



# THE EXPERTS SPEAK: FUTURE OF THE D BLOCK

## THOUGHT LEADERS WEIGH IN ON WHAT'S NEEDED TO BUILD A PUBLIC SAFETY NETWORK

Check out blogs by industry experts as they debate the issues surrounding spectrum and funding for a wireless broadband network designed to meet the unique needs of public safety. This collection of viewpoints was originally published in Motorola Next Generation Public Safety FRESH IDEAS.



### WE MUST FIGHT TO RESERVE SLICE OF SPECTRUM FOR PUBLIC SAFETY

**R. David Paulison**  
**Former Administrator, FEMA**  
**U.S. Department of Homeland Security**

It often takes a crisis for organizations to unite to support a common cause. The FCC's proposed National Broadband Plan and the negative result it will have on Public Safety if implemented gives our organizations cause – again – to come together and ask Congress to take action. All Public Safety organizations need spectrum for advanced technologies like streaming video and wireless data access in the field. Without these tools, the lives of citizens and public safety officials will be jeopardized. Join me in supporting the Public Safety Alliance. Call your congressional representative and ask them to stop the D Block auction and reallocate the spectrum to public safety. Visit [psafirst.org](http://psafirst.org) for more ways to help.

R. David Paulison is the former administrator for the Federal Emergency Management Agency, United States Department of Homeland Security.



### 4G BROADBAND: BUILDING THE BRIDGE TO PUBLIC SAFETY LAND MOBILE NETWORKS

**Andy Seybold**  
**Wireless Industry Analyst**

The public safety community is finally in a position to begin making use of wireless broadband services on spectrum the FCC has set aside exclusively for its use. Today, and in fact, since the 1930s, public safety has relied primarily on mission-critical voice radio systems (land mobile radio or LMR) to be able to communicate. Recently, the FCC approved some broadband spectrum that is adjacent to the new spectrum that will be used by AT&T, Verizon Wireless, and others to provide next-generation or 4G wireless broadband services.

This does not mean the public safety community will be giving up its voice networks. In fact, voice will continue to be the method of choice for daily and emergency operations well into the future. However, it does mean that it will be able to incorporate data, multimedia, and video services that will enable first responders to serve us better, obtain information they need in the field in a more timely manner, and provide for additional first responder safety capabilities.

It is important to understand that public safety agencies have unique needs that cannot, for the most part, be satisfied by using commercial voice and broadband networks. This new spectrum enables the addition of broadband services that, if the networks are designed correctly, can be integrated into local, regional, and state networks to provide the best of both voice and broadband services using an inter-connected network back-end design. If the new public safety broadband networks are designed and built as separate networks, they will provide some of the capabilities that have been missing from public safety for years, but they won't provide the integration between voice and broadband networks that can add a whole new level of capabilities.

These capabilities include better incident management, quicker response of the proper resources for the incident, and additional data-heavy capabilities to ensure the safety of the personnel in the field who risk their lives daily on our behalf. It may be difficult for those of us who have been using voice, text messaging, and broadband services for several years to understand that the public safety community has been without many of these capabilities until now. It is vitally important that its new networks be designed from the ground up to not only provide these new services, but to incorporate its existing voice networks to provide the full capabilities wanted and needed in the field.

Many people question why public safety needs its own mission-critical networks and cannot simply use existing commercial networks. The answers are many and include the fact that each local jurisdiction needs full control over its networks, including the types of devices, the applications, and management of the network. Public safety needs mission-critical communications that are not available on commercial networks, and it needs to be able to provide both voice and data on a one-to-many basis. Further, its networks need to provide coverage deep inside buildings, subways, and other subterranean structures, and field personnel must be able to communicate even when they are out of range of a tower.

There is certainly a need for cooperation and sharing with commercial networks for non-emergency communications and services, and public safety and commercial network operators are working together to provide this integration. More importantly, public safety needs its own hardened, mission-critical networks and devices that can withstand harsh environments.

The public safety community has all of these capabilities when it comes to voice networks, but it cannot readily interoperate with other first responders in other jurisdictions. In addition to providing the needed data, multimedia, and video services, if designed properly, these new broadband networks will also provide a higher level of voice integration. The same network infrastructure can also provide voice interoperability if the broadband networks are thought of as intelligent extensions of the existing voice networks and not as standalone networks. This is one case where combining networks and serving both voice and data will have an additive effect in the types of services that can be delivered to public safety resources in the field, and public safety will finally have the same capabilities that consumers have had for a few years.

Andy Seybold is a wireless industry analyst.



## SALE OF D BLOCK COULD HOBBLE PUBLIC SAFETY NETWORK'S FUTURE

**Rick Neal**  
**Motorola Vice President**  
**Government & Commercial Markets**

Why does the auction of spectrum need to include the D Block?

Simply put, selling the D Block could remove spectrum needed to support guaranteed access to a public safety grade network.

Combining the D Block and the existing 10 MHz of spectrum would allow public safety to deploy a contiguous 20 MHz block of spectrum. Building on a contiguous 20 MHz spectrum block, public safety could realize significant economies of scale that would not work with deployment built on the existing spectrum – Public Safety Spectrum Trust (PSST) – along with a piece of spectrum that is not adjacent to it.

While there is nothing inherently wrong with auctioning spectrum to raise funds to deploy a national public safety broadband network, there are other blocks of spectrum that could raise revenue that are not adjacent to the current public safety allocation – like the D Block.

Also, the auction of the D Block may not provide the necessary funding needed to build out a broadband network. As shown by the failure of the D Block auction in March 2008, requiring commercial carriers to build networks with public safety grade reliability and coverage is not a sustainable business plan.

By contrast, reducing the requirement makes the commercial business plan more viable but leaves public safety without the public safety grade network it needs. Therefore, neither approach provides a realistic option for making a public safety network a reality.

Congress should make it a priority to provide both the spectrum and funding needed for a nationwide broadband public safety network with the capacity and reliability needed for 4G broadband operability and interoperability across all levels of government. The National Broadband Plan calls for auctioning off 500 MHz of spectrum, of which 300 MHz would be auctioned within five years. The 10 MHz associated with the D Block translates into 2% of the spectrum.

Is 2% too much to ask for our first responders to assist them in doing their jobs? Or is it more important to give the 2% for access to Facebook, MySpace and Twitter? Clearly, our government must decide to set aside the D Block for public safety.

Rick Neal is Motorola Vice President, Government & Commercial Markets.



## INTEROPERABILITY PROGRESS SINCE 9/11: APCO PRESIDENT GRADES IT AS C MINUS

**James Careless**  
**Freelance Journalist**

C minus.

That's how APCO International President Richard Mirgon grades America's progress on achieving radio interoperability since 9/11. "We've improved since September 11th, but we're not there yet and we've got a long way to go," he said recently.

In giving this grade, Mirgon is not criticizing the efforts of public safety agencies, manufacturers or the Department of Homeland Security (DHS). "In fact, the DHS Office of Emergency Communications has done a lot of good work in getting public safety people together and talking to each other," he says. (Such inter-agency communications was in short supply before 9/11, when many police, fire and EMS departments focused on protecting their own turf.)

So why the C- ? The big problem is money; specifically the ongoing shortage of cash to buy P25-compliant radios that support interoperable two-way communications.

"There are still a lot of older proprietary radio systems deployed today," Mirgon says. "The departments who use them don't have the money to buy new radios. ... Until those proprietary radios are replaced, interoperability will remain a challenge for first responders."

Meanwhile, the use of interoperable "radio bridges" – electronic boxes that interconnect incompatible radios and switch audio between them – comes with its own challenges. "The problem is that people on the street want their communications to be simple; they want to push a button to talk to who they want to talk to, when they want to," he notes. "Radio bridges make this process more complicated. Add the fact that these boxes aren't used all that often, and the result is that people forget how to run them – which doesn't help during mutual aid incidents."

Looking ahead, Richard Mirgon is looking forward to the creation of a national broadband public safety network on the 700 MHz band. Right now the creation date is up in the air, because currently the project requires an auction of the 'D Block' spectrum, a critical asset caught in the middle of a disagreement between public safety representatives, who think the spectrum should be allocated directly to them, and the Federal Communications Commission, which plans to auction the spectrum to the commercial sector.

"When the public safety has the D Block spectrum and it is finally in use for a national public safety network, the interoperability problem will truly have been addressed," he says. "But that hasn't happened yet, because the spectrum still has not been allocated to public safety. In the meantime, there's no reason that the commercial carriers cannot partner with us today to start the ball rolling – but nothing has happened."

The bottom line: Progress towards comprehensive U.S. public safety radio interoperability is being hampered by tight money, low political priority on the part of elected officials, and a lack of a broadband network. In contrast, much of what has been achieved to date can be credited to the willingness of public safety people to work together, across agencies and levels of government.

Compared to the pre-9/11 world, this achievement is quite significant. But it is nowhere near enough to bring U.S. interoperability's grade up to an A+.

James Careless is an award-winning freelance writer with extensive experience covering the telecommunications industry; his credits include Law and Order, Urgent Communications, and Government Video magazines.



## BROADBAND FOR FIRST RESPONDERS

**Don Bishop**  
**Freelance Journalist**

To make the optimum deployment of 4G broadband technologies possible for public safety, a perfect storm is needed: spectrum, funding, equipment and applications. But instead, what public safety seems to be facing is a perfect mess.

Case in point is public safety's hopes for the allocation of 10 MHz of spectrum in the 700 MHz band known as the D Block. Even though many public safety communications experts are on record as saying that the additional 10 MHz would not be sufficient, not to have it at all would be worse.

With that in mind, on April 20, Rep. Peter King (R-N.Y.) introduced HR5081, the Broadband for First Responders Act of 2010, which would amend the Communications Act of 1934 in a way that would require the FCC to allocate the D Block for public safety broadband communications. Although Congress is known for considering some lengthy, obtuse legislation, this 1,200-word bill is refreshingly concise.

The act would give the FCC 180 days to establish rules for the frequency band, including a standard or set of standards to ensure nationwide interoperability and roaming.

Passing King's legislation would mean a reverse in direction for the D Block, which under current law and FCC regulation is headed for auction to commercial bidders as early as the first or second quarter of 2011. The chief of the FCC's public safety and homeland security bureau, Jamie Barnett, said, "I know that there is a mystical and spiritual bond between public safety and the D Block, but the fact of the matter is that the D Block was never given to public safety." The Broadband for First Responders Act of 2010 would change all that.

What wouldn't change is the lack of funding to build a public safety network. The FCC estimated that it would cost \$16 billion to construct a nationwide public safety network. But the legislation Rep. King introduced would not require such construction. It appears that the rollout would follow previous public safety communications network deployments such that agencies in various jurisdictions would construct systems in the new frequency band as voters who live there approve local funding.

Most likely, the first systems in the D Block would be built in metropolitan areas where existing public safety systems have insufficient capacity for video and other high-bandwidth next-generation public safety communications applications.

It has been pointed out that a congressional reallocation of the D Block to public safety would provide public safety with an appropriate amount of dedicated capacity while eliminating several interference issues. It would lessen dependency on carrier roaming and mitigate excessive roaming charges.

Don Bishop is a freelance writer, editor and photographer who has been covering wireless telecommunications since 1983. He currently serves as executive editor and associate publisher of AGL (Above Ground Level), a wireless infrastructure industry magazine that he co-founded in 2004.



## ALLIANCE PRESSES FOR NATIONAL WIRELESS PUBLIC SAFETY NETWORK

The Public Safety Alliance (PSA), which is a partnership of the nation's leading public safety associations, strives to ensure that law enforcement, fire, EMS and other first responders are able to use the most technologically advanced communications to meet the difficult, life-threatening challenges that public safety agencies face every day as they protect America.

The Alliance does this by raising awareness about the need for a nationwide broadband wireless network to enable interoperable, redundant, failsafe communications between agencies and departments at all levels of government.

One of the goals of the Alliance is to urge Congress and the Obama administration to authorize and fund a dedicated nationwide wireless communications network for public safety utilizing the D Block spectrum.

PSA has the support of a broad-based group of the public safety community -- including Motorola and other manufacturers -- to further the impact of its mission. Association members include the International Association of Chiefs of Police, International Association of Fire Chiefs, National Sheriffs' Association, Major Cities Chiefs Association, Major County Sheriffs Association, Metropolitan Fire Chiefs Association, International, National Emergency Management Association and APCO. The partnership is operated as a program of the Association of Public-Safety Communications Officials (APCO) International.

Visit [PSAfirst.org](http://PSAfirst.org) to learn what the Public Safety Alliance is doing to raise awareness and how you can support their efforts.



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