

**Testimony of
Morgan O'Brien, Chairman
Cyren Call Communications
before the
Committee on Commerce, Science and Transportation
United States Senate**

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Good morning Chairman Inouye, Vice Chairman Stevens, Members of the Committee. 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. The challenge before us today is how to correct this imbalance, since 9/11 taught us that we are all one nation facing a new threat. To meet this threat, public safety must have the same extraordinary capabilities that consumers already are beginning to enjoy on commercial broadband networks.

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 Committee has repeatedly recognized the importance of broadband for the general public. The nation's most essential users, the individuals who protect our persons and property, also have a paramount need to access the almost mind-boggling capabilities that can be delivered on an advanced wireless broadband network. We must identify an approach that at last will permit public safety users to be at the forefront of this nation's telecommunications revolution.

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 sector-private sector partnership and funding method. In my opinion, and as indicated by the public safety representatives who address you today, this shared 30 MHz governmental/commercial network at 700 MHz, described more fully below, is the only technically and financially viable solution 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 week, 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, more than 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 with 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. That type of situational awareness will give first responders a quantum leap in intelligence, a 21st century equivalent to body armor.

Just as important, it is becoming increasingly 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 will be a vital enhancement to the 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 public safety is to enjoy 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 that led to the creation of Cyren Call and its work 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 (PSBT). The PSBT would consist of representatives of a broad variety of local, state and federal governmental entities and organizations. Excess capacity on the 30 MHz would be leased to commercial carriers for entirely commercial service in exchange for building, maintaining, operating and upgrading the network in accordance with specifications established by the PSBT. The PSBT proposal contemplates that public safety entities would pay for their own subscriber equipment and for system 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. Instead, the PSBT 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 PSBT 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. It would not replace existing public safety voice facilities, but would provide access to a state-of-the-art system 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 PSBT 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 provider purposes on a scaled basis as dictated by the event. Of course, the rules of the road with respect to preemption would be established in advance by the PSBT 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 substantial challenge for commercial wireless veterans and will require careful oversight by the PSBT, whose members are not professional network operators. The legislation therefore permits, but most certainly does not require, the PSBT 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 *vis-à-vis* the network and has raised capital in anticipation of responding to any PSBT management services request for proposal. 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 PSBT or this 700 MHz spectrum. All such decisions will remain firmly in the hands of the PSBT, participation in which will be limited exclusively to public safety/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. 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 emails 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. Competition in a fully competitive marketplace is a powerful engine 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 Committee. 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 already 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 this reason that the public safety community has embraced the fundamental premise of the PSBT legislation – a shared governmental/commercial 30 MHz broadband network 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 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.

Last week's oversight hearings also reaffirmed that this Committee 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. Indeed, several Senators questioned whether there should be incentives for more expansive broadband deployment and how addressing this issue might impact the Universal Service Fund.

The shared governmental/commercial network proposed in the PSBT legislation represents a solution that requires neither governmental incentives nor USF monies. Chief McEwen has explained the financial structure of the PSBT legislation. He has described how the Federal Treasury will be compensated for the 30 MHz of spectrum that would be allocated to the PSBT 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 with operations in more commercially attractive markets such as Los Angeles and New York defraying the cost of providing service in areas such as North Dakota, South Dakota, Arkansas, Mississippi, and West Virginia. 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 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 PSBT'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 PSBT 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. A 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 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.
- Satellite Coverage Cost: Although the terrestrial build-out would cover 99.3% of the population, 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, coverage that is not always available even today, 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 or fire officer or an EMT loses communications, a life may be lost.

Because of the responsibilities their 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 build-out expenses even when the up-front investment is significant. A 37,000 plus site network providing advanced capabilities to 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 PSBT 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 spectrum-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 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 PSBT and the assignment to it of a 30 MHz authorization 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 stalemate, 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 PSBT 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.