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September 15, 2008

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

*Re: Unlicensed Operation in the TV Broadcast Bands; Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band
ET Docket Nos. 04-186 and 02-380*

Dear Ms. Dortch:

Together with the Rural Telecommunications Group, Inc. (“RTG”), FiberTower Corporation (“FiberTower”) described the numerous advantages of using licensed services in the TV White Spaces to provide much-needed broadband services in these bands in the *Optimizing the TV Bands White Spaces* white paper filed almost one year ago,¹ which has also been endorsed by Sprint Nextel, T-Mobile, NTCA, and COMPTEL.² Using highly efficient, time-tested licensing systems that the Commission has already perfected, point-to-point licensing can bring broadband access to the nation, as described in detail in the *White Paper* and subsequent filings,³ including the *June 25*

¹ “Optimizing the TV Bands White Spaces: A Licensed, Fixed-Use Model for Interference-Free Television and Increased Broadband Deployment in Rural and Urban Areas,” *Ex Parte* filing by FiberTower Corporation and the Rural Telecommunications Group, Inc., ET Docket Nos. 04-186, 02-380 (filed Oct. 2, 2007) (“*White Paper*”).

² *Ex Parte* filing by Sprint Nextel Corporation (“Sprint Nextel”) and T-Mobile USA, Inc. (“T-Mobile”), ET Docket Nos. 04-186, 02-380 (filed Jan. 3, 2008); *Ex Parte* filing by the National Telecommunications Cooperative Association (“NTCA”), ET Docket Nos. 04-186, 02-380 (filed Mar. 6, 2008); *Ex Parte* filing by COMPTEL, ET Docket Nos. 04-186, 02-380 (filed May 9, 2008).

³ See, e.g., *Ex Parte* filing by COMPTEL, RTG, Sprint Nextel, and FiberTower, ET Docket Nos. 04-186, 02-380 (filed Jun. 25, 2008) (“*June 25 Discussion Draft*”); *Ex Parte* filing by FiberTower and RTG, ET Docket Nos. 04-186, 02-380 (filed Apr. 21, 2008).

Discussion Draft filed by RTG, FiberTower, Sprint Nextel, and COMPTTEL (“Licensed Use Proponents”).

On September 5, 2008, the White Spaces Coalition submitted an ex parte filing⁴ in this proceeding that contained numerous errors regarding the *White Paper* and the proposed rules described in the *June 25 Discussion Draft*. Moreover, contrary to the assertions of the White Spaces Coalition regarding the parameters of the Commission’s *Further Notice* in this proceeding,⁵ the Commission has asked for comment on licensed, as well as unlicensed, use of the TV bands white spaces.⁶ This filing responds to a number of misstatements in the *Sept. 5 White Spaces Coalition Ex Parte*, as detailed below:

LICENSED USE, AS PROPOSED BY FIBERTOWER/RTG, FOSTERS INNOVATIVE USE OF WHITE SPACES

The White Spaces Coalition is wrong in stating: “Licensing the white spaces based on the FiberTower/RTG Plan would foreclose a number of innovative white space spectrum uses with little to show in return. . . . Moreover, even if companies are allowed to use the white spaces for backhaul in less populated areas, individuals there would likewise be denied access to innovative unlicensed applications and services.”

Innovative wireless systems that cover more than one cell site require a backhaul infrastructure. The White Spaces Coalition, whose seven members collectively operate zero mobile networks, continues to miss this fundamental point. *Mobile networks do not get launched until the backhaul system is built.* The large-scale mobile networks it proposes must rely on yet-to-be-built backhaul systems before such networks can ever hope to function. Moreover, unlicensed applications and services, especially mobile services, are highly unlikely to work in less-populated areas unless and until they are connected back to infrastructure.

Licensing the white spaces is exactly what is needed to get this process underway, especially in areas where broadband access is currently limited or non-existent. Broadband wireless providers, government and commercial campuses, medical centers, long distance connectivity, first responder networks, and other basic services vital to any community simply require transport and need highly reliable broadband backhaul to make their systems feasible. Once the transport is available, end-user applications can bloom.

In any event, the Licensed Use Proponents have not suggested that all unlicensed use of the TV bands white spaces should be foreclosed, and there may be opportunities for both

⁴ *Ex Parte* filing by Ed Thomas on behalf of the TV White Spaces Coalition, ET Docket Nos. 04-186, 02-380 (filed Sept. 5, 2008) (“*Sept. 5 White Spaces Coalition Ex Parte*”).

⁵ *Unlicensed Operation in the TV Broadcast Bands*, First Report and Order and Further Notice of Proposed Rulemaking, 21 FCC Rcd 12266 (2006).

⁶ *Id.* ¶¶ 26-32.

licensed and unlicensed use of these bands, once the unlicensed proponents have shown that they will not cause interference to incumbent operators.

LICENSED USE POSES *LESS RISK* TO INCUMBENT OPERATIONS THAN UNLICENSED DEVICES

The White Spaces Coalition is wrong in stating: “The proposed licensed use by FiberTower/RTG also poses a far greater risk to incumbent operations than the low power unlicensed devices contemplated by the Coalition.”

Unlike unlicensed mobile systems, the proposed licensed use would only occur through a long-established, low-cost, and highly efficient process, where third-party FCC-approved coordinators carefully examine the existing incumbent operations before ever allowing additional deployment of licensed services. Moreover, in the event that an incumbent experiences any concern about a Part 101 operation, it can instantaneously locate at www.fcc.gov the licensed operators in the area (down to the precise coordinates), determine the exact equipment being utilized, and reach the official licensee contact. The Licensed Use Proponents have also outlined defined parameters and detailed proposed rules for avoiding interference with incumbent operators in their *June 25 Discussion Draft*, which was filed after months of discussion with the many incumbents in the TV bands.

In sharp contrast to the mobile unlicensed approach, the *White Paper* supported by RTG, FiberTower, T-Mobile, Sprint Nextel, NTCA, and COMPTTEL has raised few concerns among the incumbent user community. Where concerns have been identified, the Licensed Use Proponents have actively engaged the incumbent users to discuss the likelihood of interference and settle upon reasonable safeguards to ensure that their operations do not experience harmful interference. For instance, when NCTA recently identified direct induction and cable headend interference as potential concerns,⁷ the Licensed Use Proponents immediately commenced technical discussions with NCTA to identify the scope of the problem and assess potential solutions. These discussions continue and the Licensed Use Proponents remain optimistic that the parties can agree upon licensing parameters that will provide ample protection against harmful interference while permitting fixed point-to-point operations to operate without undue constraint.

In contrast, end-user, unlicensed devices are not immediately locatable, nor are they *ever* guaranteed to be accountable. Commercially deployable end-user unlicensed equipment for the TV bands white spaces has yet to pass interference testing or become mature enough for the Commission to define feasible technical rules, much less reach a point where the proposed manufacturers can provide the incumbents, the public, and this Commission with reliable, clearly defined equipment specification sheets. Without knowing all of these elements, it is highly speculative to even determine the interference impact from those devices, let alone the problem of locating them.

⁷ *Ex Parte* filing by National Cable Telecommunications Association (“NCTA”), ET Docket Nos. 04-186, 02-380 (filed Aug. 1, 2008).

Similarly, unlicensed mobile base stations also pose a greater interference risk than licensed operations. By their nature, unlicensed mobile base stations are either much more highly powered than fixed wireless systems (*e.g.*, if they seek to cover large 20-mile radius areas)⁸ or are lightly powered systems that essentially require numerous pico-cell deployments to cover a metropolitan area.⁹ Like unlicensed devices, unlicensed mobile base stations are not registered through FCC-approved coordinators and thus are not immediately locatable, nor are they *ever* guaranteed to be locatable or accountable.

THE ALLOCATION OF SPECTRUM ON A LICENSED BASIS WOULD BENEFIT BOTH URBAN AND RURAL COMMUNITIES

The White Spaces Coalition is wrong in stating: “Critically, many of the communities that would benefit the most from unlicensed access to the white spaces reside in urban areas, where high power operations proposed by the FiberTower/RTG Plan are infeasible. Thus, were the Commission to allocate the spectrum on a licensed basis per FiberTower/RTG’s proposal, much white spaces spectrum would continue to lie fallow in numerous densely populated areas, denying the benefits of white spaces access to large segments of the population.”

The licensed use proposal only seeks to use available spectrum and does not propose to use channels adjacent to incumbents (in urban, suburban *or* rural areas). The spectrum available would be determined through an FCC-approved coordinator, and the spectrum used would be based on customer needs, whether sensible alternatives exist, and economic feasibility. Because the TV bands white spaces spectrum is predominantly available in rural areas, this availability matches up well to the critical need for low-cost wireless backhaul in rural America. But there is little likelihood that usable TV bands white spaces spectrum in urban areas would lie fallow, whether the FCC decides to allow licensed, unlicensed or both types of uses into these bands.

Interestingly, this is the first time that the White Spaces Coalition has made it plain that they intend to operate primarily in the metropolitan areas, in contrast to the Licensed Use Proponents’ efforts to bring much needed backhaul for broadband services to rural areas.

THE BENEFITS OF WHITE SPACES USE SHOULD NOT BE LIMITED

The White Spaces Coalition is correct in stating: “The benefits of white spaces use should not be restricted only to a few corporations in areas where most Americans would not benefit.”

The FCC’s Part 101 licensing framework allows anyone to license a link as long as they build it within 18 months. This avoids delay, prevents the warehousing of large spectrum swaths, and rewards those who possess an immediate need to serve the community.

⁸ Such systems require from 50 to 500 watts input power. See, for example: <http://www.erfwireless.com/graphics/BaseStation.pdf>.

⁹ See, *e.g.*, *Ex Parte* filing by Motorola, ET Docket Nos. 04-186, 02-380 (filed Apr. 24, 2007) (discussing 4 watt broadband systems).

Rather than becoming hostage to the huge companies comprising the White Spaces Coalition¹⁰ that have yet to develop – and may never develop – an interference-free solution for the TV bands white spaces, the Commission should allow this spectrum to be utilized today to bring proven, workable broadband now to underserved areas. It should let end-user applications connect to these licensed frameworks and bloom.

CUSTOMERS NEED RELIABLE LICENSED SPECTRUM THAT PROPAGATES OVER LONG DISTANCES

The White Spaces Coalition is vague in stating: “There is also already other spectrum available for backhaul that is better suited to fixed point-to-point operations.”

First and foremost, the White Spaces Coalition, which repeatedly notes that it needs a low-powered, short-distance solution, should be examining the many other spectrum bands already available that can be used for short-distance unlicensed operations. A recent study filed by Jackson, Robyn, and Bazelon found that a large amount of spectrum has already been allocated for unlicensed use, there is no evidence of congestion that suggests the need for additional unlicensed allocations, and many unlicensed bands appear to experience very little usage.¹¹ The long-range propagation characteristics of the TV bands white spaces make it particularly well-suited to licensed use rather than short-range use, and a “licensed approach to the white space is far more likely to produce large investments in long-range infrastructure and the resulting innovation.”¹²

Regarding the Coalition’s suggestion of “other spectrum available,” it is unclear as to the type of backhaul or primary connectivity to which it is referring. If it means providing long-haul (10 miles or over) connectivity on a basis that meets the service level agreement (“SLA”) requirements of a first responder network, hospital, broadband mobile wireless carrier, competitive carrier, or a government agency, then the White Spaces Coalition is sadly mistaken. These customers all need reliable licensed spectrum that propagates over long distances. The TV bands white spaces allow for links to be deployed that reach 30, 40 or more miles. The economics do not work, for example, for a rural medical center or a local broadband carrier to build heavy-duty towers every 10 miles to support heavy, 8-foot diameter 6 GHz antenna systems. These rural businesses, however, could afford a lighter tower (*e.g.*, 40 miles away), and perhaps a pole mount on the medical center roof that can support smaller antennas able to operate in the TV bands white spaces frequencies.

¹⁰ The White Spaces Coalition members include: Dell, Inc., Google, Inc., Hewlett-Packard Co., Microsoft Corp., Palm, Inc., Philips Electronics North America Corp., and TDK Corp.

¹¹ *See, e.g.*, *Ex Parte* filing by Jackson, Robyn, and Bazelon, “Unlicensed Use of the TV White Space: Wasteful and Harmful,” ET Docket Nos. 04-186, 02-380, 2-3 (filed Aug. 20, 2008).

¹² *Id.* at 3.

THE FCC HAS BEEN SUCCESSFUL IN FIXED-LINK COORDINATION

The White Spaces Coalition is wrong in stating: “To underscore the extent to which the FiberTower/RTG Plan would impact existing authorized uses, one need only look at the technical consequences for wireless microphones. Although the proposed rules would require fixed white space operations to coordinate with wireless microphone installations operating at previously-registered locations prior to buildout, there are no protection guarantees for wireless microphones that would operate in channels proposed for backhaul once those operations commence.”

This statement fails to understand the concept of private sector coordination. Fixed-link coordination is one of the FCC’s greatest success stories: coordination has worked successfully for decades and will continue to work. This statement also underscores the fact that the White Spaces Coalition overlooked the proposed technical rules for licensed use, which state that fixed wireless operations would avoid co-channel operations with wireless microphone systems.¹³

Indeed, rather than complain about the licensed use proposal, the wireless microphone community has suggested that the Commission look more closely at the *White Paper* proposal as a viable alternative for the TV bands white spaces.¹⁴

The White Spaces Coalition is also wrong in stating: “And unlike personal/portable operations, FiberTower/RTG’s proposed rules contemplate high power operations of up to 3,160 Watts in 6 MHz. As the attached analysis demonstrates, operations at each tower could effectively block out 350 square kilometers—an area roughly twice the size of Washington, DC. Such operations could significantly impair news reporting and other Part 74 broadcast auxiliary activities in these locations, to say nothing of the illegal, yet still socially beneficial, applications such as wireless microphone use in houses of worship.”

Again, the Coalition fails to understand the concept of fixed-link coordination. Wireless microphones work today among numerous incumbent systems, and they can continue to thrive and work well in the presence of high-site, point-to-point links—especially with FCC-approved third-party coordinators protecting them. In addition, wireless microphone system operators and manufacturers understand that the real risk of interference in the TV bands is from unproven, ubiquitously deployed unlicensed mobile systems that people will carry in their pockets, and that may require uneconomic

¹³ The proposed technical rules permit wireless microphone operations on adjacent channels and on channels not proposed for fixed wireless links.

¹⁴ *See, e.g., Ex Parte* Comments of Shure Incorporated, ET Docket Nos. 04-186, 02-380, 17-19 (filed May 6, 2008) (“[T]he Commission should give serious consideration to the fixed service/adjacent channel protection proposal submitted by FiberTower Corporation and the Rural Telecommunications Group, Inc. and supported by Sprint Nextel Corporation and T-Mobile USA, Inc. . . . This approach represents an important potential opportunity to achieve the Commission’s goal of facilitating deployment of new services in the television frequencies, especially rural broadband services, while protecting existing services.”).

deployment of additional beacons or other technologies by the wireless microphone community. On the other hand, they also know that licensed fixed operations occur high on towers and rooftops, are not ubiquitous, will not absorb the plentiful spectrum in less-populated areas, and are always locatable on the FCC web site (and therefore accountable to all incumbent users). As noted previously, the wireless microphone community has specifically recommended the licensed use proposal as a viable alternative for the TV bands white spaces.

Finally, the White Spaces Coalition attachment, “Analysis of Proposed Technical Rules for Wireless Backhaul,” also contains a flawed analysis of the Licensed Use Proponents’ licensed use proposal. The entire analysis is based on purported co-channel interference between wireless backhaul or wireless fixed use and wireless microphone systems, whereas the proposed technical rules in the *June 25 Discussion Draft* preclude any co-channel operation with wireless microphone systems.

As noted above, the proposal for interference-free, fixed, point-to-point licensing of the TV bands white spaces, has drawn support over the last year from a wide variety of major industry players, including Sprint Nextel, COMPTTEL, NTCA, and T-Mobile. The advocates of licensed point-to-point use also have conducted extensive outreach to the National Cable Television Association, the Association for Maximum Service Television, the National Association of Broadcasters, major wireless microphone associations, and other organizations. Indeed, advocates for licensed fixed use have worked for more than a year to document and understand these parties’ interference concerns and have developed detailed interference-prevention measures drawn from empirical evidence that are designed to prevent incumbent users from experiencing harmful interference.

Fixed, point-to-point licensing of the TV bands white spaces spectrum will permit innovative broadband services to expand in underused bands throughout the frequency spectrum. Experienced wireless broadband operators from rural and urban areas recognize that backhaul is essential to broadband. And those following the record recognize that the “questions” mentioned by the TV White Spaces Coalition have been fully addressed during the course of this proceeding. The Commission should dismiss the White Spaces Coalition’s incorrect and poorly reasoned assertions, and it should expeditiously license the TV bands white spaces spectrum for fixed point-to-point use.

Pursuant to the Commission's rules, a copy of this notice is being filed electronically in the above-referenced dockets. If you require any additional information please contact the undersigned.

Respectfully Submitted,

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