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

Reply Comments of United States Cellular Corporation on Second Further Notice of Proposed Rulemaking

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SUMMARY

The comments propose two viable alternatives for re-auctioning the D Block. Under the public/private partnership model, there is widespread support for the key elements of the plan described by United States Cellular Corp. ("USCC") based on auctioning licenses no larger than MEAs. On the other hand, if the FCC decides to auction this spectrum on an unencumbered basis, USCC agrees with the many parties supporting an auction of CMA or EA licenses.

Pursuant to the public/private partnership model, USCC's comments explained a proposal whereby: (1) the FCC auctions area licenses covering MEAs or similar regions (like areas matching the NPSPAC regional committees); (2) before the auction, the FCC adopts a technical framework and the Public Safety Spectrum Trust Corporation ("PSST"), taking into account suggestions from any interested potential bidders, develops the Network Sharing Agreement ("NSA"); (3) NSA provisions vary some rates and other terms, aiming to make all regions commercially viable for licensees; (4) licensees form a national committee as a single point of contact with the PSST for on-going implementation and review of the national NSA; (5) individual licensees and regional public safety committees negotiate region-specific amendments to the NSA to address differences in public safety needs and market conditions; and (6) if necessary, the FCC promptly re-auctions any unsold licenses with terms more favorable to the licensees, possibly with federal funding support.

Many parties -- ranging from the two largest wireless carriers, to smaller wireless carriers, to local governments and public safety agencies, to equipment manufacturers -- support key elements of this proposal. There is large unsatisfied demand for area licenses, but no indication of a serious bidder on a nationwide license under the public/private partnership. The

largest carriers and other parties agree that the FCC's technical framework and NSA would lead multiple area licensees to provide a nationwide, interoperable "network of networks" for public safety users. In addition to noting the industry's many interoperability achievements spanning multiple service providers, a wide range of parties describe many advantages of smaller regional licenses, including a larger pool of potential bidders, faster network deployment, less risk from failure of a single operator, and greater responsiveness to the particular regional needs of public safety agencies. There is strong support for pre-auction determination of technical and operating terms through an allocation of responsibilities between the FCC and PSST, and involving local and state agencies in developing region-specific terms for the NSA. Several diverse parties want the FCC to help make the partnership approach commercially viable by revising the network coverage and reliability requirements to 90-95% levels.

As a second viable alternative, many parties urge the FCC to re-auction this spectrum on commercial terms without the public/private partnership model. Various parties do not believe that the partnership model would be commercially viable without substantial federal funding, and some public safety agencies express a lack of interest in using 700 MHz spectrum, at least in the context of the partnership model. Under this approach, USCC and other potential bidders agree that CMA or EA licenses will produce a more robust auction, yielding more revenues that could be used to support public safety agencies. Also, smaller licenses will increase competition and innovation in wireless broadband services.

There is widespread opposition from consumer groups as well as potential bidders to auction rules that would foster further spectrum concentration, including through unrestricted eligibility or package bidding.

Of course, some of the ideas floated in the comments should be rejected by the FCC. An RFP process would not only require passage of legislation by Congress, but would also sacrifice the transparency, fairness and speed of the auction process. The public interest would clearly suffer as the RFP model would significantly delay the use of this valuable spectrum. Furthermore, the D Block spectrum should not be licensed to public safety agencies. Commercial entities need additional spectrum to provide competitive broadband services to a wide range of users, and the needs of these agencies can be met without adding exclusive use or control of the D Block to the public safety spectrum that has been allocated already.

Table of Contents

Introduction 1

A. Benefits of Smaller License Areas 2

B. Support for USCC's Plan Under the Public/Private Partnership 9

C. Comments Also Support Re-Auction Without the Public/Private Partnership 13

D. Auction Rules Should Deter Further Spectrum Concentration 15

E. RFP Approach Would Cause Unacceptable Delays and Uncertainties 16

F. D Block Spectrum Should Be Auctioned to Commercial Entities. 17

Conclusion 19

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Introduction

If the Auction 73 no-show was not enough evidence, the comments prove that the FCC cannot successfully auction a nationwide license for the D Block spectrum under a public/private partnership. Even with the opportunity to propose revised network, service and reserve-price rules, no potential bidder stated that it would likely bid on a nationwide license. The two largest carriers point to advantages of regional licenses, and no potential entrant has emerged to take on this nationwide challenge. The FCC must look to alternative models to meet the needs of public safety agencies and productively use this valuable spectrum.

The comments propose two viable alternatives for re-auctioning the D Block based on area licenses. Among the potential bidders, United States Cellular Corp. ("USCC"), AT&T, Cox, MetroPCS, NTCH, Rural Telecommunications Group, Spectrum Acquisitions, Spring Grove Communications, Verizon Wireless and Wirefree Partners filed comments supporting smaller license areas. Auction 73 demonstrated billions of dollars of unsatisfied demand for smaller area licenses in the 700 MHz band.

Under the public/private partnership model, there is widespread support for the key elements of the plan described by USCC based on a "network of networks" for nationwide, interoperable services to public safety agencies. In addition to noting the industry's many interoperability achievements spanning a large number of service providers, these parties describe strong advantages of smaller regional licenses, including a larger pool of potential bidders, faster nationwide deployment, less risk from failure of a single operator, and greater responsiveness to the particular regional needs of public safety agencies. Several diverse parties want the FCC to help make the partnership approach to the D Block spectrum commercially viable by revising the network coverage and reliability requirements to 90-95% levels.

If the FCC decides to auction this spectrum on an unencumbered basis, USCC agrees with the range of parties supporting an auction of CMA or EA licenses.

Under either model, there is widespread opposition from consumer groups as well as potential bidders to auction rules that would foster further spectrum concentration. Moreover, either auction model is clearly superior to an RFP approach or simply licensing the D Block spectrum to public safety agencies.

A. Benefits of Smaller License Areas

USCC's comments explained several advantages of smaller license areas for the D Block spectrum: (1) larger pool of potential bidders, as shown in the higher valuations of the smaller license areas in Auction 73; (2) focus on the particular regional needs of public safety agencies; (3) more innovative solutions and faster aggregate deployment coming from multiple licensees; and (4) increased competition for broadband wireless services.[1] Citing some of the

[1] Comments of USCC at 4-13.

strong examples of successful technical and operational collaboration among multiple carriers, multiple public safety agencies and equipment suppliers, USCC described steps to achieve nationwide, interoperable services with area licensees under the public/private partnership. According to Professor Douglas Sicker (former Chief of the FCC's Network Technology Division and former Chair of the Network Reliability and Interoperability Council Steering Committee), the model of smaller area licenses for the D Block "offers an excellent chance for successful auctioning and successful network development."[2]

If the FCC decides to auction the D Block spectrum without the public/private partnership, USCC's comments recommend CMA or EA licenses.

Many parties -- ranging from the two largest wireless carriers, to smaller wireless carriers, to local governments and public safety agencies, to equipment manufacturers -- support smaller license areas for this spectrum. In contrast, no potential bidder -- incumbent operator, new entrant or consortium -- stated that it would likely bid on a nationwide license.

The two largest wireless carriers observe that auctioning multiple area licenses will yield a nationwide, interoperable network under the public/private partnership, with advantages over a nationwide licensee. According to Verizon Wireless, "regional licenses would broaden the range of potential partnerships and provide for greater local flexibility in choosing interoperability solutions that reflect particular needs and resources"; "[s]preading responsibility across multiple partnerships using multiple business models would contain the risk of failure to ensure that the troubles of a single arrangement would not jeopardize the network on a nationwide scale"; "smaller geographic licenses would open the door to participation by regional

[2] See statement attached hereto (reflecting slight revisions from the version filed with USCC's Comments).

providers that are unable to compete on a nationwide scale but that may have existing networks that could be leveraged to build out rural or difficult-to-serve areas"; and regional licensing could take advantage of established structures to coordinate local public safety agencies.[3] Similarly, AT&T supports regional licenses to attract wider interest among commercial entities and "encourage simultaneous and rapid network construction across the country because multiple service providers will leverage the strongest points of their existing networks to construct the public/private broadband network."[4]

Several smaller wireless carriers agree with USCC that the D Block spectrum is attractive if auctioned as smaller regional licenses. Rural Telecommunications Group argues for CMA licensing and observes: "[i]f the United States is to successfully develop a nationwide interoperable network for public safety communications, it is going to take the efforts of many carriers. Rural and small companies will have a role to play...."[5] NTCH envisions a group of BTA licensees that have adopted a uniform national network structure and work closely with local public safety agencies "to ensure that the network layout in each BTA meets their needs, as well as the commercial needs of the carriers themselves."[6] Along the same lines, Wirefree Partners observes that smaller markets pose smaller financial and operational hurdles, and that it is feasible for multiple regional licensees to build an interoperable system allowing seamless handoffs and transparency.[7]

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[3] Comments of Verizon Wireless at 29-32.

[4] Comments of AT&T at 9, 25.

[5] Comments of Rural Telecommunications Group at 6 n.10.

[6] Comments of NTCH at 3.

[7] Comments of Wirefree Partners at 14.

More generally, the comments support USCC's observation that there is substantial demand for smaller area licenses in the D Block.[8] Cox[9] and Spectrum Acquisitions[10] urge the FCC to facilitate market entry for competing carriers by auctioning CMA licenses. In recommending CMA licenses, MetroPCS points out that "regional, mid-tier and rural carriers continue to have substantial unsatisfied demands for paired CMRS spectrum."[11] Similarly, Spring Grove Communications notes the significant unmet demand for spectrum at the CMA level, and urges the FCC to create opportunities for small and rural carriers.[12]

Several public safety agencies emphasize the regional differences in their needs and believe that they would not be satisfied in dealing with a nationwide licensee. According to comments filed by a national local governments association and three local governments, larger local governments believe that licenses should be issued regionally, with interoperability ensured by national standards.[13] Similarly, the International Association of Fire Fighters asks how best to achieve a nationwide interoperable network: "Quite possibly, the answer involves building local or regional networks built to national standards so that they can be linked when necessary."[14] Agencies in New York City, Philadelphia and San Francisco believe that a nationwide licensee

[8] Comments of USCC at 5-6 (citing testimony by Dr. Coleman Bazelon estimating from Auction 73 bids that there is over $9 billion in unsatisfied demand for licenses like those auctioned in the A and B Blocks).

[9] Comments of Cox at 5.

[10] Comments of Spectrum Acquisitions at 14.

[11] Comments of MetroPCS at 10.

[12] Comments of Spring Grove Communications at 3.

[13] Comments of Telecommunity, Charlotte, Houston and Montgomery County at 14.

[14] Comments of International Association of Fire Fighters at 7.

operating pursuant to a single nationwide Network Sharing Agreement ("NSA") will not meet their needs; instead, they argue for regional licenses.[15]

At least two major network equipment manufacturers advocate regional licensing and regional flexibility. Motorola believes that "the most effective means of deploying a public safety broadband network to meet the variety of needs across multiple agencies and jurisdictions is to do so on a regional basis under a national framework as opposed to a national basis only."[16] Also, Tyco Electronics M/A-COM encourages the Commission "to provide regional flexibility in the use of the public safety broadband network and to respond to local needs in the construction of the network."[17] These manufacturers have had extensive experience in the deployment and operations of public safety networks around the country; they recognize that, when guided by a national FCC technical framework and NSA, multiple area licensees will achieve a nationwide, interoperable network. Consumer Electronics Association also advocates smaller geographic areas as allowing for maximum participation by bidders of all sizes.[18]

However, the PSST, certain public safety agencies and various other parties currently look to a single nationwide licensee as an easier path to a nationwide, interoperable network than multiple area licensees. This focus on what is believed to be "easy" fails to reflect at least four important points.

First, the required technical and operational coordination of multiple wireless carriers has been achieved many times for a range of challenging networks and services. In this

[15] Comments of New York City Police Department at 5; Comments of the City of Philadelphia at 3-4; Comments of the City and County of San Francisco at 5-9.

[16] Comments of Motorola at 15-17.

[17] Comments of TE M/A-COM at 10.

[18] Comments of Consumer Electronics Association at 5.

case, interoperability will be guided by the FCC's adoption of the technical framework and, under USCC's proposal, development of a national NSA before the auction through work of the PSST. USCC's comments refer to the repeated cooperation of carriers and manufacturers through standards committees and other industry agreements, and provide the statement of Professor Sicker relating his successful experiences with industry interoperability and standards coordination.[19]

Second, there is encouraging precedent supporting a simple organization of multiple licensees so that dealing with area operators is manageable for the PSST or FCC. Under USCC's proposal, the licensees' election of a national committee to serve as a single point of contact would ease coordination with the PSST and FCC. The FCC's rules on the NSA could guide this organization, just as the FCC led the formation of the PSST and NPSPAC to represent thousands of public safety agencies, as well as formation of the National Exchange Carrier Association to coordinate 1,150 local telephone companies.[20]

There are also a few additional technical points that must be clarified in the pre-auction NSA when the FCC offers area licenses. Most of the NSA -- including standards for coverage, reliability, service specifications, rates and terms for using each 10MHz spectrum block, authorized public safety users, emergency preemption conditions and procedures, etc. -- must be specified by the PSST before the auction regardless of the geographic scope of the license or licenses. Otherwise, the uncertainty over costs and revenues will deter bidders or greatly suppress bid amounts. Generally, an efficient commercially-viable shared broadband wireless network requires that network features and functions are based on global, standards-

[19] Comments of USCC at 13-14.

[20] Id. at 21.

based, commercially available technologies.[21] With area licenses, the pre-auction NSA must provide additional guidance for potential bidders as to network technology (Long Term Evolution (LTE), or possibly WiMax or other) and perhaps a few other areas for inter-operator coordination. The incremental burden of laying the groundwork for an auction of area licenses is not great. As Professor Sicker concludes from his experience with specifying standards and interoperability practices, developing the pre-auction NSA for bidding on multiple area licenses appears to be a manageable job.[22]

Next, Auction 73 and the comments show that there simply is not a commercial entity or consortium likely to bid on a nationwide license pursuant to the public/private partnership. Any hypothetical coordination advantages of having a single commercial nationwide licensee cannot be achieved if no such dependable entity exists.

Fourth, as noted in the comments of USCC, Verizon Wireless and AT&T, multiple licensees will likely develop a nationwide, interoperable network faster than a single licensee. Having several operators will decrease risk and increase innovative solutions. These will be substantial benefits to the PSST and public safety agencies. Additionally, concerns about unserved areas would be addressed, if necessary, by the FCC promptly re-auctioning any unsold licenses with terms more favorable to the licensees. As Congress, the FCC, the industry and users learned from the history of supporting universal service, such a mechanism of targeted, explicit support is far better than relying on implicit; hoped for, cross-subsidies by a hypothetical

[21] See Comments of Alcatel-Lucent at 1-2, 7; Comments of Motorola at 7; Comments of AT&T at 10-11; Comments of Ericsson at 2-3.

[22] Id. at 26. See also description in Section B infra of a reasonable process for the PSST to take into account suggestions from interested potential bidder in developing the pre-auction NSA.

nationwide licensee which are likely unsustainable in a competitive wireless industry without extensive regulatory oversight, and therefore unfair to users in low-cost areas.

In conclusion, the record supports use of area licenses.

B. Support for USCC's Plan Under the Public/Private Partnership

USCC's comments explained a proposal whereby: (1) the FCC auctions area licenses covering MEAs or similar regions (like areas matching the NPSPAC regional committees); (2) before the auction, the FCC adopts a technical framework and the PSST taking into account suggestions from any interested potential bidders, develops the NSA; (3) NSA provisions vary some rates and other terms, aiming to make all regions commercially viable for licensees; (4) licensees form a national committee as a single point of contact with the PSST, for on-going implementation and review of the national NSA; (5) individual licensees and regional public safety committees negotiate region-specific amendments to the NSA to address differences in public safety needs and market conditions; and (6) if necessary, the FCC promptly re-auctions any unsold licenses with terms more favorable to the licensees, possibly with federal funding support.[23] USCC also favors revising the coverage and reliability standards.[24] Many parties support key elements of this proposal.

Area Licenses Covering MEAs or Similar Regions. As described in Section A above, there is no indication of a willing nationwide bidder but strong support for area licenses from a range of parties and potential bidders. Verizon Wireless, AT&T, Rural Telecommunications Group, NTCH, Wirefree Partners, and Motorola endorse the central

[23] Id. at 16-26.

[24] Id. at 21.

element of this proposal – multiple area licensees will deploy and operate a nationwide, interoperable network, with advantages over a nationwide licensee.[25]

Pre-Auction Determination of Terms Through FCC's Technical Framework and PSST's NSA. Several diverse parties emphasize the importance of a balance between FCC rules and the NSA in defining technical and operating terms in order to attract bidders and develop a nationwide, interoperable "network of networks" for public safety users.[26] The correct combination of FCC rules and pre-auction development by the PSST of a master NSA would give potential bidders greater certainty on cost and revenue factors without locking-in all details in FCC rules or imposing an excessive burden on the FCC's staff to micro-manage the networks and services.

Under USCC's proposal, responsibility for developing the network and service terms would be allocated between the FCC and PSST. Before the auction, the FCC would adopt a technical framework, and then the PSST would develop the NSA which would be subject to FCC review for compliance with the technical framework. This allocation would take advantage of the work already done by the PSST on network and services technical specifications.

Regardless of the geographic scope of the licenses, the PSST should take into account the suggestions of interested potential bidders in developing the NSA. The PSST has already made significant progress on proposed network and service specifications, and has invited recommendations by filing them as Attachment C to its comments. The PSST should

[25] Comments of Verizon Wireless at 29-32; Comments of AT&T at 9, 25; Comments of Rural Telecommunications Group at 6 n.10; Comments of NTCH at 3; Comments of Wirefree Partners at 14; Comments of Motorola at 15-17.

[26] See Comments of National Public Safety Telecommunications Council at 9-10; Comments of Ericcson at 2 ("capacity, throughout and quality of service should be specified as part of the NSA, rather than as a Commission requirement:); Comments of AT&T at 11-14.

continue to seek suggestions from all interested potential bidders through public or confidential filings and discussions. Some interested potential bidders may want confidential treatment in order to protect their plans on bidding, networks and services. Even so, the end result will be fair and transparent because the NSA will be publicly available before the auction and subject to FCC review. The PSST could enter into non-disclosure agreements to maximize industry input on its proposed NSA terms.

Aiming at making each license commercially viable, the PSST should develop some rates and terms which vary with a region's likely usage, density and other factors. Before issuing the final NSA, the PSST should make its proposals available for reactions from potential bidders to test them. Specifically, lower-cost regions could make larger spectrum lease payments to support the PSST and other common nationwide operations, and to provide some funding for networks and public safety uses in other regions. This would help attract bidders to the higher-cost regions while slightly decreasing the bids for the most attractive regions.

Also regardless of the geographic scope of the licenses, the PSST needs funding to develop the NSA. The PSST needs staff or outside resources to address engineering, legal and business issues, and to review the suggestions of interested parties. Neither Congress nor the FCC has provided funding for the PSST, and most public safety agencies do not have the resources to support the PSST. Instead, interested potential bidders could be required to pay a modest fee in order to engage in pre-auction review of the NSA and provide suggestions to the PSST. Such fee could be credited to bidders' upfront payments in the auction.

Meeting Regional Needs and Conditions Through Involvement of Local and State Agencies. Like USCC, various parties recommend that the process of specifying regional network and service standards be designed to take advantage of collaborations of state and local

public safety agencies, such as the NPSPAC regional committees. For example, the City of Philadelphia recommends that the PSBL "delegate authority to regional entities comprised of public safety agencies to negotiate terms of the NSA that affect their operations."[27] The work of regional committees of public safety agencies within the framework of the national NSA will decrease the burdens on the PSST to address diverse regional needs and market conditions.

Revising Network Coverage and Reliability Standards. Several diverse parties join USCC in asking the FCC to help make the partnership approach commercially viable by revising the network coverage and reliability requirements. A change from 99.3% to 95% coverage over ten years would "improve the commercial business case for D Block bidders by potentially billions of dollars," according to Northrop Grumman.[28] Specifically, Alcatel-Lucent's recommended standards appear reasonable – minimum cell edge data rate of 256 kbps on the forward link (base to mobile), 128 kbps on the reverse link (mobile to base), and 95% area coverage reliability corresponding to 90% edge contour reliability.[29] Additional support for a 90% or 95% coverage standard comes from the National Regional Planning Council and Region 33 (Ohio), 700 MHz Planning Committee.[30] Even public safety agencies that are focused on remote areas support downward revision of the 99.3% population coverage standard in order to

[27] Comments of City of Philadelphia at 3-4. See also Comments of Region 33 (Ohio), 700 MHz Planning Committee at 8; Comments of City and County of San Francisco at 6; Comments of Tyco Electronics M/A Com at 11

[28] Comments of Northrop Grumman at 5-6. See also Comments of Alcatel-Lucent at 5; Comments of Tyco Electronics M/A Com at 5; Comments of AT&T at 14-15; Comments of Sprint at 14.

[29] Comments of Alcatel-Lucent at 5.

[30] Comments of National Regional Planning Council at 4; Comments of Region 33 (Ohio), 700 MHz Planning Committee at 9, 18.

achieve a more cost-effective solution.[31] Interisle Consulting Group recommends a baseline of 90% population coverage, with a higher benchmark for a particular area only if the public safety agencies in that region make a bona fide request and commit to use the system.[32] Along the same lines, hardening sites beyond commercial standards would significantly increase the licensees' costs,[33] so the FCC's technical framework and the NSA should exercise constraint in the types and locations of hardening requirements.

Similarly, with regard to service reliability, public safety representatives and other parties agree that the standards should be "on a par with today's most robust commercial networks,"[34] and not impose uneconomic burdens that would deter potential bidders.

In conclusion, the comments support the key elements of USCC's proposal for improving the viability of the public/private partnership model.

C. Comments Also Support Re-Auction Without the Public/Private Partnership

A second viable alternative for the D Block spectrum would auction it without the network and service conditions of the public/private partnership. If the FCC decides not to re-apply the partnership model, USCC recommends auctioning CMA or EA area licenses. This approach will foster deployment of competitive broadband networks offering services to public

[31] Comments of the International Municipal Signal Association, International Association of Fire Chiefs, Congressional Fire Services Institute, and Forestry Conservation Communications Association at 12-13.

[32] Comments of Interisle Consulting Group at 7.

[33] Comments on Ericcson at 18-20; Comments of AT&T at 9; Comments of Verizon Wireless at 8-10.

[34] Comments of Association of Public-Safety Communications Officials International at 33. See also Comments of Region 33 (Ohio), 700 MHz Planning Committee at 14 (95% reliability standard); Consumer Electronics Association at 3; Comments of Leap Wireless at 12; Comments of Sprint Nextel at 15; Comments of Wirefree Partners at 14-15.

safety and other users. Through a robust auction, this approach will yield revenues to the U.S. Treasury that could be used to support public safety needs.

In addition to the expressed desire by some potential bidders to offer competitive wireless services without the public/private partnership,[35] two points in the comments support this alternative.

First, several parties believe that the partnership conditions are not commercially viable without substantial federal funding. The Florida Region 9 Regional Planning Committee concludes: "Without Federal funding we believe that any public/private partnership will fail the requirements of the PSST."[36] According to Motorola, federal government funding is necessary for a public safety grade broadband wireless network; the small public safety user base together with the uncertain availability for commercial use of any excess capacity on public safety's 10 MHz of spectrum is not likely to be sufficient to overcome the added cost of the public safety network and service requirements.[37] Similarly, Dr. Bazelon recommends financing public safety needs through federally provided funds, which may come in part from an auction of unrestricted D Block spectrum with additional funds raised by auctioning television white spaces.[38] With this record and the absence of federal government funding for 700 MHz public safety networks and services, the FCC could conclude that the risk of another failure in re-auctioning under the public/private partnership is too great.

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[35] See Comments of Cox, MetroPCS, Rural Telecommunications Group.

[36] Comments of Florida Region 9 Regional Planning Committee at 3.

[37] Comments of Motorola at 4-6.

[38] Comments of Bazelon at 2; Comments of Jackson, Robyn and Bazelon.

Additionally, some public safety agencies expressed a lack of interest in using services provided by a network constructed and operated under such partnership. Some public safety agencies are providing for interoperable broadband wireless services using other frequencies, or are unlikely to use 700 MHz networks and services because of the combination of existing services and lack of funding.[39] These facts decrease the need for the public/private partnership in terms of serving public safety agencies, and also decrease the commercial viability of building a new high-cost network to satisfy beyond-commercial specifications.

D. Auction Rules Should Deter Further Spectrum Concentration

There is widespread opposition among consumer groups as well as potential bidders to auction rules that would foster further spectrum concentration, including through unrestricted eligibility or package bidding. The auction rules should reflect these concerns, regardless of whether the spectrum is auctioned under the public/private partnership model or unencumbered.

USCC's comments explained that concentration in the D Block, in 700 MHz spectrum or across CMRS spectrum would reduce competition, innovation, responsiveness to the needs of public safety agencies, and speed of network deployment.[40] Other proponents of spectrum caps or other eligibility requirements to enhance competition include Public Interest

[39] Comments of National Public Safety Telecommunications Council at 15; Comments of City of Philadelphia at 5; Comments of Government of District of Columbia at 3-6; Comments of New York City Police Department.

[40] Comments of USCC at 12-13 and n. 32.

Spectrum Coalition, Rural Telecommunications Group, Leap Wireless, Rural Cellular Association and Council Tree Communications.[41]

Along the same lines, USCC's comments explained that package bidding distorted Auction 73, leading to lower winning bids and harms to smaller entities.[42] Other parties opposing package-bidding rules in the D Block re-auction include Cox, MetroPCS, Rural Telecommunications Group, and Dr. Bazelon.[43]

E. RFP Approach Would Cause Unacceptable Delays and Uncertainties

The FCC should promptly proceed to re-auction the D Block spectrum and reject proposals that it wait to implement an RFP approach.

USCC agrees with Dr. Bazelon that "[t]he worst thing to do with the D Block is leave it unused."[44] The RFP approach would do just that for many years. Advocates of this approach concede that legislation would be required to amend Section 337(a)(2) of the Communications Act, followed by a lengthy process of developing the evaluation criteria and RFP, preparing applications, evaluation, selection and negotiation of agreements.[45] Additional delays should be expected from legal challenges to the selections, which may tie up the spectrum

[41] Comments of Public Interest Spectrum Coalition at 2; Comments of Rural Telecommunications Group at 8; Comments of Leap Wireless at 3; Comments of Rural Cellular Association at 3-5; Comments of Council Tree Communications at 14-15.

[42] Comments of USCC at 22.

[43] Comments of Cox at 7-8; Comments of MetroPCS at 19-20; Comments of Rural Telecommunications Group at 11; Comments of Bazelon at 10-11.

[44] Comments of Bazelon, attached testimony at 21.

[45] Comments of AT&T at 6-7. See also Comments of Verizon Wireless at 19-21.

for more years. Commercial customers as well as public safety users would be deprived of the services and competition that commercial licensees would deliver through this spectrum.

Moreover, the RFP approach would undermine the transparency and fairness promoted by the auction process. Advocates of this approach gloss over serious issues which must be addressed in considering moving away from an auction for this valuable spectrum, including whether designated entity or other credits should apply, and if so how.

Additionally, support for the RFP process relies on the assumption that the public/private relationship will be so complex that the terms and conditions cannot be clearly stated until after extensive further, non-public analyses and negotiations. On the contrary, the FCC and PSST have made substantial progress on the technical and operations terms for an auction. With the precedent of successful collaboration on many difficult standards and other interoperability practices, the industry and public safety agencies should support these efforts. The FCC and PSST should continue to prepare for re-auction, rather than waiting for Congressional authority and then engaging in open-ended development of an RFP followed by a contentious process of selection and negotiation.

The comments have presented improvements in the rules for the public/private partnership model as well support for auction of unencumbered D Block spectrum. These approaches are superior to the RFP process in speed, transparency and fairness.

F. D Block Spectrum Should Be Auctioned to Commercial Entities.

The D Block spectrum should not be licensed to public safety agencies. Commercial entities need additional spectrum to provide competitive broadband services to a wide range of users, and the needs of these agencies can be met without adding exclusive use or control of the D Block to the public safety spectrum that has been allocated already.

D Block spectrum should promptly be used in the most productive manner. On the one hand, USCC, Dr. Bazelon, MetroPCS, Spring Grove Communications and other carriers observed that Auction 73 left commercial entities with substantial unmet demand for spectrum.[46] The D Block 700 MHz spectrum offers technical and operating advantages over the AWS and other spectrum expected to become available in the near future. With or without the public/private partnership, auctioning this spectrum will promote the availability of and increased competition for broadband services, benefiting commercial and public safety users. An auction will also generate revenues for the U.S. Treasury which could be used to support public safety.

In contrast, some of the public safety agencies asking that the D Block spectrum be licensed to them stated that they are unlikely to use such spectrum, at least for many years.[47] Public safety agencies are developing interoperable voice and data systems on various frequency bands, and do not need to have exclusive use of or control over all D Block spectrum.

The concerns stated by some public safety agencies that commercial wireless carriers would not satisfy their needs are unconvincing. Wireless carriers, including USCC, provide important services for public safety agencies, and such agencies use commercial landline carriers' networks. For example, USCC serves hundreds of federal, state and local public safety agencies such as the FBI, U.S. Border Patrol, U.S. Drug Enforcement Agency, Maine State Law Enforcement Association, Illinois State Police, Missouri State Patrol, Oregon State Police, Des

[46] See Section A, supra.

[47] See Comments of City of Philadelphia at 5; Comments of Government of District of Columbia at 3-6; Comments of New York City Police Department at 3.

Moines (Iowa) Police, Franklin County (Maine) Sheriff, South Portland (Maine) Fire Department, City of Rockford (Illinois) Police, and City of Beardstown (Illinois) Ambulance.

Finally, the proposed re-allocation of D Block spectrum would require legislation, leading to further delays in using this valuable asset.[48]

The public interest requires the FCC to auction the D Block spectrum to commercial entities.

Conclusion

The D Block spectrum represents a great challenge but also an even greater opportunity. The proposals presented by USCC describe two viable alternative approaches to re-auctioning that have the support of many diverse parties. Each approach to the re-auction would promote the public interest, with benefits to public safety agencies as well as commercial users.

Both approaches take advantage of replacing the concept of a nationwide license with multiple area licenses, yielding a much larger pool of potential bidders, faster network deployment, much less risk from an operator's failure, greater responsiveness to local public safety agencies, more competition and increased innovation. No party indicated interest in bidding on a nationwide license. In contrast, regional licenses are attractive to many potential bidders and will produce nationwide, interoperable services under the public/private partnership.

The key elements of USCC's proposal for the public/private partnership, which have strong support from a range of parties, are as follows: area licenses covering MEAs or similar regions; before the auction, the FCC adopts a technical framework and the PSST, taking into account suggestions from interested potential bidders, develops the NSA; licensees and

[48] See Service Rules for the 698-746, 747-762 and 777-792 MHz Bands, 22 FCC Rcd. 8064, 8148 (2007) ("it would be contrary to Congress' intent in enacting Section 337 to consider modifying the commercial and public safety allocations in the band at this time").

regional public safety committees negotiate region-specific amendments to the NSA; and the FCC and NSA decrease the coverage and reliability standards to help make the licenses commercially viable.

A second viable approach is to auction CMA or EA licenses without the public/private partnership. Commercial operators will use the spectrum to provide competitive broadband wireless services to the benefit of all users including public safety agencies. Payments for the licenses could help fund public safety needs.

These two proposals offer clear public benefits over an RFP approach and an approach of licensing the D Block spectrum to public safety agencies.

The public interest requires the FCC promptly to adopt rules for re-auctioning the D Block spectrum.

Respectfully submitted,

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COMMENTS FROM DR. DOUGLAS C. SICKER[1]

ON MULTIPLE AREA D BLOCK LICENSING

INTRODUCTION

The FCC's public-private partnership license model is an innovative solution to the crucial problem of funding an interoperable, nationwide advanced wireless broadband network for public safety communications.[2] By moving to regional D Block licensing this public-private model can be successfully maintained and the goals of funding and timely deployment of a commercial-public safety, state-of-the art, advanced wireless broadband network can be met, while also accruing additional benefits. Regional licensing corresponding with the National Public Safety Planning Advisory Committee (NPSPAC) regions has numerous benefits and will pave the road for successful auctioning of the D Block spectrum, as well as successful deployment of the public-private network. Adopting a detailed and specific technical framework and developing a Network Sharing Agreement (NSA) prior to the auction decreases uncertainties and risks, further facilitating a successful auction and successful network deployment.

Although it is easy to perceive that multiple area licensees would likely have more difficulty coordinating with the PSBL (Public Safety Broadband Licensee) when it is already anticipated that it would be challenging for a single provider to do so, creating regional licenses that correspond to the NPSPAC regions and forming a national committee of licensees could improve overall coordination. Creating regional licenses that specifically correspond to the NPSPAC regions allows for private provider interface into an already existing organizational structure with proven working processes and institutional knowledge. The primary objective is

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[2] The FCC notes this problem, "Importantly, we also found that this approach was the best means available to address the issue of funding for construction of a public safety communications infrastructure, which has proven a significant impediment to date." *See*, Second Further Notice of Proposed Rulemaking, Service Rules for the 698-746, 747-762 and 777-792 MHz Bands, WT Docket No. 06-150, FCC08-128, para. 5 (May 14, 2008).

to create a state-of-the-art, nationwide broadband public safety network; so it is sensible to align the private partner with the public safety partner in such an advantageous manner.

Although interoperability is a significant issue that must be actively worked on by all private licensees, there is precedent for such an endeavor and this model offers an excellent chance for successful auctioning and successful network deployment. Note that other national public safety endeavors have not been undertaken by a single national provider. For example, E911 was implemented by all service providers and advanced with extensive work by industry, public safety and government representatives. Clearly, interoperability has been achieved many times in the past to create national coverage without a national license.

I will examine the benefits of adopting a regional licensing plan corresponding from a technology policy perspective, focusing on coordination of multiple providers in planning and deployment and on interoperability, as well as the advantage of using smaller providers for public safety needs. I will first discuss the greater responsiveness and more tailored solutions that a regional licensing plan can yield. Next, I will describe that successful planning and coordination can be expected from such a model. I then discuss why we can expect multiple regional providers to effectively coordinate to achieve interoperability. Lastly, I demonstrate why multiple regional providers working in concert will result in more rapid, tailored network deployment than a single national licensee.

GREATER RESPONSIVENESS, TAILORED SOLUTIONS AND INCREASED INNOVATION

In response to the question of whether it would be beneficial to divide the licensing areas into high-density and rural areas to draw commercial licensees specializing in rural coverage, I would offer that moving to a model of regional licenses corresponding to the NPSPAC regions will offer greater responsiveness and more tailored solutions to regional needs. In forming and maintaining the NPSPAC regions, the committees have been able to tailor their decisions and actions to differing regional needs. A rural and high-density area division could have been chosen by NPSPAC, but was not. The NPSPAC regions have been serving the needs of public safety entities in coordinating wireless systems, and public safety entities will benefit from working with smaller area licensees that are likely to be more responsive to the differing area needs and conditions. Establishing commercial license regions corresponding to the NPSPAC regions will allow each region's network provider to draw on the experience of that NPSPAC in meeting its particular needs under its unique conditions and operating environment.

Increased innovation is more likely to arise out of this model than that of a single provider. Not only do numerous providers increase the paths to various innovations, but each

provider will produce novel solutions in response to specific regional conditions they encounter. The latter advantage may be lost in the case of a single national provider where the unique concern of one region may be considered too minor to address, or to garner immediate response or significant resources.

During my tenure at the FCC, we were continually striving to encourage the establishment of alternative, smaller providers to encourage competition and innovation. I still believe the introduction of multiple companies working in a specific field leads to innovations that best address users' needs. Additionally, in my current role as an advisor to the National Institute of Justice (NIJ), I have observed that there is "pent-up" emerging technology and innovation from small companies that is waiting to emerge in a variety of technologies, including software defined radio (SDR), cognitive radio (CR), dynamic spectrum access, public safety interoperability gateways, locationing and wireless security. Each of these technologies will contribute to the success of the D Block network.

Additionally, public safety entities of each region become more significant customers. Rather than being just one of many public safety entities being served by a single provider, each NPSPAC regional committee will represent entities that comprise a major "customer" to its regional provider. Also, the economies of scale sought from a single national provider may still be achieved through smaller providers planning in parallel and purchasing in concert.

SUCCESSFUL PLANNING AND COORDINATION

The FCC aptly questioned whether negotiating with numerous commercial entities, rather than a single nationwide partner, would be disadvantageous. However, an efficient interface with the national PSBL could be quickly established with a simple plan to designate representatives for a national level committee of licensees. As for regional interfaces, the existing structure of NPSPAC regional committees could be utilized to achieve one-to-one regional partnerships with licensees.

Offering regional licenses aligned with the NPSPAC regions emulates a successful and established model employed by the FCC in originally creating the NPSPAC regions. This adds the certainty of using a historically successful, established framework and organizational structure for commercial partners to model, or even mirror, in interfacing with a public safety partner as contiguous NPSPAC regional entities. The number, size and precise areas of the regions have already been determined by experienced NPSPAC members through consensus, "taking into account experience in coordination and administration of public safety operations,

and the size of the regions to be administered,"[3] and have already been vetted by the FCC. Additionally, there is a history of successful coordination of state and local public safety wireless communications spanning over two decades. Under this "federal" system, the NPSPAC developed a national plan and the regional committees subsequently developed conforming regional plans and systems tailored to their diverse regional needs.

Taking advantage of the existing coordination, expertise and established systems of the NPSPAC regional committees will lead to more efficient and timely negotiation and planning stages. Numerous regional committees have implemented wide-area public safety plans and systems in the 800 MHz band.[4] The NPSPAC organization need not be relied upon, but only adds additional benefits in coordination for the private licensees, PSBL and local public safety agencies to take advantage of any existing efficient mechanisms, expertise and knowledge base.

My experience in the Network Reliability and Interoperability Council (NRIC)[5] was that numerous entities could collaborate to yield effective solutions. This lends support to the idea that several smaller potential bidders could coordinate effectively with the PBSL to produce an NSA, establishing detailed technical specifications for efficient nationwide, interoperable planning and deployment. While at the FCC, I observed many providers working together effectively, through such mechanisms as standards bodies and advisory committees, to devise a variety of technical solutions. For example, the North American Numbering Council, an FCC Federal Advisory Committee, has long made technical recommendations to foster the efficient administration of the numbering plan. Likewise, potential regional licensees could work together effectively with the PSBL to establish detailed technical specifications to develop a pre-auction NSA. As discussed in great detail in the Interoperability section, below, there are a great many examples of industry successfully planning and coordinating.

INTEROPERABILITY

As noted in the introduction, although interoperability is an issue requiring active work, there is ample evidence of industry, government and public safety coordination in this area to warrant an NPSPAC regional licensing model. Again, a single nationwide license has seldom been issued and interoperability has been achieved many times in the past to create national coverage without a national license. Even in most commercial mobile networks coverage is

[3] *Development and Implementation of a Public Safety National Plan*, 3 FCC Rcd. 905, at 910 (1987).
[4] *See*, *Improving Public Safety Communications in the 800 MHz Band*, 19 FCC Rcd. 14969, at 14991 (2004).
[5] *See*, The Network Reliability and Interoperability Council at http://www.nric.org/.

facilitated through roaming and other mechanisms. Indeed, it is often the case that numerous providers coordinate to achieve interoperability, rather than a single provider acting in isolation, using only its own network to provide coverage. It is common for providers to effectuate coverage through interconnection and interoperability, which is evident in automatic roaming. The FCC inquired how it could "ensure interoperability of communications between public safety users of different regional networks," asking whether to adopt obligations "to facilitate coordination between D Block licensees," such as mandating "that each D Block licensee provide roaming to the public safety users of all other D Block regional networks?" Automated roaming is commonly used to provide interconnection, as noted above. Mandating roaming as part of the license terms would formalize a minimal requirement for interconnection / interoperability.

We can look to a broad range of established mechanisms in the telecommunications space as examples of successful industry coordination including, but not limited to, frequency coordination, telephone number assignment, Internet address coordination, network reliability, network security and mobile subscriber roaming. Each of these has its own unique market and technology characteristic, but they collectively demonstrate what industry is capable of attaining. For example, the FCC has long relied on the use of private organizations to serve as frequency coordinators to assist in managing the Private Land Mobile Radio spectrum.[6] Likewise, public safety entities work together to manage their radio frequency resources through Public Safety Frequency Coordinators.[7] Roaming of subscribers among various network operators has been accomplished through automated mechanisms since the 1990's.[8] This process has not been free of controversy (for example disagreements concerning the rates charged for roaming), but these controversial issues should be addressed in advance of the auctions by stipulating the conditions and resolutions mechanisms.

Industry has many examples of working together to specifically solve interoperability issues and enable new technology. For example, the Open Mobile Alliance has charted working groups that address many of the issues central to developing a successful D Block network. This includes, among other items, working groups on Location, Messaging, Client Management, Availability, Push to Talk, Security, Architecture, Data Synchronization, and

[6] Frequency Coordinators http://wireless.fcc.gov/services/index.htm?job=licensing_3&id=industrial_business
[7] PS Freq coor. http://www.fcc.gov/pshs/public-safety-spectrum/coord.html
[8] http://www.allianceforfairroamingaccess.com/facts.html

Device Management.[9] Of note, OMA has wide and extensive membership, which includes all of the major carriers and manufacturers.

There are also a number of examples of where industry coordination through Federal Advisory Committee oversight has resulted in well structured and smoothly operating mechanisms to ensure the proper use and coordination of interoperability and reliability functionality. For example, the NANP has for many years served to maintain the coordination and use of the numbering resources.[10] Likewise, similar address management has been coordinated and carried out in the Internet space through cooperative agreements. The Network Reliability and Interoperability Council (NRIC), a Federal Advisory Committee of the FCC, includes a broad range of coordination efforts to ensure that best practices are established and shared among network operators.[11] The FCC recognizes interoperability has been achieved by many entities working together and references NRIC's accomplishments in this proceeding, "There is a rich history of standards-setting bodies whose work draws on industry experts and other interested parties to ensure that consumer devices operate efficiently in their networks, including, for instance, the Network Reliability and Interoperability Council (NRIC) and the Open Mobile Alliance (OMA)."[12]

These examples demonstrate that it is possible for industry coordination of such processes and that the shared criticality of providers who enter into the D Block would foster cooperation. There is an important difference between efforts such as recent wireless E911, which was imposed after the fact on providers, and the efforts that could occur in the D Block with providers knowingly and willingly taking on these expectations at the onset. In many prior cases, the players were impelled into action after a service existed; whereas in the case of the D Block, participants would knowingly enter into the arrangement (with the obligation of complying with the NSA specifications).

In my role as Chair of the NRIC IV Steering Committee, I saw that industry could work together to effectively address the development of standards and best practices to enhance the reliability and interoperability of wireline and wireless networks. This includes extensive efforts in focus groups that map directly to many of the technical specifications as defined in the BID V.2 document, including work on 1) outage reporting mechanisms, 2) best practices for network reliability, 3) network interoperability, 4) system hardening, 5) metric specification, and 6)

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[9] See http://www.openmobilealliance.org/Technical/WorkingGroupsCommitees.aspx

[10] http://www.nanpa.com/number_resource_info/code_admin.html

[11] NRIC http://www.nric.org/fg/index.html

[12] See, *Service Rules for the 698-746, 747-762 and 777-792 MHz Bands*, Second Report and Order, supra, at para. 225.

disaster recovery. The most recent NRIC included a focus group for the analysis of the effectiveness of best practices aimed at E911 and public safety and a focus group on long term issues facing emergency and E911 service.[13] These, together with the broader scope of coverage from this advisory committee, demonstrate that industry is motivated and able to coordinate to address public safety concerns.

RAPID AND EFFICIENT DEPLOYMENT

Non-incremental Deployment

Non-incremental deployment of a broadband wireless network on a national scale by a single provider, on such a tight, mandatory timescale with such tight build-out requirements has not been undertaken to date, and such an endeavor creates substantial risk. Even large providers have achieved national networks through incremental network build-out or acquisition. Further, the national coverage of large providers is achieved in part through interconnection with and use of networks of other providers. Smaller providers are able to offer national, or close to national, coverage by interconnecting and sharing networks to a greater degree. Moving to a regional licensing plan would decrease risk significantly by allowing this known incremental build-out and interconnection model to be followed, as any single provider will be building only a portion or portions of the national network.

Regional Licenses Corresponding to NPSPAC Regions

In its Second Further Notice of Proposed Rulemaking, the FCC noted that it originally developed a national D Block license because it saw this as the "most practical means of speeding deployment,"[14] but asked for comments as to whether it should "adopt a regional geographic service area basis"[15] and "the appropriate geographic service area for the D Block."[16] Adopting regional licenses corresponding to the NPSPAC regions is appropriate and there are benefits that would speed deployment in a way that a single provider working on a national scale could not. This structure would likely have the advantage of adjusting the NSA, networks and services to specific regional issues and also speeding implementation of national decisions to the regional level.

An interface of regional providers matched to existing public safety regions would be advantageous in fully representing unique regional needs. It would also likely reduce overhead

[13] See http://www.nric.org/fg/index.html

[14] *Service Rules for the 698-746, 747-762 and 777-792 MHz Bands*, Second Further Notice of Proposed Rulemaking at para. 9, 183 (May 14, 2008).

[15] Id. at para. 3.

[16] Id. at para. 183.

in coordination to have each NPSPAC region coordinate with its own regional provider for planning and implementation specifics. A single provider operating on a national scale could model their interface with the PSBL in such a way, but it would be more challenging. In the case of a single large provider operating on a national scale, an internal organizational structure already exists, and drastically altering this structure to align with the NPSPAC regions would require significant internal reorganization and time. In other words, designing something from scratch for a particular model is easier than retro-fitting an existing structure.

More Rapid Deployment

In understanding the impact of the use of multiple licenses, as opposed to a single nationwide license, we should consider whether the task can be decomposed / divided and the nature of this decomposition / division. Many engineering tasks require a serial process of solving one problem and then moving to the next, meaning that these problems do not lend themselves to parallelism (working on multiple aspects of the problem at the same time). The task of deploying a private/public partnership in the D Block is a task that can be divided; moreover, it can be argued that it is a task that should be divided, simply to ensure that the stringent timelines can be met.

Further, more rapid deployment may be achieved in a model with regional licenses corresponding to the NPSPAC regions since the established NPSPAC organizational framework allows for rapid and efficient establishment of a private-public safety interface, the NPSPAC regional committees bring expertise and knowledge base, and it facilitates numerous regional providers working in parallel. Adopting a plan where each NPSPAC region has its own provider, and all providers have direct national representation, allows for great efficiency in deployment. This allows parallel deployment of regional networks to form a nationwide network. Speed of deployment is greatly enhanced over a single provider model when regional networks are built in concert, and a national network is achieved through coordination of the provider national committee and the PSBL.

I note that an NPSPAC regional licensing plan would be more efficient and less burdensome to the PSBL than a model using RFPs to contract for services. While RFPs have been used successfully in other contexts, such a model would burden the PSBL with the task of calling for bids, reviewing bids and negotiating with the numerous bidders, whereas the FCC has a working auction mechanism in place and the expertise to call for bidders, qualify them and authoritatively carry out the process to determine winning bidders.

Additionally, as specified in the BID, version 2.0, the extensive reliance on open protocols, open design, and COTS equipment should help to facilitate multiple providers

efficiently deploying a national network. From a technical standpoint, we should ask the question - how does moving to regional licenses impact the technical complexity of the problem? To answer this question we evaluate the technical criteria in detail in the following section.

In addition, a pre-determined technical framework would significantly reduce planning time and achieve uniformity in parallel network deployment. A pre-auction NSA also reduces planning and negotiation time and brings uniformity, while slight regional modifications allow for tailored solutions to public safety needs in differing regions.

ROLE OF TECHNICAL FRAMEWORK AND PRE-AUCTION NSA

In addition to regional licensing, a more developed technical framework and pre-auction NSA will speed negotiation and facilitate planning and coordination. The FCC should adopt its idea to develop a more detailed technical framework, using comments from interested parties, and incorporate it into rules as part of the license terms. This provides for a more rapid negotiation, as the technical framework will be used as a basis for the NSA and will serve as a premise for initial and ongoing network planning. In its FNPRM the FCC posed the question, "should we mandate a "master" NSA that would include minimum network specifications, which could then be modified on a regional basis with more detailed schedules?" An NSA should be developed pre-auction: optimally it would have detailed technical specifications, with only minor modifications and amendments made post-auction to allow for regional differences. Not only does this greatly reduce uncertainties and risks, but it will speed the negotiation timeline. As discussed above, the PSBL and interested providers should be able to efficiently coordinate to develop a detailed NSA. This will allow interested parties to enter the bidding already prepared or planning to meet particular technical specifications, thus speeding deployment as well.

As stated in the previous section, the extensive reliance on open protocols, open design, and COTS equipment specified in the BID, version 2.0, should help to facilitate multiple providers efficiently deploying a national network. Again, we should ask the question - how does moving to regional licenses impact the technical complexity of the problem? To answer this question, we need to evaluate the technical criteria.

Architecture: As earlier discussed, the system architecture will be more decomposed in its physical design than one might assume looking at the BID document. The point being that the actual network design will include a diverse set of interconnection points and will include a hierarchy of connected networks (regardless of whether there are one or more licenses).

Network Platforms and Services: Within the standards for a nationwide interoperable network, it would be likely that certain regions of the country may wish to make use of different technology and services depending on their needs and service conditions. Regional providers could facilitate efficiently meeting regional needs and conditions. However the specifics, such as the 1) technical requirements, 2) standardized interfaces, 3) standardized application capabilities (e.g., push-to-talk) and 4) reliance on COTS technology, should ensure that the system provides what the users need, while also ensuring interoperability within and between service providers.

Network Reliability, Availability and Hardening: Each of these parameters is mostly influenced by the design and implementation of a robust system and the means of ensuring these goals has been a long time focus of the industry and of the NRIC. Therefore, these are issues less dependent on whether the network is deployed and operated by regional providers or a national operator, and more dependent on design and best practices.

Security, Network Priority and QoS: These issues are highly dependent on the establishment of standards and the agreement to deploy and cooperate in the use of these standards. For example, there would need to be agreed upon QoS standards that network providers would deploy and recognize.

It is not my intention to imply that having multiple providers will not add some additional complexity, but rather that it is something that is manageable and that many of the technical issues are largely unaffected by moving toward regional licenses.

CONCLUSION

In conclusion, a regional licensing model supports the FCC's goal of creating a state-of-the-art, nationwide, interoperable, advanced broadband public safety network, while retaining the advantages and efficiencies the FCC seeks to create in a private-public partnership. Licensing corresponding to NPSPAC region lends itself to successful planning and coordination by taking advantage of the existing organizational structure of the NPSPAC and its knowledge base. Regional providers also lead to greater local responsiveness, more tailored solutions and increased innovation. It has been demonstrated in numerous cases that industry, government and public safety can successfully coordinate to achieve interoperability, supporting the idea that regional licensees can be expected to effectively work together to do so as well. Regional licensing also addresses uncertainty and risk, as it uses a known method of licensing and network build-out, rather than the uncertainty of a single provider attempting to deploy a national network non-incrementally. Additionally, numerous regional providers working in parallel can more rapidly deploy a national network than a single provider. This model, coupled with a detailed technical framework and NSA developed in advance of the auction, will lead to a successful auction and more rapid deployment of a national interoperable network that is more tailored to unique regional public safety needs.