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October 22, 2008

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

Re: **Written *Ex Parte* Presentation**
ET Docket Nos. 04-186 and 02-380

Dear Ms. Dortch:

In a series of oral and written ex parte presentations made on July 30 and August 1, 2008,[1] the Wireless Internet Service Providers Association ("WISPA") proposed a "licensed-lite" solution for the TV White Spaces that would promote broadband deployment and operations in rural and underserved communities, facilitate interference-free operations and provide interference protection to incumbents. In light of further development of the record, discussions with other active participants and public reports of a plan that Chairman Martin apparently supports, WISPA presents details on its "licensed-lite" approach for fixed services in certain portions of the TV White Spaces band. WISPA strongly believes that this plan, which is consistent with recent presentations made by the Association for Maximum Service Television, Inc. ("MSTV"),[2] will better serve the public interest than would either a traditional license structure or an unlicensed regime, especially in light of concerns surrounding the results of the Commission's testing of sensing-based interference mitigation technologies.[3]

WISPA was formed in 2004 to represent the interests and advocate on behalf of wireless Internet service providers ("WISPs") and their customers, and is believed to be the largest association of WISPs in the country. Its membership consists of more than 375 WISPs, vendors and others committed to the development and expansion of wireless broadband services. WISPs today serve approximately 2,000,000 consumers and businesses, primarily in rural and suburban communities nationwide. In many of these communities, wired broadband services are not available such that consumers often have no other means to access the Internet at broadband speeds.

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[1] *See* Notices of Ex Parte Presentation of WISPA, ET Docket Nos. 04-186 and 02-380, filed Aug. 1, 2008, and presentations included therewith.
[2] *See* Notice of Ex Parte Presentation of MSTV, ET Docket Nos. 04-186 and 02-380, filed Oct. 1, 2008, and presentation included therewith.
[3] *See The FCC's Office of Engineering and Technology Releases Report on Tests of Prototype TV White Spaces Devices*, DA 08-2243 (rel. Oct. 15, 2008) ("Report").

WISPs operate primarily on unlicensed spectrum in 900 MHz, 2.4 GHz, 5.3 GHz and 5.8 GHz bands. By any account, the Commission's decision to authorize unlicensed operations has been successful, creating opportunities for inexpensive deployment of broadband services. In fact, operations in the unlicensed bands have proliferated to the point where congestion and "noise" have created a "tragedy of the commons" that prevent WISPs from continuing to serve existing customers with reliable signals. WISPs know firsthand the means and methods for mitigating and avoiding interference, but those solutions are temporary, costly and ultimately too little, too late to avoid disrupting service to the public.

Despite the success of WISPs and the community benefits they provide, WISPA is fully aware that the availability of broadband services is not ubiquitous. WISPA disagrees, however, with the views expressed by a group of rural organizations – most of which have never operated wireless Internet service businesses.[4] WISPA believes this group has little understanding of the "real-world" wireless network deployment issues, interference issues and the "real-world" needs of rural consumers. The rural group's proposal underestimates the technical challenges of building rural broadband networks, disregards the need for frequency coordination to eliminate interference, ignores WISPA's affordable, non-exclusive "licensed-lite" licensing proposal and overestimates the ability of unlicensed mobile devices to serve rural consumers.

Last year, the Commission opened the 3650-3700 MHz band under a "licensed-lite" approach that enables WISPs to expeditiously and affordably launch broadband service and enjoy some minimal measure of coordination rights.[5] Increasingly, WISPs have turned to the 3650-3700 MHz band as a better alternative to congested unlicensed bands. In less than a year, the Commission has issued nearly 500 nationwide, non-exclusive licenses in this band, many to WISPs seeking to improve and expand their networks. Commission records also show that the Commission has accepted more than 1,200 registrations in the 3650-3700 MHz Service.

This streamlined licensing process is the framework for WISPA's "licensed-lite" approach for the TV White Spaces.

- **Nationwide, Non-Exclusive Licensing** – As the first step in the "licensed-lite" process, WISPs and other TV White Space operators file for and obtain a nationwide, non-exclusive license through the Commission's electronic filing procedures.

- **Registration of Base Station Locations** – Once an applicant obtains its license, it may then register base station locations for the provision of fixed services. In contrast to the procedures used in the 3650-3700 MHz Service, which only require registrants to coordinate with earlier-registered operators, registrants would be required to input a set of data points into the Commission's Universal Licensing System ("ULS") that would

[4] *See* Ex Parte Letter of the Center for Rural Strategies, *et al.*, ET Docket Nos. 04-186 and 02-380, filed Oct. 20, 2008 ("Rural Group Letter"). It appears that only one of the ten signatories to the Rural Group Letter may have actually provided wireless Internet service to the public.

[5] Public Notice, "Wireless Telecommunications Bureau Announces Start Date for Licensing and Registration Process for the 3650-3700 MHz Band," DA 07-4605 (rel. Nov. 14, 2007).

determine whether the station could be deployed without causing interference to incumbent licensees entitled to protection.[6] These data points would include geographic coordinates, antenna beam width, transmitter power, antenna height, antenna polarization and antenna azimuth, which in turn could be used to calculate D/U (desired/undesired) protection ratios, geographic separation or any other defined measure of interference protection, as determined in this proceeding. After the data entry process, ULS would notify the registrant whether the proposed facilities are predicted to cause interference. If no interference to a primary licensee or a previously registered base station is predicted, the facilities could be placed in operation and, as described below, the Commission's database would be updated to show the new base station. If interference to a primary licensee is predicted, the registration would be rejected and the registrant could then propose alternative facilities. Although previously registered base stations would not be protected from interference from subsequent base stations, if interference to a previously registered base station is predicted, the prospective registrant could then propose alternative facilities so that neither party would suffer actual interference. In the unlikely event that no non-interfering base station facilities could be designed through techniques such as location changes, power reductions, antenna polarity changes or channel selection, the registrant and the incumbent registrant would be obligated to negotiate in good faith to coordinate their facilities for a period of 30 days and keep records of their discussions in case the information is needed by the Commission.[7]

WISPA proposes that registrants notify the Commission upon commencement of service to the public within 180 days following base station registration. If a notice is not timely filed, the registration would be deleted from the database and the registrant would be prohibited from re-registering a base station at the same location.

WISPA believes that this Internet-based coordination process will yield the same results as frequency coordination under Part 101 without the time and expense associated with formal frequency coordination.[8] Like formal coordination, this process will identify predicted interference before it occurs so that the pitfalls of operating unlicensed and uncoordinated facilities can be avoided.

- **Geolocation Database** – The incumbents and any subsequent registrations would comprise a dynamic geolocation database within ULS to prevent fixed users from interfering with primary incumbents, television stations, wireless microphones and other fixed users. Registered fixed base stations would be protected from interference from low-power unlicensed personal/portable devices in the geographic area defined by the

[6] Such primary licensees would include full-power TV broadcast stations, Class A TV broadcast stations, LPTV and translator operations and other incumbents. *See* Ex Parte Letter of COMPTEL, the Rural Telecommunications Group, Sprint Nextel Corporation and FiberTower Corporation, ET Docket Nos. 04-186 and 02-380 ("COMPTEL Letter"), filed June 25, 2008, Discussion Draft at 1-2.

[7] A similar policy is in place for coordination between 3650-3700 MHz Service licensees and fixed satellite service licensees. *See Wireless Operations in the 3650-3700 MHz Band*, 20 FCC Rcd 6502, 6526-27 (2005).

[8] *See* COMPTEL Letter at 1.

data points loaded into the software. Using this database, personal/portable devices would be required to implement geolocation technologies to preclude co-channel operations that would cause harmful interference to registered incumbent base stations. For example, an Internet-connected unlicensed personal/portable base station can use the database to select a non-interfering frequency and can then authorize connected stations to also use that same non-interfering frequency. Personal/portable devices without database connectivity via the Internet could still operate but at reduced power levels. The geolocation database promotes shared, efficient and non-interfering use of TV White Spaces by all users and creates an accountability system should interference issues arise.

- **Power Level** – Fixed users could operate at a maximum 20 watts of transmitter power. This will assure reliable and economical delivery of broadband services to consumers in rural and underserved communities without causing interference between nearby networks or to existing users, and will also enable point-to-point network interconnection of rural networks, including WISP, public safety, private, local government and grassroots community networks.[9] The 20-watt power limit would promote delivery of broadband Internet to rural parts of the country that today often go without economical and reliable Internet access. WISPA believes that the 4-watt EIRP limit proposed by Motorola[10] is insufficient for "licensed-lite" WISP operations because it would require the use of many more base stations and thus undermine the economic viability and affordability of such services.

- **Avoidance of Co-channel and First-Adjacent DTV Channels** – WISPA believes that, to operate fixed networks reliably and without causing interference, "licensed-lite" operations should be prohibited on TV White Space that is co-channel and immediately adjacent to existing DTV channels in those geographic areas where incumbent DTV stations are already authorized.

- **Interference Remediation** – WISPA supports post-registration procedures that would expeditiously resolve rare instances of alleged interference to users entitled to interference protection. WISPA believes, however, that the combination of base station registration and the geolocation database will greatly limit instances of alleged interference.

- **Fair and Affordable Frequency Sharing** – WISPA's approach fosters fair, shared and non-interfering access to the TV White Space frequencies for all users, including unlicensed personal/portable devices that can co-exist with incumbents and fixed broadband providers. Services are made affordable because spectrum for fixed "licensed-lite" and unlicensed devices would not be subject to auction.

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[9] A drawing depicting WISPA's overall technical solution is attached. A transmitter power of 500 mW for unlicensed devices is roughly equivalent to 4 watts EIRP.

[10] *See* Ex Parte Letter of Motorola, ET Docket Nos. 04-186 and 02-380, filed Sept. 8, 2008, and presentation included therewith.

WISPA believes that this "common ground" approach will allow WISPs, television broadcasters, network interconnection providers, wireless microphone devices, other incumbent licensees and users of low-power unlicensed devices to share the TV White Space spectrum on a non-interfering basis.

Reliable rural broadband wireless networks don't just work "auto-magically." Building reliable rural networks requires the availability and the application of technical and engineering skills and experience. Building reliable rural networks requires frequency coordination to assure freedom from the interference that causes networks to be both slow and unreliable. Building reliable rural networks that meet the needs of rural Americans today does not require a wide proliferation of mobile devices. Americans need affordable fixed broadband Internet service to their homes and businesses before they need broadband Internet access in their tractors or, as the rural group suggests, on their livestock. Finally, WISPA's proposal allows for operation of unlicensed TV White Space devices, both fixed and mobile. WISPA merely requests that unlicensed devices either be frequency-coordinated or operate at lower power levels so that they will not cause interference to existing licensed services or to the new "licensed-lite" services which WISPA hereby proposes that the Commission authorize.

The choice is not, as the Rural Group Letter suggests, between only "licensed" or "unlicensed" – there is an alternative that incorporates the benefits of each without the interference and operational problems of an unlicensed environment and the entry barriers of a licensed scheme. WISPA's "licensed-lite" approach, using pre-registration safeguards that incorporate web-based frequency coordination and geolocation, will not preclude unlicensed personal/portable devices and will help ensure that there will be no disruption to TV broadcast operations by devices introduced into the TV White Spaces.

Moreover, the use of WISPA's "common ground" approach would obviate the need for the inclusion of "sensing" technologies, which are still largely untested in real-world applications. Following the release of the FCC's Report on testing of sensing-based interference mitigation between personal/portable devices and DTV signals, television broadcasters filed an Emergency Request with the Commission, arguing that the Commission must accept public comment on the Report results and that those results do not support the exclusive use of sensing technologies to mitigate interference.[11] WISPA notes that the Report did not consider the interference consequences of unlicensed personal/portable devices on fixed-service operations such as those that WISPs would deploy in the TV White Spaces. If the Commission chooses to accept further public comment, WISPA will welcome the opportunity to provide the Commission with further details describing how its interference-mitigating geolocation-based solution can be implemented.

[11] *See* Emergency Request of MSTV, *et al.*, ET Docket Nos. 04-186 and 02-380, filed Oct. 17, 2008. *See also* Comments in Support of Emergency Request of Shure Incorporated, ET Docket Nos. 04-186 and 02-380, filed Oct. 21, 2008; Ex Parte Comments of the FBC Television Affiliates Association, ET Docket Nos. 04-186 and 02-380, filed Oct. 21, 2008.

WISPA respectfully requests that the Commission adopt the proposals set forth herein.

Respectfully submitted,

/s/ Jack Unger
Jack Unger
Chair, WISPA FCC Committee
Secretary, WISPA Board of Directors

Attachment