Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Service Rules for the 698-746, 747-762 and 777-792 MHz Bands	)	WT Docket No. 06-150
	)	
Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band	)	PS Docket No. 06-229

COMMENTS OF COVERAGE CO.

Andrew Beard
President
Coverage Co.
One Cambridge Center
Cambridge, MA 02142
(617) 864-1711
June 20, 2008

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Service Rules for the 698-746, 747-762 and 777-792 MHz Bands	)	WT Docket No. 06-150
	)	
Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band	)	PS Docket No. 06-229

COMMENTS OF COVERAGE CO.

I. Overview and Summary

Coverage Co. commends the Commission for its efforts to solve an important and long standing public safety communications interoperability problem. In particular, Coverage Co. applauds the Commission's efforts to create incentives for the build out of a combined D-Block-Public Safety network in a public private partnership resulting in a nationwide interoperable public safety network. However, combining the commercial spectrum with public safety results in some unique requirements that make building a cost effective network challenging. In particular the 99.3% population coverage build out specification is a challenging and costly requirement.

To meet this challenge in a way that will improve the appeal of D Block to bidders, Coverage Co. proposes that the Commission divide the D Block into two blocks, D1 and D2, with D1 comprising the most densely populated areas of the country that accumulate to 70% of the population, and with D2 comprising the less densely populated areas of the nation from 70% to 100%. While these percentages define the licensed areas, the build-out requirements for D1 and D2 will have to be treated separately as discussed below. Coverage Co. describes below the compelling rationale for this proposal and urges its swift adoption by the Commission.

II. Conventional Approaches to Building and Operating a Network in the Least Densely Populated Areas of the Nation Will not be Economic

Several carriers and analysts have estimated that each percentage point population build-out would cost $4.3B more than a 95% population build-out. The challenges in reaching these very remote areas are great; some are not within the footprint of the nation's roadways, making access for equipment and materials to construct towers very difficult. The difficulties are as fundamental as getting concrete to such sites in order to lay the tower pad. As you approach 100% coverage, the population density in the areas covered thins out considerably so that the last 0.3% alone amounts to approximately 150,000 square miles, which is over 4% of total U.S. landmass. These challenges and difficulties are experienced by the major carriers even today, with a coverage

footprint that does not begin to approach the 99.3% goal set by the Commission for the D Block.

Of course, towers are built in some very remote areas of the country, despite these challenges and difficulties. The building of such towers often reflects a strategic judgment by a carrier that contiguous coverage is important in that particular area. These towers are not profitable on a standalone basis for the carriers; many carriers have many sites that lose money. A network build out requirement that necessitates pushing even deeper into rural will result in an even larger number of unprofitable sites. This is an obvious concern to any potential bidder for D Block, and a disincentive.

Nevertheless, in embracing such an ambitious build out plan, the Commission has acknowledged that wide land area coverage is important to public safety. Accordingly, Coverage Co proposes a solution that includes a different business model for rural coverage that can make deep rural coverage more cost effective. This, in turn, will reduce the disincentive to bidders that was an obstacle to a successful auction of the D Block in Auction 73.

Coverage Co. proposes a new approach that reduces the disincentives to build out by improving the revenue model for the D Block licensee (D2) that serves the most rural parts of the country. The unprofitability of very rural towers is a function of the cost of building and operating them and the reality that a conventional network build in rural areas cannot generate enough traffic on the network in low population density areas to pay for the cost of operating a

network. In part, this is because these networks are typically built to support a single subscriber base using a single technology, e.g., Verizon Wireless' network is built to support Verizon Wireless' CDMA-dependent subscribers and not AT&T's GSM-dependent subscribers. Thus, each carrier can only capture a portion of the revenue available in each area as end users with a different technology cannot connect to the network. In other words, when an AT&T subscriber roams into an area where only Verizon Wireless has built out its network, Verizon Wireless has no means to serve that subscriber and capture the attendant revenue.

The Coverage Co. model changes an important aspect of that picture. Using software radio technology, it is now possible to build a single network that supports multiple technologies simultaneously. Such a network can capture more revenue in rural areas by supporting all of the users in that area, regardless of technology or carrier.

This approach of building and running a multi-standard network requires a different business model than a conventional carrier. The approach is similar to a wholesale carrier that does not have any subscribers, but builds a network to support the subscribers of multiple different networks. By supporting subscribers from multiple carriers on a single, multi-standard wholesale network, low population density rural areas can be covered more cost effectively – not because the network is cheaper to build, but because improved revenue prospects make the build out economic.

III. Implementation of the Software Radio Model Requires Splitting the D Block into Two Nationwide Licenses

Since conventional networks are not cost effective in deep rural areas, and the cost effective approach of a multi-standard wholesale network requires a business model that differs from the conventional carrier model, Coverage Co. proposes splitting the D-Block license, based on population, into two pieces. We propose that the D1 license covers the most densely populated areas (in which 70% of the population resides) and the D2 license covers the balance of the land area (bringing the joint population coverage of the D Block licensees from 70% to 100%). The traditional build out requirements such as those proposed in auction 73 are appropriate for the D1 block. For the D2 block, the build out requirement needs to take into account that D2 encompasses the larger land areas and contains very sparsely populated areas. For the D2 build out requirements we propose a two pronged approach to the build out requirement. First, the D2 licensee is responsible for building out coverage for 95% of the nationwide population (in combination with the D1 licensee and assuming 100% coverage of the D1 license) on a time scale similar to the auction 73 requirements. Beyond that the D2 licensee is responsible for building out all towns of 3,000 or more people and all interstates in the remaining D2 area. We recommend that licenses buildout requirements for tribal lands and Alaska native regions be considered separately.

We suggest the Commission harmonize the upper bound of the coverage buildout (proposed as 95%) with the requirements of the PSST, with the understanding that 99.3% nationwide population coverage may make any business model uneconomic. While the breakpoint is based on population, Coverage Co. suggests that the actual license areas be mapped onto conventional geographic coverage areas in order to be consistent with other licenses and allow for better synergy between existing rural infrastructure and the licensed areas. For example, mapping to 70% population coverage onto CMA boundaries, as shown in Figure 1, would provide licensed areas that are consistent with existing spectrum boundaries. This will enable better reuse, synergies and partnerships with existing rural spectrum license holders.

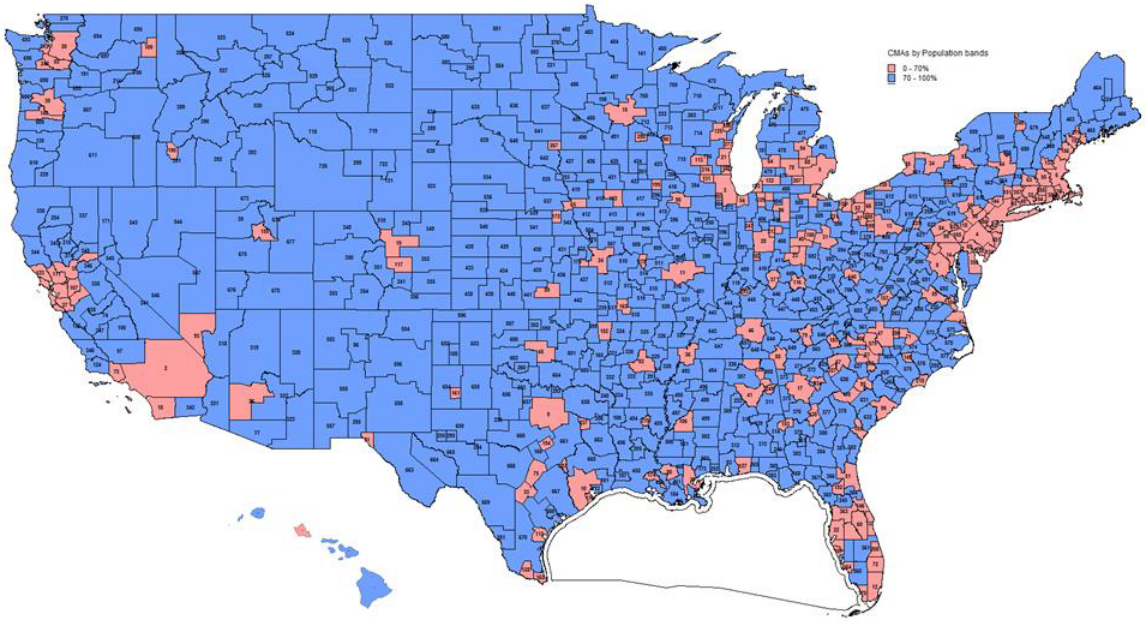

Figure 1: 70%-30% population boundary expressed in terms of CMAs

The proposed D1 license area would then be more consistent with traditional network builds, and should be more appealing to a traditional carrier than a license requiring deep rural coverage. The D2 block then becomes suitable for a different business model that can provide cost effective coverage in deep rural areas. Moreover, inclusion of some less dense landmass in the D2 license cross-subsidizes service for the most remote areas. Furthermore, this proposal will result in a faster build out of rural areas than a single license with build out requirements as contemplated in Auction 73. Auction 73 required a 75% population coverage by the end of the 7 year license term. Thus, no sites would have been required to have been built in areas with 75%-100% population for the first seven years. With the splitting of the block, coverage will be rolled out faster in the deep rural areas since the majority of the sites erected by the D2 winner would not have been constructed for seven years under a single nationwide license.

In summary, splitting of the D block into D1 and D2 as described will make deep rural coverage feasible and result in a faster build out of rural areas at 700 MHz.

IV. Commercial License Conditions Essential to Very Rural Coverage

In order to make the rural business case work, even with the multi-standard wholesale business model proposed herein, three essential conditions must apply.

First, a bi-lateral mandatory roaming agreement between the D1 and D2 licensees is essential. Further, any wholesale customers of the D2 network must be able to roam onto the D1 network under this agreement.

Second, it is essential that the D2 winner be the exclusive roaming partner for the D1 winner in the D2 territories, and that the D1 winner be prohibited from overbuilding D2 at 700 MHz. Without this component of the roaming revenue, the D2 area cannot be made to be profitable.

Third, it would be important to prohibit CMRS carriers from barring the D2 winner from becoming a roaming partner on any technology and frequency that such carriers support. It is not necessary that the D2 licensee be a priority roaming partner, only that no carrier can block D2 from providing roaming services in the D2 area. If a carrier already has coverage in the areas, or pre-existing roaming agreements it is reasonable that these take priority on the roaming list, but the D2 licensee must be mandatorily included on the roaming list. This will enable the D2 winner to garner additional revenue in the deep rural areas where there is poor coverage today.

Of course the ability to roam is itself meaningless without reasonable pricing, for which the market will provide appropriate incentives. Therefore, for all of the roaming conditions above it is imperative that roaming must be priced at a reasonable rate, comparable to the prevailing industry rates charged in Tier 1 bilateral roaming agreements. The conditions described

above create a balance between the D1 and D2 licensees, who are dependent upon one another to "complete" national coverage. Under these conditions, market forces should drive the D1 and D2 licensees to agree on mutually-agreeable rates, and these rates could serve as a benchmark for roaming relationships with other CMRS providers in other bands. Nonetheless, for the framework to produce commercially viable economics for the D2 licensee, the Commission will have to maintain a vigilant stance, taking action where required to ensure that roaming occurs on a truly reasonable and non-discriminatory (RAND) basis.

V. Attributes of the Public-Private Partnership Essential to Its Success

In discussions leading up to the presentation of this proposal, Coverage Co. gained a deep appreciation for certain aspects of the relationship between the D Block licensee – or, in the event of adoption of this proposal, licensees – and Public Safety. Coverage Co. recognizes that in a pioneering effort like the public-private partnership envisioned here, the mutual needs and concerns of the parties to the partnership will emerge and evolve over time. These comments reflect Coverage Co.'s understanding at the present time of some of the key concerns regarding the public-private partnership.

First, In order to effect a seamless nationwide network, the D2 winner must agree to match the technology choice of the D1 winner, and the D1 winner must choose a non-proprietary technology that can be licensed under

commercially reasonable terms by the D2 winner and its partners. LTE would be one such choice that meets these conditions.

Second, it is extremely important that the combined D1/D2 winners present a single face to public safety. We suggest the formation of a separate entity, with equal representation from the D1 and D2 winners that is the sole interface to public safety on behalf of both the D1 and D2 winners.

Third, Coverage Co. understands public safety's need for uniform nationwide pricing, and it is intended that the entity described above would be the instrumentality for developing and offering such a service structure. Nationwide pricing is possible only if the revenue from public safety is shared on a geographic basis, as described above. However, the cost of building and running the public safety network are proportional to the geography covered. The D2 winner will cover a much larger geography, with far fewer public safety users. In recognition of this, Coverage Co. propose that the revenue from public safety be divided between D1 and D2 according to the relative percentage of land area covered by each.

Fourth, while a nationwide public safety network is the goal, the likely reality is that in some areas of the country, public safety users will judge their existing systems adequate, or adopt alternative broadband solutions that do not rely upon 700 MHz spectrum. It is not sensible to build a network in areas where public safety does not wish to use it. We propose that the D2 winner only be required to build in areas where public safety commits

to using the network. Such commitments could be reviewed from time to time during the license period to keep up with the evolving needs of public safety users.

Fifth, while reliability is an essential characteristic of a public safety network, the requirements currently recommended in the PSST bidder information document[1] for the public safety network are far beyond what is cost effective for commercial networks. For example, the requirement for generators with a 5-7 day fuel supply will be an unmanageable cost burden in both rural and urban areas. Some have theorized that building out the network to public safety reliability specifications ultimately will generate returns to the carrier because it is an added selling point to attract commercial subscribers. But the reality is that most commercial subscribers regard "reliability" as a binary proposition – the call goes through, or it does not -- and are not willing to pay a premium for the value proposition that in an emergency, the call may be "more likely" to go through.

Some leeway with respect to site hardening and power backup requirements in very rural areas is needed. Specifically, Coverage Co. proposes a two tiered solution to the problem: (A) The D2 winner should be required to build out to the Commission's commercial power backup order[2] and the major carriers have thus far opted to challenge the order rather than comply with it,

I. _____

[1] Bidder Information Document, Public Safety Spectrum Trust, http://www.psst.org/documents/BID2_0.pdf
[2] 47 CFR 12.2 (2007).

arguing that the costs are prohibitive for a commercial network. Therefore, voluntary acceptance of the power backup order represents a big step forward for public safety. (B) In those locations where public safety desires a higher level of reliability, the D2 licensee could charge and pass through to public safety users a cost-based fee for such additional services.

Sixth, given the difficult economics of very rural build out and coverage, there should be no lease payments to the PSST by the D2 licensee for use of the public safety spectrum. While this is no doubt suboptimal from public safety's perspective, it acknowledges the reality that the very rural portion of the network is very expensive to build, and represents a very substantial avoided cost for public safety. This reality requires the Commission and the Congress to face another reality: that without a sustainable source of funding PSST cannot perform the vital functions entrusted to it in the public interest, and it will be hampered in providing additional help, guidance and advocacy in the complex process of building the network in cooperation with thousands of localities and public safety organizational units. Coverage Co. encourages the Commission to address the issue of funding for the PSST in its Order in these proceedings. We urge that the Commission look at alternative methods for funding the PSST including using the interest collected on auction down payments, or possibly

requiring a small additional posting by the bidders to provide funding to the PSST, or the ideas contained in the bill proposed by Rep. Harmon[3].

Seventh, the most important aspect of the public-private partnership is certainty. This means that all of the requirements, rules and financial relationships must be spelled out in the rules before the auction commences. If they are left to a later negotiation, the uncertainty will make it very difficult for any entity to make a bid under any rules. Coverage Co. suggests that the Commission formulate the rules and requirements related to public safety based on the comments submitted to this NPRM, and then publish the public safety rules and have a second comment period specifically on the set of rules to insure that we all end up with a set of rules that are workable.

VI. Conclusion

For all the foregoing reasons, Coverage Co. urges the Commission's swift adoption of its proposal to divide the D Block and further, that it specify rules regarding the terms of the license and the operation of the public-private partnership that will provide appropriate and balanced incentives for a successful partnership and the expeditious build out of a nationwide interoperable public safety network.

I. _____

[3] Public Safety Broadband Authorization Act of 2008, H.R. 6055, 110th Cong. (2008)

Respectfully submitted,

/s/ Andrew Beard

Andrew Beard
President
Coverage Co.
One Cambridge Center
Cambridge MA, 02142
(617) 864-1711

Submitted June 20, 2008