

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
)	
Promoting Interoperability in the 700 MHz Commercial Spectrum)	WT Docket No. 12-69
)	
Interoperability of Mobile User Equipment Across Paired Commercial Spectrum Blocks in the 700 MHz Band)	RM-11592 (Terminated)
)	

REPLY COMMENTS OF T-MOBILE USA, INC.

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SUMMARY

While T-Mobile generally prefers industry solutions to regulatory mandates, the majority of commenters agree that an industry solution is unlikely, and therefore a Commission-imposed Lower 700 MHz interoperability requirement is necessary and in the public interest. First, requiring interoperability will promote economies of scale and scope in the commercial equipment marketplace by providing manufacturers with the incentive to deliver a wide array of much-needed Band Class 12 devices and equipment to all Lower 700 MHz licensees, not just the largest carriers. Second, an interoperability requirement would promote roaming among 700 MHz and other licensees by increasing the number of technologically compatible roaming partners, providing carriers with the flexibility to change roaming partners as circumstances warrant, and augmenting the ability of smaller carriers to offer nationwide service to consumers. Third, an interoperability mandate would enhance public safety by facilitating roaming, generating greater potential lease revenues, and providing access to higher quality, lower cost devices and equipment for the public safety community.

While interoperability generates significant benefits, any impediments to achieving interoperability either are overstated or can be readily mitigated. In particular, sound studies show that there should be no harmful intermodulation interference to Lower 700 MHz B and C Block operations if the use of Band Class 12 devices is mandated. Moreover, any concerns that might exist can be alleviated or will become non-existent over time. The record likewise shows that E Block operations will not cause harmful interference to Lower 700 MHz B and C Block operations using Band Class 12 devices. Consequently, the record fails to provide any persuasive evidence contradicting the finding that Band Class 12 devices can operate on Lower 700 MHz B and C Block devices without noticeable performance degradation.

Further, achieving compliance with an interoperability mandate will not be technically or financially burdensome. For instance, upgrading infrastructure to accommodate Band Class 12 operations could be accomplished through a modest software upgrade before the next 3rd Generation Partnership Project (“3GPP”) release, and achieving interoperability would require no changes to Band Class 17 handsets and other equipment.

While T-Mobile applauds the Commission’s efforts to achieve interoperability in the Lower 700 MHz band, the Commission also should take action to extend interoperability throughout the entire 700 MHz band. The Commission has ample statutory authority to require 700 MHz interoperability. Consequently, the Commission should act now to require interoperability in the Lower 700 MHz band and initiate further proceedings to resolve any technical impediments to achieving full interoperability throughout the entire 700 MHz band.

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REPLY COMMENTS OF T-MOBILE USA, INC.

T-Mobile USA, Inc. (“T-Mobile”) submits these reply comments in the Commission’s proceeding inviting input on interoperability in the 700 MHz band.^{1/} The record shows broad support for Commission action to ensure interoperability in the Lower 700 MHz band, with the great majority of commenting parties agreeing that interoperability will improve competition, encourage roaming, and benefit public safety. The comments also show that concerns regarding interference from television Channel 51 and the 700 MHz E Block into Band Class 12 devices are overstated or can be mitigated, that achieving interoperability is feasible, and that an interoperability mandate would not impose any undue burdens on commercial providers currently using Band Class 17 equipment. While the record supports the Commission mandating interoperability in the Lower 700 MHz band, this proceeding should be just the first step towards achieving interoperability throughout the entire 700 MHz band. Commission action to achieve interoperability is fully within the Commission’s authority and would enhance competition and facilitate the delivery of high quality, lower priced wireless services to consumers.

^{1/} See *Promoting Interoperability in the 700 MHz Commercial Spectrum; Interoperability of Mobile User Equipment Across Aired Commercial Spectrum Blocks in the 700 MHz Band*, Notice of Proposed Rulemaking, WT Docket No. 12-69 and RM-11592 (Terminated), FCC 12-31 (rel. March 21, 2012) (“*NPRM*”).

I. INTRODUCTION

The overwhelming majority of commenting parties support an interoperability mandate in the Lower 700 MHz band.^{2/} While T-Mobile continues to prefer industry solutions to regulatory mandates,^{3/} the strong consensus is that there will be no industry solution in the 700 MHz band so long as parties continue to frustrate actions designed to promote interoperability.^{4/} Therefore, in this limited instance, it is appropriate for the FCC to take regulatory action and mandate interoperability in order to achieve the significant benefits described below and in the comments submitted in this proceeding.

^{2/} See, e.g., Comments of King Street Wireless, L.P., WT Docket No. 12-69 and RM-11592 (Terminated), at 5 (filed June 1, 2012) (“King Street Comments”) (“There is no question but that interoperability is needed, based both upon the overall wireless communications industry situation and upon the facts surrounding the 700 MHz Band.”); Comments of United States Cellular Corporation, WT Docket No. 12-69, at 10 (filed June 1, 2012) (“U.S. Cellular Comments”) (“[N]o industry solution has been forthcoming since [the interoperability] issue was flagged over 2½ years ago. As a consequence, Commission action is necessary.”); Comments of Horry Telephone Cooperative, Inc., WT Docket No. 12-69, at 1 (filed June 1, 2012) (“Horry Comments”) (writing to strongly urge the Commission to adopt interoperability rules requiring mobile user equipment to be capable of operating on all paired commercial Lower 700 MHz spectrum); Comments of Vulcan Wireless LLC, WT Docket No. 12-69, at 30 (filed June 1, 2012) (“Vulcan Comments”) (“Vulcan urges the Commission to adopt a simple interoperability mandate before the end of 2012.”); Comments of Cellular South, Inc., WT Docket No. 12-69, at 2 (filed June 1, 2012) (“Cellular South Comments”) (“It is necessary for the Commission to take action on behalf of consumers and competition and quickly implement rules that would require interoperability across the Lower 700 MHz paired spectrum through the use of a single LTE band.”); Comments of RCA – The Competitive Carriers Association, WT Docket No. 12-69 and RM-11592 (Terminated), at 15 (filed June 1, 2012) (“RCA Comments”) (urging the Commission to impose an interoperability mandate).

^{3/} See Comments of T-Mobile USA, Inc., WT Docket No. 12-69 and RM-11592 (Terminated), at 24 (“T-Mobile Comments”).

^{4/} See, e.g., *id.* at 6, 24 (discussing that an industry solution to 700 MHz interoperability is not likely in the foreseeable future); U.S. Cellular Comments at 8 (“If there were to be a ‘timely industry solution,’ it would have occurred already.”); King Street Comments at 15 (“The simple fact is that the longer it takes to implement interoperability, the better the competitive position of the largest two carriers. . . . [This is] why it would serve no purpose for the Commission to wait further prior to mandating interoperability . . .”); Horry Comments at 5 (“While Horry agrees that industry self-governance is generally preferable to government intervention, in this situation, absent Commission action, the status quo will not change and the deployment of advanced wireless services will continue to be delayed.”); Comments of the Office of Advocacy, U.S. Small Business Administration, WT Docket No. 12-69, *et al.*, at 3 (filed May 24, 2012) (noting that in the year and a half since last writing on this issue, “no industry solution to the interoperability issue has been achieved”); Vulcan Comments at 33-36 (“Notwithstanding the general agreement that a unified band class in the Lower 700 MHz band would result in benefits for

II. THE MAJORITY OF COMMENTING PARTIES AGREE THAT AN INTEROPERABILITY MANDATE IS IN THE PUBLIC INTEREST

A. Interoperability Will Promote Economies of Scale and Scope in the Commercial Equipment Market.

As many commenters noted, the balkanization of the 700 MHz band has made it difficult for carriers – other than the two largest carriers – to obtain access to equipment.^{5/} In particular, the development of Band Class 17 equipment for operations in the Lower 700 MHz B and C Blocks has orphaned the smaller carriers holding licenses in the Lower 700 MHz A Block, forcing them to face higher equipment costs, if they can obtain equipment at all, because they do not serve large enough numbers of subscribers to provide manufacturers with an incentive to develop and provide them with equipment.^{6/} These licensees either must pass these costs onto

all licensees in the Lower 700 MHz band, and despite the consistent efforts by A Block licensees to resolve their interoperability concerns in the marketplace, no industry solution appears to be forthcoming that will enable interoperable A Block deployments within a reasonable time frame.”); Comments of Consumers Union, Public Knowledge, New America Foundation, and Free Press, WT Docket No. 12-69 and RM-11592 (Terminated), at 17 (filed June 1, 2012) (“Public Interest Commenters Comments”) (“It is the Commission’s responsibility to protect the public interest, and it should no longer wait for the industry to deliver interoperability to consumers.”); Cellular South Comments at 5-6 (“[T]he notion that an industry-driven solution to Lower 700 MHz interoperability is achievable after nearly 4 years of public debate should be commended for its optimism alone.”).

^{5/} See, e.g., King Street Comments at 7; Cellular South Comments at 16-17.

^{6/} See, e.g., Comments of MetroPCS Communications, Inc., WT Docket No. 12-69 and RM-11592 (Terminated), at 8 (filed June 1, 2012) (“MetroPCS Comments”) (noting that given the relatively smaller market share of A Block licensees, “manufacturers are able to make the rational business decision not to devote their time and attention to developing and manufacturing handsets with Band Class 12 chips.”); Comments of Cricket Communications, Inc., WT Docket No. 12-69, at 7 (filed June 1, 2012) (“Cricket Comments”) (“[C]onsumers of small and midsize carriers operating only on Band Class 12 will be severely disadvantaged by higher prices for devices resulting from the lack of scale efficiencies.”); Vulcan Comments at 22 (“Without interoperability, Lower A Block licensees cannot leverage the economies of scale that are necessary for equipment manufacturers to invest in developing devices, equipment, and chipsets for Lower A Block licensees. Equipment manufacturers have little to no incentive to meet the needs of smaller wireless carriers that, due to the unnecessarily disjointed 3GPP standards in the Lower 700 MHz band, are only technically capable of providing service over their limited service areas.”).

their customers in the form of higher prices or absorb the costs themselves – either of which places them at a competitive disadvantage.^{7/}

This lack of access to equipment is well-documented in this proceeding.^{8/} For example, Horry Telephone Cooperative, Inc. (“Horry”) stated that it “has not been able to find affordable mobile equipment capable of operating in its licensed spectrum and, as a result, has yet to utilize its 700 MHz A Block license as part of its [Long Term Evolution (“LTE”)] roadmap.”^{9/} King Street Wireless, L.P. (“King Street”) summed up the problem by stating that “without interoperability, smaller carriers face a ‘triple whammy’: They will not get phones as quickly as the largest carriers; when they do get them, they won’t have access to the most sought-after ones; and they will pay more for phones that they do get.”^{10/}

The “lack of interoperability also limits the business case for rapid and broad scale deployment of Lower 700 MHz A Block spectrum, limiting the utility of this important resource,

^{7/} See, e.g., Comments of the Rural Telecommunications Group, Inc., WT Docket No. 12-69 and RM-11592 (Terminated), at 6-7 (filed June 1, 2012) (“RTG Comments”).

^{8/} See, e.g., Comments of Cavalier Wireless, LLC and Continuum 700 LLC, WT Docket No. 12-69 and RM-11592 (Terminated), at 6 (filed June 1, 2012) (“Cavalier Comments”) (“[T]he available phones go first to the larger carriers and the smaller carriers are left to wait for access to any phones.”); RCA Comments at 4 (“Absent interoperability, smaller carriers have found it difficult, if not impossible, to obtain handsets that work in the Lower A Block spectrum.”); U.S. Cellular Comments at 14 (“AT&T’s size makes it a preferred customer of equipment manufacturers, which has allowed it to obtain a large variety of Band Class 17 devices to offer its customers. In contrast, collectively the Lower A Block licensees currently have only one smartphone available in the marketplace.”); Vulcan Comments at 19 (“[T]he fragmented Lower 700 MHz band has prevented Lower A Block licensees from obtaining commercially viable devices, equipment, and technology for their networks.”).

^{9/} Horry Comments at 3

^{10/} King Street Comments at 8; see also Cellular South Comments at 17 (“While it is possible to acquire network equipment that spans the entire Lower 700 MHz band, the fragmentation of Lower 700 MHz spectrum in Bands 12 and 17 has resulted in delayed development for Band 12 devices and components which subsequently resulted in a few uncompetitive devices whose features and performance lag well behind the Band 17 (and Band 13) devices available to the largest 700 MHz LTE operators.”).

and preventing this spectrum from being put to its highest and best use.”^{11/} Vulcan Wireless LLC (“Vulcan”) explained that, “[a]s a result of the equipment-related obstacles caused by the lack of Lower 700 MHz interoperability, A Block licensees have been unable to reasonably plan their network deployments or offer competitive mobile broadband service to consumers,” resulting in “stranded investment, inefficient use of spectrum, reduced competition, and stifled marketplace innovation.”^{12/} Vulcan also notes that these effects often have a disproportionate impact on the provision of service to rural areas and on greenfield operators, the latter of which do not yet have any existing devices, equipment, vendor relationships, roaming agreements, or other licensed spectrum.^{13/}

On the other hand, requiring interoperability in, as an initial matter, the Lower 700 MHz band would promote a vibrant, competitive equipment marketplace. With a common Lower 700 MHz band class, manufacturers would have an incentive to develop and produce a wide variety of equipment and devices for all carriers, thus spurring competition in the equipment market resulting in lower priced, higher quality devices for consumers.^{14/} Consumers also would benefit

^{11/} See, e.g., MetroPCS Comments at 8; RCA Comments at 9-14 (explaining that the lack of interoperability “has sidelined nearly \$2 billion in spectrum investment by RCA members” because “[w]ithout the assurance of available devices, carriers cannot project sufficient revenues to offset deployment costs or attract capital on reasonable terms to finance the build out of that spectrum”); Comments of the National Telecommunications Cooperative Association, WT Docket No. 12-69 and RM-11592 (Terminated), at 6 (filed June 1, 2012) (“NTCA Comments”) (“Lack of interoperability will undermine the business case for small carriers to deploy their networks.”); Horry Comments at 4 (“Without mandated interoperability, Horry does not see a roadmap for the deployment of advanced services utilizing its 700 MHz A Block license throughout rural portions of the Carolinas or for the seamless integration of [its license] into its existing CMRS network.”).

^{12/} Vulcan Comments at 23.

^{13/} *Id.* at 24-25, 28-29.

^{14/} See, e.g., Cricket Comments at 7 (“Unifying Band Class 12 and Band Class 17 will increase demand for devices capable of operating on the unified band class, thereby increasing the incentives for manufacturers to develop a wide range of devices. This enlarged device ecosystem and the demand for devices which operate in the unified band class will generate the economies of scale that allow the design costs and other manufacturing costs to be spread over a larger volume of devices, resulting in lower per unit costs.”); Comments of the Blooston Rural Carriers, WT Docket No. 12-69, at 1 (filed June 1, 2012)

from interoperability as it would provide them with the ability to change service providers more easily, as their end user devices would work on more providers' networks.^{15/}

Claims that Band Class 12 equipment is available and that, therefore, there is no need for the Commission to impose an interoperability requirement, are simply incorrect. There is a wide disparity between the availability of Band Class 12 and Band Class 17 devices. On the one hand, AT&T has successfully released a wide array of Band Class 17 devices, including the HTC One X, Samsung Focus 2, Nokia Lumia 900, Samsung Galaxy Note, Samsung Galaxy S II Skyrocket HD, Samsung Exhilarate, Sony Xperia Ion, Pantech Element, and Pantech Burst.^{16/} By contrast, “with the exception of the [United States Cellular Corporation (“U.S. Cellular”)]/King Street deployment, there has been no comparable deployment of advanced 4G LTE services by Band 12 licensees . . . despite significant efforts to overcome the lack of a Band 12 device ecosystem.”^{17/} The U.S. Cellular/King Street deployment, which currently exists only in select cities in six states,^{18/} “is the sole exception to this bleak Band 12 deployment picture,” and as described by U.S. Cellular, that deployment experienced extensive delays in obtaining access to Band 12 chipsets and devices and even then was able to make available only one smartphone,

(“Blooston Rural Carriers Comments”) (“A unified Lower 700 MHz band class would create economies of scale that would result in reduced network buildout and device costs for operators large and small, as well as resellers.”).

^{15/} See RTG Comments at 8-9; Public Interest Commenters Comments at 8 (“Use of the common technology and advances in chipsets should benefit consumers since they can allow ease of interoperability and make it easier for consumers to switch carriers and take their phones with them.”).

^{16/} See, e.g., Press Release, *AT&T 4G LTE Available Throughout Greater New Orleans Region*, May 17, 2012, available at <http://www.marketwatch.com/story/att-4g-lte-available-throughout-greater-new-orleans-region-2012-05-17>; Dustin Earley, *Pantech Announces Two AT&T LTE Devices*, Jan. 9, 2012, <http://androidandme.com/2012/01/devices/pantech-announces-two-att-lte-devices-burst-waterproof-element-tablet/>.

^{17/} U.S. Cellular Comments at 3.

^{18/} See Press Release, *King Street Wireless and U.S. Cellular Release Samsung Galaxy S III in July*, June 4, 2012, available at <http://www.kingstreetwireless.com/news.html> (“King Street Wireless, in partnership with U.S. Cellular, currently offers 4G LTE service in select cities in Iowa, Maine, North Carolina, Oklahoma, Texas and Wisconsin.”); U.S. Cellular Comments at 5.

one tablet, and one mobile hotspot.^{19/} Similarly, while C Spire Wireless hired Samsung to create Band Class 12 devices, it has recently asserted that it has been unable to obtain such devices.^{20/} United Wireless also hoped to obtain Band Class 12 phones from its vendor, Huawei, but Huawei has yet to deliver.^{21/}

Moreover, more than a handful of Band Class 12 devices must be made available to A Block licensees in order for them to offer a truly competitive service. As discussed by Vulcan, “an operator may thrive only if it offers a range of devices – regardless of whether it provides retail or wholesale service . . . Lower A Block licensees, like all carriers, require a sufficient *quantity* and *variety* of handsets to meet consumer demand.”^{22/} The small number of devices released to date is insufficient, especially considering that there do not appear to be new Band Class 12 devices in any manufacturer’s development pipeline.

Other arguments that the 700 MHz equipment market is competitive and properly functioning are likewise unpersuasive. AT&T Services Inc. (“AT&T”) argues that Band 12-only devices “share economies of scale with Band 13 and Band 17 devices,” because once a device manufacturer has invested the resources to design an LTE phone for a non-Band 12 carrier, “the incremental cost to create a variant for Band 12 is negligible,” and therefore manufacturers have

^{19/} See U.S. Cellular Comments at 4-5; Vulcan Comments at 19-20 (discussing U.S. Cellular’s Band Class 12 devices, stating that “[a]lthough a limited number of Band Class 12 devices have recently become available in the marketplace, they suffer from severe shortcomings that only magnify the costs of non-interoperability in the Lower 700 MHz band”).

^{20/} See Maisie Ramsay, *C Spire Sues AT&T Over Alleged Collusion*, WIRELESS WEEK, June 4, 2012, available at <http://www.cedmagazine.com/news/2012/06/c-spire-sues-at-t-over-alleged-collusion>.

^{21/} See Maisie Ramsay, *LTE Interoperability: the Fix Regional Carriers Count On*, WIRELESS WEEK, June 1, 2012, available at <http://www.wirelessweek.com/Articles/2012/06/LTE-Interoperability-the-Fix-Regional-Carriers-Count-On/>.

^{22/} Vulcan Comments at 21.

ample incentive to design and sell Band 12 devices.^{23/} The creation of Band Class 12 variants of Band Class 17 devices would not result in “sharing” economies of scale. Even if the incremental cost to design a Band Class 12 variant is “negligible,” which has not been demonstrated, the cost to manufacture and therefore sell a Band Class 12 device under current conditions will be higher because the unique components needed for the Band Class 12 devices – even if they are few – will have much lower volumes and therefore higher costs than their higher volume Band Class 17 counterparts. In addition, the creation of Band Class 12 variants of Band Class 17 devices would not change the fact that there still would be multiple band classes in the Lower 700 MHz band, potentially forcing providers to choose among Lower 700 MHz roaming partners, because of the limitation on the number of band class chipsets that may be included in handsets.

Indeed, if the costs to create such Band 12 “variants” were “negligible,” manufacturers would have offered them already because they would have an economic case to do so. Instead, as discussed above, the record demonstrates convincingly that A Block licensees lack sufficient access to equipment and devices and what little equipment may be available comes at higher costs and lesser quality.

Last, it is not accurate that “it is the interference from Channel 51 (and potential interference from the E Block) – not a lack of availability of handsets – that is deterring A Block licensees’ deployment of LTE networks, which in turn has prevented many A Block licensees . . . from pursuing Band 12 devices.”^{24/} While T-Mobile agrees that Channel 51 interference must be addressed, resolving this interference issue does not resolve the lack of scale and scope that has resulted from the creation of Band Class 17 devices. Regardless of how

^{23/} See Comments of AT&T Services Inc., WT Docket No. 12-69 and RM-11592 (Terminated), at 11-12 (filed June 1, 2012) (“AT&T Comments”); see also *id.* at Prize Declaration at 7-8, ¶¶ 15-17 (discussing that the costs involved in producing “variants” are “trivial”).

^{24/} *Id.* at 15.

interference in the A Block is addressed, the A Block is still heavily populated by smaller carriers that do not have the market presence sufficient to drive the development of Band Class 12 devices for their limited market, even though many of these licensees fall outside areas that would be impacted by Channel 51 operations and hence, would not be deterred in launching LTE service on their A Block licenses because of potential Channel 51 interference.

B. Interoperability Will Encourage Roaming Among Commercial Providers.

Many commenters agree with T-Mobile that a lack of interoperability is negatively affecting carriers' ability to roam.^{25/} Specifically, fragmentation of the 700 MHz band limits the number of carriers with which both 700 MHz and non-700 MHz licensees can roam.^{26/} This limitation on roaming could have potentially devastating long-term effects, particularly for small providers that are unable to provide nationwide service without adequate roaming capabilities. As U.S. Cellular stated, without the ability to offer their customers broad roaming capabilities, Lower A Block licensees – many of which are smaller, rural, and regional carriers – “will be

^{25/} See, e.g., T-Mobile Comments at 6-10; U.S. Cellular Comments at 15 (“The lack of device interoperability across the 700 MHz band also severely limits essential roaming options for Lower A Block licensees.”); RTG Comments at 5 (“Now that AT&T and Verizon have largely amassed nationwide mobile wireless networks, at least in major urban areas of the country, they are using the narrowing of band classifications for LTE in the Upper and Lower 700 MHz Bands as a means to prevent competitors from accessing their networks for roaming.”); Cricket Comments at 8 (“[C]ustomers of small and midsize carriers will have less effective and more costly roaming services as a result of these carriers utilizing a band class that has been split off and isolated from the general Lower 700 MHz frequency band.”); Vulcan Comments at 25-28 (“Without viable devices or equipment capable of functioning on other spectrum blocks within the Lower 700 MHz band, A Block licensees will continue to be unable to execute roaming agreements necessary to offer a nationwide mobile broadband service that meets consumer needs.”); Cellular South Comments at 17 (“Interoperability is fundamental to customers’ ability to roam on other carriers’ LTE networks.”); Cavalier Comments at 7 (“Without interoperability, there will be no nationwide roaming ability for Band Class 12 units.”).

^{26/} See, e.g., RTG Comments at 9-10; Public Interest Commenters Comments at 10 (“While the LTE standard does allow for technological compatibility, balkanization of the band would allow carriers like AT&T and Verizon Wireless to refuse to negotiate roaming agreements based on technical incompatibility.”); RCA Comments at 4 (“[S]maller carriers have faced increased hurdles to obtaining roaming agreements that cover the Lower 700 MHz band . . . because of the absence of handsets that operate across the entire Lower 700 MHz band and because AT&T could claim that the networks are not ‘technologically compatible.’”).

prevented from becoming viable competitors . . .”^{27/} If smaller carriers cannot operate in the smaller, rural areas, service to and competition in such areas will be significantly hindered.^{28/}

In addition, while T-Mobile agrees that multi-band handsets are the norm, the number of band classes that can be accommodated in one device is limited.^{29/} By fragmenting the Lower 700 MHz band, carriers will be forced to select which band classes to include and which to exclude in their user equipment because of current limitations in the number of band classes a device can support.^{30/} This will lead to a lock-in effect whereby a carrier, once roaming partners are selected, will be tied (*i.e.*, locked in) to those partners for the long term because the phones it provides (which will remain on its network) will only be compatible on those partner networks and may not be able to roam onto other networks. Therefore, it will be more difficult for a carrier to change roaming partners. This will lead to higher roaming costs and will benefit the largest carriers at the expense of the smaller ones. Interoperability across not only the Lower but the entire 700 MHz band would help alleviate the lock-in effect and enhance roaming opportunities because carriers would be required to make fewer choices among bands to be included in their devices and would have a greater choice of roaming partners.

AT&T also argues that “technological innovation and the standards-setting process will give the A Block carriers multiple additional avenues for roaming on that spectrum long before an interoperability mandate could,” noting that “[a]t the handset level, [QUALCOMM

^{27/} U.S. Cellular Comments at 16; *see also* MetroPCS Comments at 13 (describing the ways in which “competitive carriers have been an extremely important source of competition for the Twin Bells”).

^{28/} *See, e.g.*, King Street Comments at 11.

^{29/} AT&T Comments at 17.

^{30/} *See, e.g.*, Comments of QUALCOMM Incorporated, WT Docket No. 12-69 and RM-11592 (Terminated), at 4-5 (filed June 1, 2012) (“Qualcomm Comments”) (“[C]hips [for A Block licensees] can support only two ports for bands below 1 GHz, and therefore cannot support both two 700 MHz bands and the 850 MHz cellular band. They can support either Band 12 or Band 17, but not both.”).

Incorporated (“Qualcomm”)] is developing a chipset that would allow a carrier to combine Band 12 and Band 17 in a single handset using only one radio port.”^{31/} Qualcomm’s comments, however, undermine this argument and recognize the serious limitations associated with the technology it has developed for Band Class 12:

Qualcomm has offered chips for use by Lower A Block licensees that include support for LTE on Band 12 plus other 3G or 4G bands (including cellular, PCS, and AWS-1). These chips can support only two ports for bands below 1 GHz, and therefore cannot support both two 700 MHz bands and the 850 MHz cellular band. They can support either Band 12 or Band 17, but not both. To attempt to work around this limitation, Qualcomm offered Lower A Block licensees chips that would support an external switch to enable a single port to support both Band 12 and Band 17, but the performance of devices using this solution would be degraded, so they declined such a solution.^{32/}

Qualcomm also noted that while it is working to develop other chipsets, it is currently facing supply constraints and other limitations, and that efforts to include multiple bands in a single port are, in any case, in their infancy.^{33/}

AT&T likewise asserts that “innovation at the network level may eventually give the A Block licensees yet another way of obtaining roaming on Band 17 networks,” as the 3GPP standards-setting process is currently developing a new standard that would allow a 700 MHz LTE network to transmit and receive simultaneously over Bands 12 and 17.^{34/} However, as noted above, the new standard would permit A Block users to roam onto a Lower B or C Block licensee’s network but would not permit the Lower B and C Block licensees’ customers to roam onto A Block licensees’ networks.

^{31/} AT&T Comments at 18; *id.* at Prize Declaration at 12, ¶ 28 (discussing that “Qualcomm has publicly stated that it is developing a chipset that would allow a carrier to combine Band 12 and Band 17 in a single handset using only one radio port”).

^{32/} Qualcomm Comments at 5, 60.

^{33/} *Id.* at 5-6, 60-63.

^{34/} AT&T Comments at 18.

C. Interoperability Will Enhance Public Safety Services and Equipment.

Other commenters joined T-Mobile in agreeing that interoperability will further important public safety goals contained in recent legislation that addressed the establishment of a nationwide, interoperable public safety broadband network.^{35/} For instance, the Utilities Telecom Council (“UTC”) stated that interoperability “will be critically important for the deployment of [the 700 MHz public safety network] which will benefit from increased interoperability with commercial networks and competition among equipment providers.”^{36/} Specifically, interoperability was envisioned by Congress as a way to help the National Telecommunications and Information Administration (“NTIA”)’s First Responder Network Authority (“FirstNet”) meet its obligations to the public safety community. Because interoperability will expand the class of commercial providers in the 700 MHz spectrum, it will lead to more roaming partner choices, greater potential lease revenues, and an increased ability for FirstNet to leverage commercial infrastructure.^{37/} The ability to roam on the entire 700 MHz band combined with open standards for devices “will also generally lower the cost of equipment and enhance the ability to develop equipment that will promote competition in the equipment market and the adoption of open, non-proprietary standards.”^{38/} Lack of interoperability, on the

^{35/} Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, 126 Stat. 156, §§ 6206, 6209 (2012).

^{36/} Comments of the Utilities Telecom Council, WT Docket No. 12-69 and RM-11592 (Terminated), at 5 (filed June 1, 2012) (“UTC Comments”).

^{37/} See Public Interest Commenters Comments at 14; T-Mobile Comments at 10-13; Comments of the Edison Electric Institute, WT Docket No. 12-69, at 3 (filed June 1, 2012) (“Edison Electric Institute Comments”).

^{38/} Public Interest Commenters Comments at 14-15 (internal quotations omitted); Blooston Rural Carriers Comments at 6-7 (“In the absence of Lower 700 MHz Band interoperability, small and independent service providers will not be able to provide meaningful 700 MHz roaming service for their own customers, or roamers, or first responders that participate in the Public Safety Broadband Network operated by [FirstNet]. Since small and regional wireless carriers often focus their efforts on rural and

other hand, would create a public safety Band Class 14 island and lead to the lock-in effect described above, effectively preventing FirstNet from being able to leverage the developments and investments of the commercial marketplace as envisioned by Congress, thereby leading to increased operational, roaming, and device costs for our nation’s first responders while providing capabilities that are inferior to standard commercial offerings.

Similarly, King Street discussed the recent report released by the Congressional Research Service, which noted that public safety users (operating in Band Class 14) are in the same position as commercial licensees who offer Band Class 12 devices in that “the costs of developing and producing the chipsets, software, and other components for equipment operating on Band Class 14 are likely to be spread across a relatively smaller customer base, increasing marginal costs and the prices paid by users.”^{39/} The report further explained that “[b]ecause the band classes are not interoperable across the 700 MHz band, public safety users are likely to incur not only higher costs for equipment to operate within their assigned frequencies but also higher costs for roaming and priority access on commercial channels.”^{40/} As a result, the report concluded that it was important to achieve full interoperability in the 700 MHz band.^{41/}

In sum, the significant benefits discussed above can only be fully realized through interoperability in the 700 MHz band. While finding an industry solution would be optimal, such a solution is not forthcoming and will not be in the foreseeable future because of the competitive advantage for AT&T in maintaining two band classes in the Lower 700 MHz band.

mid-tier markets, the availability of 700 MHz service to consumers and first responders in these [markets] could very well be delayed or incomplete as well.”).

^{39/} Linda K. Moore, *The First Responder Network and Next-Generation Communications for Public Safety: Issues for Congress*, Congressional Research Service #R42543, at 22 (May 23, 2012); King Street Comments at 11-12.

^{40/} *Id.*

^{41/} *Id.*

The Commission should therefore act now to mandate interoperability in the Lower 700 MHz band.^{42/}

III. THE RECORD IN THIS PROCEEDING DEMONSTRATES THAT TELEVISION CHANNEL 51 AND E BLOCK OPERATIONS ARE NOT IMPEDIMENTS TO INTEROPERABILITY

Recent testing, which has received widespread validation from commenting parties in this proceeding, has conclusively demonstrated that “a Band Class 12 device would provide normal performance in the presence of Lower E Block and Channel 51 broadcast towers, and there would be no interference threat to Lower B and C Block device reception.”^{43/}

A. Concerns Regarding Reverse Intermodulation Interference from Television Channel 51 Broadcasts Are Overstated.

1. There Is Little Risk of Harmful Interference from Television Channel 51 Transmissions to Lower B and C Block Operations.

Reverse intermodulation interference testing conducted by Wireless Strategy LLC (“Wireless Strategy”), which was submitted in this proceeding by a number of Lower 700 MHz A Block licensees and analyzed by Vulcan, has confirmed that “commercial LTE devices are capable of normal operation in the presence of very strong nearby signals, such as the scenario

^{42/} While T-Mobile agrees with the vast majority of commenters that an interoperability mandate is necessary, it also agrees with commenters that the Commission should provide affected parties with time to comply with such a directive by specifying a reasonable amount of time for such transition to take place based on the evaluation of the transition proposals advanced by a number of parties. *See, e.g.,* King Street Comments at 18; Vulcan Comments at 40-42; Cricket Comments at 9; Cavalier Comments at 16.

^{43/} Doug Hyslop and Paul Kolodzy, *Lower 700 MHz Test Report: Laboratory and Field Testing of LTE Performance near Lower E Block and Channel 51 Broadcast Stations*, at 68 (Apr. 11, 2012) (“Wireless Strategy Report”), attached to Letter from R. Nash Neyland, Cavalier Wireless, LLC, *et al.*, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 12-69 (filed May 29, 2012). T-Mobile notes that a second study was submitted in this proceeding on July 13, 2012. While T-Mobile has not had an opportunity to fully review the study, it appears to strongly confirm the results of the Wireless Strategy Report, in contrast to the lack of any meaningful engineering analyses which show that television Channel 51 or E Block operations will cause harmful interference to B and C Block operations using Band Class 12 devices. *See* Reply Comments of V-COMM, L.L.C. Prepared on Behalf of Cavalier Wireless, Continuum 700, King Street Wireless, MetroPCS Communications, Inc., and Vulcan Wireless LLC, WT Docket No. 12-69 and RM-11592 (Terminated) (filed July 13, 2012).

which may result when Channel 51 is employed in a city” and that “AT&T devices could employ a Band 12 duplexer without risk of interference from Channel 51 operations.”^{44/} Commenting parties agreed that based on these test results, “Reverse Intermodulation Distortion cannot credibly be claimed as a source of interference for Band Class 12 devices.”^{45/} As noted by U.S. Cellular, the testing “presents persuasive measurement and quantitative analysis demonstrating that these speculative interference risks are not a reasonable obstacle to interoperability.”^{46/}

2. There Will Be No Degradation of Performance to Band Class 12 Devices.

While Band Class 12 devices may be relatively more *susceptible* to interference from television Channel 51 transmissions than Band Class 17 devices, this greater susceptibility to interference will not actually cause Band Class 12 mobile devices to operate less efficiently. Greater susceptibility does not necessarily result in poorer *performance*.

As noted above, testing by Wireless Strategy has demonstrated that Band Class 12 and Band Class 17 devices are capable of normal operation on the Lower B and C Blocks in the presence of television Channel 51 transmissions. Vulcan has further explained that “[a] minimum signal level of -13.5 dBm from Channel 51 would be necessary to create an interference signal at the noise floor of the Lower B Block receiver.”^{47/} U.S. Cellular has

^{44/} Wireless Strategy Report at 44.

^{45/} Vulcan Wireless LLC, *Study to Review Interference Claims That Have Thwarted Interoperability in the Lower 700 MHz Band*, at 12 (Nov. 22, 2011), attached to Letter from Mark W. Brennan, Counsel to Vulcan Wireless LLC, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 11-18, RM-11592, Chart at 12 (filed Nov. 25, 2011).

^{46/} U.S. Cellular Comments at 6.

^{47/} Vulcan Comments at 14.

similarly concluded that the test results show that “the risk of B+C intermodulation interference is not meaningful from a provider or user perspective.”^{48/}

3. Television Channel 51 Interference Issues Will Be Resolved Over Time.

In addition, any potential harmful interference from television Channel 51 operations will eventually become non-existent.^{49/} Commenting parties agree that since the Media Bureau has, among other things, placed a freeze on the filing of new applications on television Channel 51 and the Middle Class Tax Relief and Job Creation Act of 2012 envisions the repacking of broadcasters, any further use of television Channel 51 will effectively be suspended and eliminated in the future.^{50/} Some parties encourage the Commission to go further to ensure that the use of television Channel 51, and thus any associated interference, is eliminated as soon as possible.^{51/}

While T-Mobile agrees that the FCC can and should continue to aggressively address television Channel 51 issues as suggested by these commenting parties, such efforts should not take the place of or priority over Commission action on an interoperability mandate. Even if these issues are resolved, and the alleged technical impediments to the creation of a single Lower 700 MHz band class (and ultimately a single 700 MHz band class) are eliminated, the need for an interoperability mandate will continue to exist because, as discussed above, there are still

^{48/} U.S. Cellular Comments at 7. As noted above, even accepting *arguendo* AT&T’s argument that there is the potential for interference from television Channel 51, that possibility only exists in three markets.

^{49/} See T-Mobile Comments at 15-16.

^{50/} See, e.g., RTG Comments at 12-13 (noting that the current “freeze” on new television Channel 51 DTV broadcast license applications and the FCC’s new policy of promoting channel sharing in the television bands will incent broadcasters to cease operating on television Channel 51 and move to a lower channel); NTCA Comments at 8-9 (asserting that to minimize television Channel 51 interference, the Commission should continue the freeze on applications for new television Channel 51 DTV broadcast licensees and encourage licensees to participate in incentive auctions).

^{51/} See, e.g., Blooston Rural Carriers Comments at 4-5; Cavalier Comments at 12-14.

issues with scale and scope and roaming for A Block licensees. Therefore, any action taken by the Commission to address television Channel 51 issues should be taken concurrently with an interoperability mandate.

B. E Block Operations Will Not Cause Harmful Interference to Band Class 12 Devices and Any Interference Caused Can Be Mitigated.

1. Testing Also Shows That Lower 700 MHz B and C Block Operations Will Not Be Harmed by E Block Operations.

The Wireless Strategy tests and field measurements in Atlanta provide a strong and reliable indication that Band Class 12 devices will not experience performance degradation as a result of high-power E Block transmissions when operating on the Lower 700 MHz B and C Blocks. In particular, the testing shows that a Band Class 12 device operating in the Lower B Block would tolerate a Lower E Block signal up to 73 dB stronger than its desired signal.^{52/}

Commenting parties agree with these conclusions.^{53/} Indeed, DISH Network Corp. (“DISH”), which is the only other E Block licensee today besides AT&T, agrees that there will be no harm to devices operating in the Lower 700 MHz B and C Blocks from E Block transmissions.^{54/} DISH notes that it supports the Wireless Strategy Report and that “DISH E

^{52/} See Wireless Strategy Report at 25.

^{53/} See U.S. Cellular Comments at 18 (“The Atlanta Study confirmed that there is negligible, if any, potential for high-power/ high-site Lower 700 MHz E Block operations causing receiver overload to Lower 700 MHz B and C Block operations.”); Vulcan Comments at 16 (“The lab and field tests performed to assess the legitimacy of this claim confirmed that Band Class 12 devices would provide more than sufficient protection against Lower B and C Block reception of high powered E Block transmissions.”).

^{54/} See Comments of DISH Network Corp., WT Docket No. 12-69 and RM-11592 (Terminated), at 6 (filed June 1, 2012) (“DISH Comments”) (“To date, there is no evidence in the record showing that DISH’s currently authorized [E Block] power levels would cause harmful interference to devices operating in the Lower 700 MHz B and C Blocks.”); *id.* at Sorond Declaration (“I support the Test Report’s conclusion that DISH E Block operations at current power levels will not cause harmful interference to devices operating in the Lower 700 MHz B and C Blocks.”).

Block operations at current power levels will not cause harmful interference to devices operating in the Lower 700 MHz B and C Blocks.”^{55/}

2. Any Interference Caused by E Block Operations Can Be Mitigated.

In any event, the Commission should impose the same technical limits and conditions it imposed on AT&T in the *AT&T/Qualcomm Order* upon DISH’s E Block licensee, Manifest Wireless L.L.C. (“Manifest Wireless”), which will help address interference from E Block operations to the A Block, as well as any claims, albeit unsubstantiated, of interference into the B and C Blocks. As T-Mobile noted, the type of service that Manifest Wireless proposes to offer, *i.e.*, a broadcast mobile video service, can be accommodated under the same power limitations set forth in the *AT&T/Qualcomm Order*.^{56/}

While DISH asserts that such limitations should not be imposed because it has “invested resources to study, plan, and assess the potential of a broadcast video service assuming the [higher] power levels currently authorized by the FCC’s rules for the Lower 700 MHz E Block,”^{57/} the Commission retains the power to change its rules, even with respect to licenses acquired through the auction process.^{58/} While the Commission must exercise that power in only limited instances, a rule change in this case is appropriate.

^{55/} *Id.* at 6-7.

^{56/} See T-Mobile Comments at 16-19 (explaining that Manifest Wireless and its lessee are already operating under one of the conditions in the *AT&T/Qualcomm Order* – the use of downlink only – and that the rationale for the second condition – operation at lower power – applies to Manifest Wireless as well).

^{57/} DISH Comments at 2.

^{58/} See, *e.g.*, *Amendment of the Commission’s Rules Regarding Maritime Automatic Identification Systems*, Report and Order and Further Notice of Proposed Rule Making and Fourth Memorandum Opinion and Order, 21 FCC Rcd 8892, ¶ 44 (2006); *Celtronix Telemetry, Inc. v. FCC*, 272 F.3d 589 (D.C. Cir. 2002).

IV. IMPOSITION OF AN INTEROPERABILITY MANDATE WILL NOT BE BURDENSOME

AT&T argues that it would take considerable time and expense to comply with an interoperability mandate,^{59/} but the record shows that is not the case. As Vulcan points out, AT&T's base stations could accommodate Band Class 12 operation through a modest software upgrade, which can be performed at minimal cost, often without even requiring a technician to visit the affected base stations.^{60/}

AT&T acknowledges that the 3GPP feature to enable the infrastructure to handle both Band Class 12 and 17 devices is a candidate feature for LTE Release 11, although it argues that it cannot be made available on its network for a lengthy period of time.^{61/} However, based on historical data on various LTE and other 3GPP releases,^{62/} it is reasonable to assume that AT&T and other operators can deploy this feature on LTE Release 11 by the end of 2013.

It is also clear that achieving interoperability through a unified Band Class 12 chipset would require only minor modifications to Band Class 17 handsets and other equipment. This is because “[i]mplementing Band Class 17 devices already include Band Class 12 chipsets, but with software that prevents use of the A Block.”^{63/} As a result, in future LTE devices, manufacturers would only have to replace the Band Class 17 software with Band Class 12 and slightly widen the duplexer to support the Lower A, B, and C Blocks.^{64/} Vulcan predicts that such device modifications could be implemented in a matter of a few months, “while legacy

^{59/} AT&T Comments at 21-27; *id.* at Wolter Declaration at 7-16, ¶¶ 15-39.

^{60/} Vulcan Comments at 37-38.

^{61/} AT&T Comments at Wolter Declaration at 7-9, ¶¶ 16-20.

^{62/} *See* 3GPP, Releases, <http://www.3gpp.org/Releases> (last visited July 16, 2012).

^{63/} Vulcan Comments at 38.

^{64/} *See id.*

Band Class 17 devices could be upgraded to recognize Band Class 12 base stations and channel numbers through a remote software update.”^{65/}

V. PARTIES AGREE THAT INTEROPERABILITY ACROSS THE ENTIRE 700 MHZ BAND SHOULD BE THE GOAL

Given the significant benefits delivered by interoperability and the fact that the 700 MHz band is “the only non-interoperable commercial mobile service band,”^{66/} many commenters agree with T-Mobile that the Commission should take action to achieve interoperability throughout the entire 700 MHz band, not just in the lower portion.^{67/} For example, Rural Telecommunications Group, Inc. (“RTG”) stated that it “still strongly believes that the best way to foster the development and immediate deployment of LTE . . . across the entire 700 MHz Band . . . would be to require that all mobile devices in both the Upper and Lower 700 MHz Bands be fully interoperable.”^{68/} Given the significant benefits created by interoperability, the Commission – in conjunction with its actions regarding interoperability of the lower 700 MHz spectrum – should initiate a Further Notice of Proposed Rulemaking making clear its intention to extend interoperability throughout the 700 MHz band and resolve any technical impediments to achieving that goal.

^{65/} *Id.* at 38-39.

^{66/} *NPRM* ¶ 2.

^{67/} *See, e.g.*, T-Mobile Comments at 20-22; Edison Electric Institute Comments at 3 (“EEI submits that, to the extent that it is technically feasible, the FCC should, mandate interoperability across the entire 700 MHz band including both the commercial and public safety segments.”); King Street Comments at 17 (“King Street further submits that, sooner or later, interoperability rules should extend throughout both the Upper Band and the Lower Band.”); UTC Comments at 5 (“The Commission should consider expanding its efforts and promote interoperability across the entire 700 MHz band, because it should promote economies of scale and attract investment which will in turn promote equipment development and availability.”); NTCA Comments at 10 (“The interoperability requirement should also be extended to the Upper band portion, both for compliance to the new single lower band class, and ultimately for full-band interoperability.”).

^{68/} RTG Comments at 2.

VI. THERE IS AMPLE AUTHORITY TO IMPOSE AN INTEROPERABILITY REQUIREMENT

While T-Mobile generally favors industry solutions to matters touching upon technical issues and the competitive market, an industry solution to 700 MHz interoperability is unlikely to occur in the foreseeable future as discussed above.^{69/} As a result, Commission action is warranted.

The majority of commenters agree that the Commission has ample authority to mandate interoperability.^{70/} First, the Commission has consistently worked to ensure interoperability in each commercial mobile services band by monitoring marketplace developments in some instances and stepping in to mandate interoperability when necessary in other circumstances.^{71/}

^{69/} See, e.g., *NPRM* ¶ 49 (discussing that if the industry fails to move toward interoperability, regulatory steps may be appropriate); MetroPCS Comments at 13 (“MetroPCS has long been a proponent of voluntary industry solutions whenever all sides are similarly motivated to achieve a successful a mutually beneficial result. However, in this case, the business incentives of AT&T, and perhaps Verizon, are not sufficiently aligned with the Lower 700 MHz A Block licensees to assure a voluntary solution to the 700 MHz interoperability problem.”).

^{70/} See, e.g., T-Mobile Comments at 22-24, King Street Comments at 2, 18 (discussing that “the Commission has more than ample authority to require interoperability”); Horry Comments at 6 (“The Commission has the statutory authority to adopt interoperability requirements in the Lower 700 MHz band.”); Vulcan Comments at 33 (explaining that mandating interoperability in the Lower 700 MHz band would be consistent with the Commission’s past exercises of authority regarding interoperability and would allow the Commission to satisfy its statutory obligation to “promote the widest possible deployment of communications services, ensure the most efficient use of spectrum, and protect and promote vibrant competition in the marketplace”) (internal citations omitted); Cricket Comments at 3 (“Cricket agrees that the Commission has broad authority under Title III of the Act to adopt a device interoperability requirement.”).

^{71/} See, e.g., RTG Comments at 3 (“The Commission has a history of proactively prescribing intra-band interoperability for mobile devices as a way of promoting competition in the marketplace. And when the Commission has refrained from imposing a mandate for mobile device interoperability for a particular mobile wireless band in the past, it has stressed its legal authority to revisit the matter if the existing environment of customer flexibility and ease-of-access has been thwarted in any way.”); MetroPCS Comments at 5-6 (noting that “the Commission historically has been interested in promoting interoperability, and has done so in other bands,” for instance, the “Cellular, PCS and AWS bands all have fully interoperable chipsets”); King Street Comments at 2 (“In certain instances, the Commission expressly mandated [interoperability]. In others, it stressed the importance of interoperability and explained that if it was not adopted by voluntary industry action, the Commission was prepared to become more proactive and require it.”).

For instance, although market conditions made the imposition of an interoperability requirement unnecessary in the Personal Communications Service (“PCS”) band, the Commission noted the importance of interoperability, stating that it would “deliver benefits to consumers and help achieve [the Commission’s] objectives of universality, competitive delivery of PCS, that includes the ability of consumers to switch between PCS systems at low cost, and competitive markets for PCS equipment.”^{72/} In other circumstances, such as the licensing of cellular spectrum and development of the public safety broadband network, the Commission expressly required interoperability.^{73/}

As RTG noted, Commission mandates of interoperability were not often needed in the past because “all operators reaped the rewards of offering a nationwide or near-nationwide footprint to their existing and prospective customers.”^{74/} In today’s marketplace, however, the two largest carriers instead have an incentive to limit interoperability, thus preventing competitors from roaming on their respective networks and limiting their customers’ ability to use their 700 MHz LTE mobile devices on competitors’ networks.^{75/}

^{72/} *Amendment of the Commission’s Rules to Establish New Personal Communications Services*, Memorandum Opinion and Order, 9 FCC Rcd 4957 (1994); *see also* U.S. Cellular Comments at 11-12; Cellular South Comments at 5-6; RTG Comments at 4.

^{73/} *See Inquiry into the Use of the Bands 825-845 MHz and 870-890 MHz for Cellular Communications Systems; Amendment of Parts 2 and 22 of the Commission’s Rules Relative to Cellular Communications Systems*, Report and Order, 86 FCC 2d 469, ¶ 26 (1981) (finding that consumer equipment should be capable of operating over the entire range of cellular spectrum as a means to “insure full coverage in all markets and compatibility on a nationwide basis”); *Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band*, Second Report and Order, 22 FCC Rcd 15289 (2007).

^{74/} RTG Comments at 4-5

^{75/} *Id.*; *see also* Cellular South Comments at 4-5 (discussing that “today’s industry conditions are exactly like those the FCC sought to guard against in the 1980s”); RCA Comments at 4 (“The lack of interoperability in the Lower 700 MHz band is part of the vicious cycle in which the two super-carriers leverage the existing competitive imbalance to further tilt the playing field against smaller providers.”).

The majority of commenters addressing this issue agree that Title III provides the Commission with ample authority to take action to achieve interoperability.^{76/} As King Street discussed, the Commission’s discussion of its authority to adopt an interoperability mandate “did not extend prior statutory authority or reviewing court pronouncements, or in any way attempt to create new law. Rather, it merely reflected authority expressly provided in Titles 1 and 3 of the Communications Act, and recognized and endorsed by the Supreme Court.”^{77/}

^{76/} See, e.g., RCA Comments at 6 (“RCA agrees that Title III provides the Commission with clear legal authority to achieve its goal of ensuring seamless interoperability in the Lower 700 MHz band.”); Cellular South Comments at 7-8 (discussing “why Title III provides the Commission with clear authority to impose conditions on licensees to ensure interoperability”); Cricket Comments at 6 (“In light of the Commission’s express statutory authority and its consistent history of using Title III to advance public interest obligations related to access to and usage of spectrum-based networks, the Commission can and should invoke its Title III authority here to implement interoperability requirements.”); Public Interest Commenters Comments at 20 (“Under Title III of the Communications Act, the Commission has several sources of direct authority to require the use of interoperable devices.”).

^{77/} King Street Comments at 2 (citing *Nat’l Broad. Co. v. United States*, 319 U.S. 190, 217 (1943)); see also Horry Comments at 6-7.

VII. CONCLUSION

The Commission should act to achieve interoperability in the Lower 700 MHz band, consistent with the views of the majority of comments filed in this proceeding. Comments to the contrary ignore the record that interoperability in the Lower 700 MHz band will bring about substantial benefits and is possible and not unduly burdensome. The Commission also should propose rules that would require interoperability across the entire 700 MHz band, subject to the resolution of any additional technical roadblocks.

Respectfully submitted,

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