downstream data speeds associated with the deployment, and the coverage area polygon should depict the boundaries where users should expect to receive those minimum required speeds. In developing propagation models and generating coverage maps, appropriate resolutions should be used. Terrain and clutter resolution should not exceed 10 meters when modeling deployments that use mmWave spectrum, while for deployments using all other spectrum such resolutions should not exceed 30 meters. The resolution of the boundaries of coverage map polygons should not exceed 30 meters. Coverage maps should also account for capacity and peak periods effects, not only propagation and signal power levels.

Field	Data Type	Sample	Description
FRN	Text {10}	0123456789	FCC Registration Number of the entity
DBA	Text {1,255}	Acme Wireless	Name of the entity customers could contact to purchase service in this area
MINDOWN	Decimal (10,3)	50.0	Downstream performance tier speed (or the downstream speed locations should expect to receive in the coverage area) in Mbps.
MINUP	Decimal (10,3)	5.0	Upstream performance tier speed (or the upstream speed locations should expect to receive in the coverage area) in Mbps.
LOCATIONS	Integer	23	Estimated number of eligible locations covered by the wireless propagation.

Data Standards

1. All map areas should be closed, non-overlapping polygons with a single, unique identifier.
2. Any variation in any of the required fields necessitates the creation of a separate polygon showing the relevant coverage. In other words, each polygon should have a single value for each of the following fields: downstream bandwidth and upstream bandwidth.
3. The shapefile should have an assigned projection with an accompanying .PRJ file.
4. The shapefile should use unprojected WGS84 geographic coordinate system.
5. The coverage boundaries should have a resolution of 30 meters (approximately one arc-second) or better. Resolutions of one arc-second or better are commonly available resolutions in terrain databases. See USGS 3D Elevation Program.

6. The shapefile should be submitted as a *.zip archive containing all required component files for the shapefile. Please ensure that the *.zip archive contains one and only one shapefile.

Wireless Infrastructure

These files contain the geolocated radio access network (RAN) infrastructure that a fixed wireless provider uses to provide its service as indicated in the propagation maps for each service milestone.

Data Format

Each wireless infrastructure file should be submitted in Comma Separated Value (CSV) format and contain the geolocated infrastructure that a service provider uses to provide fixed wireless deployments. This file should use the unprojected WGS84 geographic coordinate system.

Field	Data Type	Sample	Description
latitude	Decimal (3,6)	38.903692	Geographic coordinate latitude of the infrastructure in decimal degrees
longitude	Decimal (3,6)	-77.009676	Geographic coordinate longitude of the infrastructure in decimal degrees
antenna_height_agl	Integer	199	Height of the antenna above-ground-level in feet
antenna_orientation	Integer (3)	120	Representative Non-zero directional orientation of the base station antenna in integer degrees
antenna_down_tilt	Decimal (3,1)	6.0	Down-tilt angle of base station antenna or sector in decimal degrees
number_of_sectors	Integer	3	Number of base station sectors
antenna_model	String	Phased array	Indicating base station antenna type and size
antenna_system_configuration	String	4 x 4 MIMO	Transmit diversity, multiple-in-multiple-out (MIMO), beam switching
effective_radiated_power	Decimal (2,1)	27.5	Effective radiated power level of base station antenna in decibel-milliwatts (dBm)
CPE_antenna_height_agl	Integer	199	CPE antenna height above-ground-level in feet
spectrum_amount_mhz	Integer	100	Amount of used spectrum in megahertz per sector
TDD_split	String	90:10	Base station TDD channel segmentation downstream to upstream
spectrum_band	String	CBRS 3.5 GHz	Frequency band is in decimal
radio_technology	String	LTE Advanced	Radio access technology such as 5G, LTE, IEEE 802.11variants