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Chairman Kevin Martin
Federal Communications Commission
445 12th Street, S.W.
Washington, DC 20554

RE: ET Docket No. 04-186

Dear Chairman Martin:

I. Executive Summary

The debate over how to use the White Space has lasted over 4 years and is likely to continue. Aloha recognizes that there are pros and cons to using the White Space for both licensed and unlicensed applications. In an effort to reach a resolution of the conflicting positions, Aloha proposes a balanced approach that Aloha believes will: 1) provide significant spectrum for new unlicensed applications; 2) make rural broadband deployments affordable and 3) generate significant revenues for the U.S. treasury.

Aloha recommends that the White Space be divided into 3 blocks of channels:

Channels	Governance	Permissible Uses
Channels 2-20	Part 27	Licensed- restricted to 1way video and 2-way point-to-point
Channels 21-36	Part 15	Unlicensed 2-way devices and wireless microphones
Channels 38-51	Part 27	Licensed- 2-way portable devices- multi use

Channels 2-20 would be governed by Part 27, but would be restricted to 1-way fixed video and 2-way point-to-point applications. Channels 21-36 would be governed by Part 15 and would be available for low powered 2-way devices and wireless microphones. Channels 38-51 would be governed by Part 27 and would be available for multiple uses, including 2-way mobile voice, data and video applications.

II. The Licensed Versus Unlicensed Debate

A number of technology companies (including, Microsoft, Google and Intel) have encouraged the Commission to allow low power, unlicensed use in the White Space. They envision both indoor and outdoor Wi-Fi networks throughout the United States using the White Space. They point to the success of unlicensed Wi-Fi devices in the 900 MHz and 2400 MHz bands and indicate that if the unused television spectrum is unlicensed it will result in a dramatic increase in new portable devices and mobile applications.

Broadcasters have also urged the FCC to license the White Space because of potential interference problems that are likely to occur with unlicensed devices. Broadcasters are not the only group that fears unlicensed interference. Hospital administrators and medical device manufacturers fear that unlicensed devices could interfere with heart monitors and other medical telemetry equipment.

The Wireless Industry also advocates licensing and auctioning the White Space. CTIA and the Rural Cellular Association both indicate that only “a licensed framework will encourage service providers to make the necessary investments in equipment and infrastructure” needed to provide broadband services in rural areas. Furthermore, the National Telecommunications Cooperative Association indicates that over 60% of rural carriers have experienced interference with unlicensed spectrum and overwhelmingly (73%) support licensed versus unlicensed spectrum allocations. The rural carriers are particularly interested in licensing White Space because it will significantly improve the economics of rural broadband by dramatically increasing the coverage

area with high powered transmitters. A typical unlicensed signal transmits at 1 watt of power and travels approximately 4 miles. A licensed signal transmits at 1 kilowatt watt and travels over 30 miles. As a result, a licensed signal can travel over 7 times as far as unlicensed signals and covers 50 times as much area. That means that each licensed cell in rural markets would need to be replaced by as many as 50 unlicensed cells to cover the same geographic area.

III. "The White Space is Worth Billions"

It is commonly believed that the White Space is a vast wasteland of unusable spectrum that resembles swiss cheese. This is an unfortunate misperception. The New America Foundation (NAF), which shares chairman with Google, is a leading proponent of use of unlicensed White Space. NAF has indicated that big cities like San Francisco, Boston and Dallas will have over 100 MHz of clear spectrum when the DTV transition is complete in February, 2009. NAF also indicates that small markets and rural areas will have over 200 MHz of clear spectrum after the DTV transition is complete. As a result, over twice as much spectrum could be available from the White Space as was available in the recent 700 MHz auction. Rather than being a vast wasteland of swiss cheese, the White Space is a rich repository of small lots of beachfront property.

NAF acknowledges that there is a considerable quantity of White Space and acknowledges that the White Space is "worth billions of dollars". The Brattle Group has been more specific about White Space value and estimates that White Space could generate between $9-24 Billion if it was auctioned, depending on which rules apply to licensed use. Aloha has conducted its own analysis and estimates that the White Space could generate between $7-15 Billion, depending on which rules apply to licensed use. Clearly, White Space has significant value and auctions cannot be ignored as a source of revenues for the U.S. Treasury.

IV. Interference is a Significant Problem

Another major issue surrounding the White Space is how to protect the over the air broadcaster signals from harmful interference from unlicensed devices. In addition, cable companies have indicated that their customers may receive interference on Channels 2-4 because of "Direct Pickup" to the television receiver from unlicensed devices. Licensing spectrum would significantly reduce both of these concerns because the source of any interference could be easily identified and its cause could be controlled by the licensee. In contrast, unlicensed interference would be difficult to control because it will be difficult to identify the source of interference and who is responsible for its correction. NAF and Google have acknowledged the potential problems of unlicensed device interference and have indicated that they do not believe that Channels 2-20 are suitable for unlicensed operation. As a result, NAF and Google are focused on the 30 UHF channels between Channel 21 and Channel 51 for their unlicensed applications.

V. A Balanced Approach is Needed

Aloha does not believe that the White Space has to be exclusively licensed or unlicensed, but rather can be divided up in a similar way as the Commission acted with PCS spectrum in the early 1990s.

Aloha recommends that the White space be divided into 3 groups of channels: Channels 2-20; Channels 21-36; and Channels 38-51. NAF and Google have indicated that they do not want Channels 2-20 for unlicensed applications because of interference and public safety use. As a result, Aloha recommends that Channels 2-20 be licensed and auctioned. However, these channels would be limited to fixed applications such as point-to-point backhaul or 1-way mobile TV. These channels would be licensed under Part 27, but would allow for OET-69 adjacent channel waiver requests. This approach would address both the broadcaster and cable company concerns about mobile device interference. This group of channels would be auctioned in 4 blocks. Block A (Channels 2-4) would be auctioned as national license. Block B (Channels 5 & 6) would be auctioned as Economic Areas. Block C (Channels 7-13) and Block D (Channels 14-20) would be auctioned as CMAs.

Of the remaining 30 channels, Aloha recommends that 16 channels would be unlicensed and 14 channels would be licensed and auctioned. The unlicensed group of channels would be Channels 21-36 and would be governed by Part 15 of the Commission's rules. Aloha recommends that Channels 21-36 be used for

unlicensed mobile devices and wireless microphones. This would allow unlicensed devices to use an additional 96 MHz of spectrum of which NAF estimates 30-40 MHz is likely to be clear in each market. Unlicensed users currently have approximately 30 MHz of spectrum in the lower frequency ranges today. (902 MHz-928 MHz). Allocating Channels 21-36 to unlicensed use would more the double the amount of lower frequencies that would be available for unlicensed devices.

Aloha recognizes that there are still significant issues that need to be addressed about interference caused by unlicensed mobile devices. Aloha believes that ultimately these problems will be solved and unlicensed devices will cause minimal interference.

Finally, Aloha recommends that Channels 38-51 be licensed and auctioned in 3 Blocks and governed by Part 27 of the Commission's rules. Aloha selected this channel group for licensed operation because Channels 38-51 are the closest to the recently auctioned 700 MHz band. Equipment developed for the 700 MHz band can be easily modified for the adjacent White Space channels. As a result, rural wireless companies using the White Space will benefit from the significant economies of scale of the 700 MHz operators. Two-way voice, data and video services would be permitted as would 1-way video transmission.

Block E (Channels 38-41) would be auctioned as Economic Areas. Block F (Channels 42-47) and Block G (Channels 48-51) would be auctioned as CMAs. Aloha recommends CMAs because they most closely match the broadcaster grade B contour. CMAs also are small enough areas so that rural carriers can bid for exactly the geographic areas in which they wish to provide wireless broadband service. Aloha also recommends that OET-69 adjacent channel waivers be permitted for video and mobile TV applications as long as diminimus interference does not exceed 2%. OET-69 methodology is the same approach that Broadcasters use among themselves to accommodate diminimus adjacent channel interference. Finally, Aloha would recommend that power levels for Channels 38-51 be limited to 1000 watts in urban areas and 2000 watts in rural markets consistent with the most current power limitations used in the lower 700 MHz A and B blocks.

VI. Conclusions

Aloha believes that a balanced approach is a reasonable way to adjust for the conflicting interests of the Wireless carriers, the Broadcasters, the U.S. treasury and the High Tech community. No single group will get exactly what it requested, but each group will get most of what they really want.

Please give me a call if you have any additional questions at 401-458-1901.

Sincerely,

/s/ Charles Townsend
President
Aloha Partners, L.P.