In the Matter of	)	
	)	
Unlicensed Operation in the TV Broadcast Bands	)	ET Docket No. 04-186
	)	
	)	ET Docket No. 02-380
Additional Spectrum for Unlicensed Devices Below 900 MHZ and in the 3 GHz Band	)	

PETITION FOR RECONSIDERATION
OF
THE NEW AMERICA FOUNDATION
AND
THE CHAMPAIGN URBANA WIRELESS NETWORK

Media Access Project, on behalf of The New America Foundation and Champaign Urbana Wireless Network ("Petitioners"), submits the following *Petition for Reconsideration* of the *First Report and Order* in the above captioned proceeding. On the whole, Petitioners applaud the Commission for moving forward with this important proceeding. Nevertheless, the Commission should reconsider three aspects of its *First Report and Order*.

First, the Commission provides no justification for reopening the question on whether to authorize these devices on a licensed or unlicensed basis. The Commission had considered this very issue twice previously to its issuing of the first *NPRM* in Docket No. 04-186, and concluded that authorizing such devices on an unlicensed basis would best serve the public interest. Nevertheless, in the *First Report and Order*, the Commission determined to once again reconsider this pivotal question. Yet the Commission makes no attempt to explain why it has suddenly deviated from its previous conclusion based on public comment on the Spectrum Task Force Report and public comment in response to the NOI in Docket No. 02-380. Such an about face

without any explanation beyond a general recitation of the potential benefits of licensing – all of which were thoroughly explored in the two previous proceedings that culminated in the *First NPRM* – appears arbitrary in the extreme.

Second, the Commission should reconsider its decision to prohibit mobile devices on Channels 14-20. The Commission should instead defer that decision until it makes a determination with regard to mobile devices as a whole. This initial determination at such an early stage needlessly deprives the public of the valuable services mobile devices will provide.

Finally, the Commission should reconsider its determination to prohibit marketing or sale of products until after February 17, 2009. This decision by the Commission has disproportionate impact on the open source development community, which generally must wait until chipsets become available on the market before beginning to develop open source alternatives to proprietary products. Needless delay in production of devices using the broadcast white spaces will delay the development of open source alternatives and thus delay deployment by community wireless organizations bringing affordable broadband to poor urban or rural areas.

ARGUMENT

I. THE COMMISSION'S DECISION TO REOPEN THE QUESTION OF "LICENSED" V. "UNLICENSED" IS ARBITRARY AND HAS NO BASIS IN THE RECORD.

The Commission's proposal to reopen the question of whether to authorize use of the broadcast white spaces on a "licensed" or "hybrid" basis rather than on an unlicensed basis marks a stunning reversal of course by the Commission. The proposal to allow unlicensed use of the broadcast white space originates with the Commission's

Spectrum Task Force and was subject to two separate rounds of public notice prior to the Commission's decision to propose unlicensed use of the white space in ET Docket No. 04-186. The Commission's failure to discuss this history, or to point to any new information or comments that it received in response to the 2004 *NPRM* that it did not consider and reject in response to the 2002 *NOI* or initial public notice for comment on the Spectrum Task Force's report, is arbitrary and should be reversed.

A. Relevant History

The Commission first considered the question of whether to permit unlicensed operation in the broadcast bands as part of its reexamination of its Part 15 Rules in 1987 but declined to do so in 1989 for fear that an unlicensed underlay in the television broadcast bands would interfere with the anticipated change to analog hi-definition television. *In re Revision of Part 15 of the Rules Regarding the Operation of Radio Frequency Devices Without Individual License, First Report & Order*, 4 FCCRcd 3493, 2501 (1989). Although no one has disturbed this essential finding of the Commission that licensed broadcasters may share the broadcast bands with low-power unlicensed devices, the television broadcast bands have remained closed to low-power unlicensed devices.

In 2002, the Commission created a Spectrum Policy Task Force (SPTF) for the express purpose of conducting a comprehensive reexamination of all aspects of the Commission's spectrum policy. *See Public Notice, Spectrum Policy Task Force Seeks On Issues Related to Commission's Spectrum Policies*, 17 FCC Rec 10560 (2002). After a lengthy deliberative process involving written comments, public workshops, and

public hearings, the Spectrum Task Force delivered a set of reports and recommendations to the Commission. *See Public Notice, Commission Seeks Public Comment On Spectrum Policy Task Force Report*, 17 FCC Rec 24316 (2002). The Commission initiated a public comment period on the report and its recommendations, providing further opportunity for public comment. *Id.*

Of specific interest here, the SPTF sought comment on "whether additional spectrum should be made available for unlicensed use." *In re Spectrum for Unlicensed Devices Below 900 MHZ and in the 3 GHz Band*, 17 FCC Rec 25632, 25634 (2002) (*2002 NOI*). The Commission, on examining the record compiled by the SPTF, concluded that the broadcast white spaces and the 3650-3700 MHZ band provided the best opportunities to open useful spectrum for unlicensed devices in a manner that would not cause harmful interference to licensees. *Id.* The Commission explicitly considered the benefits of unlicensed access against the possible harms. As the Commission explained, however, permitting unlicensed operation in the broadcast bands appeared both feasible and desirable as a means of facilitating numerous public interest benefits. *Id.* at 25637. Nevertheless, out of an abundance of caution, the Commission chose to issue an initial notice of inquiry rather than proceed directly to a rulemaking.

In 2004, acting on the record built in the *2002 NOI*, the Commission commenced the pending rulemaking. *In Re Unlicensed Operation In the TV Broadcast Bands*, 19 FCC Rec 10018 (2004) (*2004 NPRM*). Once again, the Commission considered the objections raised against operation of unlicensed devices in the broadcast bands. Once

again, the Commission concluded that the arguments raised in favor of unlicensed operation in the broadcast white spaces outweighed the interference risks or purported advantages of licensing use of the broadcast white spaces. *Id.* at 10022-25. Accordingly, the Commission adopted a "tentative conclusion" to allow unlicensed operation in the broadcast white spaces. *Id.*

B. The Commission's Decision To Reopen the "Licensed" v. "Unlicensed" Question Was Arbitrary In Light of the Record.

Petitioners here submitted lengthy comments with regard to the superiority of unlicensed operation in the broadcast band, and will do so again in response to the *Further Notice*. Rather, Petitioners request that the Commission reverse its decision not merely to reopen the question of unlicensed v. licensed operation yet again, but its reversal from a "tentative conclusion" in favor of unlicensed operation to giving equal consideration to either licensed or unlicensed.

An agency may, of course, refuse to adopt a proposal. But where the agency moves from a proposed rule to a complete change in direction, the agency must provide some compelling reason for its reversal. *Environmental Integrity Project v. EPA*, 425 F.3d 992 (D.C. Cir. 2005). Yet the *First Report & Order and Further Notice of Proposed Rulemaking* provides no explanation for the sudden change of course. Apparently unaware that it had spent two years before issuing the *2004 Notice* on this very question, the *FNPRM* observes that the *2004 Notice* "did not address the possibility of instead providing for new low-power operations on a licensed basis." *2006 FNPRM* at ¶26.

Anyone familiar with the history of the proceeding would, of course, understand why the *2004 Notice* "did not address" the possible virtues of licensed as opposed to unlicensed operation. Indeed, as if struck by some form of institutional amnesia, the Commission proceeds to discuss the relative benefits of licensed v. unlicensed operation as it did in the *2002 NOI*. *Compare FNPRM* ¶¶27-30 with *2002 NOI*, 17 FCC Rec at 25633-37. Similarly, the discussion of the comments favoring unlicensed operation and favoring licensed operation will read, to quote Yogi Berra, "like deja vu all over again." *Compare FNPRM* at ¶¶29-30 with *2004 NPRM,* 19 FCC Rec at 10023-24.

The Commission provides no extended discussion of the comments in favor of either scheme that would provide insight into why the Commission has chosen to reverse course and reconsider its decision on licensing. Given the extensive argument that has taken place on this very issue for the last four years, and the tentative resolution of the Commission in favor of unlicensed use in the broadcast white spaces two years ago, the failure to explain ***why*** the Commission has reversed its tentative conclusion is arbitrary and counterproductive. Parties supporting unlicensed operation have no guidance from the Commission on what has caused this sudden reversal, and therefore cannot expect to do more than reiterate the arguments made in the last two proceedings.

For the Commission to determine that something has caused it to change its mind about its tentative conclusion in 2004, but to fail to explain precisely what, is the essence of arbitrary decision making. For the Commission to provide sufficient notice, it must at least explain what prompts this reversal, so that parties can respond to the

agency with the necessary specificity. *See Environmental Integrity Project*, 425 F.3d at 998. The Commission should therefore reconsider its decision and restore its previous tentative conclusion in favor unlicensed use.

II. THE COMMISSION SHOULD RECONSIDER ITS DECISION TO PROHIBIT MOBILE DEVICES IN CHANNELS 14-20.

The Commission determined that, to the extent it permitted mobile devices to operate in the broadcast white spaces at all, it would prohibit mobile devices from operating on channels 14-20. *Report and Order* ¶21. The Commission explained that it acted in an abundance of caution to protect the public safety operations on these channels, although reserved the right to re-examine this conclusion in the future "as it develops familiarity with the technical challenges of operating in the white spaces." *Id.* n.37.

The Commission takes far too cautious an approach. As explained in the *FNPRM*, the Commission will continue to investigate the technical requirements for mobile devices, as well as for fixed use on channels 14-20 (and fixed and mobile use in channels 2-4). The Commission will therefore have more than sufficient opportunity to determine whether or not to permit mobile use on channels 14-20.

The Commission's decision goes to more than timing. While the Commission reserves the right to revisit its decision in the future, this will have little impact as a practical matter. If this Commission makes a decision at this stage to foreclose mobile devices on channels 14-20, no one will conduct the necessary studies to determine whether mobile devices can coexist safely with the PLMRS/CMRS operations on these

channels. This will foreclose the use of valuable spectrum not merely to the broader community, but to public safety operators as well. *See* Naveen Lakshmipathy, "Wireless Public Safety Networks Operating on Unlicensed Airwaves: Overview and Profiles," New America Foundation (2006) (describing use of unlicensed spectrum by public safety entities and need for more unlicensed spectrum).[1]

The Commission can, and should, defer a final decision on whether to permit mobile operation on Channels 14-20 until it becomes more familiar with the available technologies for mobility generally through the processes outlined in the *FNPRM*. Requiring interested parties to start an entirely new proceeding at some undefined future date will only increase the cost in time and money while needlessly depriving the country of much needed spectrum.

In the realm of public safety, prudence is always commendable. But the Commission must also be wary of imposing unnecessary costs on the public – including the public safety community – through a needless overabundance of caution. The Commission will have the opportunity to make a final determination on whether to permit mobile operations on channels 14-20 at the conclusion of the process outlined in the *FNPRM*, at no risk to the public safety operations in the bands. Rather than impose unnecessary costs through a needless decision at this time, the Commission should reconsider its decision in the *First Report and Order* to prohibit, even at this early stage, mobile operation on channels 14-20.

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[1]Available at http://www.newamerica.net/files/archive/Doc_File_2633_1.pdf.

III. THE COMMISSION SHOULD RECONSIDER ITS DECISION TO WAIT UNTIL THE END OF THE DTV TRANSITION TO PERMIT MARKETING AND RELEASE OF UNLICENSED DEVICES IN THE WHITE SPACES.

The Commission determined in the *First Report and Order* that it would prohibit marketing devices operating in the broadcast white spaces until after the "hard date" for the digital transition on February 17, 2009. Again, the Commission's overabundance of caution would impose considerable and needless cost on the public.

The Commission's decision to delay marketing until the day set by Congress for final switch off of analog television broadcasting is flawed for several reasons. First, as others have observed, there is no technical reason why devices using any of the mechanisms the Commission will approve cannot operate prior to the analog switch off date. *See* Letter of Scott Blake Harris to Marlene Dortch, December 7, 2006. The Commission had tentatively approved the operation of unlicensed devices in the white spaces before Congress mandated a "hard date" for the end of analog broadcasting, and through the process outlined in the *FNPRM*, could ensure that devices operating in the white spaces do not interfere with licensed broadcasts in either analog or digital.

Second, if the DTV transition is to go smoothly, the vast majority of stations must be converted and the public ready to receive digital signals well before February 17, 2009. Congress imposed a timetable, including deadlines for auctioning the spectrum and a hard date for conclusion of analog broadcasting, because Congress found that relying on a voluntary transition had failed. Accordingly, Congress set a date certain by which analog television broadcasting must cease in the United States.

For this hard date to prove successful, licensed broadcasters must have towers

constructed and commence broadcasting digital signals well before February 17, 2009. Technical standards and other elements of the transition are already in place, or will be swiftly resolved. All that remains is the speedy implementation of the process. If the marketing of unlicensed devices prior to February 17, 2009 could cause significant issues because of the "state of flux" around the DTV transition, or because some large number of stations continue to broadcast on analog until the last minute and thus reduce the number of available channels, *see First Report & Order* at ¶22, then something has gone seriously wrong with the DTV transition. Nor is it realistic to expect that the market will suddenly be awash in devices using broadcast white spaces. To the contrary, the Commission should anticipate a considerable lag time as new devices are phased in that can safely overlap with the phase out of analog spectrum.

On the other hand, needless delay in bringing devices to market will impose significant costs on the public. This goes beyond the immediate lost benefits of new proprietary technologies. The public will also lose the valuable innovation from volunteers in the open source community and elsewhere.

Consider the ongoing efforts by the Champaign Urbana Wireless Network (CUWiN) to bring the benefits of low-cost connectivity to everyone. CUWiN has developed open source software that it freely distributes through its website, www.cuwin.net. This software provides a "plug and play" method of converting a wide variety of recycled and abandoned equipment into wireless mesh network nodes that provide broadband connectivity for thousands of low income and rural people in the United States and abroad. CUWiN's work has won it support from the National

Science Foundation, among others, to develop the next generation of open-source wireless protocols.

CUWN and others in the open source community cannot begin to develop new software or new products until wireless transmitters using the broadcast bands become available on the market. Only when the hardware becomes commercial available will innovators and developers have the opportunity to explore their full potential. Indeed, much of the interest in and sale of commercial equipment in unlicensed arises from this process of releasing new hardware to a public that includes educated and motivated innovators. It was this process that created the community wireless movement, as dozens of innovators in hundreds of neighborhoods began to use tools initially designed for local networking to provide neighborhoods with wireless connectivity. *See generally*, Rob Flickenger, BUILDING WIRELESS COMMUNITY NETWORKS, 2nd Ed. O'Reilly (2003).

Because the TV broadcast bands will represent new devices operating under new rules, in spectrum with propagation characteristics different from those found in the widely used 2.4 GHz band, developers will need to "start from scratch" when innovating with the new equipment rather than simply building on past experience and existing software. The sooner the Commission allows properly certified devices on the market, the sooner the learning and experimentation can begin. This will benefit not merely the development community, but the broader public.

In deciding to delay marketing of unlicensed devices operating in the white spaces until February 17, 2009, the Commission failed to conduct any sort of balancing

of the supposed benefits of delay versus the real costs of delay. The Commission should therefore reconsider its decision to delay deployment, and should instead authorize marketing of devices as soon as the Commission develops rules and certifies that devices comply.

CONCLUSION

WHEREFORE, the Commission should reconsider its determinations in the *First Report and Order* and provide the relief requested.

Respectfully Submitted,

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