

September 9, 2015

VIA ELECTRONIC FILING

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: *Comment Sought on Defining Commencement of Operations in the 600 MHz Band* (GN Docket No. 12-268)

Dear Ms. Dortch,

On Wednesday, September 2, 2015, CTIA – The Wireless Association® (“CTIA”) and its members met with representatives from the Incentive Auction Task Force (“IATF”), the Wireless Telecommunications Bureau (“WTB”), the Office of Engineering and Technology (“OET”), the Media Bureau (“MB”), and the Office of General Counsel (“OGC”) to discuss the above-referenced proceeding. A list of attendees is included as **Appendix B** to this *ex parte* filing.

As CTIA explained in the meeting, in the *Commence Operations* proceeding,¹ the Commission contemplates a substantially new approach that would delay licensees’ access to their purchased spectrum and limit licensees’ ability to access their entire licensed area. As CTIA previously explained, the proposal to limit “commence operations” to areas where a 600 MHz licensee has begun site activation and commissioning tests using permanent base station equipment and permanent antenna or tower locations would unnecessarily preclude rapid deployment of the spectrum and may raise costs for consumers.² CTIA continues to strongly believe that the Commission’s rules should reflect 600 MHz licensees’ considerable investment and primary usage rights, including the ability to access their licensed spectrum free from interference.

While CTIA has serious concerns about this approach, we have nevertheless sought to identify a compromise position that would allow wireless licensees to gain timely, necessary access to spectrum they purchased while delaying displacement of secondary users to the last possible moment. As described below, and as discussed at the meeting, this compromise proposal would largely adopt the suggested “commence operations” definition proposed by the Commission, while also allowing 600 MHz licensees to initiate critically important market testing in limited markets and geographic areas. CTIA believes that this new proposal is a substantial compromise – to be sure, unlicensed white space device users and low-power television (“LPTV”) stations remaining in the band after it is reallocated and licensed for mobile

¹ See *Comment Sought on Defining Commencement of Operations in the 600 MHz Band*, 30 FCC Rcd 3200 (2015) (“*Commence Operations*”).

² See e.g., *Ex Parte* Presentation of CTIA – The Wireless Association®, GN Docket No. 12-268 (filed July 6, 2015).

wireless use would still be able to use mobile wireless spectrum on a secondary basis until it became necessary to clear the spectrum for wireless use, but wireless licensees would retain the right to perform “market” testing, without which deployment will not occur. Such market testing typically is conducted in only a fraction of the areas where full commercial launch would occur – thus, LPTV stations and other secondary users could continue to utilize the mobile wireless band in the vast majority of areas beyond this stage, until pre-commercial launch testing necessitates the use of the mobile wireless band for mobile wireless service.

Need for Market Testing. The ability of wireless providers to conduct market (or “cluster”)³ testing without interference from secondary services is a necessary pre-requisite to commercial deployment. The most basic purpose of market tests is to ensure that the network equipment and software works as designed. Such testing also informs the engineering and business decisions that influence comprehensive network deployment plans. Prior to engaging in site commissioning testing, a wireless provider needs to deploy prototype equipment in a limited number of markets to determine if the equipment actually performs as expected in the real-world (as compared to laboratory performance) and if the propagation models and software that have been developed accurately model the capabilities of the new radiofrequency equipment. This is true of any commercial wireless deployment, but is particularly important for the 600 MHz band, as there has never been deployment in this spectrum anywhere in the world to rely upon to understand how equipment will work in the field (*i.e.*, in a real-world environment). New 600 MHz wireless licensees will therefore need to: (1) test different base station equipment from a variety of vendors; (2) test different antennas from different vendors (and different antenna configurations); (3) measure coverage in the market (as compared to the predicted coverage from the propagation model); (4) test functioning of hardware and software within the base station equipment; and (5) measure the effects of impairments (both domestic and foreign) that will remain in the 600 MHz band from full power broadcast television stations (as opposed to the predicted levels of interference from the Commission’s engineering models). In order for such testing to accurately inform critical business and engineering decisions, it must not be affected by interference from secondary operations that will not exist during commercial operations.

Market Testing Proposal. To facilitate the necessary market testing component of mobile broadband deployment, CTIA offers the following proposal which preserves key elements of the FCC’s original proposal:

- A 600 MHz band wireless licensee’s operations will be deemed to “commence” when the licensee begins either market or site commissioning tests.
- Market testing in certain select markets (and limited geography within those select markets) would consist of deployment of base stations or other radio facilities to:
 - Allow testing of prototype equipment;
 - Calibrate the propagation models relative to actual, real-world performance of mobile broadband operations in 600 MHz spectrum; and/or

³ Market testing may also be referred to as cluster testing or First Field Application testing. It is not generally conducted throughout an entire market area, but instead typically occurs in a cluster of sites within a market area.

- Determine the effects of impairment from full power TV stations that will continue to operate after repacking.
- Where market testing is not required, a 600 MHz wireless licensee would be deemed to have “commenced operations” at the site commissioning testing stage, with the definition of site commissioning testing based on the original Commission proposal, as modified in the attached *Appendix A* in order to more closely reflect the carriers’ site deployment practices.
- Regardless of whether commencement of operations is triggered via market or site commissioning testing, licensed providers would follow the required notification procedures to secondary service incumbents as previously adopted by the Commission.

Market Testing Is Limited in Scope. We expect that licensees’ conduct of market testing would be consistent with past spectrum deployments, would be limited in nature, and would be conducted in good faith. Based on previous market testing by CTIA member carriers, such testing typically involves from two to six test areas, comprising from as little as 10 sites to 200-300 sites. The test areas typically cover a county or two within a license area, generally no more than 1,000 square miles.⁴ Indeed, the restricted scope of market testing should not widely affect remaining secondary services – only in a small subset of the geography and spectrum would it be necessary to clear the licensed spectrum of secondary incumbents prior to the site commissioning stage proposed by the Commission. Market testing sites represent only a small fraction of the tens of thousands of sites that licensees will ultimately deploy.

Consequences from Lack of Market Testing. If 600 MHz licensees are not able to conduct actual field testing of new equipment and software (and perhaps a new 5G technology) free from interference from secondary services, a number of highly problematic consequences would be likely. First, the inability to conduct market tests would inevitably delay deployment of mobile broadband services until such testing could be completed. Without clear spectrum to conduct field testing, carriers and vendors would lack the ability to determine whether the new software, hardware, and technology are able to meet requirements under actual field conditions. As a result, licensees may be unable to meet their first interim build-out requirement within six years from the date of receiving their licenses.⁵ Under normal circumstances, meeting this interim benchmark would be challenging for licensees. However, in the 600 MHz band, licensees will not have full access to their licensed spectrum until full power broadcast television stations are relocated – a process that can take up to 39 months. Inhibiting market testing in any fashion, and particularly in the limited window available after full power broadcast television stations are relocated, will greatly jeopardize wireless providers’ ability to meet the six-year interim build-out requirement, as such market testing is a necessary prerequisite to commercial launch.

⁴ It should be noted that county sizes vary among different parts of the country. However, 1,000 square miles is not a particularly large portion of a license area. For example, in the Washington DC – Baltimore Partial Economic Area, two counties – Montgomery and Prince George’s, representing only a fraction of the licensed area – are collectively about 1,004 square miles in size.

⁵ See 47 C.F.R. § 27.14(t)(1).

More importantly, however, the inability to field test new equipment and technology inevitably will delay the availability of mobile broadband services in the 600 MHz band. This would directly affect the more than 300 million users of commercial mobile broadband services. Of course, the rapid deployment of mobile broadband services in the 600 MHz band was Congress' paramount objective in granting the FCC the authority to hold the incentive auction. Purposefully delaying the use of this spectrum by mobile broadband licensees (who will have paid billions for the exclusive right to use the spectrum) in order to allow secondary users of broadcast spectrum to remain in the 600 MHz band more than three years after it was reallocated and auctioned for primary mobile wireless use would frustrate this paramount objective. Indeed, a rule that effectively deprived 600 MHz licensees of the ability to conduct necessary testing in their licensed spectrum risks forcing licensees to file for waivers to gain access to the spectrum they paid billions to use. Such proceedings would not only delay deployment, but would highlight the manner in which any rule not allowing necessary market tests unlawfully ran counter to the purposes of the Spectrum Act. It is therefore essential that market testing be permitted, as described above, to avoid these unnecessary and harmful impacts to licensed commercial deployment of the 600 MHz spectrum.

Requirement for Confidential Treatment of Commencement Notifications. In addition, CTIA reiterates the importance of ensuring that notifications of commencement of operations by 600 MHz licensees to white space database administrators be subject to confidential treatment. Provision of polygons that show the market launch information for wireless providers is competitively sensitive – in effect, a 600 MHz licensee would be providing its infrastructure plans ahead of commercial launch to competitors. As such, CTIA believes that polygon information provided to white space database administrators should be subject to the following stringent protection requirements:

- The information should not be made publicly available in any aggregate form (parties can simply seek channel assignments from the white space database administrator, but without knowledge of the full launch plans for 600 MHz licensees).
- White space database administrators may not use this data for any purposes other than to predict interference to licensed 600 MHz providers.
- White space database administrators must internally cabin off this data from other portions of the business, since some white space database administrators are direct competitors to licensed 600 MHz providers.

* * * *

CTIA believes that this compromise proposal properly balances the competing interests in the 600 MHz band. Under the compromise proposal, secondary services will not be impacted in the vast majority of markets and geography. As described above, market testing typically only occurs in: (1) a limited number of markets (generally no more than six markets per licensee), (2) for a small subset of base stations (generally no more than 300 base stations per market), and (3) in a reduced geographic area (typically covering a county or two within a license area, generally no more than 1,000 square miles). And importantly, the Commission's current notification

requirements for commencement of operations would be maintained for each secondary user. No secondary user would be displaced unless that use would interfere with the use of the spectrum by a 600 MHz licensee for market testing or site commissioning. Indeed, given the interim build-out requirements, 600 MHz licensees have a strong incentive, all things being equal, to attempt to perform market tests in areas where there are no secondary services, especially LPTV and TV Translators, which are provided a 120-day notification period prior to a 600 MHz licensee commencing operations.

On the other hand, licensed providers will be allowed access to their spectrum to conduct the vital market testing that is a pre-requisite to site commissioning and commercial service to the public, and will retain the ability to select appropriate locations and testing methods, consistent with the best business and engineering practices. Importantly, market testing will allow 600 MHz licensees to rapidly deploy service on their licensed spectrum and meet the interim build-out requirements prescribed by the Commission.

Accordingly, this approach represents a reasonable compromise that allows LPTV and unlicensed users of the UHF band to remain in operation in the 600 MHz band even after it is reallocated and licensed to others, while assuring 600 MHz licensees of access to their licensed spectrum as necessary to “commence service,” including the pre-requisite market and commissioning testing steps that must precede a commercial launch. Under this compromise definition, secondary users would not be displaced any sooner or to any greater extent than necessary to facilitate rapid deployment of wireless broadband to American consumers.

Pursuant to Section 1.1206 of the Commission’s rules, a copy of this letter is being filed in ECFS. Please do not hesitate to contact the undersigned with any questions.

Sincerely,

/s/ Scott K. Bergmann

Scott K. Bergmann
Vice President, Regulatory Affairs
CTIA – The Wireless Association®

APPENDIX A

Definition of Commence Operations

A 600 MHz Band wireless licensee's operations will be deemed to "commence" prior to the licensee's launch of commercial services in an area, specifically when the licensee begins either market or site commissioning tests. Market testing consists of the deployment of base stations or other radio facilities to: (1) operate a test network to conduct testing of prototype equipment; (2) take RF measurements designed to calibrate the propagation models relative to actual, real-world performance of mobile broadband operations in the 600 MHz spectrum; or (3) test network configuration to respond to impairment from full power television stations that will continue to operate after repacking.

For the remaining deployments, 600 MHz licensees will employ site commissioning testing. Site commissioning tests typically will be conducted after a cell site has been constructed, with base station equipment, antennas, feed systems, and other hardware installed, and with power systems and backhaul connectivity installed and operational. This testing can encompass start-up procedures and system checks when the system is first powered up, a series of functionality tests, and over-the-air field tests, such as establishing mobile calls, validating coverage, or confirming handover between sectors. Site commissioning tests are used to confirm that all of the site infrastructure is working properly and is integrated into the licensee's network, and to enable the licensee to verify the site's coverage through direct measurements.

To ensure the accuracy of this market testing or site commissioning testing, a licensee will require access to its 600 MHz Band spectrum in the area in which it is commencing operations so all of its facilities can be tested under the real world conditions for which they were designed and in an environment that is free from potential interference from others. Given the substantial investments that wireless carriers will make in the 600 MHz band and their desire to quickly deploy innovative new services to consumers, we expect that 600 MHz Band wireless licensees will act reasonably and in good faith to activate service to subscribers within a reasonable period of time after initiating market or site commissioning testing.

APPENDIX B
September 2, 2015 Meeting Participants

CTIA – The Wireless Association®

Scott Bergmann, Vice President, Regulatory Affairs, CTIA
Brian Josef, Assistant Vice President, Regulatory Affairs, CTIA
Krista Witanowski, Assistant Vice President, Regulatory Affairs, CTIA
Kara Romagnino, Director, Regulatory Affairs, CTIA
Thomas Dombrowsky, Senior Engineering Advisor, Wiley Rein LLP (for CTIA)

CTIA Member Company Representatives

Brian Benison, AT&T
Michael Goggin, AT&T
Richard Engelman, Sprint
Chris Wieczorek, T-Mobile
Grant Spellmeyer, U.S. Cellular
Leora Hochstein, Verizon
Robert Morse, Verizon

Federal Communications Commission – Incentive Auction Task Force

Gary Epstein
Howard Symons
Mary Margaret Jackson
William Scher

Federal Communications Commission – Wireless Telecommunications Bureau

Roger Sherman
Brian Regan
Chris Helzer
Blaise Scinto
Sandra Danner
Simon Banyai
Paul Malmud
Janet Young

Federal Communications Commission – Office of Engineering and Technology

Ira Keltz
Paul Murray
Aspa Paroutsas
Hugh Van Tuyl

Federal Communications Commission – Media Bureau

Michelle Carey
Joyce Bernstein

Federal Communications Commission – Office of General Counsel

David Konczal