Holland & Knight

Tel 202-955-3000
Fax 202-955-5564
www.hklaw.com

Holland & Knight LLP
800 17th Street, N.W., Ste. 1100
Washington, DC 20006

Leighton T. Brown
(202) 457-7161
Leighton. Brown@hklaw.com

January 6, 2014

Via ECFS

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: Ex Parte Presentation
Docket No. 12-268: *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*

Dear Ms. Dortch:

As United States Cellular Corporation ("USCC") previously explained in comments and reply comments filed in this docket,[1] and as the Commission has recognized on numerous occasions with respect to other spectrum bands,[2] ensuring interoperability in the 600 MHz band will be essential to achieving the extraordinary potential of this spectrum to promote competition and greatly expand access to wireless broadband services, particularly in rural and other underserved areas. USCC therefore joins a substantial majority of commenters addressing this issue and again strongly urges the Commission to adopt a clear, *ex ante* interoperability requirement for the 600 MHz band.[3]

---

[1] *See* Comments of USCC, Docket No. 12-268 (Jan. 25, 2013); Reply Comments of USCC, Docket No. 12-268 (Mar. 12, 2013); Comments of USCC, Docket No. 12-268 (June 14, 2013); Reply Comments of USCC, Docket No. 12-268 (June 28, 2013).

[2] *See, e.g.*, *Promoting Interoperability in the 700 MHz Commercial Spectrum*, Report and Order and Order of Proposed Modification, 28 FCC Rcd 15122, 15145 (2013) ("*Lower 700 MHz Interoperability Order*") (noting that interoperability will "promote the efficient use of spectrum, the availability of higher quality and lower priced offerings and enhanced choices for customers of all wireless broadband providers, overall timely deployment of nationwide wireless broadband coverage, and the delivery of such service to rural and underserved areas"); *Application of AT&T Inc. and Qualcomm Incorporated for Consent to Assign Licenses and Authorizations*, Order, 26 FCC Rcd 17589, 17619 (2011) ("*AT&T/Qualcomm Order*") (noting that the "substantial public interest benefits" of interoperability include "enhancing competition by facilitating consumer choice, and facilitating the widespread deployment of broadband services and competition, including access to broadband in rural and underserved areas").

[3] *See, e.g.*, Reply Comments of Competitive Carriers Association, Docket No. 12-268, p. 11 (Mar. 12, 2013) ("CCA NPRM Reply") ("The Commission should establish a clear, *ex ante* rule requiring that all devices operating in the 600 MHz band be capable of operating across the entire band."); Comments of T-Mobile USA, Inc., Docket No. 12-268, p. 21 (Jan. 25, 2013) ("T-Mobile NPRM Comments") ("The Commission should require interoperability across all paired 600 MHz band channels."); Reply Comments of King Street Wireless, L.P., Docket No. 12-268, p. 5 (Mar. 12, 2013) ("The Commission … should expressly mandate interoperability in the incentive auction."); Reply Comments of Leap Wireless International, Inc. and Cricket Communications, Inc., Docket No. 12-268, p. 3 (Mar. 12, 2013) ("Leap NPRM Reply") ("[T]he Commission can strongly promote the public interest by guaranteeing

Specifically, as USCC previously proposed, the Commission should require that: (1) all mobile devices designed to operate on 600 MHz paired spectrum must tune to all 600 MHz paired frequencies; and (2) all 600 MHz networks operating on 600 MHz paired frequencies must permit the use of such devices. USCC again clarifies that its use of the terms "paired spectrum" and "paired frequencies" refers to how the spectrum blocks are originally allocated and auctioned off. In other words, any subsequent use of the spectrum by a carrier that does not involve both uplink and downlink operations would not alter the regulatory treatment of this spectrum with respect to the carrier's interoperability obligations.[4] USCC further clarifies that its interoperability proposal would apply to all 600 MHz networks, regardless of bandwidth. Thus, every 600 MHz network would have to be capable of interoperating with any 600 MHz device designed to use paired 2x5 MHz spectrum blocks or any multiple of a 2x5 MHz pairing.

USCC also stresses the need for the 600 MHz interoperability requirement to account for the possibility that a portion of this spectrum will be auctioned and licensed on a supplemental downlink basis. As the Commission previously recognized, such a requirement is necessary to ensure that a carrier does not use downlink-only spectrum in ways that impede roaming, the substantial benefits of which are detailed below. For instance, the Commission found that "AT&T's proposed acquisition of Qualcomm's [downlink-only] Lower 700 MHz D and E Block licenses ha[d] the potential to cause some competitive and other public interest harms."[5] Specifically, the Commission noted the "potential for AT&T to incorporate the Qualcomm spectrum into its network in such a way as to preclude roaming on spectrum it chooses to bond through supplemental downlink technology to the Lower 700 MHz D and/or E Blocks."[6] The Commission therefore conditioned its approval "on the requirement that AT&T may not configure its network so that the supplemental downlink technology creates a barrier to roaming…"[7]

Based on these same considerations, the Commission should include similar provisions in the 600 MHz interoperability requirement, and require that a licensee:

---

interoperability across the entire 600 MHz band…"); Supplemental Comments of Cellular South, Inc., Docket No. 12-268, p. 8 (June 14, 2013) ("Cellular South Band Plan Comments") ("[T]he Commission must ensure interoperability in the 600 MHz band."); Reply Comments of McBride Spectrum Partners, LLC, Docket No. 12-268, pp. 6-7 (June 22, 2013) ("McBride Band Plan Reply") ("Maximize the number of small carriers that take part in the 600 MHz incentive auctions by mandating interoperability … from the start."); Reply Comments of DISH Network Corporation, Docket No. 12-268, pp. 11-12 (Mar. 12, 2013) ("DISH NPRM Reply").

[4] USCC notes its concern that, even with these requirements in place, the benefits of interoperability could be circumvented or diminished if the 600 MHz band plan includes only a limited amount of paired spectrum. For instance, if there is a limited amount of paired spectrum (*e.g.*, 2x25 MHz), it is reasonable to expect that the largest carriers would have both the incentive and ability to acquire every license for paired 600 MHz spectrum blocks, leaving only unpaired spectrum – which would not be subject to the proposed interoperability requirement – available to small and regional carriers. In such a circumstance, the Commission would need to consider expanding the scope of the interoperability requirement to cover both paired and unpaired 600 MHz spectrum.

[5] *AT&T/Qualcomm Order*, 26 FCC Rcd at 17590.

[6] *Id.* at 17614.

[7] *Id.*; *see id.* at 17590 ("AT&T cannot use the Qualcomm spectrum in a way that deprives other providers of the benefits of the Commission's roaming rules.").

- May not incorporate 600 MHz supplemental downlink spectrum into its networks in such a way as to preclude roaming by a provider that otherwise supports the same primary spectrum (*e.g.*, AWS, Cellular, PCS, 700 MHz) but does not support the supplemental downlink technology; and

- May not use 600 MHz supplemental downlink spectrum in such a way as to preclude other providers of the benefits of roaming on the licensee's paired 600 MHz spectrum holdings.[8]

In addition to ensuring that a licensee will not be able to use its downlink-only 600 MHz spectrum to restrict roaming options for customers of other 600 MHz licensees, these provisions would ensure that the use of such spectrum will not undermine the device interoperability – and thus, the broad roaming opportunities – currently found in other spectrum bands.[9]

As noted by the Commission, the 600 MHz spectrum has the potential to "promote economic growth and enhance America's global competitiveness, increase the speed, capacity and ubiquity of mobile broadband service … and accelerate the smartphone- and tablet-led mobile revolution, benefitting consumers and businesses throughout the country."[10] A failure to adopt an interoperability requirement, however, could withhold these potential benefits from the public. As T-Mobile stressed, a "lack of interoperability is devastating to the value and usefulness of a set of frequencies…"[11] Similarly, in the NPRM, the Commission noted how "[i]nteroperability has often been important in ensuring rapid and widespread deployment of mobile devices in a new spectrum band."[12]

Thus, in order to maximize the potential of the 600 MHz spectrum, and thereby greatly advance the public interest, the Commission must adopt a clear, *ex ante* interoperability requirement.[13] As the Commission recently found, and as detailed below, interoperability "serve[s] the public interest by enabling consumers, *especially in rural areas*, to enjoy the benefits of greater competition and more choices, and by encouraging efficient use of spectrum,

---

[8] *See id.* at 17614.

[9] *See id.* ("For example, if AT&T bonds the Qualcomm spectrum with AWS-1 spectrum, AT&T cannot use that bonding as a basis to decline to offer roaming to providers offering service on AWS-1 spectrum.").

[10] *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Notice of Proposed Rulemaking, 27 FCC Rcd 12357, 12359 (2012) ("NPRM").

[11] Reply Comments of T-Mobile USA, Inc., Docket No. 12-268, p. 54 (Mar. 12, 2013) ("T-Mobile NPRM Reply"); *see* CCA NPRM Reply at 11 ("The widespread availability of devices will be critical to effective deployment in the 600 MHz band, and such device availability depends on interoperability across the band.").

[12] NPRM, 27 FCC Rcd at 12415.

[13] *See Lower 700 MHz Interoperability Order*, 28 FCC Rcd at 15171 (Statement of Acting FCC Chairwoman Mignon L. Clyburn) ("Clyburn Statement") (noting that interoperability in the Lower 700 MHz band "will substantially benefit the public interest"); T-Mobile NPRM Comments at 21 ("The benefits of requiring interoperability are great and cost little to nothing, especially at the outset of band development."); Comments of MetroPCS Communications, Inc., Docket No. 12-268, p. 28 (Jan. 25, 2013) ("MetroPCS NPRM Comments") ("Such a requirement will … promote the public interest.").

investment, job creation, and the development of innovative mobile broadband services and equipment."[14]

Most fundamentally, an interoperability requirement is necessary in order to promote timely access to a variety of mobile devices by all 600 MHz licensees, including small and regional carriers.[15] As CCA explained, absent such a requirement, the largest carriers could, and would have the incentive to, "develop wireless equipment which would support only their licensed blocks."[16] This would create a significant competitive advantage for these already-dominant carriers. Specifically, because of their volume purchases, manufacturers initially, and perhaps exclusively, would focus on these carriers' device needs in order to maximize their profits.[17] Consequently, at a minimum, "competitive carriers would experience years of delay in gaining initial access to devices, and thereafter perpetually lack the breadth of device options available to the largest operators."[18]

This inability of small and regional carriers to obtain devices would significantly impair their ability to compete by making it difficult to maintain current customers and acquire new ones. As McBride Spectrum Partners explained, "[t]oday's customers demand a choice of the latest in mobile phones and devices."[19] Similarly, in its most recent Wireless Competition Report, the Commission noted that mobile handsets and devices "directly affect the quality of a consumer's mobile wireless experience and can factor into a consumer's choice of a wireless provider."[20] As such, a carrier's "portfolio of handsets and devices may be a significant non-price factor affecting its ability to compete for customers."[21] Accordingly, despite any competitive advantages small or regional carriers may have when it comes to price, local

---

[14] *Lower 700 MHz Interoperability Order*, 28 FCC Rcd at 15123 (emphasis added).

[15] *See* Comments of Competitive Carriers Association, Docket No. 12-268, p. 6 (Jan. 25, 2013) ("CCA NPRM Comments") ("The Commission must require interoperability for all auctioned blocks in the incentive auction to ensure access to a wide range of devices for competitive carriers.").

[16] Supplemental Comments of Competitive Carriers Association, Docket No. 12-268, p. 6 (June 14, 2013) ("CCA Band Plan Comments"); *see* DISH NPRM Reply at 12 ("Absent such a requirement, the incumbents are likely to separate the 600 MHz spectrum into company-specific bands…").

[17] *See* T-Mobile NPRM Comments at 22 ("Absent precautions to preserve interoperability in the 600 MHz band, multiple boutique band classes may emerge that reduce the incentive for device manufacturers to develop handsets that are available to all licensees in the band."); Cellular South Band Plan Comments at 9 ("Unless the Commission takes steps to preserve interoperability in the 600 MHz spectrum, multiple incompatible band specifications could emerge…, reducing the incentive for OEMs to develop devices that are available to all licensees…").

[18] CCA Band Plan Comments at 6; *see* DISH NPRM Reply at 12 ("The diffusion of bands, coupled with single-chip device limitations, allows large incumbent providers to limit the development and deployment of devices available for smaller providers.").

[19] McBride Band Plan Reply at 3.

[20] *Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services*, Sixteenth Report, 28 FCC Rcd 3700, 3768 (2013) ("*Sixteenth Competition Report*"); *see Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services*, Fifteenth Report, 26 FCC Rcd 9664, 9847 (2011) ("*Fifteenth Competition Report*") ("Handsets and devices are becoming increasingly central to consumers of mobile wireless services.").

[21] *Sixteenth Competition Report*, 28 FCC Rcd at 3768; *see Fifteenth Competition Report*, 26 FCC Rcd at 9847 ("Recent studies show handsets play an important role for consumers as a basis for choosing providers…").

coverage and customer service, consumers may avoid these carriers if they cannot offer a specific handset.[22] This clearly would impact small and regional carriers' ability to truly compete with the national carriers, which would result in higher prices for consumers.[23] On the other hand, McBride explained that, "[w]hen the element of device interoperability is removed from a consumer's equation on what device to choose, he or she can then focus on the truly important distinguishing elements such as price, customer service, and local coverage."[24]

Even if small and regional carriers manage to secure some devices for their 600 MHz networks without an interoperability requirement, as demonstrated in the Lower 700 MHz band, these devices likely will be delayed for months or years after the introduction of similar devices by the national carriers.[25] In other words, small and regional carriers would not be able to offer the latest "cutting edge" devices demanded by consumers. On the other hand, as Commissioner Rosenworcel recently noted, full device interoperability "provide[s] consumers of small and rural wireless carriers access to more cutting-edge devices."[26]

Moreover, even if the latest devices eventually become available to small and regional carriers, by then the national carriers would have already established a substantial 600 MHz customer base that, absent interoperability, could not switch providers without purchasing a new handset. These switching costs would effectively bind many consumers to the largest carriers, making it very difficult to persuade them to change service providers.[27] Ultimately, this competitive imbalance would directly harm consumers, many of whom could not justify incurring the potentially significant switching costs to move to another carrier, no matter how much better or less expensive the competing service may be.[28]

On the other hand, the Commission has explained that, "[i]f enough consumers have the ability and propensity to switch service providers in response to a change in price or non-price factors, then mobile wireless service providers will have an incentive to compete vigorously to gain customers and retain their current customers."[29] In other words, an interoperability requirement would "promote consumers' ability to choose the higher quality service at

---

[22] *See Sixteenth Competition Report*, 28 FCC Rcd at 3844 ("In addition to competing on price and network quality, mobile wireless providers continue to compete by offering consumers a variety of different mobile wireless devices with innovative features.").

[23] *See Promoting Interoperability in the 700 MHz Commercial Spectrum*, Notice of Proposed Rulemaking, 27 FCC Rcd 3521, 3359 (2012) (Statement of Commissioner Clyburn) (noting that a "lack of interoperability means fewer device and service choices for consumers," and that "[f]ewer competitive options results in higher prices").

[24] McBride Band Plan Reply at 10.

[25] *See Lower 700 MHz Interoperability Order*, 28 FCC Rcd at 15173 (Statement of Commissioner Jessica Rosenworcel) ("Rosenworcel Statement") (noting that, with full interoperability, "devices will be available faster").

[26] *Id.*

[27] *See id.* at 15145 ("[I]nteroperability directly promotes 'the ability of consumers to switch … at low cost.'") (quoting *Amendment of the Commission's Rules to Establish New Personal Communications Services*, Memorandum Opinion and Order, 9 FCC Rcd 4957, 5021-22 (1994) ("*1994 PCS Order*")).

[28] *See id.* ("The record demonstrates that the existence of two incompatible band classes is a substantial obstacle to the ability of subscribers to switch their service provider to take advantage of higher quality or lower cost service.").

[29] *Fifteenth Competition Report*, 26 FCC Rcd at 9808.

affordable prices and thus increase[] competition."[30] In sum, absent an interoperability requirement, small and regional carriers' delayed access to the devices demanded by today's consumers, as well as the high switching costs that would result from a lack of interoperability, would further solidify the largest carriers' dominant market positions by providing them with a significant "head-start" advantage with respect to acquiring 600 MHz customers – an advantage the Commission has described as "a significant hurdle to new competition."[31]

In addition, without a universal 600 MHz device ecosystem, small and regional carriers would incur higher device costs due to a lack of volume production and the resulting loss of beneficial economies of scale.[32] In contrast, a national carrier could, by itself, order a sufficiently large volume of devices to generate economies of scale. Smaller and regional carriers would be forced to either pass their higher device costs onto consumers in the form of higher retail prices – which most consumers would not pay if given the choice of service providers – or absorb the added costs in order to compete with the prices offered by large carriers. The consequences of this latter approach, however, could be disastrous because device subsidies result in slim, nonexistent or even negative profit margins, meaning these discounts would directly affect these carriers' bottom lines and ultimately their ability to remain in business and provide competition. Either way, these higher device costs would harm competition by erecting yet another barrier to entry into new markets or service offerings.[33]

With an *ex ante* requirement, however, the resulting "broad interoperability [would] increase economies of scale,"[34] and thereby reduce device costs for even the largest carriers.[35] Presumably, carriers would pass these additional savings on to consumers in order to survive in the more competitive marketplace that an interoperability requirement would help to create. In

---

[30] *Lower 700 MHz Interoperability Order*, 28 FCC Rcd at 15145; *see id.* at 15138 (finding that interoperability creates "choice for consumers so that they can more readily change providers in order to avail themselves of competitive alternatives"); T-Mobile NPRM Comments at 21 ("For consumers, interoperability promises increased competition in pricing and services through a greater ability to switch among competing carriers.").

[31] *Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers and Other Providers of Mobile Data Service*, Order on Reconsideration and Second Further Notice of Proposed Rulemaking, 25 FCC Rcd 4181, 4192 (2010); *see Interconnection and Resale Obligations Pertaining to Commercial Mobile Radio Services*, First Report and Order, 11 FCC Rcd 18455, 18465 (1996) ("The advantages such incumbency conveys are well understood.").

[32] *See Lower 700 MHz Interoperability Order*, 28 FCC Rcd at 15173 (Rosenworcel Statement) ("Thanks to economies of scale, [devices] also will be less expensive."); T-Mobile NPRM Reply at 54 ("Interoperability decreases the costs of devices because carriers and manufacturers are able to achieve economies of scale."); MetroPCS NPRM Comments at 28 (explaining that an interoperability requirement "will serve to reduce equipment costs for competitive carriers").

[33] *See Facilitating the Provision of Spectrum-Based Services to Rural Areas and Promoting Opportunities for Rural Telephone Companies To Provide Spectrum-Based Services*, Notice of Proposed Rulemaking, 18 FCC Rcd 20802, 20807 (2003) ("Any small, new entrant attempting to serve a niche market might face barriers to entry arising from its inability to exploit economies of scale, and will inevitably have less bargaining power to secure equipment, supplies, or negotiate agreements.").

[34] *1994 PCS Order*, 9 FCC Rcd at 5022.

[35] *See Sixteenth Competition Report*, 28 FCC Rcd at 3821-22 ("When competing mobile wireless service providers deploy compatible network technologies, greater economies of scale in the production of both end-user devices and network infrastructure equipment can result, lowering the unit cost of handsets, chipsets, and other [] equipment.").

turn, these lower costs would "promote more rapid adoption of mobile wireless services,"[36] particularly amongst lower-income consumers, who currently lag in broadband adoption.[37]

Although a lack of timely and affordable access to a sufficient quantity of the latest devices would be the most direct consequence from a lack of interoperability in the 600 MHz band, numerous other harms to small and regional carriers and the public would arise from the absence of a robust device ecosystem. For instance, because small and regional carriers would lack any assurances that they could offer the variety of mobile devices demanded by consumers, it would be difficult for these carriers to justify expending the substantial sums needed to purchase 600 MHz licenses and build out networks.[38] In other words, as the Commission recently found with respect to the Lower 700 MHz band, a lack of interoperability in the 600 MHz band would discourage network deployments by small and regional carriers, and thereby withhold the public interest benefits of broadband access and increased competition from those who otherwise would be served by these carriers.[39] In contrast, requiring interoperability would "remove barriers to infrastructure investment for mobile broadband services and increase spectrum utilization…"[40]

Not only would the reduced participation by small and regional carriers in the forward auction reduce revenues and further increase concentration in the wireless industry, it would decrease the likelihood that the 600 MHz spectrum will be used to provide broadband services to rural and other underserved areas, where these carriers often focus their deployment efforts.[41] Thus, if the Commission declines to adopt an interoperability requirement for the 600 MHz band, ultimately it will be consumers in these areas who will suffer. Because "most areas without mobile broadband coverage are in rural or remote areas,"[42] this outcome clearly would conflict with the Commission's and President Obama's goal of accelerating the reach of broadband to all

---

[36] *Id.* at 3822.

[37] *See* FCC, *Connecting America: The National Broadband Plan*, p. 5 (Mar. 2010) ("*Broadband Plan*") (noting that broadband adoption "lags considerably among certain demographic groups, including the poor, the elderly, some racial and ethnic minorities, those who live in rural areas and those with disabilities").

[38] *See* Comments of McBride Spectrum Partners, LLC, Docket No. 12-268, p. 2 (June 14, 2013) ("The lack of interoperability is an absolute barrier to entry for small businesses and puts small businesses at a great competitive disadvantage.").

[39] *See Lower 700 MHz Interoperability Order*, 28 FCC Rcd at 15146 ("The difficulties of obtaining prompt delivery from vendors of the choices of 4G devices at affordable prices necessary to attract and retain subscribers have discouraged LTE network deployments for smaller new market entrants.").

[40] *Id.* at 15156; *see id.* at 15171 (Clyburn Statement) ("Today's Order removes barriers that have kept [small wireless] carriers from operating in this band, and acts to spur private investment, job creation and the development of new services and devices.").

[41] *See id.* at 15171 (Clyburn Statement) (noting that the Lower 700 MHz band's lack of interoperability "ended up stifling deployment of service into rural areas"); T-Mobile NPRM Comments at 21 (explaining that interoperability "increase[s] deployment of next-generation broadband services across the country, especially in rural areas").

[42] *Broadband Plan* at 22; *see Lower 700 MHz Interoperability Order*, 28 FCC Rcd at 15123 (noting that, "in rural America, [] 1.3 million people (and approximately 13% of rural road miles) still lack any mobile wireless broadband coverage"); FCC, *Bringing Broadband to Rural America: Report on a Rural Broadband Strategy*, GN Docket No. 09-29 (May 22, 2009), *attached to Rural Broadband Report Published in FCC Record*, Public Notice, 24 FCC Rcd 12791, 12806 (2009) ("[B]roadband service in rural America is generally inadequate.").

Americans.[43] Moreover, even where rural residents have some broadband access, they often lack the competitive benefits that arise from multiple service providers,[44] or they only have access to slower broadband speeds.[45]

Thus, as it has done in the past, the Commission must strive to adopt spectrum policies that will benefit consumers in unserved and underserved rural areas.[46] First and foremost, the Commission should adopt an explicit *ex ante* interoperability requirement. As the Commission recently noted, "[b]y eliminating barriers to deployment by small and rural" Lower 700 MHz band licensees, the Commission took "another important step toward fulfilling [its] mandate to bring these advanced services, 'so far as possible, to all the people of the United States.'"[47] Likewise, because a 600 MHz interoperability requirement would similarly remove an "unnecessary barrier to the successful operation of businesses," such a requirement would "drive economic growth, promote competitive service, and create jobs in rural America…"[48] As the Commission recently explained, "[s]mall or regional providers serving rural areas drive economic growth in these rural areas, directly, by investing in their networks and creating jobs, and indirectly, by enabling the growth of other small businesses."[49] It was for these reasons that Commissioner Clyburn described the industry agreement regarding interoperability in the Lower 700 MHz band as a "big win for consumers, *especially in rural areas*, who will soon see more competition and have more choices."[50]

---

[43] *See Lower 700 MHz Interoperability Order*, 28 FCC Rcd at 15138 ("As the demand for mobile broadband continues to grow, it is critical that there is nationwide mobile broadband coverage, including service in rural and underserved areas…"); *Connect America Fund*, Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd 17663, 17684 (2011) ("The principle that all Americans should have access to communications services has been at the core of the Commission's mandate since its founding."); Memorandum for the Heads of Executive Departments and Agencies, *Expanding America's Leadership in Wireless Innovation*, 78 Fed. Reg. 37431 (2013).

[44] *See Lower 700 MHz Interoperability Order*, 28 FCC Rcd at 15146 ("More than one-third of the population in rural areas still lacks coverage from more than two mobile broadband service providers."); *Fifteenth Competition Report*, 26 FCC Rcd at 9881 ("While 82 percent of the total U.S. population lives in census blocks with coverage by three or more mobile broadband providers, this is true for only 38 percent of the rural population.").

[45] *See* NTIA, *Broadband Availability Beyond the Rural/Urban Divide, Broadband Brief No. 2*, p. 5 (May 2013) ("[O]nly 15 percent of rural residents had wireless download speeds of 10 Mbps or greater available, compared to 70 percent of urban residents.").

[46] *See, e.g., Service Rules for the 698-746, 747-762 and 777-792 MHz Bands*, Second Report and Order, 22 FCC Rcd 15289, 15362 (2007) ("Rapid deployment and ubiquitous availability of broadband services across the country are among the Commission's most critical policy objectives."); *Facilitating the Provision of Spectrum-Based Services to Rural Areas and Promoting Opportunities for Rural Telephone Companies to Provide Spectrum-Based Services*, Report and Order and Further Notice of Proposed Rulemaking, 19 FCC Rcd 19078, 19081 (2004) ("One of the Commission's primary statutory obligations, as well as one of its principal public policy objectives, is to facilitate the widespread deployment of facilities-based communications services to all Americans, including those doing business in, residing in, or visiting rural areas.").

[47] *Lower 700 MHz Interoperability Order*, 28 FCC Rcd at 15146-47 (quoting 47 U.S.C. §151).

[48] *Id.* at 15123.

[49] *Id.*

[50] *Id.* at 15172 (Clyburn Statement) (emphasis added); *see id.* at 15123 ("The steps we take here will assist consumers and the economies in rural areas, as well as small and regional businesses that operate there.").

A lack of interoperability in the 600 MHz band also would severely limit essential roaming options for small and regional carriers because it would allow large carriers to rely on the "technical incompatibility" loophole in order to avoid the Commission's data roaming rule.[51] Unfortunately, if available, this course of action may be likely considering the past conduct of certain national carriers.[52] And, by doing so, these carriers would undermine the "substantial benefits that [otherwise] will be derived from adoption of the data roaming rule."[53] For instance, in the *Data Roaming Order*, the Commission explained that the availability of roaming arrangements "encourage[s] service providers to invest in and upgrade their networks and to deploy advanced mobile services ubiquitously, *including in rural areas*."[54] Roaming arrangements also "provide additional incentives to enter a market by allowing network providers without a presence in an area a competitive level of local coverage during the early period of investment and buildout."[55]

The Commission further noted how "the availability of data roaming arrangements can be critical to providers remaining competitive in the mobile services marketplace."[56] This is especially true for small and regional carriers, who cannot viably compete against the dominant national carriers if they cannot offer customers expansive geographic coverage.[57] As the Commission explained, because "consumers expect to be able to have access to the full range of

---

[51] *See* T-Mobile NPRM Reply at 54 (noting that interoperability "promotes roaming between networks"); CCA, *A Framework for Sustainable Competition in the Digital Age: Fostering Connectivity, Innovation and Consumer Choice*, Docket No. 12-268, pp. 14-15 (Dec. 5, 2013) ("*CCA White Paper*") ("Interoperability [] makes roaming technologically possible; non-interoperable devices simply cannot roam on other carriers' networks.").

[52] *See Reexamination of Roaming Obligations of Commercial Mobile Radio Service Providers and Other Providers of Mobile Data Service*, Second Report and Order, 26 FCC Rcd 5411, 5424 (2011) ("*Data Roaming Order*") ("[P]roviders have encountered significant difficulties obtaining data roaming arrangements…, particularly from the major nationwide providers."); *id.* at 5427 ("[G]iven the coverage of these nationwide providers, there is a serious risk they might halt the negotiations of roaming … altogether in the future in the absence of Commission oversight, harming competition and consumers."); *id.* at 5485 (Statement of Commissioner Clyburn) ("The fact that these merged companies oppose a mobile broadband service roaming rule suggests to me that they might use their increased market power to unreasonably restrict consumer access to competitive alternatives.").

[53] *Id.* at 5427.

[54] *Id.* at 5443 (emphasis added); *see id.* at 5480 (Statement of Chairman Genachowski) ("[T]he absence of data roaming guarantees will limit our broadband future by eliminating choices, *especially in rural areas*, or in some cases delaying or preventing access to mobile broadband at all.") (emphasis added); FCC, *Bringing Broadband to Rural America: Update to Report on a Rural Broadband Strategy*, GN Docket No. 11-16 (June 17, 2011), *attached to Chairman Genachowski Releases Update to 2009 Rural Broadband Report*, Public Notice, 26 FCC Rcd 8680, 8701 (2011) ("Widespread availability of data roaming capability will … promote connectivity for and nationwide access to mobile data service.").

[55] *Data Roaming Order*, 26 FCC Rcd at 5421; *see Sixteenth Competition Report*, 28 FCC Rcd at 3837 ("[R]oaming provides important assistance to new entrants who wish to begin offering service before they have fully deployed their networks.").

[56] *Data Roaming Order*, 26 FCC Rcd at 5419; *see Prepared Remarks of Acting Chairwoman Mignon L. Clyburn*, Competitive Carriers' Association Annual Convention, Las Vegas, Nevada, p. 3 (Sept. 17, 2013) ("*Clyburn CCA Remarks*") ("Data Roaming is critical to supporting competition and innovation.").

[57] *See Sixteenth Competition Report*, 28 FCC Rcd at 3837 ("[R]oaming remains particularly important for small and regional providers with limited network population coverage to remain competitive by meeting their customers' needs for nationwide service.").

services available on their devices wherever they go," even where a carrier has "built out broadband networks in a regional service territory, [its] inability to offer roaming easily can deter customers from subscribing."[58]

Absent an interoperability requirement, the national carriers could take advantage of this competitive reality by building non-interoperable 600 MHz networks and relying on the data roaming rule's "technical incompatibility" loophole. The national carriers could then differentiate their services in terms of coverage from that of smaller carriers, which would make the national carriers far more attractive to potential customers. In doing so, these carriers would not be differentiating their services by making them better. Rather, they would be differentiating their services by forcing their competitors to be worse.

On the other hand, an interoperability requirement would provide small and regional carriers with the ability to enter into effective roaming arrangements,[59] and thereby significantly improve their service offerings for the benefit of the public. As the Commission stressed in the *Data Roaming Order*, "the availability of roaming capabilities is and will continue to be a critical component to enable consumers to have a competitive choice of facilities-based providers offering nationwide access to commercial mobile data services."[60] Moreover, because roaming arrangements are crucial for small and regional carriers to effectively compete, such arrangements are "particularly important for consumers in rural areas – where mobile data services may be solely available from small rural providers."[61] The additional competition from small and regional carriers also would reduce costs to consumers, and thereby promote greater broadband adoption.[62]

Permitting customers of the national carriers to roam on the networks of small and regional carriers would produce public interest benefits as well. For instance, these customers would have seamless coverage as they travel through more remote areas, where the largest carriers typically have not deployed their own networks. In addition, the fees associated with this roaming would provide small and regional carriers with an additional revenue source that could prove critical in their efforts to further build out their networks in currently unserved or underserved areas and to become more viable competitors to the dominant national carriers. Finally, and importantly, carrier diversity provides potential roaming alternatives to public safety entities, including users of FirstNet. This carrier diversity also would increase the robustness and

---

[58] *Data Roaming Order*, 26 FCC Rcd at 5419; *see id.* at 5480 (Statement of Chairman Genachowski) ("[P]roviders must be able to offer nationwide voice and data plans to have any chance of competing in today's market.").

[59] *See Lower 700 MHz Interoperability Order*, 28 FCC Rcd at 15147 ("[T]he AT&T license modifications we propose today … will help promote reasonable roaming arrangements among 700 MHz providers.").

[60] *Data Roaming Order*, 26 FCC Rcd at 5419; *see id.* at 5422 ("[R]oaming arrangements help[] provide consumers with greater competitive choices … by encouraging investment and network deployments…").

[61] *Id.* at 5419; *see Broadband Plan* at 49 ("[S]mall rural providers serve customers that may be more likely to roam in areas outside their providers' network footprints.").

[62] *See Data Roaming Order*, 26 FCC Rcd at 5428 ("[A] rough estimate is that the benefits from the increased competition would be in the billions of dollars per year."); *id.* at 5427 ("[M]illions of American consumers who otherwise might not have full access to mobile broadband services will benefit from adoption of the rule.").

availability of service to public safety because the network of one carrier may not experience the same outage as that of another carrier.[63]

The potential for the 600 MHz spectrum to promote competition to the dominant national carriers makes an interoperability requirement particularly important given that the wireless industry is in its most precarious competitive state in over a decade. For instance, in its most recent Wireless Competition Report, the Commission, for the third time in a row, was unable to find the existence of "effective competition" in the wireless industry.[64] In fact, the weighted average of the Commission's Herfindahl-Hirschman Index ("HHI") calculations increased to 2873 since the previous report.[65] And, from 2003 to year-end 2011, the average HHI for the industry increased from 2151 to 2873, meaning market concentration has increased by more than a third in less than a decade.[66] Notably, an HHI exceeding 2500 indicates that a market is "highly concentrated."[67]

Fortunately, the 600 MHz spectrum provides the Commission with a rare opportunity to help address the industry's current lack of adequate competition. But this opportunity will be wasted if the Commission fails to take steps – such as adopting an interoperability requirement – to promote competition by ensuring a level playing field for all 600 MHz licensees. In turn, various public interest harms would result. For instance, the Commission has found that competition among service providers is "critical to ensure vitality and innovation in the broadband ecosystem and to encourage new products and services that benefit American consumers and businesses of every size."[68] Similarly, Commissioner Clyburn recently underscored how "[c]ompetition is an essential driver of investment and innovation…"[69]

A continued lack of adequate competition also would "raise concerns that firms may be able to exercise market power, *i.e.*, without competitors or potential entry, there may not be sufficient constraints to prevent the exercise of market power."[70] In contrast, if the Commission adopts an interoperability requirement, the "[a]dditional competition in rural areas is likely to

---

[63] *See* T-Mobile NPRM Comments at 21 ("Interoperability also helps promote the public interest by ensuring that more than one carrier can offer service to large categories of users in the event of a disaster or other system-disabling event.").

[64] *See Sixteenth Competition Report*, 28 FCC Rcd at 3837.

[65] *See id.* at 3756-57.

[66] *See id.* at 3757.

[67] *See id.* at 3755.

[68] *Joint Statement on Broadband*, 25 FCC Rcd 3420, 3420 (2010).

[69] *Clyburn CCA Remarks* at 2-3; *see* T-Mobile NPRM Comments at 21 ("[I]nteroperability can also stimulate investment, create jobs, and spur innovation…"); *CCA White Paper* at 14 ("[D]evice interoperability is a prerequisite to a well-functioning wireless marketplace; it encourages innovation, gives consumers more choices, and reduces costs to end users.").

[70] *Fifteenth Competition Report*, 26 FCC Rcd at 9690.

result in lower-priced services,"[71] which would lead to "direct consumer surplus as well as greater utilization of broadband data services."[72]

The potentially significant amount of repurposed 600 MHz spectrum, as well as the great importance of this spectrum to the wireless industry, also means that the Commission's decisions in this proceeding will have long-lasting effects with respect to the competitive state of the wireless industry. The Commission, therefore, must ensure that its 600 MHz service rules – including an interoperability requirement – maximize this spectrum's potential to promote competition. As detailed above, absent an interoperable 600 MHz device ecosystem, small and regional carriers likely will be incapable of using this spectrum to increase competition to the largest carriers because they will not be able to provide the quantity and quality of 600 MHz-capable devices necessary to attract a sufficient customer base.

An interoperability requirement also is especially important here because "the propagation characteristics of the 600 MHz band should allow for robust coverage at a lower cost than some other comparable bands."[73] This is true because lower frequencies travel further at a given power level, which "allow[s] providers to cover a relatively large geographic area with a relatively small number of cell sites."[74] Consequently, the 600 MHz band is particularly well-suited for the rapid and efficient deployment of mobile and other advanced services in high-cost rural areas, precisely where broadband access is most lacking.[75] However, absent an interoperability requirement, small and regional carriers will lack any assurance that they will have access to a competitive range of devices. As a result, these carriers, which often focus their buildout efforts in rural and other underserved areas, may not be able to justify expending the substantial sums that 600 MHz licenses likely will command. Thus, in addition to permitting small and regional carriers to more effectively compete, an interoperability requirement would greatly promote the deployment of 600 MHz broadband networks in rural areas.

While USCC appreciates the Commission's goal of "encouraging interoperability" in formulating a 600 MHz band plan,[76] it again joins CCA and others in strongly urging the Commission to "go beyond mere encouragement and *ensure* full interoperability across the 600

---

[71] *Lower 700 MHz Interoperability Order*, 28 FCC Rcd at 15123.

[72] *Data Roaming Order*, 26 FCC Rcd at 5428; *see Broadband Plan* at 168 ("When prompted for the main reason they do not have broadband, 36% of non-adopters cite cost.").

[73] NPRM, 27 FCC Rcd at 12487-88; *see* CCA Band Plan Comments at 10 ("An operator expanding wireless coverage with low-band spectrum … will only require half of the number of sites as at higher bands, significantly reducing the initial capital expenditures and ongoing operational expenses.").

[74] *Fifteenth Competition Report*, 26 FCC Rcd at 9885; *see* Comments of Sprint Nextel Corporation, Docket No. 12-268, p. 4 (June 14, 2013) ("600 MHz spectrum will offer operators the ability to achieve wide-area coverage…").

[75] *See Fifteenth Competition Report*, 26 FCC Rcd at 9885 ("Spectrum below 1 GHz can be crucial for the deployment of mobile wireless service in rural areas…"); CCA NPRM Comments at 2 ("The superior propagation characteristics of spectrum below 1 GHz provide the network economics essential to building coverage in light suburban and rural markets.").

[76] NPRM, 27 FCC Rcd at 12415.

MHz band."[77] Although the band plan can be structured in ways that will help to promote interoperability, no band plan, by itself, can ensure interoperability.[78] In other words, an interoperable 600 MHz device ecosystem, as well as the various benefits detailed above which arise from such an ecosystem, likely will not develop absent an explicit interoperability requirement.

Simply put, the largest carriers, who alone can drive device development, have no incentive, and in fact have a disincentive, to offer interoperable equipment. Because these carriers are the preferred customers of device manufacturers, and because they are sufficiently large to independently benefit from economies of scale, they would gain little, and perhaps lose much, by voluntarily agreeing to full interoperability in the 600 MHz band. For instance, interoperability would enhance the competitiveness of small and regional carriers by affording them the ability, through roaming, to offer customers geographic coverage comparable to that offered by the national carriers. In contrast, because large carriers operate geographically extensive networks, the potential incremental coverage available to them and their customers via roaming would be small.[79] Further, to the extent that customers of the large carriers possess devices that are compatible with other carriers' networks, interoperability would reduce customer switching costs and thus enhance the potential for increased competition by making it easier for customers to migrate to rival providers.[80]

Although USCC applauds the recent industry agreement, the experience of small and regional carriers, as well as the Commission, with respect to the Lower 700 MHz band clearly demonstrates that the industry – *i.e.*, the largest carriers – will not voluntarily offer interoperable equipment absent, at a minimum, substantial pressure by the Commission, and as a practical matter, the passage of considerable time during which damage can be significant. As Commissioner Clyburn explained, although she "had hoped that [the] NPRM would create the proper incentives for wireless companies on opposite sides of this debate to reach a solution" to the lack of interoperability, "[u]nfortunately, that did not happen."[81] Consequently, Commissioner Clyburn was forced to "issue[] statements indicating that [she] expected an interoperability solution – whether voluntary or regulatory – during [her] tenure" as Acting Chairwoman.[82]

---

[77] CCA NPRM Reply at 11; *see* Reply Comments of Cellular South, Inc., Docket No. 12-268, p. 5 (Mar. 12, 2013) ("Cellular South NPRM Reply") ("There is vigorous and broad support for Commission efforts to ensure, not merely 'encourage,' interoperability across the 600 MHz band.") (internal citation omitted).

[78] *See* DISH NPRM Reply at 12 ("[T]he Commission's proposed band plan may lessen the need for an interoperability standard, but does not entirely alleviate it.").

[79] *See Data Roaming Order*, 26 FCC Rcd at 5426 ("Consolidation in the mobile wireless industry … may have [] reduced the incentives of the largest two providers to enter into such arrangements by reducing their need for reciprocal roaming.").

[80] *See* T-Mobile NPRM Reply at 53 (noting that, with interoperability, "handset vendors will create phones compatible with all providers, which will increase the ability of users to switch providers without switching phones – something that is not necessarily in the interest of handset manufacturers, who would just as soon see the consumer buy another costly device, or in the interest of dominant wireless operators, who use increased switching costs to reduce churn off of their networks.").

[81] *Lower 700 MHz Interoperability Order*, 28 FCC Rcd at 15171 (Clyburn Statement).

[82] *Id.*

Because of this continued reluctance by AT&T to enter into an interoperability agreement on a truly voluntary basis, a significant – and unreasonable – amount of time has passed since carriers acquired their Lower 700 MHz A Block licenses.[83] As the Commission recently recognized, during that time, the lack of interoperability in the Lower 700 MHz band "had numerous effects,"[84] including "seriously limited development of the Lower 700 MHz band…"[85] In previously urging the Commission to adopt an interoperability requirement for the 600 MHz band, commenters in this proceeding similarly noted the public interest harms caused by the lack of interoperability in the Lower 700 MHz band. For instance, CCA noted how the balkanization of the Lower 700 MHz band "sharply impeded competition and [] slowed deployment of LTE services to consumers."[86] The result, MetroPCS explained, is that "[c]ompetitive carriers, who are starved for spectrum, [have been] unable to use the spectrum already in their hands, while their customers [have been] denied the benefits of improved coverage or advanced wireless services that such spectrum would provide."[87]

Given the substantial public interest benefits related to an interoperable device ecosystem, as well as the fact that the largest carriers are unlikely to readily agree to full interoperability, USCC joins CCA and others in "strongly urg[ing] the Commission to require interoperability throughout the 600 MHz band to avoid the problems that [] plagued the Lower 700 MHz band."[88] As Cellular South stressed, absent an *ex ante* interoperability requirement, "the 600 MHz spectrum will face the same sort of reduced consumer choice, absence of roaming

---

[83] *See Acting FCC Chairwoman Clyburn Statement on Voluntary Industry Solution Resolving Lower 700 MHz Interoperability*, FCC News Release (Sept. 10, 2013) ("After many frustrating years, wireless carriers have finally reached a voluntary industry solution…").

[84] *Lower 700 MHz Interoperability Order*, 28 FCC Rcd at 15126.

[85] *Id.* at 15146; *see id.* at 15171 (Clyburn Statement) (noting that the "expected innovation and investment in advanced communications has been on hold for far too long"); *id.* at 15173 (Rosenworcel Statement) ("For too long, lack of interoperability in the lower 700 MHz band has left some carriers and some consumers with fewer choices and higher prices.").

[86] CCA NPRM Comments at 16; *see* MetroPCS NPRM Comments at 28 ("[T]he lack of interoperability across the Lower 700 MHz Band has significantly delayed deployment, particularly among small licensees in the Lower A Block."); Comments of Leap Wireless International, Inc. and Cricket Communications, Inc., Docket No. 12-268, p. 7 (Jan. 25, 2013) ("Leap NPRM Comments") ("The lack of interoperability in the 700 MHz band has had serious adverse effects … on the ability of carriers to deploy facilities..."); T-Mobile NPRM Reply at 54 ("[T]he Lower 700 MHz A Block … has languished following a decision by one of the largest carriers to … develop hardware incapable of operating on the 700 MHz A Block frequencies.").

[87] MetroPCS NPRM Comments at 28; *see Lower 700 MHz Interoperability Order*, 28 FCC Rcd at 15173 (Rosenworcel Statement) ("[A]t a time when demand for our airwaves is growing at a breathtaking pace, we are ushering into use 12 megahertz of prime wireless spectrum that previously had been barely used."); Comments of Cellular South, Inc., Docket No. 12-268, p. 8 (Jan. 25, 2013) ("Cellular South NPRM Comments") ("Operators who have sought to incorporate Lower A Block spectrum into their deployments have been thwarted by an inability to acquire devices...").

[88] CCA NPRM Comments at 16; *see* Cellular South NPRM Comments at 9 ("The Commission should not allow this to happen again…"); MetroPCS NPRM Comments at 28 ("The Commission must ensure that this does not happen again in the 600 MHz Band by mandating a single band class across the entire band."); Leap NPRM Reply at 3 ("[T]he Commission can strongly promote the public interest by guaranteeing interoperability across the entire 600 MHz band, to prevent the fragmentation that has occurred in the Lower 700 MHz band.").

opportunities, and limited deployment of next-generation wireless services across the country – especially in rural areas – that we are witnessing today in the Lower 700 MHz spectrum."[89]

Ensuring interoperability in the 600 MHz band by adopting an express requirement prior to the auction, rather than hoping that a voluntary industry solution will arise in the future, would have other significant benefits as well. For instance, an *ex ante* interoperability requirement would provide the Commission with greater flexibility in formulating an optimal 600 MHz band plan because the Commission could focus its efforts solely on maximizing the potential of this spectrum.[90] In other words, by adopting USCC's proposal, the Commission could ensure the benefits of interoperability in the 600 MHz band while also pursuing other important band plan proposals designed to maximize the amount and utility of the repurposed spectrum.[91] As CCA emphasized, such an approach "will help ensure that this valuable national resource is put to its highest and best use…"[92] Attempting to formulate a band plan that focuses on "encouraging interoperability" also would add yet another layer of complexity to this proceeding. In contrast, T-Mobile explained how "adopting an interoperability requirement for the 600 MHz band represents the simplest and most effective means of preventing anti-competitive band fragmentation at 600 MHz."[93]

An *ex ante* interoperability requirement also is necessary so that potential bidders in the forward auction that are not large enough to drive device development will know in advance that the 600 MHz band will conform to the Commission's traditional model of full interoperability. Otherwise, the potential lack of interoperability, and the significant harms that would impose upon these bidders, would deter their auction participation.[94] In fact, without an explicit requirement, smaller bidders could be prevented from participating in the auction because it would be far more difficult to secure the outside financing many of these bidders require if potential investors fear that the equipment necessary to provide an adequate return on investment will not be available in the near-term. As CIT Group Inc., a bank holding company, explained, "[i]f there is any investor or lender concern as to the timely availability of technology necessary

---

[89] Cellular South NPRM Reply at 6; *see* NPRM, 27 FCC Rcd at 12553 (Statement of Commissioner Clyburn) ("The current lack of interoperability, in the lower 700 MHz band, is impeding the deployment of competitive options for consumers. To ensure that this incentive auction yields the greatest possible benefits for consumers, we must consider whether we should mandate interoperability in the spectrum we repurpose for mobile services.").

[90] *See* NPRM, 27 FCC Rcd at 12409 ("Supporting two band classes [] results in additional interoperability concerns.").

[91] *See* CCA NPRM Comments at 16 ("To the extent that multiple band classes or multiple pass filters prove necessary, the Commission should ensure interoperability across band classes within the 600 MHz band…").

[92] CCA NPRM Reply at 11-12.

[93] T-Mobile NPRM Reply at 52-53.

[94] *See* Comments of Mobile Future, Docket No. 12-268, p. 4 (June 14, 2013) ("The practical reality is that the Commission's band plan must attract wireless operators willing to bid billions of dollars to ensure a successful auction, and the Commission should avoid any steps that would reduce the attractiveness or commercial viability of the to-be-auctioned spectrum…"); McBride Band Reply at 3 ("Developing a sound business case without interoperability is almost impossible.").

for the initiation of revenue service, that concern will have a detrimental effect on the availability of capital, with a commensurate impact on the financial success of the incentive auction."[95]

At a minimum, the risks these bidders would face absent an interoperability requirement would cause them to temper their bidding. Either way, auction competition, and thus auction revenue, would decrease. In contrast, if small and regional carriers are assured that they will have access to a competitive range of devices as a result of an interoperability requirement, they would be far more likely to aggressively participate in the forward auction. Their expanded participation would, in turn, boost auction competition and revenue, and substantially increase the likelihood that 600 MHz spectrum will be used to deploy wireless broadband networks in rural and other underserved areas. Moreover, while anticipated auction revenue is always a valid consideration for the Commission,[96] it is particularly important here because lower revenues in the forward auction may mean reduced funding for our nation's first responders.[97] Finally, an *ex ante* interoperability requirement would prevent those carriers who oppose interoperability from resisting future interoperability efforts by claiming detrimental reliance[98] or a lack of Commission authority.[99]

In sum, as the Commission recently concluded with respect to the Lower 700 MHz band, requiring interoperability in the 600 MHz band would be "consistent with the Commission's longstanding interest in promoting the interoperability of wireless mobile services … and further[] important public interests, including promoting the widest possible deployment of mobile broadband services, ensuring the most efficient use of spectrum, promoting competition and enhancing consumer choice of wireless services."[100] Guaranteeing interoperability in the 600 MHz band *ex ante* also would not "leav[e] the Commission, carriers, and most importantly, consumers struggling to deal with potential threats to interoperability in the future."[101]

For these reasons, USCC, like a large majority of commenters, strongly urges the Commission to adopt a clear, *ex ante* interoperability requirement for the 600 MHz band. Specifically, the Commission should require that: (1) all mobile devices designed to operate on

---

[95] Supplemental Comments of CIT Group Inc., Docket No. 12-268, p. 6 (June 14, 2013).

[96] *See Ranger Cellular v. FCC*, 33 F.3d 255, 261 (D.C. Cir. 2003) ("[T]he Commission is free to consider revenue enhancement when determining whether to expand the pool of eligible bidders.").

[97] *See* NPRM, 27 FCC Rcd at 12555 (Statement of Commissioner Jessica Rosenworcel) ("The auction revenues the Commission raises are designated to support the first nationwide, interoperable, wireless broadband public safety network. … We cannot divorce the choices this agency makes in developing these auctions from the broader purposes in this legislation and the public safety needs of the American people.").

[98] *See* Comments of AT&T Services Inc., WT Docket No. 12-69, p. 20 (June 1, 2012) ("[T]he imposition of this mandate would destroy reliance interests of participants throughout the wireless ecosystem.").

[99] *See id.* at 37 (arguing that an interoperability requirement would be "an unlawful retroactive modification").

[100] *Lower 700 MHz Interoperability Order*, 28 FCC Rcd at 15128.

[101] Leap NPRM Comments at 7; *see* CCA NPRM Comments at 16 ("The Commission should protect the 600 MHz band from such harms by implementing an interoperability mandate as part of its initial band plan and service rules, rather than waiting to attempt to resolve interoperability concerns that inevitably will arise in the future.").

600 MHz paired spectrum must tune to all 600 MHz paired frequencies; and (2) all 600 MHz networks operating on 600 MHz paired frequencies must permit the use of such devices.[102]

In addition, USCC urges the Commission to include provisions in its 600 MHz interoperability requirement to ensure that carriers cannot use 600 MHz supplemental downlink spectrum to prevent roaming on spectrum bonded with this downlink spectrum – whether such bonded spectrum holdings are paired 600 MHz blocks or paired spectrum blocks in other bands. Specifically, the Commission should require that a licensee: (1) may not incorporate 600 MHz supplemental downlink spectrum into its networks in such a way as to preclude roaming by a provider that otherwise supports the same primary spectrum (*e.g.*, AWS, Cellular, PCS, 700 MHz) but does not support the supplemental downlink technology; and (2) may not use 600 MHz supplemental downlink spectrum in such a way as to preclude other providers of the benefits of roaming on the licensee's paired 600 MHz spectrum holdings.

Pursuant to Section 1.1206 of the Commission's Rules, 47 C.F.R. §1.1206, this *ex parte* presentation is being filed electronically with the Office of the Secretary.

Respectfully submitted,
HOLLAND & KNIGHT LLP

/s/.
George Y. Wheeler
Peter M. Connolly
Leighton T. Brown
Counsel for United States Cellular Corporation

[102] USCC again clarifies that these requirements would apply to all 600 MHz networks, regardless of bandwidth.