

CBRS Transition Could Leave Some WISP Customers Without Service

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The recent FCC decision to allow commercial deployments in the CBRS spectrum band will ultimately be good news for wireless internet service providers (WISPs), many of whom already have been using a portion of the band to provide fixed wireless service, primarily in rural areas.

But the transition to the new CBRS rules poses some challenges and there is a danger that end users that have relied for years on that portion of the band could lose service.

Previously, only 50 MHz of spectrum in what is now the CBRS band was available for WISPs to use. That increases to as much as 150 MHz under the new rules, which should enable the WISPs to boost speeds, capacity or both. The transition from the old rules to the new rules raises some important challenges, however.

Telecompetitor spoke with several stakeholders recently about the issues involved.

CBRS Transition Explained

The 50 MHz of spectrum that WISPs already have been using lies between 3.65 GHz and 3.7 GHz and traditionally was available on a lightly licensed basis. To use the spectrum, WISPs simply had to register with the FCC. Once registered, a WISP could use the spectrum nationwide but had to share it with other users operating in the same area, explained Scott Imhoff, senior vice president of product management for Cambium Networks, a manufacturer of fixed wireless equipment used by WISPs.

The requirement to register offered a bit more protection against interference in comparison with a purely unlicensed approach because it provided “an avenue to address conflicts,” Imhoff explained.

Fixed wireless equipment designed for use in the 3.65-3.7 GHz band works on a “listen before talk” basis, explained Kurt Schaubach, CTO for Federated Wireless. If there are multiple network operators in an area, they essentially take turns using the spectrum.

Federated Wireless is one of four companies that have been approved as spectrum access system (SAS) administrators. Those administrators will play a key role in opening the remainder of the CBRS band between 3.55 and 3.65 GHz for commercial use.

The FCC is not requiring existing military users operating along U.S. coastlines to vacate that spectrum. Instead, CBRS equipment will be required to interoperate with a SAS, which will keep track of where military users are using the spectrum and assign other users to frequencies that are not in use by the military.

The SAS will play another role as well and it relates to network operators who will use the spectrum on a general authorized access (GAA) basis. While the lower 70 MHz of the new 100 MHz that the FCC is freeing up will be auctioned, the remaining 30 MHz and the 50 GHz already in use by the WISPs will not be auctioned but instead will be available for shared use. Those are the GAA users and in addition to the 80 MHz of GAA spectrum, the GAA users also will be able to use spectrum in the lower 70 MHz in areas where there is no licensee, or the licensee is not using the spectrum.

The SAS will keep track of the spectrum available for GAA use in an area and will enable GAA users to share it. But instead of using a “listen before talk” approach, the new approach is to divide however much GAA spectrum is available equally by the number of GAA users, Schaubach explained. For example, if two operators were sharing 80 MHz of spectrum, each would get 40 MHz of dedicated spectrum. Schaubach added that “what we often find is that [operators’] coverage areas don’t completely overlap.”

According to Schaubach, the new approach is more efficient than the previous approach and should help minimize interference problems. He noted, for example, that under the previous system, an operator might have to try transmitting multiple times before getting through – a scenario that should be less common now. And airtime will be used more efficiently because operators won’t have to listen before transmitting.

Imhoff believes that “in many locations, not all the licensed spectrum will be leased – in more cases than not, there will be more than 80 MHz available.”

WISPs expect to support speeds as high as 100 Mbps by using the latest technology in the CBRS band, although exact speeds will depend on the spectrum available.

CBRS Transition Challenges

Where the shift to the SAS approach and the broader CBRS band will create challenges for WISPs relates to those customers the WISP is already serving using the previous-generation equipment, which is referred to as Part 90Z, or simply Part 90, equipment.

As Imhoff explained, Cambium now offers WISPs the ability to upgrade the company’s Part 90 equipment via an over-the-air software upgrade. But both he and Louis Peraertz, vice president of policy for the Wireless Internet Service Providers Association (WISPA), note that not all manufacturers of Part 90 equipment offer a way to upgrade that equipment. According to Peraertz, that’s true of the “vast majority” of manufacturers.

This is becoming an increasingly urgent concern, as WISPs have a limited time to upgrade or replace Part 90 equipment or take it out of service. The specific date by which that must happen varies from one WISP to another, but both Imhoff and Peraertz noted that for many WISPs that date comes in April of this year.

WISPA has asked the FCC to extend deadlines because, as Peraertz explained, deadlines initially were established years ago, at which time the FCC expected the industry to have reached key milestones earlier than it did. He noted, for example, that there were no base stations or customer premises equipment approved to use the full CBRS band until late 2019.

Initially, WISPA filed a waiver request asking that the April 2020 date be extended to January 2023, but that request didn’t receive a positive reaction from the FCC, Peraertz said. Accordingly, WISPA has revised its request to ask that the April 2020 date be extended until year-end 2021. In addition, WISPA is now asking for the same level of protection from other users that GAA users will have in the band. That level of protection was scaled back from an initial request for a higher level of protection.

In addition, about 20 WISPs have filed waiver requests on an individual basis.

The FCC’s decision on the waiver requests will impact thousands of WISP installations, Peraertz said.

It’s worth noting that WISPs are accustomed to replacing customer equipment and base stations every few years because the technology has continued to advance, and it certainly seems to be to a WISP’s advantage to upgrade or replace Part 90 equipment.

The big question, however, is whether the FCC is giving WISPs enough time to do that, considering that replacement equipment wasn’t approved until late last year.

I would be interested to hear what Telecompetitor readers, particularly those who use fixed wireless, think about this.

Updated to correct Kurt Schaubach’s name and title