

STATEMENT OF  
COMMISSIONER MICHAEL J. COPPS

**Re: *Unlicensed Operation in the TV Broadcast Bands, ET Docket No. 04-186; Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band, ET Docket No. 02-380***

One of the great lessons of history I quickly learned here at the FCC is the power of technology to turn scarcity into abundance. Once upon a time, it seemed that certain swaths of the public airwaves could support only a few expensive, bulky “brick” telephones (so named because of their forbidding size and weight). These early phones permitted just 30 minutes of scratchy voice communications on a single battery charge. Today, thanks to the extraordinary work of America’s great engineers and inventors, the same amount of spectrum can support millions of full-featured, relatively inexpensive, multimedia handsets—like the popular iPhone—that perform many of the functions of a desktop computer for days between charges.

Or, to take an example even closer to today’s item, we have learned in the past decade that unlicensed bands—once derided as “junk spectrum” suitable only for garage door openers—can actually support Wi-Fi connectivity for tens and even hundreds of millions of users every day. Something that seemed of marginal value has given us broadband in homes, airports, hotels, coffee shops, and downtown areas—developments that are changing the ways in which we live. Just stop by a Starbucks and look at how many people are typing away on laptops. That, to me, is the most important lesson of the wireless revolution: as technology marches on, the real winners are American consumers. This process is as it should be—the airwaves, after all, are the *people’s* airwaves. And it is the FCC’s job to make sure that the American people continue to extract full value from their property.

So in setting responsible spectrum policy, the FCC must always recognize that technology cannot stand still, and that even as we protect existing users from harmful interference, we also have to promote innovation—because until someone finds a way to make more electromagnetic spectrum, it is only *innovation* that can improve the wireless choices available to consumers.

For four years, the FCC has been considering proposals to authorize unlicensed devices in the TV white spaces. The proponents have argued that we can enable a whole new generation of wireless devices—bringing new broadband connectivity to our rural and urban communities—without harming free, over-the-air TV. Does this seem almost too good to be true? Of course. But so did the modern cellular industry, the explosion of Wi-Fi devices, and so many other innovations at comparable stages in their development. Even the notion of transmitting high quality video through the air to millions of TV sets must have seemed pretty fantastical when it was first demonstrated decades ago. This is the history of wireless innovation in a nutshell—the nearly miraculous becomes commonplace.

My approach throughout this process has been to let the engineering analysis drive our decision-making. The good news is that the process—while far from perfect—has involved a great deal of serious study and public openness. In fact, the last round of testing was conducted with engineers and lawyers from all sides looking over the shoulders of the FCC’s engineers as they performed their bench and field testing. While I do not envy the Commission’s engineers for undergoing this level of scrutiny as they go about their daily tasks, I think it’s fair to say that few other engineering analyses at the FCC have been as lengthy or open as this one.

The results of our testing have shown that there is merit in the initial positions of *both* sides in this debate—and I believe our conclusion today reflects this point. For example, the white spaces proponents initially argued that spectrum-sensing alone would be adequate. Our testing has shown that this approach,

right now, is not ready for prime time. That is why our decision does not authorize devices today that rely exclusively on sensing—though we do create a process for evaluating the next generation of such devices.

Instead, today, we move towards a compromise technology—geo-location—that represents a simpler and more conservative approach to protecting existing licensed users of the television band. We also have built in several forms of belt-and-suspender protections. First, we still will have a chance to “kick the tires” of these devices at the certification stage—to make sure they operate as designed. Second, because we permit these devices to operate under our Part 15 unlicensed rules, they must protect broadcast licensees and shut off if they create harmful interference. Third, because we use geo-location technology, we retain the ability to require particular makes and models of white space devices to turn off if they have a manufacturing flaw. Fourth, to the extent that we consider certifying a next-generation sensing-only device, we have established a process to make sure that all parties have an opportunity to be present during the testing process. So, though there will never be metaphysical certainty when it comes to interference issues, I am comfortable that the FCC and its dedicated engineers have approached this issue with the necessary seriousness and developed an approach that will adequately protect over-the-air viewers.

In this lengthy process, some parties have come forward with arguments for licensed use of the TV white spaces, either in whole or in part. As I have stated before, I think that both licensed and unlicensed regimes benefit consumers. The key is to get the right mix. In the past few years, we have auctioned off almost 150 MHz of new *licensed* spectrum. The time has now come, I believe, to increase the amount of *unlicensed* spectrum—especially the amount of spectrum below 1 GHz. The order we vote on today will do exactly that.

Some have called this new technology “Wi-Fi on steroids”—and I hope they are right. Certainly, this new technology, taking advantage of the enhanced propagation characteristics of TV spectrum, should be of enormous benefit in solving the broadband deficit in many rural areas. Indeed, I agree with the view of several of my colleagues that it should be quite possible, at some point, to authorize higher-power devices in rural areas that will support backhaul and broadband infrastructure. That is why I support our commitment to issue a Notice of Inquiry on this topic—which should give the Commission more than enough time to build a record and act before the first commercially-ready devices enter the market.

Today’s item represents the culmination of a lot of hard work by the Commission’s skilled engineers and staff in our Office of Engineering and Technology and elsewhere. I want to thank them for their dedication to this task and their accomplishment in charting a course that accommodates both existing users and innovators in this spectrum. Ultimately, this careful threading of the needle between the path-breaking and the tried-and-true will reap huge benefits for the American people.