

**Testimony of
Morgan O'Brien, Chairman
Cyren Call Communications
before the**

Committee on Energy & Commerce

Subcommittee on Telecommunications and the Internet

United States House of Representatives

March 22, 2007

Good morning Chairman Markey, Ranking Member Upton, Members of the Subcommittee. My name is Morgan O'Brien. I am the Chairman of Cyren Call Communications Corporation. Prior to forming Cyren Call last year, I spent eighteen years as a founder of Nextel Communications, Inc. I served most recently as Vice Chairman of Nextel prior to its merger with Sprint Corporation.

Historically, Congress and the FCC have treated the communications requirements of the public safety and commercial communities as separate and distinct. As a result, public safety increasingly has been left behind while commercial service providers have revolutionized the telecommunications capabilities of the nation. We are left with a public safety communications system that is outdated and broken. It has already failed us. It has already cost lives. Now is the time for a new approach. As we face greater and more dangerous threats, the public demands a dependable, 21st century public safety network. We simply cannot wait any longer. The consequences of delay are increasingly dire.

The nation's emergency response providers are being asked to take on ever expanded duties with limited human and financial resources. Improved technology is key to enabling that workforce to keep pace with those responsibilities. This Subcommittee has repeatedly recognized the importance of broadband for the general public. However, the nation's most essential users, the individuals who protect our lives and property, also have an urgent need to access the almost mind-boggling capabilities that can be delivered on an advanced wireless broadband network. We cannot leave public safety out of these discussions any longer. It's time to put our first

responders at the head of the table on this issue. We should shift our focus to what is best for them and fashion legislation that maximizes the benefit for our public safety personnel.

On April 27, 2006, Cyren Call filed a comprehensive proposal with the FCC in which it recommended the creation of a nationwide, wireless broadband network for public safety and commercial use employing an innovative public private partnership and funding method. Our filing precipitated a much needed debate of the broadband communication needs of the public safety community and how those needs can be met. As of today, I think it is safe to say that we have agreement by all parties, including the FCC itself, on the need for a public safety broadband network. We also have consensus that the network must be a national network – with a national license for the required spectrum – and that the viability of this new network requires that it be a private/public sector partnership. Beyond that, there are still disagreements.

The first question is whether the public sector should be the licensee, and sub-auction the spectrum to private entities, as Cyren Call has proposed? Or should a private sector enterprise hold the license subject to public sector encumbrances and obligations? Another important question involves what and how much spectrum is required. Should we use half of the spectrum that we are recovering from analog television broadcasters, as we have proposed? Or should we try to rely, in whole or in part, on spectrum already assigned to public safety, even though it is generally recognized that it becomes very difficult, if not impossible, to find enough suitable spectrum for the network?

These, Mr. Chairman, are the questions we need to answer, and we need to answer them soon. We now have the technology to develop a public safety broadband network that is shared with

commercial services. The public safety community understands that technology and how it can be made to work for them. And it is becoming increasingly clear that our nation's security may depend on getting this done, and getting it done right. In testimony before this Subcommittee last week, Chairman Martin stated that the broadband revolution had ushered in the promised land of convergence for companies and consumers. There can be no excuse for leaving public safety behind in this revolution, particularly not in America. So we look forward to having this debate, and to being part of the solution to this problem. Right now, this year, we have a one-time historic opportunity to improve dramatically and permanently public safety communications. It will *not* come again. In my opinion, and as indicated by the public safety representatives who support this proposal, creating a shared 30 MHz governmental/commercial network at 700 MHz, described more fully below, is the most workable solution. If we adopt this approach we can and will prevent the communication failures of the past.

A shared network on 30 MHz of spectrum is the approach supported by the public safety community. Under this approach, the public safety community would create a single licensee to hold the spectrum and establish the parameters for the network. That entity would be a non-profit corporation, modeled on the Corporation for Public Broadcasting, called the Public Safety Broadband Trust Corporation. The Public Safety Broadband Trust would lease the spectrum to commercial operators using established FCC procedures. The commercial rents from the leases would fund the buildout of the network and the cost of obtaining the license for the spectrum from the FCC.

Perhaps the most controversial part of this approach is that it proposes to use half of the spectrum scheduled to be recovered from analog television services. That spectrum is currently scheduled to be auctioned for purely commercial use by the FCC. That spectrum was chosen for the Public Safety Broadband Trust because of its technical qualities and the fact that it is the best spectrum that is available and suitable for the successful creation of this network. Only by committing suitable spectrum can we bring the “promised land of convergence” to the people who put their lives on the line for ours.

We believe that this approach is the correct one, for the following reasons:

- First, those who protect our lives and property should be using best-in-class, state-of-the-art wireless technology, and all too frequently they are not. Both spectrum and financial limitations act as barriers to that objective.
- Second, the nation’s public safety mobile capabilities must be upgraded as the FCC has reported on several occasions over the past few years. The public safety community’s expanded responsibilities require a nationwide, interoperable broadband network at 700 MHz. Comments filed by thousands of public safety representatives in response to several recent FCC proceedings confirm that they embrace the idea of a 700 MHz broadband public safety network.
- Third, the realities of local, state and even federal funding constraints make it clear that the public sector – on its own – cannot finance a broadband network with the necessary

geographic coverage and technical capabilities. Indeed, earlier this month, the administration proposed sharp cuts in FY 2008 grants for first responders. And even if such a network could be built with taxpayer dollars – a daunting assumption that requires the availability of tens of billions of dollars for that purpose alone -- the ongoing cost of operating, maintaining and continuously upgrading it to keep pace with technological improvements vastly exceeds available public funding sources.

- Fourth, almost twenty-five years of commercial wireless deployment has also made it clear that no business case has emerged to induce commercial carriers to build out their networks beyond areas of relative population density, even though substantial spectrum has been made available for that purpose. Yet, the individuals in those communities still require police, fire, emergency medical and other vital governmental services. Moreover, they deserve access to the same wireless broadband technology that is transforming peoples' lives and their ways of conducting business in more urban markets.

The considerable time I have spent over the past years listening to police, fire, EMS and other emergency response providers, those serving rural, sparsely populated communities as well as those in major urban areas, has given me a deep appreciation for their truly unique communications requirements. Access to tomorrow's broadband devices will be essential, for example, to enable police officers to have real-time (streaming) video of a crime scene or major disaster as it unfolds. As a matter of principle, first responders must be given the tools, capability, and capacity to communicate what they need when they need it. Giving our public

safety personnel access to that kind of technology would be the 21st century equivalent to providing them with body armor.

Just as important, it is absolutely clear that the nation needs a secure wireless broadband network to meet the needs of the critical infrastructure community, upon which our economy and well-being depend. Their access to a secure broadband network, in times of national threat or emergency, is essential to our nation's security.

At Nextel, I had hands-on experience building a commercial wireless network from the ground up, while also converting operations from analog to digital technology. I know what is required to finance, deploy, operate, maintain and upgrade a top-quality, large-scale wireless network. Even with that experience, I do not underestimate the even greater challenge of building a nationwide broadband network to the more demanding public safety specifications and fully appreciate that the commitment, of necessity, is long-term. But it must be started now and started right. If we want to give public safety the advanced capabilities it needs and deserves, its wireless devices must be developed in conjunction with the right technology platform, not retrofitted to conform to a system built to less stringent commercial standards.

It is the combination of these factors, and our belief that first responders have a right to a communications system that meets the urgent public safety demands of the 21st century, that led to the creation of Cyren Call and the Public Safety Broadband Trust proposal. We've worked with the public safety community in developing the concept of a governmental/commercial shared 30 MHz broadband network at 700 MHz, the license for which would be held by the

Public Safety Broadband Trust. The Public Safety Broadband Trust would consist of representatives of a broad variety of public safety organizations, as well as local, state and federal governmental entities and groups. The Public Safety Broadband Trust would make available for lease to commercial entities usage rights to the licensed spectrum, in exchange for commitments from those entities to build out, maintain, operate and update the network to public safety's specifications and to make appropriate lease payments. In return, those commercial entities would have the ability to offer services to commercial subscribers on the network, using the excess capacity remaining after public safety's communications needs have been met – and, given the 30 MHz of spectrum deployed in the network, the excess capacity (in all but the most extreme public emergency circumstances) available on the network should be adequate to support a sizeable commercial subscriber base. The Public Safety Broadband Trust proposal contemplates that public safety entities would pay for their own subscriber equipment and for network access. However, they would avoid the infrastructure costs that require extraordinary bond or other taxpayer measures, measures that take years to effectuate and, at best, provide individual organizations with equipment that already may be outdated by the time it is deployed, and which then cannot be upgraded for years or decades without additional taxpayer funding. These are delays and shortfalls in technology that our first responders simply cannot afford.

Instead of settling for the status quo, the Public Safety Broadband Trust approach would mirror the commercial approach to network upgrades; public safety technology would be refreshed routinely in accordance with the demands of the consumer marketplace, although always consistent with the Public Safety Broadband Trust specifications as well. Public safety also would enjoy the cost economies of subscriber devices produced in volume for the broader

consumer market, economies that continue to drive down the cost of cell phones and other wireless products.

The result would be a nationwide broadband network available to serve both public safety entities and the general public. This network would be efficient, relevant, accountable, and – best of all – this network would serve the needs of first responders, above all else.

To be clear, this network would not replace existing public safety voice systems, but would provide access to a state-of-the-art mobile broadband network built specifically to public safety standards. On a day-to-day basis, the great majority of capacity would be devoted to commercial usage. While public and private wireless operations traditionally have been viewed as incompatible, the 21st century network contemplated in the Public Safety Broadband Trust proposal permits rational shared use. The first commercial subscribers are likely to be a combination of users such as utilities with more demanding public safety-like requirements and first adopters who want access to the most advanced technology available. However during emergencies, whether of a local, statewide, regional or even nationwide scope, increased access and capacity would automatically be dedicated for emergency response purposes on a scaled basis as dictated by the event. These situations are akin to seeing emergency responder sirens in our rearview mirror on the road – we pull over to the side to allow them to pass quickly. Of course, the rules of the road with respect to preemption would be established in advance by the Public Safety Broadband Trust so that those transmitting less critical communications would know to anticipate some disruption during those events. Those with vital transmissions, network users at the local, state and federal levels, would have immediate, seamless interoperability.

Public safety agencies operating on their own systems in other bands also could be provided with interoperability through IP-based gateway patches that would reside on the network and use its IP backbone resources.

The operation of this network would represent a challenge for commercial wireless veterans and will require careful oversight by the Public Safety Broadband Trust, whose members are not professional network operators. The legislation therefore permits the Public Safety Broadband Trust to hire personnel or enter into contracts with parties that bring skills critical to the network's success. Cyren Call believes it has the qualifications to take on important responsibilities for the network. However, I will state here for the record what I have stated publicly and repeatedly since filing the proposal with the FCC in April 2006: Cyren Call is not asking for a guarantee of **any** ongoing role with respect to the Public Safety Broadband Trust or this 700 MHz spectrum. If the Public Safety Broadband Trust desires assistance with managing the network, the process for selecting appropriate assistance should be competitive, transparent and fair. All such decisions will remain firmly in the hands of the Public Safety Broadband Trust, participation in which will be limited exclusively to public safety and governmental organizations.

Representatives of the nation's police and fire officers have explained to the Committee their critical need for broadband capability on a national scale. They have described some of the functions that cannot be introduced on their current radio systems, but that would be available on a 30 MHz broadband network.

Our first responders are telling us: the 24 MHz already is devoted – in many areas, especially the large population centers – to addressing and remedying public safety communications needs that have been in place for most of the past ten years. Finally gaining access to that spectrum is not enough; we need more to do more. We need more bandwidth to keep Americans safe. Will we ignore their calls, again? Will we allow another catastrophic failure of communication, as happened during Katrina, to occur again? When will we learn that we need to start listening to the people on the ground, the people who deal with the challenges of this issue every single day? They put their lives on the line for us and we owe it to them to put everything we can behind them.

Public safety officers are hampered today by not having access to features such as streaming video, large file downloads (e.g., building diagrams and architectural plans), remote database access and multi-media messaging capability. And these are the capabilities that we already know are needed. The history of telecommunications teaches us that the introduction of improved technologies spawns applications and functionalities even beyond those originally anticipated. Who could have anticipated in 1983 when the first analog cellular system was activated that subscribers in 2007 would be using their “phones” to take pictures, watch television, read e-mails and maintain calendars? It is not possible to envision today all of the uses to which emergency response providers and commercial subscribers will put this broadband network since the only limits will be those of entrepreneurial ingenuity. However, a compelling advantage of this public/private broadband partnership is that public safety at last will enjoy the ongoing technical developments that now are taken for granted by subscribers on commercial

networks. The forces of innovation and improvement that are at work in a competitive marketplace are powerful engines for driving technological advances.

Technical improvements on this order require an appropriate spectrum platform. Yet critics of this governmental/commercial shared network claim that public safety does not need additional spectrum on which to deploy a broadband network. They argue that public safety could meet its needs by using its existing spectrum more effectively.

The proponents of such criticism either are woefully misinformed or are willfully disingenuous about the reality of public safety spectrum allocations. Most public safety spectrum is allocated in individual 25 kHz or 12.5 kHz channels. These channels are but a fraction of the spectrum awarded to each cellular and PCS licensee and, even then, are not contiguous to one another. Under rules and procedures established by the FCC, they are interleaved with channels used by a variety of non-public safety entities and must coexist with them. Even if the FCC were inclined to displace all existing public safety operations on this shared spectrum, those individual channels could not be cobbled together to create a block of contiguous spectrum adequate to support a broadband network. Suggesting otherwise is a deliberate attempt to mislead Congress and this Subcommittee. The fact that this fiction originated from CTIA, the organization representing the wireless carriers who have made no secret of their appetite for the spectrum in question, speaks volumes.

The public safety community also has stated that even the 12 MHz of contiguous public safety spectrum at 700 MHz proposed by the FCC for a nationwide broadband network is entirely

inadequate for that purpose. They have determined that it would not provide enough capacity to accommodate all governmental broadband usage, much less provide excess capacity that would attract commercial partners.

It is for precisely these reasons that the public safety community has embraced the fundamental premise of the Public Safety Broadband Trust legislation – a partnership of governmental and commercial interests, joined by their common interest to create and operate this 30 MHz broadband network. This proposal is the only economically realistic vehicle for delivering broadband capabilities to local, state and federal public safety users as well as to the American people that live beyond the outposts of current commercial wireless deployment. If there is a better answer, one that addresses all of the technical and economic factors that must be integrated to produce a workable solution, its proponents should be here, before this Committee, so that their proposal could be tested for cohesiveness and validity.

The needs of public safety are urgent and immediate. They should not be deferred in the hope that this problem will resolve itself or that an easier solution will emerge. They most certainly should not be denied because of a previously enacted Congressional auction schedule, especially when reallocating a portion of the spectrum for this joint public safety/commercial use will neither prevent or delay the auction of the balance of the spectrum or put at risk any of the programs and allocations originally expected to be funded solely by auction proceeds.

Last week's oversight hearings also reaffirmed that this Subcommittee and the FCC consider ubiquitous broadband deployment one of the fundamental challenges for our nation's

telecommunications policies. There is no question that state-of-the-art broadband technology should be delivered to all of our citizens, not just those in the more densely populated communities that support purely commercial deployment. In fact, a growing debate centers on the role of the Universal Service Fund (USF) and how it can provide incentives for an expansive broadband deployment. Clearly, the USF requires some additional review in this regard as broadband does not currently fall under the auspices of the USF program. These concerns were also expressed last week by your Members and the FCC leadership.

The shared governmental/commercial network proposed in the Public Safety Broadband Trust legislation represents a solution that requires neither additional governmental incentives nor USF monies. Chief McEwen has explained the financial structure of the Public Safety Broadband Trust legislation. He has described how the federal treasury will be compensated for the 30 MHz of spectrum that would be allocated to the Public Safety Broadband Trust rather than auctioned.

The success of this approach is dependent upon two factors. First, the network must be conceived, organized and operated as a nationwide system to assure that operations in more commercially attractive markets such as Los Angeles and New York will be paired, either physically or financially, to enable construction and operation of the same network, providing the same broadband capabilities to public safety personnel and residents, in rural areas of California, Kentucky, Michigan, Mississippi, Nebraska, New Mexico, Oklahoma, Oregon, Tennessee and Texas. The network must operate on the principle of coupling access to prime spectrum usage rights in commercially desirable markets with the obligation to build and

operate, or to contribute to the construction and operation of, the network in more sparsely populated and underserved markets. If not, it will be bound by the same economic barriers that, to date, have defined the geographic coverage of commercial wireless systems. Indeed, one of the Public Safety Broadband Trust's greatest challenges will be balancing public safety coverage requirements with the implacable economic realities of network costs.

Second, there must be sufficient capacity to support governmental usage while still attracting commercial interest. The former dictates that the network be built to hardened public safety specifications, substantially beyond the requirements of a typical commercial system, and that it have truly nationwide coverage through a combination of terrestrial and satellite service. The cost of deploying such a network is substantial. The commercial operators who will be building, maintaining, operating and improving it pursuant to their lease arrangements with the Public Safety Broadband Trust must be confident that there will be sufficient commercial capacity to support significant usage by a commercial customer base large enough to justify their investments.

Let me share with you a summary of the analysis that suggests 30 MHz is the **minimum** needed to support a viable network of this scope.

- Terrestrial Coverage Cost: Public safety must provide services wherever there is public to serve. The proposed nationwide public safety broadband network is assumed to require a terrestrial build to 99.3% population coverage. The favorable propagation characteristics at 700 MHz help reduce the costs of network construction, operation and

maintenance *vis-à-vis* building out in a higher band, but even with the 700 MHz coverage advantages, it still is estimated that approximately 37,000 cell sites will be needed to achieve this level of extensive, beyond commercial coverage, terrestrial network footprint.

- Satellite Coverage Cost: Although the terrestrial buildout would cover 99.3% of the population, approximately 35% of the nation's land mass would not receive service from terrestrial sites. To ensure that public safety providers and the general public scattered throughout these sparsely populated areas nonetheless would have coverage, and to guarantee a level of nationwide redundancy in the event of a catastrophe along the lines of Hurricane Katrina, satellite coverage will be an essential part of the network. Both terrestrial and satellite capabilities would be built into handsets so that emergency response providers will develop a full familiarity with both as part of their day-to-day radio operations.
- Hardened Network Cost: The occasional dropped call or network outage is an inconvenience, not a catastrophe, for a commercial subscriber. When a police officer or firefighter or EMT loses communications, a life may be lost. Because of the responsibilities its personnel shoulder, public safety agencies require their communications systems to be built to significantly higher standards of reliability and redundancy than are the norm in commercial networks. Each of these elements adds cost to the network.

- Operational/Maintenance/Upgrade Cost: Economic analyses often focus on the cost of initial network deployment and fail to calculate the very substantial ongoing expenses associated with operating, maintaining and upgrading wireless systems. In fact, those costs can dwarf buildout expenses even when the upfront investment is significant. A 37,000 plus site network providing advanced capabilities to tens of millions of public safety and commercial subscribers will have very significant operational and maintenance costs. Refreshing the network with technology upgrades as dictated by the marketplace and consistent with Public Safety Broadband Trust specifications will require additional financial commitments on the part of the commercial operators.
- Estimated Usage: The history of wireless communications is that subscriber usage invariably exceeds estimates. The spectrum efficiencies gained when improved technologies are introduced permit new applications that themselves prompt additional system utilization. The impact on network usage when public safety leapfrogs from voice-centric communications to streaming video and other bandwidth-consuming applications will be extraordinary. And the data applications that drive broadband usage will only expand once this next generation network is deployed. The viability of the network will depend, among other factors, on ensuring that it has sufficient capacity to support these more capacity-consuming applications while maintaining a public safety grade blocking rate.
- Required Rate of Return: Commercial operators have a financial obligation to their investors and/or shareholders. The potential rate of return associated with the shared

governmental/commercial network described herein must justify the investment required to fund the elements identified above. This requires that the network those operators commit to build, operate, maintain and upgrade will generate capacity that is adequate to accommodate local, state and federal government usage with enough excess capacity to support an economically remunerative commercial subscriber base as well. There is no viable business case for a shared 12 MHz nationwide broadband network. 30 MHz is the minimum allocation that will satisfy this purpose.

By scheduling this hearing, this Committee already has demonstrated its seriousness of purpose with respect to public safety communications requirements. It has been apparent for some time that the traditional response to a worsening situation - piecemeal financing of individual, incompatible systems serving individual needs - is prohibitively costly to taxpayers and does not address what clearly is a systemic problem.

The solution endorsed by the public safety community, creation of the Public Safety Broadband Trust and the assignment to it of a license to 30 MHz of 700 MHz spectrum that is particularly well-suited and designated specifically for deployment of a nationwide, advanced technology, interoperable, and secure wireless broadband network shared by governmental and commercial users, represents a unique opportunity to address both public safety and rural broadband needs. But time is not on the side of those who support this initiative. Its opponents recognize that actions taken by prior Congresses mean that the clock continues to tick down toward the auction deadline for this 700 MHz spectrum. A failure to act promptly will eliminate this solution by

default and rob Congress of the opportunity to engage in reasoned decision making on this vital national issue.

I urge Congress to embrace the comprehensive approach set out in the Public Safety Broadband Trust legislation and endorse a public/private partnership that will deliver wireless broadband service to all of the American public and provide public safety with the telecommunications capabilities needed to protect the safety of our citizenry. If your life or the life of anyone you know has been saved by a first responder, you know the importance of what we're discussing today. They show up to do their jobs, no questions asked. Now it's time to do yours. We put our faith and trust in our elected representatives to make the right decision, to put the health and safety of the people ahead of the lobbyists and special interests who have their own priorities.

Just as our first responders are accountable for the trust you place in them, you must now demonstrate your accountability for the faith they've placed in you. The consequences of the wrong action or of inaction will weigh heavily on each and every one of you. I implore you, on behalf of the first responders and on behalf of those they work to save and protect, to act correctly and to act quickly.

Summary

Cyren Call, with the support of the public safety community, believes the only way to solve permanently America's public safety communications problem is through the creation of a nationwide, next-generation, wireless broadband network for public safety. This network should be created with 30 MHz of spectrum from the upper 700 MHz band of the radio spectrum, providing first responders with a sufficient amount of spectrum with the right propagation characteristics necessary to carry out their mission critical tasks. The legislation authorizing this network must also permit the creation of a public-private partnership by which a Public Safety Broadband Trust would collaborate with commercial entities to construct the network. This arrangement will align incentives appropriately, combining public safety possession of the spectrum license with the strength of private investment and technical capability to build a public safety-grade network.

Over the last few months, a broad consensus has formed on this topic. Namely, there is wide support for the creation of a nationwide public safety network, endowing it with a block of spectrum and permitting shared use of the network with commercial operators. However, the only way to make certain that this network is built to public safety standards and to make sure they have appropriate leverage in the future is to place first responders in control of the spectrum asset. This can be achieved by creating a Public Safety Broadband Trust and making it the licensee for the 30 MHz of spectrum.

No other alternatives offered to date solve the public safety communications problem as comprehensively as the Public Safety Broadband Trust proposal. Our nation's first responders deserve a seat at the head of the table of the broadband revolution and we must provide them with a state-of-the-art communications network. If Congress does not act soon, this opportunity will be gone forever and along with it the lives of our citizens.