Request for Experimental License

Purpose:

AT&T Laboratories files this request seeking authorization to test multiple new radio systems that are equipped with integrated adaptive antennas, including prototype equipment and systems. This testing will allow AT&T to evaluate the performance characteristics of each system in real-world rural and suburban environments, such as data throughput, latency, error rates, availability, susceptibility, SAS integration, and generation of self and external interference.

Radio Systems:

These radios will be installed and tested by AT&T Laboratories personnel using microwave radio and digital communications test equipment. Each radio unit weighs about 33 lbs. and is housed in a weatherproof outdoor enclosure approximately 10.4" (w) x 25" (h) x 4" (d) in size. Each radio unit consists of a transmitter, a receiver and an adaptive beamforming antenna. The maximum transmitter power of the radio unit will not exceed 47 dBm / 10 MHz EIRP.

Spectrum Use:

The radio transmitters may occupy spectrum from 3550 MHz to 3650 MHz. Depending on how it is configured, each radio will use a digitally modulated 10 MHz, 20 MHz or 40 MHz channel in this band. Different transmitters may use the same or different channels as each other. The total conducted transmit power of any transmitter will not exceed 43 dBm (20 Watts).

Antenna Systems:

Much of the experimentation will be centered around the evaluation of the adaptive antenna system in a non-line-of-sight (NLOS) environment. So, the exact antenna gains and beam widths to be realized are unknown at this time. Furthermore, the main lobe of any antenna deployed will be pointed approximately to the horizon plus or minus 10 degrees. The azimuthal orientation of the main lobe of the antenna may be arbitrary.

Equipment Deployment:

The radio units will be deployed on a mast on the roof top of an AT&T facility located at 3400 W Plano Parkway, Plano TX, 75075 (33 00 31.63511 latitude and 96 45 32.09787 Longitude) at a ground elevation (GE) of 218 meters above mean sea level (AMSL). The radio units will be deployed on existing towers at the following locations.

- 511 Ohio Drive, Plano, TX 75075 (33 00 41.83775 latitude and 96 47 14.50003 longitude) at GE 213 meters AMSL.
- 17804 Dickerson, Dallas, TX 75252 (32 59 30.84058 latitude and 96 46 19.99752 longitude) at GE 209 meters AMSL.
- 2412 Preston Rd, Suite 160, Plano, TX 75093 (33 01 48.83631 latitude and 96 47 34.90102 longitude) GE 216 meters AMSL.
- 3304 Coit Rd, Plano TX 75023 (33 02 32.63609 latitude and 96 46 9.89769 longitude) GE 236 meters AMSL.

No more than 3 radio transmitters will be operated simultaneously at any location. Radios will be mounted on rigid masts on the building rooftop and on existing tower locations and will not exceed a height of 19 meters (65 feet) above the ground level (AGL). See the diagram in Figure 1 and 2 for a depiction of the structure deployment.



Figure 1 - Possible Building Radio Mount Plano, TX



Figure 2 - Possible Tower Radio Mount Plano, TX