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Jan 1, 2005 12:00 PM

By Donny Jackson

Over the past three years, public-safety officials pushed mightily for a plan to get more spectrum for first-responder communications — a notion every policymaker publicly supported but one that was complicated by the commercial interests of affected entities. Expect more of the same in 2005.

But this time, the heavy lobbying effort will not be focused on the 800 MHz band shared with Nextel Communications. Instead, public safety's target is the 700 MHz band used by television broadcasters to deliver analog signals until the transition to digital television is complete.

For public safety, the good news is that the 700 MHz debate has become a priority for lawmakers; for instance, language in the intelligence-reform legislation passed last month states Congress "must" address the issue in 2005. The bad news is that the language is not binding, and the commercial implications surrounding the issue have much greater economic, social and political impact than anything encountered in the 800 MHz controversy.

Public-safety officials had hoped a U.S. Senate-approved bill that establishes a firm date for broadcasters to clear the 24 MHz of spectrum in the band designated for public safety would have become law, but the House leadership indicated it would only support legislation that clears the entire 700 MHz band. The stalemate resulted in the passage of the non-binding resolution and a growing recognition that public safety's access to the airwaves depends on policymakers resolving issues in the commercial portion of the band.

"In some ways, it makes it harder," said Robert Gurss, director of legal and public affairs for the Association of Public-Safety Communications Officials (APCO). "It's clear, at least in the House, that they want to deal with this comprehensively throughout the band. ... If that's what it takes, fine."

The need for speed

Such a matter-of-fact attitude in the face of a daunting political challenge is reflective of the value of the 700 MHz band. Simply put, many believe the spectrum — used today to transmit signals for analog channels 52 through 69



— is ideal for broadband wireless applications because it has better propagation characteristics than other frequencies typically used for broadband data applications.

These features translate into more cost-effective networks for public safety. For instance, one access point in a 700 MHz network can cover the same area as four access points in a 2.4 GHz network or 10 access points in a 4.9 GHz network. By having fewer access points, installation and maintenance costs are reduced. In addition, 700 MHz signals often penetrate building walls better, a critical benefit for first responders.

Unfortunately, for public safety, these attributes also have caught the attention of commercial companies wanting to provide wireless services using the 700 MHz band. In particular, many analysts believe the TV spectrum would be ideal for WiMAX applications. The interest is so great that Democratic presidential candidate Sen. John Kerry (D-Mass.) proposed funding his entire science and technology platform with the \$30 billion that he estimated an FCC auction of 700 MHz airwaves would generate for the U.S. Treasury.

Others question such valuations, particularly in light of recent wireless mergers and other transactions that have bolstered the spectrum positions of nationwide mobile carriers.

“Congress thinks [700 MHz spectrum is] worth a lot more than we think it is,” said Harlin McEwen, chairman of the International Association of Chiefs of Police Communications and Technology Committee. “I don't think Congress is being realistic.”

The broadcaster dilemma

While McEwen's assessment may be true, there is little argument that a 700 MHz auction would generate billions of dollars that would be welcomed by a government criticized for recent deficit spending. But such an auction can be conducted effectively only after broadcasters are cleared from the airwaves.

In 1997, Congress called for broadcasters to return their analog airwaves in the 700 MHz band on Dec. 31, 2006, or when 85% of households in a market could receive broadcasters' more spectrally efficient digital signals. When it became apparent that consumer demand for digital-ready TVs was limited, the FCC repeatedly delayed scheduled auctions of the spectrum (see timeline) amid concerns from former FCC Chairman William Kennard that the digital transition might not be completed until 2025.

To accelerate the process, FCC Media Bureau Chief Ken Ferree has since proposed counting cable and satellite TV subscribers when measuring the 85% threshold to ensure that the spectrum is available by 2009. Although such a plan could meet the criteria in the law, the notion of disenfranchising people that still depend on over-the-air broadcasts for information is a significant hurdle.

“The question is: How do you tell the American public that the analog set they just bought or they have in their home doesn't work anymore?” said David Donovan, president for the Association of Maximum Service Television.

Lawmakers who fail to answer that question effectively risk losing voters' support. And, in a country where the 2000 presidential election was decided by a few hundred ballots, the idea of alienating tens of millions of voters by turning off analog signals to their TVs is not an ideal political strategy.

“The potential for consumer outrage is enormous, and it's something Congress needs to understand,” said Dennis Wharton, spokesman for the National Association of Broadcasters (NAB). “One Congressman told us, ‘If I vote to turn off analog TV in December 2006, I'll be impeached by January 2007.’”

Seeking alternatives

One proposal, advanced this fall by Sen. John McCain (R-Ariz.), established a firm date for the return of the 700 MHz spectrum and a \$1 billion subsidy mechanism — funded from proceeds of a 700 MHz auction — to pay for converters that would let analog TVs receive digital signals.

For public safety, McCain's proposal would have been a “home run,” according to Gurs. However, it was never voted on in the Senate, which instead opted for a bill offered by Sen. Conrad Burns (R-Mont.) that would have given public safety a firm date of Jan. 1, 2008, to begin using its 24 MHz of spectrum in the 700 MHz band.

Support for this proposal was generated largely from the fact that the 9/11 Commission report advocated additional spectrum for public safety. In addition, of the 1600-plus full-power TV stations in the U.S., only 5% would be affected by a mandate to clear the 24 MHz of 700 MHz spectrum earmarked for public safety, according to Stu Overby, Motorola's director of spectrum and standards strategy.

“In other words, 5 percent of the TV stations are preventing more than 50 percent of the markets from being able to have first-rate public-safety communications to keep them safer,” Overby said.

But Burns' legislation offered no clear path for a commercial auction of 700 MHz airwaves. In addition, some broadcasters such as Bud Paxson, chairman of Paxson Communications, indicated that unequal treatment of stations in the transition could be the foundation of litigation. As a result, the Burns bill failed in the House, where Commerce Committee Chairman Rep. Joe Barton (R-Texas) advocates a comprehensive approach to the digital-television transition — a philosophy advocated in the intelligence-reform legislation.

“The [Senate] proposals would require the dislocation of up to 75 broadcast stations, which also serve a critical public-safety function by broadcasting weather, traffic, disaster, and other safety alerts,” the legislation states. “Such disparate treatment of broadcasters would be unfair to the broadcasters and their respective viewers.”

Worth the wait?

Instead, Congress passed the intelligence-reform legislation with the non-binding provision that calls for lawmakers to take action in 2005. Although public-safety representatives expressed some disappointment that the matter was not resolved, they are generally encouraged by the progress on Capitol Hill.

“We're encouraged, as much as we can be,” McEwen said. “We're further along than we have been in the past.”

Motorola's Overby echoed this sentiment.

“The good news is that there's lots more discussion and lots more momentum on it than there has been in the past,” Overby said. “If you read what's here [in

the intelligence reform bill], it's clear that there's a better understanding of the problem.”

For public safety, delays in the 800 MHz proceeding ultimately resulted in a more favorable deal. Public-safety officials hope that scenario will be repeated in the 700 MHz band negotiations.

The idea of giving public safety additional spectrum beyond the 24 MHz already earmarked had been advanced before, but Beltway sources indicate that the notion has gained momentum. In addition to public-safety groups and traditional public-safety vendors such as Motorola, the notion also is being supported by Lucent Technologies — a longtime commercial telecom vendor but a relative newcomer to first-responder issues.

Lucent is advocating the delegation of 700 MHz spectrum for broadband data uses that would enable public-safety organizations to leverage cheaper off-the-shelf wireless technologies — such as CDMA EV-DO — that would be the foundation for nationwide interoperability.

Charles Mathias, Lucent's director of government affairs, said it's “easy” to satisfy public safety's security concerns with advanced software techniques. Meanwhile, public-safety's redundancy and durability standards also can be met, if the monetary resources are made available. Using commercial radio technology instead of proprietary systems should generate cost savings while introducing much-needed innovation into the public-safety sector.

“Our proposal represents a paradigm shift in concept,” Mathias said. “We really believe that our first responders should at least be able to do everything a typical teenager with a cell phone can do.”

Exactly how much additional spectrum would be needed is a matter of debate, with some proposals calling for an additional 10 MHz for public safety and others seeking an extra 30 MHz. Gurss noted that additional spectrum would be needed for such a dedicated network because the 24 MHz of 700 MHz spectrum currently allocated to public safety is not configured to enable broadband data applications.

Of course, dedicating extra 700 MHz spectrum means those airwaves could not be auctioned. Even with the 9/11 Commission's recommendation to secure more spectrum for public safety, many doubt that lawmakers are willing to forego potentially billions of dollars in auction proceeds to pursue such a plan.

“That's the big question. ... Like the rest of the band, it's encumbered, and it isn't of any value until it's cleared,” one Beltway source said. “Will it be auctioned, or will it be used for other things? ... That debate is still to come.”

That could take a while. The intelligence-reform legislation calls for the matter to be studied during the next year, although several sources indicated the reviews could be completed during the summer. Meanwhile, the notion of an interoperable national broadband data network certainly is not being ignored, Mathias said.

“We're getting a lot of interest and positive feedback in the vision ... but I think it's too early to say [whether it will be passed by Congress],” he said.

700 MHz path to nowhere — so far

- **August 1997:** Balanced Budget Act is signed into law, requiring the

FCC to auction 700 MHz spectrum, but it doesn't require broadcasters to vacate the airwaves until Dec. 31, 2006, or until 85% of households can receive a digital television signal.

- **August 2000:** FCC delays 700 MHz auction for a third time, until 2001.
- **October 2000:** FCC Chairman William Kennard accuses broadcasters of "spectrum squatting," says it may be 2025 before the 85% threshold is met.
- **July 2001:** Led by new Chairman Michael Powell, FCC delays 700 MHz auction again, until 2002.
- **September 2001:** FCC approves voluntary guidelines designed to encourage broadcasters to clear 700 MHz at privately negotiated prices — an idea advocated by Paxson Communications CEO Lowell "Bud" Paxson.
- **July 2002:** On the eve of a 700 MHz auction, President George W. Bush signs legislation eliminating budgetary deadlines for auction of most 700 MHz spectrum.
- **March 2003:** Reps. Jane Harman (D-Calif.) and Curt Weldon (R-Pa.) introduce H.R. 1425, the Homeland Emergency Response Operations Network Act, also known as the HERO Act, which calls for broadcasters to clear 700 MHz spectrum earmarked for public safety.
- **September 2004:** Sen. John McCain (R-Ariz.) proposes setting a firm date for broadcasters to clear the entire 700 MHz band, but the measure fails to make it out of committee. Sen. Conrad Burns (R-Mont.) amends the proposal on the Senate floor to set a firm date only for public safety to receive its 700 MHz allocation.
- **October-November 2004:** In conference, House leadership resists notion of Senate's public-safety carve out for 700 MHz, seeks resolution of entire band.
- **December 2004:** As part of the Intelligence Reform Act, Congress includes a non-binding resolution calling on lawmakers to address the 700 MHz dilemma in 2005.

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