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TV WHITE SPACES COULD BE A BOON TO RURAL AREAS

Mar 3, 2009 3:05 PM, By Donny Jackson

Last week, online spectrum exchange company Spectrum Bridge unveiled a new web site that provides information regarding the unused spectrum between TV channels —better known as white spaces—that is available for unlicensed applications.

At the new web site, Spectrum Bridge lets users quickly see what white-space spectrum is available for use at any particular address across the nation. In most urban areas, there are little or no white-space frequencies available, so it will be of limited value in those areas of the United States.

However, in rural parts of the country, there is an abundance of this unlicensed spectrum available, said Rick Rotondo, vice president of marketing for Spectrum Bridge. Moreover, because the white-space spectrum is all below 698 MHz, signals will carry much further than they do in the familiar 2.4 GHz and 5.8 GHz unlicensed bands, he said.

"This will go pretty far—the propagation is excellent and the [in-building] penetration is excellent," Rotondo said during an interview with Urgent Communications. "Where municipal Wi-Fi systems failed before, I think it's a whole different ballgame with this spectrum—I think it could really work."

While the propagation characteristics are much better in the TV white spaces, this new spectrum does provide some challenges that 2.4 GHz and 5.8 GHz do not. First, because TV stations operate on different channels in various areas of the country, the available white-space spectrum is not as predictable, so the devices need to access a spectrum-management database—run by Spectrum Bridge or others—to determine whether they can operate on specific frequencies without creating interference to local TV stations.

According to the FCC and industry sources, such technology has been demonstrated to work and should not make devices cost-prohibitive for consumers. Rotondo said white-space devices are not expected to be introduced in the marketplace until the end of this year or in 2010.

Last November, the FCC approved initial rules for white-space use. One of the rules grants protection to wireless microphones from interference created by unlicensed white-space devices over a 1-kilometer (0.62 miles) radius, Rotondo said. (However, wireless microphones are not protected from interference from other wireless microphones.) In addition, adjacent-channel white-space use must be low power, while higher-power transmitters can be deployed if there is at least a one-channel buffer between the device and a broadcaster's signal.

This stipulation reinforces the notion that the TV white spaces will be of limited use in urban and even suburban areas. However, in rural areas, there are plenty of opportunities to leverage vast swaths of spectrum, Rotondo said. As an example, more than 80% of the channels in Steamboat Springs, Colo., are available for white-space use.

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