Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
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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)
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To: The Commission

COMMENTS OF THE CONSUMER ELECTRONICS ASSOCIATION

The Consumer Electronics Association ("CEA")[1] respectfully submits this response to the Commission's Notice of Proposed Rulemaking seeking comment on a variety of issues related to interoperability of wireless handsets in the Lower 700 MHz Band.[2] The Commission should reject requests to mandate interoperability across all paired spectrum in the Lower 700

[1] CEA is the principal U.S. trade association of the consumer electronics and information technologies industries. CEA's more than 2,000 member companies lead the consumer electronics industry in the development, manufacturing and distribution of audio, video, mobile electronics, communications, information technology, multimedia and accessory products, as well as related services, that are sold through consumer channels. Ranging from giant multi-national corporations to specialty niche companies, CEA members cumulatively generate more than $195 billion in annual factory sales and employ tens of thousands of people.

[2] *Promoting Interoperability in the 700 MHz Commercial Spectrum; Interoperability of Mobile User Equipment Across Paired Commercial Spectrum Blocks in the 700 MHz Band*, WT Docket No. 12-69; RM-11592 (Terminated), Notice of Proposed Rulemaking, FCC 12-31 (rel. Mar. 21, 2012) ("NPRM"). Interoperability, as discussed in the NPRM, would require all handsets manufactured for operation in the Lower 700 MHz Band to support Band Class 12 (which supports LTE operation in Blocks A, B, and C), instead of, or in addition to, Band Class 17 (which supports LTE operation in Blocks B and C). *See* NPRM ¶¶ 23, 41. Both Band Class 12 and Band Class 17 are part of the 3rd Generation Partnership Project's ("3GPP") LTE standard.

MHz Band. An interoperability mandate in the Lower 700 MHz Band would increase handset and deployment costs in the 700 MHz Band, which would hamper innovation in the dynamic and innovative wireless handset marketplace by reducing the options manufacturers and service providers have to meet their customers' needs, and delay broadband deployment. A mandate also would undermine future spectrum auctions and standards-setting efforts. For these reasons, the Commission should not adopt an interoperability mandate, and instead should allow the marketplace to continue to weigh the costs, benefits and technical challenges associated with interoperability and make the trade-offs appropriate to respond to consumer demand.

I. THE COST/BENEFIT BALANCE IS BEST ADDRESSED BY MARKETPLACE FORCES

The vibrant and innovative handset marketplace is well suited to balancing the relative costs and benefits of handset features, including interoperability, to best meet consumer needs. Interoperability is a desirable feature that manufacturers and service providers alike have an incentive to incorporate into handsets: the more bands a device can operate on, the greater the potential customer base. However, as with all potential features, manufacturers and service providers must weigh the benefits and costs of interoperability through a nuanced, situation-specific design and market analysis process. This balancing is not a one-time decision applicable to all handsets, but depends on many factors, including the target subscriber market, network characteristics, and current consumer demand. Manufacturers and service providers should remain free to determine when including a particular feature will best meet their respective consumers' desires.

A. AN INTEROPERABILITY MANDATE WOULD INCREASE COSTS, REDUCE FLEXIBILITY, DISCOURAGE INNOVATION AND DELAY BROADBAND DEPLOYMENT

An interoperability mandate would unnecessarily raise the cost and limit the features of many devices, while slowing wireless broadband deployment. The record shows that there are significant technical challenges to developing and producing interoperable equipment across the entirety of the paired spectrum in the Lower 700 MHz Band.

Handsets that are interoperable across the entire paired spectrum in the Lower 700 MHz Band would be more expensive to manufacture than handsets operating in accordance with only Band Class 17 specifications, due to significant technical challenges.[3] As the NPRM notes, many participants in the prior proceeding expressed concern that Band Class 12 devices faced increased interference in the Lower 700 MHz B and C blocks.[4] Indeed, interference concerns motivated the creation of the 3GPP Band Class 17 specification, which provides additional protection from interference.[5] The record also contains specific, undisputed analyses of the interoperability challenges in the Lower 700 MHz Band, with one commenter noting that "a narrow duplex gap (12 MHz), a relatively small duplex spacing (30 MHz), and the presence of strong interfering signals… present challenges in designing cost effective broadband wireless

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[3] *See* Comments of Verizon Wireless, RM-11592, at 11 (filed Mar. 31, 2010) ("Verizon Wireless 2010 Comments"); Comments of Motorola, Inc., RM-11592, at 7-8 (filed Mar. 31, 2010) ("Motorola 2010 Comments").

[4] NPRM ¶ 13.

[5] NPRM n.20; Letter from Michael Goggin, AT&T Services, Inc., to Marlene H. Dortch, FCC, RM-11592, at 1 (filed July 29, 2011); Motorola 2010 Comments at 4-5 ("3GPP defined four band classes to operate in the 700 MHz band …. The decision to identify band class 17 separately from band class 12 was based entirely on a desire to avoid harmful interference that would negatively affect the operation of 700 MHz mobile broadband devices.").

devices."[6] And incorporating both Band Class 12 and 17 into a single device would negatively affect the size, power consumption, complexity, and cost of each device.[7]

An interoperability mandate also would increase network deployment costs and potentially delay the roll-out of wireless broadband. As supporters of a mandate admit, the interoperability mandate would increase the potential for interference and require service providers to construct and operate numerous additional facilities.[8] Building new sites is extremely expensive, and can take years.[9] The additional costs would ultimately be passed through to consumers. Such a mandate would also slow the deployment of mobile broadband, undermining one of the Commission's core goals.[10]

B. THE COMPETITIVE MARKETPLACE IS BEST SUITED TO BALANCE THE RELATIVE COSTS AND BENEFITS OF HANDSET INTEROPERABILITY

There is no single, "correct" outcome when evaluating the efficacy of trade-offs between handset features, as evidenced by the wide variety of devices available today in the marketplace. A wide range of interoperable devices, with tri-band, quad-band, and other configurations of

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[6] Verizon Wireless 2010 Comments at 7. *See also* Motorola 2010 Comments at 5-6.

[7] Letter from Steve B. Sharkey, Motorola, Inc., to Marlene H. Dortch, FCC, at 2 (filed Feb. 8, 2010); Motorola 2010 Comments at 7.

[8] *See, e.g.*, Wireless Strategy, LLC, *Lower 700 MHz Interference Management* (Sept. 10, 2010) (proposing the construction of additional towers as a possible method to address 700 MHz interference concerns."); *see generally* Letter from Joseph P. Marx, AT&T, Inc., to Marlene H. Dortch, FCC, RM-11592 (filed Nov. 2, 2010) (discussing the Wireless Strategy whitepaper and its proposed "commonplace engineering technique" of building more towers near sources of potential interference.).

[9] *See, e.g.*, *Petition for Declaratory Ruling to Clarify Provisions of Section 332(c)(7)(B) to Ensure Timely Siting Review*, Declaratory Ruling, 24 FCC Rcd 13994, 14004-05 ¶ 32 (Nov. 18, 2009).

[10] *National Broadband Plan* at 9 ("Goal No. 2: The United States should lead the world in mobile innovation, with the fastest and most extensive wireless networks of any nation.").

devices are all available.[11] Manufacturers and service providers weigh many factors in determining what features – including different levels of interoperability – are desirable and should be included in a device. Such factors include the target price point, the target consumer demographic, and the characteristics of various carriers' networks. Neither the Commission nor industry can or should weigh these various trade-offs and reach a decision that would apply across the board. The analysis must be done by manufacturers and service providers on a case-by-case basis, based on marketplace forces.

Indeed, the marketplace currently reflects this case-by-case approach with respect to devices operating in the 700 MHz Band. 3GPP established two Band Classes to support LTE in the Lower 700 MHz Band in order to provide manufacturers and service providers with the flexibility to offer devices that best meet their and their respective customers' particular needs. Mandating support of Band Class 12 in all devices would eliminate this independent market judgment, stifle creativity, and reduce the options available to manufacturers, service providers and their customers. Such intervention in a well-operating handset marketplace is unnecessary and even counterproductive. Rather than superseding manufacturers' and service providers'

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[11] *See, e.g.*, ERIC M. ZEMAN, FIRST CDMA AWS HANDSET LAUNCHES TOMORROW, Mar. 7, 2008, phonescoop.com, http://www.phonescoop.com/articles/article.php?a=2823 (describing Cricket's release of the first tri-band CDMA phone, which operates on CDMA 850/1900 and 1700 AWS bands); BlackBerry Curve 8530, http://www.metropcs.com/metro/detail/BlackBerry%C2%AE+Curve%E2%84%A2+8530/PRD26497019 (last visited May 31, 2012) (MetroPCS page offering the tri-band Curve); ZTE, Press Release, Pocket Communications Launches ZTE's Tri-Band C79 and C78 (Apr. 2, 2009), http://wwwen.zte.com.cn/en/press_center/news/200904/t20090402_171120.html; BlackBerry® Torch™ 9850 Smartphone, http://www.verizonwireless.com/b2c/store/controller?item=phoneFirst&action=viewPhoneDetail&selectedPhoneId=5694 (last visited May 31, 2012) (describing the Torch, which is both a dual-band CDMA and quad-band GSM phone, with UMTS support).

informed business judgment, the Commission should adhere to its long-standing principle of technology neutrality.[12]

II. ADOPTING AN INTEROPERABILITY MANDATE AT THIS LATE STAGE WOULD POTENTIALLY DISRUPT FUTURE AUCTIONS AND STANDARDS-SETTING EFFORTS

In the interest of the long term success of its auction program, the Commission should not change the rules of the game by imposing new encumbrances on Lower 700 MHz Band licenses. These licenses were auctioned under a specific, fully-disclosed set of technical and operating rules, which were adopted after public notice and comment, and after full consideration of the band plan and its attendant interference issues.[13] Those rules provide for flexible use of the spectrum and, consistent with the FCC's long-standing practice of maintaining technological neutrality,[14] do not include an interoperability mandate.

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[12] *See, e.g.*, *National Broadband Plan* at 79 ("allowing technologically flexible access to spectrum is an essential innovation policy that the FCC should continue to develop"); *id.* at 60 (supporting a "pro-competitive, transparent and technology-neutral" regulatory framework); Julius Genachowski, Chairman, FCC, Remarks at the International Telecommunication Union Global Symposium for Regulators, Beirut, Lebanon, at 4 (Nov. 10, 2009), http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-294594A1.pdf ("We also believe that any regulation should be effective and targeted, not micromanagement, and that it should strive for technological neutrality."); *see also Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, Report, 14 FCC Rcd 2398, 2402 ¶ 5 (1999) (explaining that the role of the Commission is "not to pick winners and losers, or to select the best technology to meet consumer demand" in ensuring access to broadband, but rather "to rely as much as possible on free markets and private enterprise"). The Commission has specifically applied these principles in the design of band plans in the past. *Service Rules for the 746-764 and 776-794 MHz Bands*, 15 FCC Rcd 476, 489 ¶ 31 (2000) ("[T]he marketplace forces operating through the auction process, rather than regulatory fiat, will determine which of the multitude of service proposals will actually be implemented.").

[13] *Service Rules for the 698-746, 747-762 and 777-792 MHz Bands, et al.*, Second Report and Order, 22 FCC Rcd 15289 (rel. Aug. 10, 2007) ("*700 MHz Second Report and Order*").

[14] *See supra* n.12.

Post-auction rule changes that impose additional significant burdens on winning bidders would undermine the FCC's auction process. Such changes would upset, without justification, the rational expectations of the parties that purchased Lower 700 MHz Band licenses. To the extent the established rules and band plan adopted in 2007 presented deployment challenges in portions of the 700 MHz Band, those challenges were reflected in the discounted prices for certain blocks of the spectrum during Auction 73.[15] As discussed above, an interoperability mandate would increase the costs associated with deployment of B and C block spectrum. Those additional costs would not have been factored in to the bids for those spectrum blocks, because they were unforeseeable. Indeed, one of the Commission's stated goals in adopting technical rules to govern the 700 MHz Band was to provide licensees with "flexibility in the services to be offered and the technologies to be deployed."[16] The Commission should remain true to that stated goal, and decline to impose a technology mandate.

Changing the rules now also would undercut the standards-setting process. Open, industry-led standards-setting processes such as the 3GPP effort that established the LTE standards are well-established mechanisms that have, for decades, enabled industry to thoughtfully and fairly consider both market and technical issues in the development and deployment of new systems and technologies. The FCC should not undermine such a well-established and successful process by ignoring and overriding the standards reached after due

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[15] *See* Letter from Joseph P. Marx, AT&T Inc., to Marlene H. Dortch, FCC, RM-11592, at 10-11, n.24 (filed June 3, 2010); ANNA-MARIA KOVACS, NEUTRAL SPECTRUM AUCTIONS: MAXIMIZING PROCEEDS AND CONSUMER BENEFIT 2, February 2012 (reflecting significant differences in price per MHz/POP between the A block, with its interference issues, and the B block, which was not subject to the same interference issues). *See also*, Communications Daily, "700 Interoperability Mandate Presents Tough Issues to Work Through, Milkman Says," April 27, 2011 (quoting Stacey Black, Assistant VP for Market Development, AT&T).

[16] NPRM ¶ 9 (citing *700 MHz Second Report and Order*, 22 FCC Rcd at 15328 ¶ 95).

and careful consideration by industry experts. The negative impact of changing the rules now would discourage participation in future standards-setting efforts, and ultimately erode confidence in such processes and the standards adopted.

Mandating interoperability across the Lower 700 MHz paired spectrum would arbitrarily override the result of a thorough and inclusive industry standards-setting effort. The LTE standards at the center of this dispute, Band Class 12 and Band Class 17, were developed by the 3GPP, through a lengthy, multi-year process. During this consensuses-driven process an international partnership of industry-based telecommunications standards bodies considered the relative technical merits of a wide range of proposals before adopting the existing standard.[17] The parties supporting an interoperability mandate had every opportunity to participate in the 3GPP process and to have their proposals considered for inclusion in the LTE standard, but did not do so. The Commission should act to support, not undermine, such thorough and inclusive industry standards-setting efforts.

[17] NPRM ¶ 10; 3GPP – About 3GPP, http://www.3gpp.org/About-3GPP (last visited June 1, 2012).

III. CONCLUSION

The Commission should promote continued handset innovation by rejecting requests to mandate interoperability across all paired spectrum blocks in the Lower 700 MHz Band. Such a mandate would impose unnecessary costs, limit the development of other handset features, and would undermine future spectrum auctions, industry standards-setting efforts, and the important public goal of wireless broadband deployment.

Respectfully submitted,

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