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January 24, 2013

VIA ELECTRONIC FILING

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th St. S.W.
Washington, D.C. 20554

Re: Promoting Expanded Opportunities for Radio Experimentation and Market Trials Under Part 5 of the Commission's Rules and Streamlining Other Related Rules, ET Docket 10-236

2006 Biennial Review of Telecommunications Regulations – Part 2 Administered by the Office of Engineering and Technology, ET Docket 06-155

Permitted Oral *Ex Parte* Presentation

Dear Ms. Dortch:

On January 22 and 23, 2013, representatives of The Boeing Company ("Boeing") met in separate meetings with representatives of the Commission staff to discuss the above-captioned proceeding on creating increased opportunities for the use of wireless spectrum for experiments and innovation. On January 22, meetings were held with Commissioner Mignon Clyburn and her legal advisor, Louis Peraertz, and intern, Brian Indovina; and with Renee Gregory, legal advisor to Chairman Genachwoski. On January 23, meetings were held with Commissioner Jessica Rosenworcel and her legal advisor, David Goldman; with Commissioner Ajit Pai and his legal advisor, Courtney Reinhard; with Erin McGrath, legal advisor to Commissioner McDowell; with Julius Knapp, Chief of the Office of Engineering and Technology, and with Bruce Romano, Associate Chief (Legal) for OET. Attending each of the meetings on behalf of Boeing were Audrey Allison, Joseph Cramer and the undersigned. The attached talking points were distributed during the meetings.

Most of the discussion was focused on reducing the incidence in which coordination and consent conditions are imposed on experimental licenses issued by OET. Section 5.85(e) of the Commission's rules instructs that OET "may, at its discretion" impose coordination requirements on experimental licenses.[1] In recent years, however, coordination requirements

[1] 47 C.F.R. § 5.85(e).

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have not been employed with discretion, but instead are routinely imposed on the experimental use of numerous spectrum bands regardless of whether coordination is warranted by the nature of the experimental operations. In part because of this, Recommendation 7.7 of the National Broadband Plan advocates permitting experimental use of spectrum "without individual coordination of frequencies, conditioned on not causing harmful interference."[2]

The Boeing representatives also discussed the Commission's proposed creation of a Program Experimental License, which would permit researchers to conduct wireless experiments over an extended period in an identified location. Boeing urged that the identification of the location applicable to such Program Experimental Licenses remains flexible so that OET, working with license applicants, can define geographic limits to such licenses (such as university or corporate campuses) that provide licensees with sufficient flexibility while adequately constraining the geographic reach of the experimental operations.

If the Commission does create a Program Experimental License, this new class of license should be available for research and experimentation in all spectrum bands. The Commission should not notch out heavily used spectrum bands, such as CMRS spectrum particularly given the significant amount of research and innovation that is conducted on new and experimental services in CMRS spectrum. Obviously, OET may need to impose additional operating restrictions on Program Experimental Licenses authorizing the use of certain especially sensitive spectrum bands, such as the Commission's Restricted Bands, but conditions for the use of such spectrum by Program Experimental Licensees can be developed by OET on an individual basis in the same manner that such conditions are developed today for traditional experimental licenses.

Boeing's discussion also focused on the Commission's proposal to place non-confidential information regarding pending applications for Program Experimental Licenses on a public web portal for review by potentially interested parties. Boeing believes that any automatic review period before which such applications could be granted should be relatively short and in no event longer than ten days. Further, any party that has a potential concern about the possibility of harmful interference regarding a specific Program Experimental License application should be required to raise specific and substantive concerns about the application within the ten day period. In the unlikely event that an interested party is unable to provide a substantive response within the ten day period, the party should be permitted to request additional time from OET, which should not be routinely granted. In the event that a substantive concern is raised regarding a specific application, the parties should be given a brief period to resolve the concerns and, if they are unable to do so, OET staff should be delegated to reach a decision on the issue, most likely by placing specific conditions or operational requirements, if deemed necessary, on the Program Experimental License that is issued.

In considering the use of a public web portal for Program Experimental License applications, the Commission should note the fact that a substantial percentage of experimental operations are necessarily confidential, either because they involve proprietary research or technology, or because they involve classified or ITAR controlled activities often undertaken on

[2] *Connecting America: The National Broadband Plan*, Federal Communications Commission, Recommendation 7.7, March 2010 ("*National Broadband Plan*") (available at http://www.broadband.gov/download-plan/).

behalf of the U.S. Government. For this reason, the information made available on the public web portal should be limited to the anticipated propagation characteristics of the tests (i.e., frequencies, power levels, emission types, duty cycles, etc.) and the geographic location of the testing.

Finally, the Commission should reject any efforts by licensees to extract monetary payments from applicants for Program Experimental Licenses, including payments that are purported to reimburse licensees for their time and effort in reviewing the web portal and in assessing Program Experimental License applications. In this regard, at least one major wireless licensee has been attempting to charge relatively substantial fees for reviewing and approving experimental coordination requests. Such fees, if widely imposed by wireless licensees, would rapidly escalate the cost of wireless experimentation beyond the capabilities of many research organizations, invariably stifling innovation. Even for those organizations that could absorb the additional costs, the significantly increased expenses would result in the development of fewer new products and higher prices for consumers for those new wireless products that are developed.

Further, the imposition of fees by licensees for reviewing experimental license applications is incompatible with the underlying obligations of spectrum licensees under the Communications Act. As the Commission has repeatedly concluded, spectrum is a scarce public resource and the right of licensees to use spectrum for commercial purposes is a privilege that carries with it certain obligations, including the obligation to assist where possible in enabling the shared use of spectrum to facilitate research and experimentation that could further the development of innovative and more efficient uses of spectrum to benefit the public.

Sincerely,

Bruce A. Olcott
Counsel to The Boeing Company

cc: Commissioner Mignon Clyburn
Commissioner Jessica Rosenworcel
Commissioner Ajit Pai
Renee Gregory
Louis Peraertz
David Goldman
Courtney Reinhard
Erin McGrath
Julius Knapp
Bruce Romano

PART 5 EXPERIMENTATION NPRM

THE BOEING COMPANY

JANUARY 23, 2013

- The National Broadband Plan (Recommendation 7.7) advocates "more flexible experimental licensing rules" to facilitate the use of spectrum by researchers
    - Its Recommendations include permitting experimentation "without individual coordination of frequencies, conditioned on not causing harmful interference"
- The NPRM seeks ways to use experimental licenses "to shorten the time it takes to transform concepts into consumer products and to bring ideas from the lab to the marketplace"

Importance of Experimental Licenses

- Major manufacturers such as Boeing depend on experimental licenses to develop new products and to conduct critically-important tests on highly sensitive operational systems
    - Boeing develops wireless technologies for such uses as public safety surveillance, homeland security and border control, remote communications, and aircraft avionics
    - Boeing conducts spectrum sweep tests on new aircraft both on the ground and in flight to ensure avionics systems are not disrupted by wireless device transmissions
    - Boeing tests the communications and control systems of each new satellite and launch system to ensure their proper operation and control during launch and in orbit

Excessive Coordination Requirements

- An escalating trend of imposing unnecessary and burdensome coordination requirements on experimental licensees significantly hampers and delays (or prevents) experimental testing
    - Coordination is often unnecessary because many experimental operations are conducted at very low power levels for brief periods in remote locations
    - Primary licensees lack adequate incentive to promptly approve coordination requests
- The OET should therefore exercise discretion to impose coordination requirements only on experimental operations that pose an appreciable risk of causing harmful interference
    - In all other cases, low power levels, brief transmission periods, remote locations or shielding, and "stop button" procedures are sufficient to prevent interference
    - Experimental license applicants should not be required to coordinate prior to filing their applications because that would presume that coordination is always needed

Safe Harbor Approach

- Boeing proposes to exempt from coordination any experimental license application in which RF transmissions will not exceed § 15.109(b) levels at the fence line of a controlled test area

- Such authorizations do not require coordination because they would pose no more risk of interference then unlicensed ubiquitously deployed unintentional radiators
- Boeing's safe harbor proposal would not solve the problem of excessive coordination requirements, but it would help to reduce a portion of the burden on researchers

Coordination Approval Fees

- Any proposal permitting individual licensees to charge fees for reviewing coordination requests could rapidly elevate the costs of experimentation, invariably stifling innovation
  - Boeing, for example, currently has about 190 active experimental authorizations, most of which include coordination and consent obligations
  - Boeing's licenses often cover many frequencies and require coordination with multiple licensees in such services as CMRS, AWS, WCS, BRS, FS, and broadcast
  - Coordination with microwave licensees can require contacting 40-50 different users
  - Coordination approval fees of up to $4,000 per licensee (as proposed by one licensee) could rapidly become prohibitively expensive and burdensome

New Experimental License Classes

- The Commission should move forward with its proposal to create two new classes of experimental licenses – program experimental and innovation zone licenses
  - Program experimental licenses should be available to private entities, which conduct the vast majority of experimental wireless operations according to OET records
  - Innovation zone licenses should be permitted within the confines of exclusive-use facilities such as manufacturing plants
    - The use of secure facilities is necessary for experiments involving technologies that are commercially sensitive or subject to export controls
    - Given that a potentially unlimited number of program and innovation zone licenses can be issued, no justification exists to limit their availability to academic institutions and shared facilities

RF Enclosures

- Experimental operations in properly designed RF enclosed facilities involve essentially no risk of interference to authorized radio communications
- The Commission should therefore codify its policy of permitting unlicensed experimental operations in RF enclosures, such as anechoic chambers or Faraday cages
  - Unlicensed experimental operations in RF enclosures should be permitted in all spectrum bands, including restricted bands and CMRS frequencies
  - Any emission limits should be no more stringent than the existing limits for Section 15.109(b) Class A unintentional radiators as measured outside of an RF enclosure