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FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 20

[WT Docket No. 12-269; Docket No. 12-268; FCC 14-63]

Policies Regarding Mobile Spectrum Holdings; Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: In this document, the Federal Communications Commission (Commission) updates its initial screen for review of spectrum acquisitions through secondary markets and makes determinations regarding whether to establish mobile spectrum holding limits for its upcoming auctions of high- and low-band spectrum, in light of the growing demand for spectrum, the differences between spectrum bands, and in accordance with its desire to preserve and promote competition.

DATES: Effective **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

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SUPPLEMENTARY INFORMATION: This is a summary of the Commission's Report and Order (**R&O**), WT Docket No. 12-269; Docket No. 12-268; FCC 14-63, adopted May 15, 2014 and released June 2, 2014. The full text of this document is available for inspection and copying during business hours in the FCC Reference Information Center, Portals II, 445 12th Street S.W., Room CY-A257, Washington,

DC 20554. Also, it may be purchased from the Commission's duplicating contractor at Portals II, 445 12th Street SW., Room CY-B402, Washington, DC 20554; the contractor's website, <http://www.bcpiweb.com>; or by calling (800) 378-3160, facsimile (202) 488-5563, or email FCC@BCPIWEB.com. Copies of the R&O also may be obtained via the Commission's Electronic Comment Filing System (ECFS) by entering the docket number WT Docket No. 12-269. Additionally, the complete item is available on the Federal Communications Commission's web site at <http://www.fcc.gov>.

1. In the R&O the Commission updates its spectrum screen for its competitive review of proposed secondary market transactions to reflect current suitability and availability of spectrum for mobile wireless services. It adds to its spectrum screen: 40 megahertz of AWS-4; 10 megahertz of H Block; 65 megahertz of AWS-3 (when it becomes available on a market-by-market basis); 12 megahertz of BRS; 89 megahertz of EBS; and the total amount of 600 MHz spectrum auctioned in the Incentive Auction. It subtracts from its spectrum screen: 12.5 megahertz of SMR; and 10 megahertz that was the Upper 700 MHz D Block. The Commission establishes a market-based spectrum reserve of up to 30 megahertz in the Incentive Auction in each license area to ensure against excessive concentration in holdings of low-band spectrum and ensuring that all bidders bear a fair share of the cost of the Incentive Auction. It adopts limits on secondary market transactions of 600 MHz spectrum licenses for six years post-auction. It declines to adopt auction-specific limits for AWS-3. It treats certain further concentrations of below-1-GHz spectrum as an enhanced factor in its case-by-case analysis of the potential competitive harms posed by individual transactions.

I. PRESERVING AND PROMOTING COMPETITION IN THE MOBILE WIRELESS MARKETPLACE

2. The Commission has long recognized that "spectrum is an input in CMRS markets," and that "the state of control over the spectrum input is a relevant factor" in its competitive analysis. Ensuring that sufficient spectrum is available for multiple existing mobile service providers as well as potential entrants is crucial to promoting consumer choice and competition throughout the country, including in rural areas,

and is similarly crucial to fostering innovation in the marketplace. For these reasons, Congress directed the Commission to proactively “include safeguards to protect the public interest” when specifying the classes and characteristics of licenses and permits to be issued by competitive bidding, and to “promot[e] economic opportunity and competition and ensur[e] that new and innovative technologies are readily accessible to the American people by avoiding excessive concentration of licenses[.]” In order for there to be robust competition, multiple competing service providers must have access to or hold sufficient spectrum to be able to enter a marketplace or expand output rapidly in response to any price increase or reduction in quality, or other change that would harm consumer welfare. Consistent with the Commission’s statutory mandate, the fundamental goal that has guided its policies regarding mobile spectrum holdings has been the preservation and promotion of competition, which in turn, enables consumers to make choices among numerous service providers and leads to lower prices, improved quality, and increased innovation.

3. Since the Commission’s last comprehensive review of its mobile spectrum holdings policies more than a decade ago, the marketplace for mobile wireless services has evolved significantly – both in consumer demand for services and market structure – as has the role of low-band spectrum for coverage purposes and high-band spectrum for capacity purposes in the deployment of providers’ networks. As providers deploy next-generation mobile networks, the engineering properties and deployment capabilities of the mix of particular spectrum bands in providers’ holdings have become increasingly important, particularly as multi-band phones allow users to take advantage of the different properties of different spectrum bands. Moreover, while the mobile wireless marketplace a decade ago consisted of six near-nationwide providers and a substantial number of regional and small providers, since then, there has been a significant degree of consolidation resulting in a market with four nationwide providers and a smaller number of regional and more local service providers.

4. Reflecting this evolution in the mobile wireless marketplace, the Commission, in recent years, has considered in more detail the technical distinctions among spectrum bands used to deploy next-generation mobile networks. The Commission adopted mobile spectrum holdings policies in this

rulemaking that address how the differences among spectrum bands may affect its overall competitive analysis of spectrum acquisitions and therefore its decision making for both auctions and secondary market transactions.

5. In adopting these policies, the Commission is mindful that the statutory framework established by Congress for mobile wireless services and implemented by the Commission, with its reliance on competition as the primary driver of consumer benefits, has fostered substantial economic growth and consumer benefits for its nation. Among other goals, Congress has directed us as well to promote the “efficient and intensive use of the electromagnetic spectrum” and avoid an “excessive concentration of licenses” in the design of systems of competitive bidding, as well as to review transactions to ensure that they serve the public interest.

6. Consistent with the evolution of the marketplace and the Commission’s statutory directives and policy goals, and in light of the evolution of wireless services demanded by consumers, the Commission must ensure that multiple service providers have access to spectrum in the foreseeable future. Existing marketplace conditions, including concerns about the potential for anticompetitive behavior, inform its predictive judgment but are not determinative as to whether the Commission needs to act. The mobile spectrum holdings policies the Commission adopted are necessary to preserve and promote consumer choice and competition among multiple service providers, promote the efficient and intensive use of spectrum, maximize economic opportunity, and foster the deployment of innovative technologies.

A. Evolution of the Mobile Wireless Marketplace

7. During the past decade, provider supply and consumer demand for wireless services has exploded, moving from the provision of mobile voice services to the provision of mobile broadband services. The rapid adoption of smartphones, tablet computers, mobile applications, and increasing deployment of high-speed 3G and now 4G technologies, is driving significantly more intensive use of mobile networks. In 2013, a single smartphone generated 48 times more mobile data traffic than a feature

phone, and average smartphone usage grew 50 percent in 2013. The adoption of smartphones increased from 27 percent to 54 percent of U.S. subscribers from December 2010 to December 2012.

Consequently, service providers generally need access to more spectrum to meet the increasing demand for mobile broadband, which consumes far greater amounts of bandwidth than did mobile phones just a short time ago.

8. The wireless industry has also undergone significant consolidation during the past decade. In 2003, there were six nationwide facilities-based wireless service providers: AT&T Wireless, Sprint PCS, Verizon Wireless, T-Mobile, Cingular Wireless, and Nextel. Now there are four – Verizon Wireless, AT&T, Sprint, and T-Mobile. In addition, there have been several significant spectrum-only transactions, such as AT&T-Qualcomm (2011), Verizon Wireless-SpectrumCo (2012), and AT&T WCS (2012) that have resulted in increased spectrum aggregation among the remaining providers.

9. Concentration in the market share of the major providers has also increased during that time period. As of December 2003, the top six facilities-based nationwide providers accounted for approximately 79 percent of total mobile wireless subscribers in the country. By December 2013, the top four facilities-based nationwide providers had increased their combined market share to 97 percent of all subscribers. Verizon Wireless and AT&T together accounted for 68 percent of the nation's subscribers as of year-end 2013, compared to 51 percent in 2004. Some regional and local service providers have achieved significant market shares within particular local markets, often the most rural markets, but they typically rely on roaming agreements with nationwide facilities-based providers to extend the geographic reach of their networks.

10. The Commission has “ample latitude to adapt its rules and policies to the demands of changing circumstances.” In light of these trends and current spectrum aggregations, the Commission must examine whether changes in its mobile spectrum holdings policies are necessary to facilitate the robust competition that leads to lower prices, improved quality, and greater innovation. The following are some of the benefits of competition: service providers have offered various pricing plans, ranging from

tiered usage-based data pricing with overage charges (Verizon Wireless, AT&T) to unlimited data pricing (Sprint), and in 2012, both Verizon Wireless and AT&T launched shared data plans for smartphones and other mobile data devices, and T-Mobile reintroduced an unlimited smartphone data pricing option.

B. Ensuring that All Americans Benefit from Mobile Wireless Competition

11. Based upon the record before us, the Commission finds that the spectrum aggregation limits the Commission adopted is needed to advance its statutory objectives under section 309(j), to promote competition, and to avoid competitive harms. The Commission's competition-related decision making is designed to advance the public interest by preserving and promoting competition that benefits consumers and the Commission must consider the totality of the circumstances and choose policies that are most likely to allow competition to flourish for the public benefit. Accordingly, the Commission recognizes the important tradeoffs in the policy decision at hand. Policies that would limit the ability of major providers to acquire additional spectrum licenses may limit their ability to provide new services or serve new customers. At the same time, policies that would allow these service providers to acquire all or substantially all of the spectrum licenses to be auctioned in the near future, particularly spectrum licenses being auctioned in the Incentive Auction, or that would allow further concentration in below-1-GHz spectrum in secondary market transactions without enhanced scrutiny, would raise significant competitive issues.

12. Raising Rivals' Costs and Foreclosure. In 2001, the Commission recognized that "it is at least a threshold possibility that because the supply of suitable spectrum is limited, firms in CMRS markets might choose to overinvest in spectrum in order to deter entry, depending on the costs of doing so." In certain situations, a dominant firm may raise rivals' costs by a variety of means, including input monopolization. As rivals' costs are raised, the competitiveness of the marketplace is likely to diminish. Foreclosure can occur when competitors have an incentive and ability to acquire an input not only to put it to their own use, but also to withhold it from their rivals.

13. **Discussion.** In its review of the evolution of the mobile wireless marketplace, its current state, and the potential future effects on consumers, the Commission is required to consider a number of concerns to advance the public interest. Section 309(j) requires the Commission to balance a number of specific statutory objectives including competition, diversity and the avoidance of excessive concentration in designing its rules regarding spectrum licenses and the competitive bidding assignment process. The Commission finds that, under the totality of circumstances, the public interest will be advanced by: reaffirming the current case-by-case review of proposed transactions, with continued use of a spectrum screen triggered at aggregations of approximately one third or more of the spectrum suitable and available for mobile telephony/broadband; updating the spectrum screen to include spectrum currently suitable and available for mobile telephony/broadband; treating certain levels of increased aggregations of below-1-GHz spectrum as an enhanced factor during case-by-case review of secondary market transactions involving below-1-GHz spectrum; and establishing a market-based spectrum reserve in the upcoming 600 MHz auction.

14. There are three independent bases for its conclusion, each of which the Commission finds warrants the policies the Commission adopted: (1) the importance of access to low-band spectrum to promote variety in licensees and the advancement of rural deployment as directed by Section 309(j), (2) the benefits to consumers associated with robust competition among multiple providers having access to low-band spectrum, and (3) the potential for competitive harm if the Commission does not provide safeguards to mitigate against the possibility of providers raising rivals' costs or foreclosing competition by denying competitors access to low-band spectrum.

15. Its findings are compelled by the changing circumstances posed by the marketplace today: increased consolidation, the growth in demand for mobile broadband, and the significance of the upcoming 600 MHz auction. First, the Commission recognizes that the mobile wireless marketplace has undergone considerable consolidation, both in terms of number of firms and relative market shares, as well as increased concentration of low-band spectrum. Recent acquisitions have exacerbated this concentration. While limited amounts of low-band spectrum might theoretically be acquired in secondary

market transactions, the vast bulk of that spectrum has already been acquired. There is also significantly less low-band spectrum than there is high-band spectrum: after its decisions, there will be 134 megahertz of spectrum below 1 GHz suitable and available for the provision of mobile broadband services and 446.5 megahertz of suitable and available spectrum above 1 GHz. Concentration in spectrum holdings by service providers of low-band spectrum has become particularly pronounced, with Verizon Wireless and AT&T together having aggregated more than 90 percent of all cellular spectrum. In addition, these two service providers together currently hold approximately 72 percent of 700 MHz spectrum. By comparison, variation in spectrum holdings of higher-frequency spectrum in the range of 1 to 2 GHz is more evenly distributed: of the PCS spectrum, Verizon Wireless holds 16 percent, AT&T holds 29 percent, Sprint holds 28 percent and T-Mobile holds 22 percent; of the AWS-1 spectrum, Verizon Wireless holds 37 percent, AT&T holds 13 percent, and T-Mobile holds 42 percent.

16. Second, its findings are informed by the skyrocketing consumer demand for mobile broadband. Today, consumers are demanding more data at higher speeds, while at home, at work, and in transit. The Commission finds that to provide sufficient level of service in the marketplace to the benefit of consumers, providers will need to deploy more spectrum that can provide both coverage and in-building penetration, as well as spectrum that can provide the increased throughput for mobile broadband applications

17. Third, its findings are based on the recognition that the 600 MHz spectrum that will be made available in the Incentive Auction will be the last offering of a significant amount of nationwide greenfield low-band spectrum for the foreseeable future. This is particularly important because of the very different characteristics of low-band spectrum. There is a large frequency gap between the below-1-GHz spectrum (in the 700 and 800 MHz bands now largely held by the leading providers and the 600 MHz Incentive Auction spectrum) and the remaining spectrum currently suitable and available for mobile broadband use, beginning with the AWS-1 band at 1710 MHz. Low-band spectrum possesses distinct propagation advantages for network deployment, particularly in rural areas and indoors. As a result, the auction of spectrum below 1 GHz presents a once-in-a-generation opportunity to promote

competition as specifically required by section 309(j). Based upon current trends in consumer demand for mobile broadband services, the Commission concludes that the decisions the Commission makes here will have a significant impact on the extent to which competition may flourish for years to come.

18. Though there is substantial support in the record for distinguishing between low-band and high-band spectrum based on propagation characteristics, as discussed above, the Commission finds that the record does not support such categorical distinctions between three different spectrum groupings – below-1-GHz, 1-2.2 GHz, and 2.3-2.7 GHz – as recently advocated by Sprint.

19. Variety of Licensees and Rural Deployment. Under Section 309(j), Congress mandated that the Commission designs auctions to “include safeguards to protect the public interest in the use of the spectrum,” including the objectives to disseminate licenses “among a wide variety of applicants” and to promote deployment of new technologies, products, and services to “those residing in rural areas.” The limited restrictions the Commission imposes on spectrum holdings will promote both of these statutory policies. A variety of licensees is particularly important in light of the lack of competitive offerings in rural America today.

20. Increasing the number of providers who have access to low-band spectrum can increase the competitive offerings of mobile wireless service for consumers, particularly in rural areas. Two nationwide providers control the vast majority of low-band spectrum, and this disparity makes it difficult for rural consumers to have access to the competition and choice that would be available if more wireless competitors also had access to low-band spectrum. Low-band spectrum, given its unique propagation characteristics, can serve as a foundation for expansion of an existing network or a new or upcoming service providers’ network deployment as it builds a customer base to support further growth. The Commission finds that its spectrum holdings policies will promote variety in licensees and deployment of new technologies to those residing in rural areas.

21. The Commission believes that holding a mix of spectrum bands is advantageous to providers and that consumer’s benefit when multiple providers have access to a mix of spectrum bands which in

turn can increase competition, drive down prices, and ensure continued innovation and investment. Accordingly, the Commission finds its public interest goal of promoting consumer welfare would be advanced by the policies the Commission adopted.

22. Potential for Competitive Harm from Increased Aggregation of Spectrum. The Commission also finds that in the absence of additional below-1-GHz spectrum on a nationwide basis, there is a substantial likelihood of competitive harm if providers that currently lack sufficient access to such spectrum cannot acquire it. Under section 309(j), the Commission has mandates to promote competition, promote efficient use of spectrum, and avoid the excessive concentration of licenses. Low-band spectrum is less costly to deploy and provides higher coverage quality and the leading providers have most of the low-band spectrum available today. If they were to acquire all or substantially all of the remaining low-band spectrum, they would benefit independently of any deployment of this newly acquired spectrum to the extent that their rivals are denied its use. Without access to this low-band spectrum, their rivals would be less able to provide a competitive alternative.

23. Along with an attenuated ability to increase output or service quality in response to price increases, providers that lack access to low-band spectrum may lack the ability quickly to expand coverage or provide new or innovative services, which would have a significant impact on competition in the mobile wireless marketplace. The Commission agrees that a service provider that is limited to high-band spectrum holdings would face challenges to provide services as robust as those offered by providers holding a mix of low- and high-band spectrum. The consumer harms from the raising of rivals' costs from increased concentration of low-band spectrum outweigh the potential benefits of unlimited spectrum aggregation. Accordingly, the Commission finds that the limited restrictions the Commission adopted will reasonably balance its goals of promoting competition, ensuring the efficient use of spectrum, and avoiding an excessive concentration of licenses in accord with section 309(j).

24. Foreclosure. The Commission agrees with DOJ, today's mobile wireless marketplace is characterized by factors that, according to DOJ, increase the potential for anticompetitive conduct,

including high market concentration, highly concentrated holdings of low-band spectrum, high margins, and high barriers to entry. These risk factors increase the incentive and ability for a provider with low-band spectrum to bid for the spectrum in an attempt to stifle competition that may arise if multiple licensees were to hold low frequency spectrum. As a result, such a provider might be the highest bidder in a spectrum auction, not because it will put the spectrum to its highest use, but because it is motivated to engage in a foreclosure strategy. In light of this risk and balancing the inherent tradeoffs, the Commission finds that the limited restrictions the Commission enacted is a reasonable balance of the Section 309(j) and public interest factors that form its statutory mandate, including the goals to promote competition, disseminate licenses among a wide variety of applicants, ensure high quality service to those in rural areas and avoid the excessive concentration of licenses, while also promoting the efficient and intensive use of the spectrum.

C. Conclusion

25. For the reasons set forth above, spectrum is a limited and essential input for the provision of mobile wireless telephony and broadband services, and ensuring access to, and the availability of, sufficient spectrum is critical to promoting the competition that drives innovation and investment. The Communications Act has long required the Commission to examine closely the impact of spectrum aggregation on competition, innovation, and the efficient use of spectrum to ensure that spectrum is allocated and assigned in a manner that serves the public interest, convenience and necessity, and avoids the excessive concentration of licenses. In recent years, the Commission has considered in more detail and largely in the context of its case-by-case analysis of secondary market transactions how distinctions among spectrum bands affect competition in the provision of next-generation mobile broadband services.

26. In today's marketplace, in many service areas currently suitable and available below-1-GHz spectrum is disproportionately concentrated in the hands of larger nationwide service providers: the two largest providers hold 73 percent of the low-band spectrum. Particularly in the context of the once-in-a-generation Incentive Auction, the Commission finds that there is a reasonably foreseeable risk of not

achieving its various section 309(j) goals whether or not leading providers are motivated by foreclosure strategies. The Commission concludes that if the Commission do not act at this time to ensure the highest use of low-band spectrum, the competitive choices available to wireless consumers will likely be substantially less attractive. The Commission therefore finds it essential to establish clear and transparent policies that will preserve and promote competition in the future, promote the efficient use of spectrum, ensure competitive mobile broadband service in rural areas, and avoid an excessive concentration of licenses. The Commission finds that excessive concentration in the allocation of relatively scarce below-1-GHz spectrum, given ever increasing consumer demand for more bandwidth-intensive services, would substantially harm the public interest and indeed, would create a significant risk in the future of an insufficient number of service providers with a network capable of satisfying consumer demand.

27. The Commission finds that the promotion of competition, variety of licensees, rural coverage, and consumer choice in the mobile marketplace, as well as in the future, crucially depends upon multiple providers having access to the low-band spectrum they need to operate and vigorously compete. The Commission also finds that the Commission must consider the potential for anticompetitive results if the concentrated holdings of below-1-GHz spectrum are not addressed. The Commission cannot ignore the possibility of diminished competition in the future, both from rivals' costs being raised and from foreclosure. Further, the Commission finds that the burden that some providers may experience by limits on their ability to acquire increasing amounts of below-1-GHz spectrum, when tailored to the minimum the Commission believed necessary to promote competition, will be outweighed by the public interest benefits that will flow from the preservation and promotion of robust and sustainable competition. By adopting clear and transparent spectrum aggregation limits, the Commission aim to ensure that American consumers have meaningful choices among multiple service providers in the future.

II. CHANGES TO THE SPECTRUM SCREEN

28. The Commission retains the current standard for whether particular bands should be included in the spectrum screen - "suitable" and "available" in the near term for the provision of mobile

telephony/broadband services. The Commission determines that the following spectrum should be added to the spectrum screen: the 600 MHz band (at the conclusion of the Incentive Auction), Advanced Wireless Services in the 2000-2020 MHz and 2180-2200 MHz spectrum bands (AWS-4), H Block, additional BRS spectrum, the majority of the EBS spectrum, and the AWS-3 band (on a market-by-market basis as it becomes “available”). The Commission also determines that it should not include the Upper 700 MHz D Block and a certain amount of the SMR spectrum, both of which previously have been included.

A. Standard for Inclusion of Bands

29. When assessing spectrum aggregation in its review of wireless transactions, the Commission evaluates the current spectrum holdings of the acquiring firm that are “suitable” and “available” in the near term for the provision of mobile telephony/broadband services. Suitability is determined by whether the spectrum is capable of supporting mobile service given its physical properties and the state of equipment technology, whether the spectrum is licensed with a mobile allocation and corresponding service rules, and whether the spectrum is committed to another use that effectively precludes its uses for mobile services. Spectrum is considered “available” if it is “fairly certain that it will meet the criteria for suitable spectrum in the near term, an assessment that can be made at the time the spectrum is licensed or at later times after changes in technology or regulation that affect the consideration.”

30. In the Mobile Spectrum Holdings NPRM, 77 FR 61330, October 9, 2012, the Commission sought comment on whether to continue to consider spectrum based on the suitability and availability standard or whether to consider other factors and asked for any legal, economic, and engineering justifications to support existing or modified criteria to determine the suitability and availability standard. The Commission also sought comment on the application of the relevant factors to particular spectrum bands and which spectrum bands should be included in the Commission’s spectrum analysis.

31. The Commission retains the current definition. The Commission finds that the current suitable and available standard has worked well to identify new spectrum to be included in the spectrum

screen, and the record does not provide persuasive evidence to support modifying the current suitability and availability standard. Any narrower definition such as “actually” or “imminently” available would preclude relevant spectrum from being accounted for in its analysis of spectrum aggregation as the Commission review secondary market wireless transactions.

B. 600 MHz Band

32. The Commission finds that the 600 MHz Band is suitable for the provision of mobile telephony/mobile broadband services. In the Incentive Auction Report and Order, the Commission establishes rules to implement the Incentive Auction and to govern the use of the 600 MHz Band for the provision of mobile wireless services and adopts a band plan that facilitates wireless broadband deployment operations. The Commission also finds that the 600 MHz Band is available for the provision of mobile telephony/mobile broadband services, citing the framework for transitioning incumbent broadcasters from the 600 MHz Band within 39 months of the close of the auction set forth in the Incentive Auction Report and Order. Given this concrete transition framework, the relative clarity regarding the availability of this spectrum, and the importance of this band to the mobile wireless marketplace going forward, the Commission anticipates that the spectrum cleared at auction is likely to begin having a competitive impact very shortly after the auction ends. As a result, the Commission will consider the 600 MHz Band to be available upon the release of the Channel Reassignment PN after conclusion of the Incentive Auction. The amount of repurposed 600 MHz Band spectrum added to the spectrum screen will be equal to the total megahertz amount of spectrum repurposed for flexible use wireless licenses.

C. Advanced Wireless Service

1. AWS-4 Spectrum.

33. The Commission finds that the 40 megahertz of spectrum in the AWS-4 band is suitable and available for the provision of mobile/telephony broadband services, and therefore should be included in the spectrum screen. In the AWS-4 Report and Order, the Commission adopted licensing, operating, and

technical rules for stand-alone terrestrial mobile wireless operations in the AWS-4 band, which already included an allocation for mobile use, and took other actions to remove regulatory barriers to mobile broadband use of the AWS-4 band, as described above. The Commission also determined that it would assign AWS-4 licenses to DISH, as the incumbent MSS operator in that spectrum, and established a concrete, proven process for efficient relocation of incumbent operations from 2180-2200 MHz. In light of these Commission actions, the Commission finds that the 40 megahertz in the AWS-4 band should be included in the spectrum screen going forward.

34. The Commission rejects argument that it should include only 35 out of the 40 megahertz of AWS-4 spectrum because of the stringent technical restrictions placed on AWS-4 operations in 2000-2005 MHz to protect adjacent operations in the upper portion of the H Block (1995-2000 MHz). Given the flexibility provided in the AWS-4 Report and Order allowing these technical restrictions on AWS-4 operations in 2000-2005 MHz to be modified by commercial agreements between licensees of the AWS-4 band and the H Block, and the fact that DISH now holds all AWS-4 and H Block licenses, the Commission concludes that any potential interference issues between 2000-2005 MHz and 1995-2000 MHz should be sufficiently resolved so that the Commission should count 2000-2005 MHz in the spectrum screen along with the other 35 megahertz of AWS-4 spectrum.

2. H Block

35. The Commission finds that the H Block spectrum is suitable and available for the provision of mobile/telephony broadband services, and therefore should be counted in the spectrum screen. In the H Block Report and Order (78 FR 50214, August 16, 2013), the Commission explained that through the adoption of service rules for this band, the Commission increased the nation's supply of spectrum for flexible-use services, including mobile broadband, and in particular would extend the widely deployed broadband PCS band used by numerous providers to offer mobile service across the United States. The Commission also found that, consistent with the technical rules it adopted, the use of both the 1915-1920 MHz band and the 1995-2000 MHz band can occur without causing harmful interference to broadband

PCS downlink operations at 1930-1995 MHz. In light of these conclusions, along with the recent completion of the H Block auction and the fact that incumbent licensees in these bands previously were cleared by UTAM, Inc. and by Sprint, the Commission finds that the H Block should be included in the spectrum screen going forward.

3. AWS-3 Bands

36. The Commission finds that the AWS-3 bands (1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz) are suitable for the provision of mobile telephony/mobile broadband services. In the recent AWS-3 Report and Order, the Commission amended the Allocation Table to include a mobile, non-Federal allocation for the 1695-1710 MHz and 1755-1780 MHz bands, which already applied to the 2155-2180 MHz band and found that licensing AWS-3 bands in a combination of 5 and 10 megahertz blocks aligns well with a variety of wireless broadband technologies, including LTE, Wideband Code Division Multiple Access (WCDMA), HSPA, and LTE-advanced. The Commission concluded that pairing uplink/mobile transmit operations in the 1755-1780 MHz band with downlink operations in the 2155-2180 MHz band would be compatible with similar operations in the adjacent AWS-1 band, effectively creating a combined 140 megahertz band. Further, the Commission observed that no regulation would prohibit licensees from pairing the unpaired 1695-1710 MHz uplink band with another present or future licensed downlink band. Given the anticipated use of the AWS-3 bands for mobile broadband service, either as an extension of the AWS-1 band or potentially in combination with other AWS bands, the Commission concludes that the AWS-3 bands are suitable for the provision of mobile telephony/mobile broadband service.

37. The Commission also finds that the AWS-3 bands should be considered available for mobile telephony/mobile broadband services on a market-by-market basis in the future, given that the timing of that access will depend on the nature of the Federal operations affecting each particular market. Commercial operators will have access to the 1755-1780 MHz and 1695-1710 MHz bands outside of areas where federal operations are protected during their transition, inside areas where federal operations

are protected during their transition if successfully coordinated with the Federal incumbent, in areas in which the Federal incumbents have relocated pursuant to their Transition Plan, and inside areas in which Federal incumbents are protected indefinitely if successfully coordinated with the Federal incumbent. Accordingly, given that the effect of Federal incumbent operations on the timing and scope of commercial operations will vary from market to market, the Commission determines that the 1755-1780 MHz and 1695-1710 MHz bands will become available on a market-by-market basis in the future. In addition, consistent with the paired offering of the 2155-2180 MHz band with the 1755-1780 MHz band, the Commission will count the 2155-2180 MHz band as available for purposes of the spectrum screen at the same time the Commission counts the 1755-1780 MHz band in the particular market, consistent with its approach to the paired AWS-1 band.

38. The Commission notes that the timing and the extent of access by commercial licensees to the 1755-1780 MHz and 1695-1710 MHz bands in particular markets will depend, in part, on the timelines to be set in the Transition Plans for relocating Federal incumbents, which will be made publicly available. In light of the importance of this band in adding capacity spectrum for mobile wireless providers to deploy next-generation networks, and the timelines to be set in the Transition Plans for different systems in different markets, the Commission will count the 1755-1780 MHz and 1695-1710 MHz bands in the spectrum screen in a particular market once all relocating Federal incumbent systems in that market are within three years of completing relocation, according to the Transition Plans. The Commission notes that the timing and the extent of access by commercial licensees to these AWS-3 bands also will depend on successful coordination with federal systems during the transition process and the Federal systems that will not be relocating from these bands. However, given that the nature and timing of the coordination will be the subject of two-party private discussions between commercial licensees and Federal incumbents and will vary from market to market, from licensee to licensee, and from system to system, the Commission will not base the timing of when the Commission count AWS-3 spectrum to be available in a particular market on the status of coordination with non-relocating Federal incumbents. The Commission notes that the Commission will count the 2155-2180 MHz band in the spectrum screen for a

particular market at the same time the Commission counts the 1755-1780 MHz and 1695-1710 MHz bands in that market, for the reasons indicated above.

D. Big LEO Bands

39. The Commission declines to add to the spectrum screen Big LEO MSS spectrum in the 2483.5-2495 MHz and 1610-1617.775 MHz ranges, noting that Globalstar's ATC authority to operate terrestrial base stations and mobile terminals using this spectrum under the authority of a waiver granted in 2008 was suspended in 2010 and none of these proposed changes have been acted on by the Commission. Thus, the Commission declines to add this Big LEO MSS spectrum to the spectrum screen at this time. The Commission distinguishes this decision from its determination to add to the spectrum screen the AWS-4 band (2000-2020 MHz and 2180-2200 MHz), for which the Commission has taken a number of actions to make the band suitable and available for mobile telephony/mobile broadband. Specifically, for the AWS-4 band, the Commission has added a mobile allocation, adopted licensing rules for stand-alone terrestrial mobile wireless operations, and assigned the spectrum to the incumbent MSS operator, DISH.

E. BRS/EBS Bands

40. **Background.** The 194 megahertz in the 2496-2690 MHz band (2.5 GHz) comprises (1) 73.5 megahertz licensed to commercial operators in the BRS band; (2) 112.5 megahertz licensed to eligible educational institutions or non-profit educational organizations in the EBS band; and (3) 8 megahertz licensed to BRS or EBS as guard bands dividing the lower, middle, and upper band segments of the 2.5 GHz.

41. In 2008, in the Sprint-Clearwire Order, the Commission decided to include in the spectrum screen 55.5 megahertz of BRS spectrum in the upper band segment, in those markets in which the transition to the new band plan was complete. The Commission observed that 2.5 GHz licensees had made substantial progress in the prior few years in transitioning to the new band plan, finalizing the WiMAX standards, developing equipment, and formulating their plans for using the 2.5 GHz band to

provide service. The Commission declined to include in the spectrum screen the 12 megahertz of BRS spectrum in the middle band segment (“MBS”) due to concerns of interference from legacy high-power video operations, stating it lacked sufficient information “to determine the extent to which MBS is in fact available for mobile telephony/broadband services.” The Commission also declined to include in the spectrum screen the BRS Channel-1 (2496-2502 MHz), which is not contiguous to the 55.5 megahertz of BRS spectrum that was included, finding that the Channel does not fit into the contemplated WiMAX deployment plans. Further, the Commission excluded from the screen the 8 megahertz of guard bands because they are secondary to adjacent-channel operations and they are too narrow to be used unless they were all aggregated in a market.

42. The Commission currently does not include in the screen any EBS spectrum, which is licensed to eligible educational entities who can lease spectrum to commercial operators subject to the requirement, inter alia, to reserve at least five percent of digital transmission capacity for educational purposes. In the Sprint-Clearwire Order, it declined to include EBS spectrum in the screen, observing that “the primary purpose of EBS is to further the educational mission of accredited public and private schools, colleges and universities providing a formal educational and cultural development to enrolled students through video, data, or voice transmissions.” The Commission noted that, while educational licensees are allowed to lease their excess capacity to commercial operators, leasing is subject to various special requirements designed to maintain the primary educational character of services provided using EBS spectrum. In addition, the Commission recognized that other elements of the EBS licensing regime, such as its solely site-specific character, with the absence of any licensee in various unassigned EBS “white spaces,” complicate use of this spectrum for commercial purposes. Further, the Commission indicated that it was sensitive to the concerns raised by EBS licensees that potential divestitures, in response to spectrum aggregation concerns relating to competition among commercial services, could disproportionately harm EBS licensees.

43. In subsequent transaction reviews, the Commission declined to add EBS or additional BRS spectrum to the spectrum screen, finding either that the circumstances had not sufficiently changed from

Sprint-Clearwire Order or that the instant rulemaking proceeding is a more appropriate place to evaluate this issue. In the context of reviewing the SoftBank-Sprint-Clearwire transaction, however, the Commission did consider arguments on the record regarding the competitive effect of Sprint obtaining 100 percent stock ownership in and de facto control of Clearwire's BRS and EBS spectrum holdings, finding competitive harm unlikely.

44. **Discussion.** The Commission finds that it is necessary to modify the amount of 2.5 GHz spectrum the Commission currently includes in the screen to reflect today's marketplace realities. The Commission will update the spectrum screen to increase the amount of 2.5 GHz spectrum from 55.5 megahertz to 156.5 megahertz. The Commission will add the 12 megahertz in the two MBS BRS channels, as well as 89 megahertz of EBS spectrum, which represents most of the EBS spectrum, adjusted to reflect white space and education use elements. The Commission will continue to exclude the six megahertz in BRS Channel 1 and the guard bands.

45. As an initial matter, the Commission observes that Sprint announced its intent to integrate its 2.5 GHz spectrum throughout its network to provide mobile broadband service. Sprint recently announced its next generation service "Sprint Spark," an enhanced LTE network, which it plans to deploy over the next three years using its SMR, PCS, and 2.5 GHz spectrum. The Commission finds that based upon how the 2.5 GHz band is being used today, and will be used in the near term; the majority of the band is suitable and available for mobile telephony/mobile broadband services.

46. With respect to BRS spectrum, the Commission finds that, in addition to the 55.5 megahertz currently counted in the screen, the Commission should include 12 megahertz of BRS MBS spectrum. The Commission recognizes that legacy video operations in the MBS, once considered a significant impediment to the deployment of cellularized operations in the MBS, are now no longer a barrier to deploying mobile broadband service in the vast majority of markets. The Commission notes that Sprint recently has acknowledged that BRS MBS channels are "more routinely available" for mobile broadband use. Accordingly, the Commission includes the 12 megahertz of BRS MBS spectrum in the screen.

47. However, the Commission will continue to exclude the 6 megahertz BRS Channel 1 (2496-2502 MHz). The proponents of including BRS Channel 1 in the screen have not demonstrated any material change in circumstances since 2008 with respect to that channel and the Commission acknowledges Sprint's concern that BRS Channel 1 is not contiguous with the other BRS channels and therefore is not conducive to the provision of mobile telephony/mobile broadband service.

48. With respect to EBS spectrum, the Commission declines to continue its policy of excluding all EBS spectrum. Leasing in and of itself does not preclude the spectrum from meeting the suitable and available standard. The Commission does not find that the differences in propagation characteristics between the 2.5 GHz band and lower frequency spectrum should result in its continued exclusion of the 2.5 GHz band from the spectrum screen for purposes of its competitive review. Nor does the Commission agree with Sprint that the aggregation of 20 megahertz of this band is a necessary precursor to counting EBS in the screen. The benefit of contiguous holdings in a band is not a factor unique to EBS spectrum that warrants excluding EBS holdings from the screen in cases where such contiguity is not achieved.

49. Although the Commission finds that EBS spectrum generally is suitable and available for mobile telephony/mobile broadband services, the Commission agrees with Sprint that there are certain factors unique to EBS that warrant not including all of the EBS spectrum in the screen. The Commission will continue to exclude the five percent of the EBS capacity that is reserved for educational uses. The Commission remains committed to EBS spectrum serving educational purposes. Originally, the 2500-2690 MHz band was allocated for ITFS service and "established to provide formal education and cultural development in aural and visual form to students enrolled in accredited public and private schools, colleges and universities." The Commission continues to support the education mission of accredited public and private schools, colleges, and universities providing a formal educational and cultural development to enrolled students through video, data, or voice transmissions. Therefore, as a starting point, the Commission will include 95 percent, or approximately 107 megahertz, of EBS spectrum in the screen.

50. With EBS spectrum licensed on a site-specific basis, certain areas exist where the Commission has not assigned a license to an educational entity. And no educational entity has been able to apply for a license for an EBS white space since 1995. Therefore, no commercial wireless provider has ever had the opportunity to lease EBS spectrum in that area. Therefore, white spaces can present certain obstacles for providing reliable, wide-area coverage. The Commission finds it reasonable to discount for white space when including EBS spectrum in the screen.

51. Given the complexity of calculating a white space discount on a market-by-market basis, Sprint proposes a uniform, nationwide EBS white space discount for administrative practicability and regulatory certainty. Sprint calculated that across all EBS channels, an average of approximately 16.5 percent of the population is located in EBS white space and therefore proposes to use a 16.5 percent discount. The Commission agrees that a nationwide discount is the best option for applying a white space discount for EBS spectrum and find Sprint's proposal reasonable. While as Verizon Wireless notes, using a nationwide average may in some instances undercount EBS white space in some markets and overcount EBS white space in other markets, the Commission finds that using an average across all markets is a reasonable method, which balances administrative efficiency with the complexity of a precise market-by-market calculation. Thus, after taking the discount into consideration, of the initial 107 megahertz of EBS spectrum, the Commission will include 89 megahertz of EBS spectrum in the screen. As discussed in Section VI.G below, the Commission declines to further weight EBS spectrum, or other spectrum bands, based on propagation characteristics.

F. Upper 700 MHz D Block

52. In light of Congress' reallocation of the Upper 700 MHz D Block spectrum (758-763 MHz, 788-793 MHz) for public safety use – and the subsequent steps taken by the Commission and the Public Safety and Homeland Security Bureau to effectuate the reallocation and licensing of this spectrum for public safety – the Commission finds that the 10 megahertz previously designated as the Upper 700 MHz D Block is no longer suitable and available for the provision of mobile telephony/mobile broadband

services. Therefore, going forward, the Commission will exclude from the spectrum screen that 10 megahertz (758-763 MHz, 788-793 MHz) that currently is part of the screen, along with the adjacent public safety broadband spectrum that is also now licensed to FirstNet (763-768 MHz, 793-798 MHz), which was not previously counted in the initial spectrum screen.

53. The Commission notes that, under the Spectrum Act, FirstNet is permitted to provide access to the 20 megahertz of Public Safety Broadband spectrum to commercial entities through certain “covered leasing agreements.” The Commission will not add to the screen any of this spectrum merely because FirstNet has entered into leasing arrangements contemplated by the Act. Deployment of this spectrum is essential to the critical statutory goal of deploying a nationwide interoperable public safety broadband network, and the Commission wants to provide equal incentives to all commercial operators to partner with FirstNet to make this goal a reality.

G. SMR Bands

54. In 2004, the Commission adopted a new band plan for the 800 MHz band to “address the [then] ongoing and growing problem of interference to public safety communications in the 800 MHz band.” The interference problem was caused “by a fundamentally incompatible mix of two types of communications systems: cellular-architecture multi-cell systems ... and high-site non-cellular systems.” To provide immediate relief, the Commission implemented technical standards that defined unacceptable interference in the 800 MHz band, while also reconfiguring the band to separate commercial wireless systems from public safety and other high site systems. Pursuant to the band reconfiguration, the Commission eliminated the interleaving of public safety and commercial channels in the 800 MHz band and separated cellularized multi-cell and non-cellularized high-site systems within the band.

55. Under the reconfiguration plan, Nextel (now Sprint) was required to vacate the 806-817 MHz and the 851-862 MHz band segments and relocate to 817-824/862-869 MHz. The Commission had designated the upper portion of the 800 MHz band (817-824 MHz/862-869 MHz) for Enhanced Specialized Mobile Radio (ESMR) systems and designated the lower portion of the 800 MHz band (806-

815 MHz/851-860 MHz) for use by public safety, Critical Infrastructure Industries (CII), and other non-cellular systems.

56. The Commission eliminates from inclusion in the screen 7.5 megahertz in the 800 MHz Band because, after the Commission reconfigured the band, that spectrum is no longer licensed for commercial, cellularized operations. The Commission also eliminates the remaining 5 megahertz in the 900 MHz band that is narrowly-channelized in 125 kHz blocks and not adjacent to the remaining 14 megahertz of SMR spectrum that is licensed for and considered suitable and available for the provision of mobile telephony/mobile broadband services. Therefore, going forward, the Commission finds only 14 megahertz of SMR spectrum is suitable and available for the provision of mobile telephony/mobile broadband services and will be included in the screen.

III. LICENSING THROUGH COMPETITIVE BIDDING

57. The Commission concludes that it is in the public interest, for auctions, to replace the current case-by-case approach of evaluating long form applications of winning bidders with a determination of whether a band-specific spectrum holding limit should apply ex ante to the licensing of particular bands through competitive bidding. In the R&O, the Commission finds that the Commission should determine what if any spectrum holding limitations should affect the licensing of particular bands through competitive bidding before the relevant competitive bidding process begins for that band. The Commission determines certain guidelines that the Commission will consider in making such determinations prior to the beginning of the competitive bidding process for a particular band, which generally will be made in the service rulemakings for those bands, enabling the Commission to take into account all relevant objectives specific to the bands in question and competitive bidding process. Given the proximity of the AWS-3 auction and Incentive Auction, the Commission makes determinations regarding whether to adopt, in the context of this rulemaking, any mobile spectrum holdings limits for the licensing of these bands through competitive bidding. In particular, based on the record in this proceeding and in the two service rulemakings, as well as the statutory goals set forth in the

Communications Act and the Spectrum Act, the Commission reserves spectrum in the forward auction for the 600 MHz Band licenses in order to ensure against excessive concentration in holdings of below-1-GHz spectrum, and the Commission declines to adopt any mobile spectrum holding limits for the licensing of the AWS-3 bands through competitive bidding.

A. Ex Ante Application of Mobile Spectrum Holding Limits to the Licensing of Spectrum Bands through Competitive Bidding

58. In the Mobile Spectrum Holdings NPRM, the Commission sought comment on general approaches to address mobile spectrum policies at auction, including whether to retain its current case-by-case approach or adopt a bright-line limit. The Commission also sought comment on the costs and benefits of applying a case-by-case approach to initial licenses acquired at auction and whether it affords participants sufficient certainty to determine whether they would be allowed to hold a given license post-auction.

59. The Commission concludes that it is in the public interest to replace its post-auction case-by-case analysis of the licensing of spectrum bands through competitive bidding with a determination of whether a band-specific mobile spectrum holding limit is necessary to carry out the duties under the Communications Act and, if so, to establish an ex ante application of that limit to the competitive bidding for that band.¹ The Commission finds that upfront, clear determination, instead of case-by-case analysis post-auction, would provide potential bidders with greater certainty in the auction process regarding how much spectrum they would be permitted to acquire at auction. Providing such certainty is consistent with Section 309(j)(3)(E) of the Communications Act, which emphasizes the need for clear bidding rules “to ensure that interested parties have a sufficient time to develop business plans, assess marketplace conditions, and evaluate the availability of equipment for the relevant services.”

¹ In subsequent secondary market transactions, the licenses acquired at auction will be included in the application of our revised spectrum screen when the spectrum is deemed suitable and available for inclusion in the screen.

60. To the extent that the Commission adopts a mobile spectrum holding limit for the licensing of a particular band through competitive bidding, applying the limit ex ante would provide greater certainty and efficiency in the process of licensing through competitive bidding, which would be particularly important for complex auctions like the Incentive Auction. Upfront, bright-line determinations would streamline the post-auction review of license applications, which should allow winning bidders to receive their licenses more quickly and proceed to deploy service using the acquired spectrum. The application of a mobile spectrum holding limit ex ante would avoid certain challenges in trying to remedy concerns after post-auction competitive review. If the Commission were to make a finding post-auction that the acquisition of spectrum by a winning bidder would be likely to cause competitive harm, it could compel abandonment of the license application or divestiture of the license won at auction, which could create incentives for bidder behavior that would undermine the goals of the auction. Alternatively, divestiture of another license from the bidder's pre-auction spectrum holdings might not address the Commission's competitive concerns with aggregation of the spectrum made available at auction, especially if the spectrum the winning bidder would propose to divest does not have similar characteristics of the spectrum acquired in the auction.

61. The Commission finds that, for competitive review of spectrum licenses acquired through competitive bidding, the benefits of a bright-line ex ante application of a mobile spectrum holding limit to the competitive bidding for those licenses outweigh any costs associated with any perceived loss of flexibility that the existing post-auction review might afford. The Commission notes that a case-by-case review of spectrum licenses acquired through secondary markets continues to be appropriate, as discussed below.

62. The Commission finds that the determination of whether to apply any mobile spectrum holding limits to the licensing of a particular band through competitive bidding, and if so the scope of such limits and policies, should be clearly specified sufficiently in advance of the auction. This approach would afford a prospective bidder sufficient time to develop a bidding strategy based on the mobile

spectrum holdings determination adopted for an upcoming auction, while allowing the Commission to consider the unique circumstances of each spectrum band auction when making its determination.

63. The Commission would evaluate a number of factors in considering whether to adopt a mobile spectrum holdings limit for the licensing of a particular band through competitive bidding and, if so, what type of limit to apply. As an initial matter, its evaluation will encompass the “broad aims of the Communications Act,” which include, among other things, preserving and enhancing competition in relevant markets, accelerating private sector deployment of advanced services, and generally managing the spectrum in the public interest. Its determination will help carry out its duties under the Communications Act, serving the public interest. Its public interest analysis in this context also may entail assessing whether a particular auction specific policy will affect the quality of communications services or result in the provision of new or additional services to consumers. Moreover, the Commission must consider any other statutory goals and directives applicable to a particular spectrum band being licensed by competitive bidding.

64. The Commission will consider whether the acquisition at auction of licenses to use a significant portion of spectrum by one or more providers would potentially harm the public interest by reducing the likelihood that multiple service providers would have access to sufficient spectrum to compete robustly in the provision of mobile telephony/mobile broadband service. This determination will be based on several factors, including total amount of spectrum to be assigned, characteristics of the spectrum to be assigned, timing of when the spectrum could be used for mobile telephony/mobile broadband services, the specific rights being granted to licensees of the spectrum, and the extent to which competitors have opportunities to gain access to alternative bands that would serve the same purpose as the spectrum licenses at issue.

B. 600 MHz Band Incentive Auction

65. For the Incentive Auction, the Commission establishes a market-based spectrum reserve of up to 30 megahertz in each license area designed to ensure against excessive concentration in holdings of

low-band spectrum – a reserve that includes safeguards to ensure that all bidders bear a fair share of the cost of the Incentive Auction. The market-based reserve balances the need to meet the requirements for concluding the Incentive Auction with the competition goals discussed above.

66. In the Mobile Spectrum Holdings NPRM, the Commission sought comment on whether to adopt limits on the amount of spectrum that entities could acquire in the context of spectrum auctions mandated by the Spectrum Act. In the Incentive Auction NPRM, the Commission sought comment on what, if anything, it should do to meet the statutory requirements of section 309(j)(3)(B) and promote the goals of the Incentive Auction. For instance, the Commission noted that “section 309(j)(3)(B)’s directive to avoid excessive concentration of licenses might militate in favor of a rule that permits any single participant in the auction to acquire no more than one-third of all 600 MHz Band spectrum being auctioned in a given licensed area.”

67. The amount of repurposed spectrum depends on the outcome of the reverse and forward auction components of the Incentive Auction. The reverse and forward auctions will be integrated in a series of stages. Each stage will consist of a reverse auction and a forward auction bidding process. Prior to the first stage, the initial spectrum clearing target will be determined based on broadcasters’ collective willingness to relinquish spectrum usage rights at the opening prices offered to them. The first stage reverse auction bidding rounds will determine the total amount of incentive payments necessary in connection with the initial clearing target. The forward auction bidding process will follow. If the final stage rule described below is satisfied, the forward auction bidding will continue until there is no excess demand for 600 MHz Band licenses. If the final stage rule is not satisfied, additional stages will be run, with progressively lower spectrum targets in the reverse auction and less spectrum available in the forward auction until the rule is satisfied.

68. The final stage rule is a reserve price with two components, both of which must be satisfied. The first component requires that the prices for licenses in the forward auction meet or exceed a certain price benchmark to assure that prices generally reflect competitive market values for comparable

spectrum licenses. The first component consists of alternative conditions, depending on the clearing target for the particular stage in which it is being applied. The alternative formulations recognize that per-unit market prices for spectrum licenses may decline consistent with an increase in supply. The price and spectrum clearing benchmarks will be established by the Commission in the Incentive Auction Procedures PN, after an opportunity for additional comment. The second component of the final stage rule requires that the proceeds of the forward auction be sufficient to meet expenses set forth in the Spectrum Act and any Public Safety Trust Fund amounts needed for FirstNet. If the requirements of both components of the reserve price are met, then the final stage rule is satisfied.

69. In the Incentive Auction Report and Order, the Commission indicates that, in the coming months, the Commission will solicit public input on final auction procedures by Public Notice (“Incentive Auction Comment PN”). This Public Notice will include specific proposals on crucial auction design issues such as opening prices, television channel assignment optimization, how much market variation to accommodate in the 600 MHz Band Plan, and benchmarks for implementing the final stage rule. Well in advance of the auction, also by public notice, the Commission will resolve these implementation issues and provide detailed explanations and instructions for potential auction participants (“Incentive Auction Procedures PN”).

1. The Need for a Market-Based Spectrum Reserve

70. . Given the importance of multiple providers, including rural and regional providers, having access to below-1-GHz spectrum for deployment and competition, the Commission concludes that a clear mobile spectrum holdings policy for the Incentive Auction is necessary to increase access opportunities to the 600 MHz Band. The Commission finds that it is appropriate to adopt a market-based spectrum reserve for entities that do not currently hold a significant amount of below-1-GHz spectrum.

71. The Commission will reserve on a contingent basis, licenses covering up to 30 megahertz of spectrum for bidders with spectrum holdings, at the deadline for filing a short-form application to participate in the forward auction, of less than 45 megahertz, on a population-weighted basis, of suitable

and available below-1-GHz spectrum in a PEA. All bidders, including those unable to bid on reserved licenses, will be able to bid on the unreserved licenses. The Commission specifies the maximum amount of spectrum that will be reserved in each market for eligible entities (“reserve-eligible” entities) in the forward auction under the various band plan scenarios identified in the Incentive Auction Report and Order, but the actual amount of spectrum reserved will depend on the demand by reserve-eligible bidders when the auction reaches a trigger (the “spectrum reserve trigger”). The Commission finds that this approach balances a number of the key statutory directives, including promoting competition, facilitating the deployment of advanced services by making spectrum available for flexible use, and sharing the costs of the Incentive Auction on a fair and equitable basis.

72. In reaching its decisions, the Commission must consider a number of statutory directives applicable to the Incentive Auction, including promoting competition, making spectrum available for flexible use, meeting proceeds requirements, and facilitating deployment of advanced services. With respect to promoting competition in the mobile wireless marketplace, the Commission observes that any of the types of limits discussed on the record – spectrum caps based on a provider’s existing below-1-GHz holdings, equal spectrum caps for all bidders, or reserved spectrum – have the potential to promote competition by ensuring that in the near future, more providers would hold a sufficient mix of spectrum to compete robustly. The Commission finds that its market-based spectrum reserve for the Incentive Auction has distinct advantages over the other approaches with respect to the other statutory directives.

73. First, the spectrum reserve gives mobile service providers significant latitude to bid on spectrum licenses they need in each area to meet their network requirements, including providers who are unable to bid for reserved spectrum in a particular PEA. Rules that would restrict the larger providers to no more than a 5x5 megahertz block of 600 MHz Band spectrum do not adequately consider the needs of those providers for additional spectrum to meet the demand of their subscribers in the longer term. Nor do such rules adequately consider that efficient deployment of services using the 600 MHz Band spectrum would likely rely on ensuring that the larger as well as smaller nationwide providers having a

stake in the development of equipment for the band. Spectrum caps also could affect to a certain extent mobile broadband providers' flexibility to expand services to meet increasing consumer needs.

74. Second, proposals that would set an individual spectrum cap on the amount of 600 MHz Band spectrum for which each provider could acquire licenses have greater risk of decreasing forward auction proceeds, and thus endangering its ability to repurpose spectrum, because it likely would lessen competition between the largest wireless providers for spectrum in amounts greater than the cap would permit.

75. The Commission concludes that its market-based spectrum reserve, particularly in the amounts and under the rules the Commission adopts is unlikely to reduce competition among bidders and in fact, will encourage competition among bidders wanting at least 20 megahertz of spectrum, as compared to other potential approaches to mobile spectrum holdings limits that could be applied to the Incentive Auction. Under the market-based spectrum reserve, every bidder will have the opportunity to bid for, and win, at least half of the 600 MHz Band spectrum in each market, and at some levels of spectrum made available in the forward auction, significantly more than half.

76. Third, the Commission concludes that its approach would not reduce participation in the auction by large providers to a level that would reduce the amount of spectrum that can be repurposed by the Incentive Auction. The reserved spectrum amount would be contingent upon (and subject to a reduction based on) the demand expressed in the forward auction by reserve-eligible bidders. If there is insufficient demand for reserved spectrum licenses, the amount of reserved spectrum would be reduced.

77. The Commission also finds that its market-based spectrum reserve is more likely to achieve its purposes more effectively than bidding credits based on the level of spectrum holdings. On balance, applying bidding credits based on spectrum holdings as opposed to reserving licenses for providers without significant below-1-GHz spectrum would not address the Commission's competitive concerns with aggregation of the spectrum made available at auction. The Commission notes that in the Incentive Auctions Report and Order the Commission adopted the bidding credits for the forward auction

applicable to small businesses. The Commission also stated it will initiate a separate proceeding to examine its designated entity (“DE”) rules generally.

78. The Commission notes that its decision to adopt a 600 MHz Band spectrum reserve and to establish the amounts of reserved spectrum specified below is based on the current marketplace structure of the mobile wireless service industry. If significant changes in the marketplace structure occur or a proposed transaction is filed with the Commission in the future affecting the top four nationwide providers and their spectrum holdings, the Commission will revisit its decisions here regarding the reserved spectrum provisions for the 600 MHz Band that the Commission adopted. The Commission will review as well whether changes should be made to any other decisions in the R&O. The Commission also plans to consider in a Further Notice of Proposed Rulemaking possible change to certain auction rules relating to joint bidding arrangements and strategies in the Incentive Auction. In order to allow the Commission to evaluate how certain bidding arrangements might affect the Incentive Auction, potential bidders will need to file well before the normal deadlines some of the information currently required in auction and license application forms.

2. Qualification to Bid on Reserved Licenses

79. The Commission needs to facilitate access by multiple providers to below-1-GHz spectrum is the basis for its adoption of a market-based spectrum reserve for the Incentive Auction and, accordingly, the Commission finds that a provider’s existing below-1-GHz holdings in a particular PEA should be the threshold basis for determining whether the provider qualifies to bid on reserved spectrum. To qualify to bid on reserved licenses in a PEA, an entity must not have an attributable interest in 45 megahertz or more, on a population-weighted basis, of below-1-GHz spectrum that is suitable and available for the provision of mobile telephony/mobile broadband services in that PEA, at the deadline for filing a short-form application to participate in the Incentive Auction. In its calculation of below-1-GHz spectrum holdings, the Commission includes not only the entity’s licensed spectrum, on a county-by-county basis, but also all long-term spectrum leasing arrangements, with spectrum being attributed to both the lessee

and lessor. Further, it includes in the calculations only the below-1-GHz spectrum that the Commission currently considers to be “suitable” and “available,” in the modified spectrum screen adopted today, and thus, no 600 MHz Band spectrum is included, as although it is suitable, it is not considered available until the conclusion of the Incentive Auction. The 45 megahertz of below-1-GHz spectrum approximates one-third of the 134 megahertz of below-1-GHz spectrum that the Commission counts in the modified total spectrum screen the Commission adopted. The Commission will measure an entity’s spectrum holdings on a county-by-county basis within a PEA,² and then construct a total county-population-weighted below-1-GHz spectrum holding for each entity within the PEA.³ As discussed below, even if a non-nationwide provider holds approximately one-third or more of the suitable and available below-1-GHz spectrum in a given market, it will not be precluded from bidding on reserved spectrum licenses in any market.

80. The Commission observes that the 45 megahertz threshold (approximately one-third of total below-1-GHz spectrum) to identify those who can bid on reserved licenses is consistent with the approximately one-third threshold for total spectrum that the Commission uses to identify those holdings in local markets that may raise particular competitive concerns in the context of secondary market transactions, as discussed below. The approximately one-third threshold is, based on its experience in numerous transactions over the last decade, an effective analytical tool in the secondary market context.

² In the context of secondary market transactions review, the Commission typically measures a provider’s holdings in a particular CMA based on the maximum spectrum holdings in any one county within that CMA. Unlike the screen the Commission uses for reviewing transactions, the qualification for bidding on reserved spectrum is a bright-line test, and PEAs are generally larger in geographic scope than the CMAs it uses for competitive review of transactions. Given those distinctions, the Commission finds that measuring a bidder’s below-1-GHz spectrum holdings amount in a given PEA, based on the highest below-1-GHz holding amount in any one county within a PEA, would not be appropriate.

³ To determine whether an entity is qualified to bid on reserved spectrum, its below-1-GHz spectrum holdings are calculated by summing (PEA county spectrum holdings x PEA county population (using U.S. Census 2010 population data)), and then dividing that sum by the total population of the PEA. In its calculations, the Commission includes licensed spectrum, on a county-by-county basis, as well as all long-term spectrum leasing arrangements, with leased spectrum being attributed to both the lessee and lessor. In those PEAs where there are existing long-term commercial leases, as the Commission attributes the leased spectrum to both the lessee and lessor, it increases the total below-1-GHz spectrum amount included by the (population-weighted) amount of the lease so that service providers’ holdings are not overstated.

Similarly, the Commission concludes that a threshold of approximately one-third is an effective line of demarcation to identify those entities that currently lack significant below-1-GHz spectrum holdings and would likely benefit from access to the reserved spectrum. In particular, the Commission finds that this threshold would help to ensure that multiple providers are able to access a sufficient amount of low-band spectrum, which would facilitate the extension and improvement of service in both rural and urban areas, to the benefit of consumers.

81. Non-Nationwide Providers. The 45 megahertz holding threshold may have substantial effects on non-nationwide providers that could outweigh the intended benefits.⁴ In many areas, regional and local service providers offer consumers additional choices in the areas they serve and provide some constraint on the ability of nationwide providers to act in anticompetitive ways to the detriment of consumers. Although nationwide providers generally set prices on a national basis, there can be significant variation in discounts, service quality, and extent of coverage at the local level. Non-nationwide providers are also important sources of competition in rural areas, where multiple nationwide service providers may have less incentive to offer high quality services. Today, 92 percent of non-rural consumers, but only 37 percent of rural consumers are covered by at least four 3G or 4G mobile wireless providers' networks and more than 1.3 million people in rural areas have no mobile broadband access. Smaller providers in such areas are likely to be more dependent upon the efficiencies gained from the unique propagation benefits of 600 MHz spectrum because they are less able to subsidize their deployment costs by revenues accrued in more densely populated areas where a nationwide subscriber base provides them with greater scale economies. Promoting competition by non-nationwide providers also advances the statutory goals of avoiding excessive concentration of licenses, disseminating licenses

⁴ In the 16th Mobile Wireless Competition Report, the Commission observed that there are four nationwide providers in the U.S. with networks that cover a majority of the population and land area of the country – Verizon Wireless, AT&T, Sprint, and T-Mobile. For purposes of this R&O, the Commission refers to other providers – with networks that are limited to regional and local areas – as “non-nationwide providers.”

among a wide variety of applicants, and encouraging rapid deployment of new wireless broadband technologies to all Americans, including those residing in rural areas.

82. The Commission will permit bidding on 600 MHz reserve spectrum by regional and local service providers in all PEAs, including those where such a provider holds more spectrum than its 45 megahertz holding threshold of the available low-band spectrum. The Commission establishes a bright-line rule to address these issues for the same reasons set forth above for generally adopting bright line rules on spectrum aggregation issues for its 600 MHz Incentive Auction. Non-nationwide service providers enhance competitive choices for consumers in the mobile wireless marketplace, and help promote deployment in rural areas. They also present a significantly lower risk of effectively denying access of low band spectrum to competitors in order to foreclose competition or to raise rivals' costs because of their relative lack of resources. Accordingly, the Commission concludes that non-nationwide service providers should be eligible to bid on reserved spectrum in all markets nationwide.

83. In sum, to qualify to bid on reserved licenses in a PEA, an entity must not hold an attributable interest in 45 megahertz or more of below-1-GHz spectrum in a PEA, as described above, or must be a non-nationwide provider. The Commission will revise the short-form application to provide for a certification by an applicant intending to bid on reserved spectrum that it meets the qualification criteria. If any entity plans to file a pre-auction divestiture application to come into compliance with the below-1-GHz holdings threshold, it will have to file in sufficient time to qualify by the short-form application deadline.

3. Market-Based Amount of Reserved Spectrum

84. Because the Commission will not know the exact number of blocks licensed or their frequencies until the Incentive Auction concludes, the 600 MHz Band Plan in the Incentive Auction Report and Order adopted a set of band plan scenarios that comprise the 600 MHz Band Plan, one of which will serve as the ultimate Band Plan for the 600 MHz Band. Consistent with this approach, the Commission specifies in the chart below the maximum amount of licensed spectrum that will be reserved

in each market for eligible entities (“reserve-eligible” entities) in a forward auction for each indicated amount of licensed spectrum at initial stage spectrum clearing targets. A spectrum clearing target will include licensed spectrum and guard bands; the chart refers only to the amount of licensed spectrum included in each target because only licensed spectrum is relevant to determination of the reserve. Each stage of the Incentive Auction will consist of a reverse auction and a forward auction bidding process. Prior to the first stage, the Commission will determine the initial spectrum clearing target and will run additional stages if necessary. If the auction does not close in the initial stage, the maximum amount of reserved licensed spectrum in each individual market in subsequent stages will be the smaller of: (1) the maximum amount of reserved spectrum in the previous stage, or (2) the amount that the reserve-eligible bidders demand at the end of the previous stage. For example, if the initial clearing target is 100 megahertz, the maximum reserve will be 30 megahertz in the initial and subsequent stages. By contrast, if the initial spectrum clearing target is 60 megahertz, the maximum reserve in the initial and subsequent stages will be 20 megahertz. In either case, if the auction fails to close at the initial stage, the maximum reserved spectrum in each PEA at the second stage will be the smaller of the maximum reserve or the amount that reserve-eligible bidders demand at the end of the first stage in that market. Correspondingly, the amount of spectrum that an unreserved bidder may acquire in subsequent stages will depend on the amount that the bidder demanded at the end of the previous stage. The actual amount of spectrum reserved will depend on the demand by reserve-eligible bidders when the auction reaches a trigger (the “spectrum reserve trigger”). Because the actual amount of reserved spectrum depends on auction participation, the Commission calls this a “market-based spectrum reserve.”

Licensed Spectrum In the Initial Clearing Target (in megahertz)	100*	90	70	60	50	40
Minimum Unreserved Spectrum	70	60	40	40	40	30
Maximum Reserved Spectrum	30	30	30	20	10	10

*The maximum amount of reserved licensed spectrum is 30 megahertz for initial clearing targets with more than 100 megahertz of licensed spectrum.

85. In determining how much reserved and unreserved spectrum will be available, the Commission balances a number of the key statutory directives, including promoting competition, facilitating the deployment of advanced services by making spectrum available for flexible use, and sharing the costs of the Incentive Auction on a fair and equitable basis. For the reasons explained above, the Commission finds that access to licenses for sufficient spectrum in the 600 MHz Band by providers that do not already hold licenses for significant amounts of below-1-GHz spectrum is important to the preservation and promotion of competition in the mobile wireless marketplace now and in the future. At the same time, however, the Commission recognizes that the structure of the Incentive Auction presents unique challenges to the adoption of a spectrum reserve for reserve-eligible bidders. In particular, because the Incentive Auction will rely on market forces to determine the amount of spectrum licenses that will be made available in the forward auction, the Commission needs to ensure that all bidders in the forward auction bear a fair share of the clearing costs identified in the reverse auction and the other costs specified in the Incentive Auction final stage rule.

86. The amount of reserved spectrum in the Incentive Auction will depend upon bidding in the forward auction. The Commission specifies a maximum amount of reserved spectrum in the chart above, but the actual amount of spectrum available only to reserve-eligible bidders will be determined at a spectrum reserve trigger that fairly distributes the responsibility for satisfying the costs of the Incentive Auction among all bidders.

87. The Commission will set the spectrum reserve trigger at the point when the final stage rule is satisfied, so that the actual amount of reserved spectrum will be based on the quantity demanded by reserve-eligible bidders in each individual market at that point in the forward auction. The amount of reserved spectrum will be the smaller of: (1) the maximum amount of reserved spectrum for that stage, or (2) the amount demanded by reserve-eligible bidders at the trigger. The Commission intends, after

opportunity for comment in the Incentive Auction Comment PN, to clarify that reserve-eligible bidders will not be able to acquire more than 20 megahertz of reserved spectrum in a market unless there is another bidder for reserved spectrum in that market. Until the spectrum reserve trigger is met, bidding for licenses in the forward auction will not distinguish between licenses for reserved and unreserved spectrum. Accordingly, all bidders will compete for generic licenses in each area – with a single price applying in each area to all the licenses in a category of generic licenses – up to the point at which the spectrum reserve trigger is reached.

88. Maximum Amount of Reserved Spectrum. The Commission sets the maximum amount of reserved spectrum at 30 megahertz for most of the potential amounts of total licensed spectrum made available in the forward auction. Setting the maximum amount of reserved spectrum at a consistent amount across most levels of total licensed spectrum will, among other things, facilitate the repurposing of more spectrum in the 600 MHz Band, because it provides the opportunity, and creates incentives, for all auction participants to bid aggressively to acquire more spectrum licenses as the total amount of available spectrum increases.

89. A 30 megahertz maximum spectrum reserve at most band clearing scenarios also benefits competition and consumers by giving reserve-eligible bidders the assurance that, after the spectrum reserve trigger is reached, they will have a greater opportunity to purchase licenses in the 600 MHz Band . At the same time, its initial maximum reserve amounts ensure that a majority of licenses at the beginning of the forward auction will be available for bidding by all participants under all circumstances. In the Incentive Auction Report and Order, the Commission determined that the 600 MHz Band will be licensed in 10 megahertz (5x5 paired) blocks. Some providers have advocated that 20 megahertz of contiguous spectrum is particularly valuable for the deployment of next-generation networks. A maximum of 30 megahertz of reserved spectrum could permit at least two reserve-eligible bidders to acquire 600 MHz spectrum licenses for deployment of next-generation networks, with one of the bidders potentially acquiring 20 megahertz of reserved spectrum for such deployment. Moreover, a maximum of 30 megahertz of reserved spectrum, an odd number of 10-megahertz blocks, will facilitate competition

among bidders seeking to acquire 20 megahertz. In addition, at most levels of total licensed spectrum made available in the forward auction, a maximum of 30 megahertz of reserved spectrum will leave a significant amount of unreserved spectrum available, for which all bidders will have the opportunity to compete.

90. Accordingly, a maximum spectrum reserve of 30 megahertz for most levels of total available spectrum licenses, on balance, will make additional low-band spectrum available to multiple providers; ensure that all bidders have an opportunity to acquire a stake in the 600 MHz ecosystem that will be critical in the future; and facilitate competitive bidding. However, if the amount of licensed spectrum at the initial stage target is less than 70 megahertz, maintaining a maximum of 30 megahertz of reserved spectrum would not be in the public interest. Maintaining that amount of reserved spectrum would potentially reduce the amount of unreserved spectrum to 20 or even 10 megahertz, which the Commission deemed to be too low to provide all bidders with an adequate opportunity to acquire licenses in the 600 MHz Band.

91. **Market-Based Spectrum Reserve.** Under the market-based spectrum reserve rule, the amount of reserved spectrum in each individual PEA will be set at the level demanded by reserve-eligible entities at the time the spectrum reserve trigger is satisfied, up to the maximum amount of reserved spectrum at the beginning of the stage. Once the spectrum reserve is established, bidders will bid separately for generic reserved and unreserved spectrum licenses, with reserve-eligible bidders able to bid for spectrum in either category, and the other bidders able to bid only for the unreserved spectrum. For instance, if the spectrum reserve trigger is met in a stage with a maximum of 30 megahertz of reserved spectrum, if reserve-eligible bidders demand only 20 megahertz in a given PEA at those prices when the trigger is met, then 20 megahertz will be reserved.

92. The market-based reserve rule would not prevent unreserved bidders from acquiring the minimum initial stage amount of unreserved spectrum specified in the chart above in subsequent stages of the auction, provided they bid actively on that amount of spectrum throughout the auction, beginning

in the first stage. For example, if an unreserved bidder demands 20 megahertz throughout the initial stage (including the extended round) but the stage fails, that bidder will be eligible to bid for 20 megahertz in the next stage. The Commission anticipates that bidding in the most urban areas is likely to be the most intense, with the highest bids, and thus that the spectrum reserve trigger mechanism the Commission ultimately adopted will mean that reserved spectrum in those areas will sell only at substantial prices.

93. The market-based reserve rule the Commission adopts balances the need to meet the requirements for concluding the Incentive Auction with the competition goals discussed above. Setting an appropriate spectrum reserve trigger for determining how much spectrum will be allotted for reserve-eligible bidders will ensure that all bidders, those eligible to bid on reserved spectrum and other bidders, contribute a fair share to the clearing costs identified in the reverse auction and the other costs specified in the Incentive Auction final stage rule. The market-based spectrum reserve leverages competition across both reserved and unreserved spectrum to provide all bidders with the incentive to bid aggressively and repurpose larger rather than smaller amounts of spectrum. Further, the contingent nature of the reserve will create reserves only in PEAs where there is sufficient demand at the point where the spectrum reserve trigger is reached. This will ensure spectrum is reserved only where there is demand at market-based prices and increase the likelihood that the auction will close at a higher spectrum target.

94. In the coming months, the Commission will solicit public input in the Incentive Auction Comment PN on procedures for implementing certain auction-related decisions made in the Incentive Auction Report and Order. Among other things, the Comment PN will seek comment on how to establish the details of a spectrum reserve trigger based on the final stage rule, in order to fairly distribute the responsibility for satisfying the costs of the reverse auction among all bidders. Among other things, the Commission will consider whether the trigger should be based solely on prices or revenues in the “major markets” and, if so, how to identify such markets. The Procedures PN will adopt the details of its spectrum reserve trigger at the same time that the Commission establishes final auction procedures and resolve crucial auction design issues, including the benchmarks required to implement the final stage rule, opening prices, and how much market variation to accommodate in the 600 MHz Band Plan.

4. Holding Period for 600 MHz Band Licenses

95. The Commission finds that certain restrictions on secondary market transactions of 600 MHz Band licenses are necessary in certain circumstances. These secondary market restrictions for 600 MHz Band licenses will not apply to exchanges of equal amounts of 600 MHz Band spectrum in the same market.

96. First, the Commission recognizes that its goal in adopting the spectrum reserve – facilitating access to 600 MHz Band licenses in order to ensure against excessive concentration in holdings of low-band spectrum – could be undermined if entities that would not be permitted to acquire reserved 600 MHz Band licenses in the auction are permitted to acquire them after the auction through secondary markets. The risk of undermining its goals for competition and the Incentive Auction must be balanced, however, against the Commission’s general policy of promoting flexibility in secondary markets transactions. The Commission finds that precluding secondary market transactions of 600 MHz Band licenses for six years, which represents the interim buildout period for 600 MHz licenses, strikes the appropriate balance to preserve the integrity of its market-based spectrum reserve while still permitting some flexibility in secondary markets transactions. Accordingly, the Commission concludes that, for a period of six years, entities that acquired reserved spectrum licenses in the Incentive Auction cannot assign or transfer those licenses to, or enter into long-term leases regarding those licenses with, entities that would not have been in compliance with the reserve-eligible entity requirements on the date the short form application was due for the Incentive Auction.

97. In addition, the Commission notes that its decision to adopt a holding period reflects its continuing efforts to avoid excessive concentration of licenses not only as a result of the Incentive Auction, but also to ensure that secondary market transactions do not frustrate the underlying public interest goals of its mobile spectrum holdings policies for this band. Aggregation of 600 MHz Band spectrum by means of secondary market transactions has the potential to further exacerbate its concerns about below-1-GHz spectrum license concentration, which must be balanced against the Commission’s

general policy of promoting flexibility in secondary market transactions. Accordingly, the Commission will prohibit any transfer, assignment, or long-term leasing of any 600 MHz Band licenses (including unreserved 600 Band licenses) for a period of six years post-auction that would result in the acquiring entity holding approximately one-third or more of suitable and available below-1-GHz spectrum post-transaction. Given that this limit is a bright-line prohibition, the acquiring entity's below-1-GHz spectrum holdings will be determined by a population-weighted methodology.

5. Further Implementation Issues

98. The Commission will seek comment in the Incentive Auction Comment PN on any further implementation issues that may affect its market-based spectrum reserve, and whether and if so how the policies and rules the Commission adopted should apply or be adjusted based on any auction details that might be relevant to the process (e.g., auctioning impaired spectrum blocks). The Commission will resolve any relevant further implementation in the Incentive Auction Procedures PN.

6. Legal Authority

99. Section 6404 of the Spectrum Act, codified at 47 U.S.C. § 309(j)(17), provides that the Commission may not “prevent” a person who is otherwise qualified from “participating in a system of competitive bidding” under Section 309(j). However, Section 6404 further provides that “[n]othing in [the foregoing restriction] affects any authority the Commission has to adopt and enforce rules of general applicability,” including without limitation “rules concerning spectrum aggregation that promote competition.”

100. The Commission finds that its adoption of reserved spectrum for the Incentive Auction is fully consistent with its authority under Title III and the Spectrum Act. The market-based spectrum reserve that the Commission adopted are “rules of general applicability” that fall under the Spectrum Act’s savings clause codified at 47 U.S.C. § 309(j)(17)(B). The term “rule of general applicability” is a term of art; it has an established meaning under the Administrative Procedure Act. “In the absence of contrary indication, the Commission assumes that when a statute uses . . . a term [of art], Congress

intended it to have its established meaning.” The established meaning of the term “rule of general applicability” is a rule that is not party-specific, that is, not a “rule of particular applicability.” It is to be contrasted with, for example, a named telephone company’s rate of return. The rule that the Commission adopted would be triggered by the amount of an entity’s below-1-GHz spectrum holdings; depending upon the particular geographic market, eligibility to bid for the reserved spectrum may vary. And the mere fact that, in a particular PEA, a specific person would not be so eligible does not render the rule one of particular applicability. Even a general rule must have potential particular effect – otherwise every rule would be ineffective. For similar reasons, it need not apply on an industry-wide basis, or apply to all Commission auctions. Because the rule that the Commission adopted applies to any entity that has the general characteristics identified in the rule, the rule is not party-specific.

101. In addition, by expressly stating that “[n]othing in subparagraph (A) affects any authority the Commission has to adopt and enforce . . . rules concerning spectrum aggregation that promote competition[,]” Section 309(j)(17)(B) preserves the Commission’s long-standing authority under Title III of the Communications Act to adopt “rules concerning spectrum aggregation that promote competition.” Over the past three decades that the Commission has licensed mobile wireless spectrum, Title III authority has been the basis for several restrictions that the Commission has adopted regarding spectrum aggregation, including ex ante limitations. The Court of Appeals for the District of Columbia Circuit has affirmed that Title III grants the Commission “expansive authority” to regulate mobile wireless licenses, and that authority includes its power to regulate spectrum concentration in mobile wireless markets.

102. Because the rules the Commission adopted today fall squarely under the historical authority of the Commission under Title III as preserved by subparagraph (B), the new prohibition created in subparagraph (A) is not applicable. In other words, the Commission interprets Section 6404 to preserve the Commission’s authority to adopt rules of general applicability regarding spectrum aggregation, without regard to whether such rules prevent participation in a system of competitive bidding.

103. Even if subparagraph (A) were to apply to an ex ante reservation of spectrum, the market-based spectrum reserve that the Commission adopted does not violate that provision because it would not “prevent” any entity “from participating” in a “system of competitive bidding.” Supreme Court precedent compels us to interpret these terms according to their ordinary meaning. The ordinary meaning of “prevent” is “to stop someone from doing something,” and the ordinary meaning of “participate” is “to take part” or “to have a part or a share in something.” Thus, the ordinary meaning of the phrase “prevent . . . from participating,” in context, is that the Commission may not stop a person who is otherwise qualified from taking part in a system of competitive bidding.

104. The term “a system of competitive bidding” is also a term of art that refers broadly to the process for granting licenses through competitive bidding, including, identifying classes of licenses to be assigned by auction, specifying eligibility and other characteristics of such licenses, and designing the methodologies to be used for competitive bidding for particular licenses. Thus, participation in a “system of competitive bidding” does not mean that every entity must be able to participate in the bidding for every single license or spectrum block that may be available in an auction.

105. The market-based spectrum reserve the Commission adopted will permit all bidders to bid for some spectrum licenses in every market, while reserving certain spectrum blocks for providers with existing holdings of below-1-GHz spectrum of less than 45 megahertz. In a single PEA, under every band scenario there will be at least as much unreserved as reserved spectrum, and in some scenarios from two to three times as much. Its action will satisfy its statutory mandate to promote very broad participation in its systems of competitive bidding by current providers of mobile services and potential entrants into the wireless data and telephony marketplace.

106. Finally, the Commission determined that it is clear from the plain text of Section 309(j)(B)(17) that the Commission has the authority to adopt the market-based spectrum reserve in its design of a system of competitive bidding. Accordingly, the Commission concluded that the market-

based spectrum reserve that the Commission adopted does not prevent any person from participating in its system of competitive bidding in a manner contrary to the Spectrum Act.

107. The Commission disagrees with arguments that it did not provide adequate notice under the APA. First, the Commission inquired about an ex ante restriction in the Incentive Auctions NPRM, observing that “section 309(j)(3)(B)’s direction to avoid excessive concentration of licenses might militate in favor of a rule that permits any single participant in the auction to acquire no more than one-third of all 600 MHz spectrum being auctioned in a given license area.” The rule that the Commission adopted is a “variatio[n] of that approach,” on which the Commission also sought comment. It would prevent providers in certain circumstances from bidding on reserved 600 MHz spectrum in some PEAs in the Incentive Auction. However, all providers will be permitted to bid on more than one-third of the available spectrum in any PEA. In addition, the Commission specifically asked about adoption of a bright-line limits approach in the Mobile Spectrum Holdings NPRM, including limits on holdings below 1 GHz and band-specific limits. Applying a 600 MHz limit applicable only to bidders with significant holdings below 1 MHz also is a logical outgrowth of issues identified in the NPRM. Where the Commission asked about a one-third limit, it did so “[a]s [an] example.” The Commission finds that the market-based spectrum reserve the Commission adopted is consistent with the Spectrum Act and with its general authority under Title III and was adequately noticed under the APA.

C. AWS-3 Auction

108. In the Mobile Spectrum Holdings NPRM, the Commission sought comment on whether to adopt limits on the amount of spectrum that entities could acquire in the context of spectrum auctions mandated by the Spectrum Act. In the AWS-3 NPRM, the Commission sought comment on whether and how to address the mobile spectrum holdings issues to meet its statutory requirements pursuant to section 309(j)(3)(B) and its goals for the AWS-3 bands.

109. The Commission finds that, on balance, it is not in the public interest to adopt a band-specific mobile spectrum holdings limit for the AWS-3 auction. Nothing in the record indicates that

without such a limitation, opportunities for access to spectrum with similar characteristics would be significantly constrained. In particular, the Commission emphasizes the availability of a substantial amount of comparable high-band spectrum to competitors and the significant existing holdings of multiple providers of comparable spectrum. In addition, with rising demand for mobile broadband services, increasing network capacity is important to all providers, and above-1-GHz spectrum is particularly suitable for such needs. The 65 megahertz of AWS-3 spectrum that the Commission plans to auction have the potential to allow for greater network capacity for all providers to meet this demand.

110. The Commission notes that multiple providers currently have access to bands comparable to AWS-3. Moreover, each of the four nationwide providers holds a significant amount of this spectrum. This is unlike the case with the 600 MHz Band, which has fewer “coverage band” substitutes (700 MHz and 800 MHz). Moreover, in contrast to bands comparable to AWS-3, the bands comparable to the 600 MHz Band are held by a limited number of service providers. Accordingly, while it is necessary to adopt a 600 MHz Band specific spectrum holding policy, such an approach is not necessary for the AWS-3 auction.

IV. SECONDARY MARKET TRANSACTIONS

111. The Commission articulated its framework for a case-by-case review for the first time in analyzing the Cingular-AT&T Wireless transaction in 2004. In particular, in that context and in its analysis of subsequent proposed transactions, the Commission used an initial screen to help identify for case-by-case review local markets where changes in spectrum holdings resulting from the transaction may be of particular concern. For transactions that result in the acquisition of wireless business units and customers or change the number of firms in any market, the Commission also applies an initial screen based on the size of the post-transaction HHI of market concentration and the change in the HHI. As set out in various transactions orders, however, the Commission has not limited its consideration of potential competitive harms solely to markets identified by its initial screen, if it encounters other factors, such as increased aggregation of below-1-GHz spectrum that may bear on the public interest inquiry.

112. The Commission finds that it is in the public interest to retain its current case-by-case review for secondary market transactions. The Commission will also retain its current product and geographic market definitions. The Commission will continue to apply the spectrum screen on a county-by-county basis to identify those CMAs where an entity would hold approximately one-third or more of the total spectrum that is suitable and available for the provision of mobile telephony/broadband services post-transaction, and will evaluate these markets for any competitive harm. Further, the Commission will continue to evaluate the likely competitive effects of increased aggregation of below-1-GHz spectrum, and in particular, will pay specific attention to those markets in which a proposed transaction would result in a service provider holding approximately one-third or more of suitable and available below-1-GHz spectrum post-transaction. Moreover, the Commission finds that it is in the public interest not to limit its analysis of potential competitive harms to solely those markets identified by the initial screen, if the Commission encounters other factors that may bear on the public interest inquiry.

A. Case-by-Case Review vs. Bright Line Limits

113. In the Mobile Spectrum Holdings NPRM, the Commission observed that the case-by-case approach to proposed transactions review affords the Commission flexibility to consider the unique circumstances of a proposed transaction and the changing needs of the mobile wireless marketplace generally, and to tailor remedies to the specific harm and circumstances. At the same time, however, the Commission noted that case-by-case review is both time- and resource-intensive, and has been criticized for creating uncertainty as to whether a particular transaction will be approved. The Commission sought comment on the costs and benefits of its case-by-case review and whether the review of proposed transactions could be more transparent, predictable, or better tailored to promote its goals. The Commission asked if bright-line limits, similar to the CMRS spectrum cap eliminated in 2003, would better serve the public interest.

114. The Commission finds that it is in the public interest to continue to use its initial spectrum screen and case-by-case analysis to evaluate the likely competitive effects of increased spectrum

aggregation through secondary market transactions, rather than to adopt a bright-line limit. It observes that the fundamental principles that the Commission articulated in eliminating the spectrum cap in favor of a case-by-case approach to transactions review continue to apply today. Moreover, in the context of transactions review, the Commission is concerned that ex ante limits on spectrum aggregation may prevent transactions that are in the public interest. The Commission has found that in reviewing secondary market transactions, the complex technical, strategic, and economic factors that determine the likely competitive effects of increased spectrum aggregation require a case-by-case assessment.

115. The Commission distinguishes its decision to retain case-by-case review for spectrum acquisitions through transactions from its determination above that any mobile spectrum holding limit applied to auctions should be a bright-line rule. The unique circumstances typically associated with spectrum auctions, particularly the time constraints and the need for certainty for each bidder regarding which licenses it would be permitted to acquire at the auction, make case-by-case analysis challenging in the auction context.

B. Market Definitions

116. The Commission considers whether to modify the current market definitions that the Commission uses in its competitive analysis for proposed secondary market transactions. The Commission concludes that it is in the public interest to retain the current product market definition and the current geographic market definition.

1. Relevant Product Market

117. **Background.** In its recent transaction orders, the Commission has determined that the relevant product market is a combined “mobile telephony/broadband services” product market that comprises mobile voice and data services, including mobile voice and data services provided over advanced broadband wireless network (mobile broadband services).

118. In the Mobile Spectrum Holdings NPRM, the Commission sought comment on whether the product market definition should be modified to reflect differentiated service offerings, devices and

contract features, for instance, or whether smaller sub-markets should be defined within a larger market. The Commission also sought comment on the costs and benefits of any potential modifications.

119. The Commission retains the current product market definition. The Commission does not find sufficient evidence in the record to support a change in the current product market definition. The Commission finds that the current product market definition, “mobile telephony/broadband services,” continues to encompass the mobile voice and data services that are provided today, and is sufficiently flexible to reflect emerging, next-generation wireless services. The Commission did not find evidence in the record to convince us that the current definition has been defined too broadly or too narrowly for purposes of its competitive analysis. As set out in prior transactions, the product market the Commission defined encompasses differentiated services (e.g., voice-centric or data-centric), devices (e.g., feature phone, smartphone, tablet, etc.), and contract features (e.g., prepaid vs. postpaid) While such distinctions may suggest the possibility of smaller markets nested within that larger product market, the Commission finds it unnecessary to define such smaller product markets in order to analyze the potential competitive effects of secondary market transactions. The Commission will continue to consider these aspects of product differentiation, as appropriate, when the Commission analyzes the competitive effects of the proposed secondary market transaction within the markets the Commission defined. Therefore, the Commission finds it is in the public interest to retain the current product market definition.

2. Relevant Geographic Market

120. In its recent transactions orders, the Commission has found that the relevant geographic markets for certain wireless transactions generally are local, while also evaluating a transaction’s competitive effects at the national level where a transaction exhibits certain national characteristics that provide cause for concern. In the Mobile Spectrum Holdings NPRM, the Commission sought comment on the appropriate geographic market definition to use when evaluating a licensee’s mobile spectrum holdings, under either its current case-by-case analysis or if bright-line limits were adopted.

121. The Commission finds for purposes of evaluating the competitive effects of proposed transactions it will continue to use local geographic markets, but also will analyze potential national effects as appropriate. The Commission continues to find that most consumers use their mobile telephony/broadband services at or close to where they live, work, and shop, in support of its decision that local markets are the relevant geographic markets in which to analyze the potential for competitive harms as a result of certain wireless transactions. Certain elements of the provision of mobile wireless services are national in scope, including key variables such as pricing, development of equipment, and service plan offerings, and nothing in the record suggests that the basis for this finding has changed. The Commission also will continue therefore to analyze the potential competitive effects of those wireless transactions that exhibit national characteristics, such as increased spectrum aggregation in many local markets across the country with the implication that harms that may occur at the local level collectively could have nationwide competitive effects.

C. Applicable Spectrum Holdings Threshold

122. In 2004 the Commission established a spectrum screen threshold of approximately one-third of suitable and available spectrum that would be held by the acquiring entity post-transaction. In the Mobile Spectrum Holdings NPRM, the Commission sought comment on whether one-third is still the appropriate threshold generally, and whether a higher threshold should apply in rural areas.

123. The Commission will retain the approximately one-third threshold for applying its initial spectrum screen. Based on its experience in applying this threshold in numerous transactions over the last decade, the Commission has found it to be an effective analytical tool in helping to identify individual markets where a proposed transaction may raise particular competitive concerns. In its application of the screen, the Commission includes not only the entity's licensed spectrum, on a county-by-county basis, but also all long term spectrum leasing arrangements, with spectrum being attributed to both the lessee and lessor.

124. The Commission finds that even where one entity holds approximately one-third of suitable and available spectrum, a market may contain more than three viable competitors. Its goal is not to equalize the amount of spectrum held by each competitor in each market. Increasing the threshold, would not be in the public interest.

125. The Commission also disagrees with AT&T's assertion that the Commission can increase the spectrum screen threshold because the costs of "false positive" errors – chilling innovation and investment, and an inefficient use of the Commission's resources – outweigh the costs of "false negative" errors because spectrum acquisitions that would harm competition would be remedied by other Federal agencies (e.g., DOJ). As the Commission previously has stated in the context of orders addressing proposed transactions, its competitive analysis, which forms an important part of the public interest evaluation, is informed by, but not limited to, traditional antitrust principles.

126. In addition, the Commission declines to adopt a spectrum screen threshold based on spectrum share HHIs finding that to do so would mark a substantial departure from its traditional approach that is not supported by the record. The Commission does not believe the record demonstrates the efficacy of applying an HHI analysis to an input market, and believes establishing such a requirement would be burdensome and create substantial uncertainty.

127. The Commission declines to do establish a higher spectrum screen threshold for rural markets. In rural areas there are significant benefits to consumers of facilitating access by multiple providers to sufficient spectrum, such that they are able to provide an effective competitive constraint. To the extent there are unique considerations in a particular rural market such that spectrum aggregation above the spectrum screen is in the public interest; its case-by-case analysis provides the Commission the flexibility to approve such a transaction.

128. Accordingly, the Commission will continue to apply an approximately one-third spectrum screen threshold in its review of secondary market spectrum acquisitions. Specifically, the modified spectrum screen the Commission adopted would include 580.5 megahertz of spectrum, with a

trigger of 194 megahertz, or approximately one-third of the suitable and available spectrum. The spectrum screen is triggered where the Applicants would have, on a county-by-county basis, an attributable interest in 194 megahertz or more of spectrum where both AWS-1 and BRS/EBS spectrum are available in the particular market. If AWS-1 and/or BRS/EBS spectrum are not available in that market, these bands are not counted for purposes of applying the spectrum screen trigger in that market.

D. Operation of the Spectrum Screen

129. As set out in various transactions orders, the Commission has not limited its consideration of potential competitive harms solely to markets identified by its initial screen, if it encounters other factors that may bear on the public interest inquiry. For example, the Commission has considered below-1-GHz concentration, and concentration within a particular spectrum band, including a band that was not at the time included in the spectrum screen. In the Mobile Spectrum Holdings NPRM, the Commission sought comment on establishing a higher burden of proof for the approval of proposed transactions that would exceed the relevant spectrum threshold.

130. The Commission will continue to review on a case-by-case basis those markets in which an entity would exceed the initial spectrum screen if the transaction as proposed were approved. The Commission declines to establish a rebuttable presumption, finding it would unnecessarily limit the Commission's flexibility. Further, the Commission affirms the Commission's conclusions that its consideration of potential competitive harms resulting from a proposed spectrum acquisition in the secondary market should not be limited solely to markets identified by the initial screen, if the Commission encounters other factors that may bear on its public interest inquiry. For instance, the Commission has specifically analyzed the potential competitive effects of aggregation of spectrum below 1 GHz. The Commission finds, in light of current marketplace conditions, that access by multiple service providers to sufficient spectrum below 1 GHz will preserve and promote competition in the mobile wireless marketplace to the benefit of American consumers, and therefore find that further significant

aggregation of below-1-GHz spectrum holdings in secondary market transactions will be subject to enhanced review in its case-by-case competitive evaluation, as discussed below.

131. While the Commission recognizes that a safe harbor would provide greater certainty to applicants, just as a bright-line limit would provide greater certainty, the Commission finds that in the context of secondary market transactions, it is in the public interest to maintain flexibility to consider any factors presented that may bear on our review. Moreover, in the absence of such flexibility, the Commission's review of future proposed transactions would be limited by its understanding of technology and industry practices at the time it adopted the specific thresholds. The Commission finds that its articulation of factors it will consider in its case-by-case analysis as set forth below provides sufficient clarity to potential applicants, while maintaining flexibility to consider changes in technology and industry practices in the rapidly-evolving mobile wireless marketplace.

132. The Commission distinguishes its decision not to adopt a safe harbor for case-by-case review of spectrum acquisitions through transactions from its determination above that any mobile spectrum holdings limit applied to auctions should be a bright-line rule. The unique circumstances typically associated with spectrum auctions, particularly the time constraints and the need for certainty for each bidder regarding which licenses it would be permitted to acquire at the auction, make case-by-case analysis challenging in the auction context.

E. Nationwide Screen

133. In the Mobile Spectrum Holdings NPRM, the Commission sought comment on whether, in addition to the spectrum screen applied on a county-by-county basis in helping to identify local markets of particular competitive concern, it should also adopt a separate screen that would be applied on a nationwide basis.

134. The Commission declines to establish a separate screen as a means to evaluate spectrum holdings at the nationwide level. The Commission finds it would either be redundant or create irrational incentives for providers to divest or to forego acquisition of spectrum in markets in which there would be

a net public benefit from such an acquisition. However, as certain elements of the provision of mobile wireless services are national in scope, including key variables such as pricing, development of equipment, and service plan offerings, the Commission will continue to analyze the potential competitive effects of those secondary market transactions that exhibit national characteristics. Increased spectrum aggregation in many local markets across the country may imply that harms that occur at the local level collectively could have nationwide competitive effects. The Commission finds that it is in the public interest to continue to define local geographic markets but also to analyze potential national effects as appropriate.

F. Distinguishing among Spectrum Bands for Transactions Review

135. In recent years, the Commission has considered below-1-GHz spectrum concentration as a factor in its review of spectrum acquisitions in the secondary market. In the Mobile Spectrum Holdings NPRM, the Commission sought comment on whether it should adopt a separate screen for below-1-GHz spectrum under which an entity that would hold, post-transaction, approximately one-third or more of the relevant spectrum below 1 GHz in a geographic market would be subject to a more detailed competitive review in that market. The Commission also sought comment on whether, alternatively, it should establish a bright-line limit for spectrum holdings below 1 GHz, whether it should assign different weights to each of the spectrum bands as part of its case-by-case review, or whether it should take any other action to recognize distinctions between spectrum bands in its competitive review of proposed transactions.

136. The Commission declines to adopt a separate screen or bright-line limit for below-1-GHz spectrum holdings, or a set of weighting factors for each spectrum band included in its initial spectrum screen. Post-transaction below-1-GHz spectrum holdings will be an enhanced factor under its case-by-case review.

1. Below-1-GHz Limit

137. Several commenters assert that the Commission should supplement the total spectrum screen applied to transactions with a screen or a bright-line limit for below-1-GHz spectrum, ranging from 25 percent to 40 percent.

138. The Commission adopts a market-based spectrum reserve for the Incentive Auction and to set limitations on the assignment or transfer of 600 MHz licenses after the Incentive Auction. These actions will help to ensure that multiple providers are able to access a sufficient amount of low-band spectrum, which will facilitate the extension and improvement of service in both rural and urban areas, to the benefit of consumers. In light of these actions, the Commission concludes that it is not necessary at this time to adopt a separate screen or cap applicable to its evaluation of the assignment or transfer of below-1-GHz spectrum. Nonetheless, the Commission will continue to evaluate below-1-GHz holdings as a factor in its case-by-case review of such transactions, consistent with the Commission's precedent in the past few years. Moving forward, post-transaction below-1-GHz spectrum holdings will become an enhanced factor in its competitive evaluation, as discussed below, and therefore, the Commission will apply particular focus to its review of this factor as the Commission evaluated the likelihood of potential competitive harms.

2. Spectrum Weighting

139. **Background.** Several commenters, including Sprint, assert that the Commission should weight spectrum bands to reflect the extent to which spectrum at that frequency yields lower costs for the deployment and operation of equipment. Other approaches to weighting raised on the record include using price data from spectrum auctions and secondary market transactions. Others contend that spectrum weighting would distort the Commission's analysis of the competitive effect of proposed transactions and is otherwise impractical to implement. Sprint argues that weight spectrum should be based on the cost to deploy and operate using a particular band, arguing that low-band spectrum is typically significantly more cost-effective to deploy than higher-frequency spectrum.

140. The Commission finds that, in principle, spectrum weighting has the potential to enhance its competitive analysis of proposed spectrum acquisitions. However, the Commission concludes that, at this time, it cannot justify, on the basis of the record, adopting specific weighting factors for each spectrum band. Nonetheless, the Commission observes that the data submitted on the record does demonstrate that there are significant differences in deployment costs between low-band and high-band spectrum, and it is able to consider those differences as a key factor in its case-by-case analysis moving forward.

141. The Commission finds that to establish specific weighting factors for each spectrum band based on band-specific signal propagation characteristics raises certain issues, including the underlying assumptions that are appropriate to make. Further, the Commission finds that establishing specific weighting factors based on other factors, such as the “value” of the spectrum, also raises certain issues as prices paid at auction vary significantly over time based on a variety of factors not necessarily related to the characteristics of the spectrum being auctioned. The Commission finds that treating below-1-GHz spectrum concentration as an enhanced factor in its case-by-case analysis is a better approach at this time because it is able to distinguish between the characteristics of different frequency bands without imposing a weighting schema that may fail to accurately reflect their competitive significance. Based upon the record in this proceeding, the Commission concludes that adopting a spectrum weighting schema would not be in the public interest at this time.

G. Factors Considered in Competitive Analysis

142. Background. In its evaluation of proposed secondary market transactions, the Commission broadly assesses whether and to what extent proposed acquisitions of wireless spectrum could affect downstream competition in the mobile telephony/broadband services marketplace. In particular, the Commission’s competitive analysis of wireless transactions focuses initially on those markets identified by the screen where the acquisition of customers and/or spectrum would result in significant concentration of either or both, and thereby could lead to competitive harm. As discussed

above, however, the Commission has not limited its consideration of potential competitive harms solely to markets identified by its initial screen if it encounters other factors that may bear on the public interest inquiry. Specifically, the Commission has considered concentration of below-1-GHz holdings, and concentration of spectrum within a specific band.

143. In its transactions analyses, the Commission has considered various other factors that help to predict the likelihood of competitive harm post-transaction. These competitive variables include, but are not limited to: the total number of rival service providers; the number of rival firms that can offer competitive nationwide service plans; the coverage by technology of the firms' respective networks; the rival firms' market shares; the combined entity's post-transaction market share and how that share changes as a result of the transaction; the amount of spectrum suitable for the provision of mobile telephony/broadband services controlled by the combined entity; and the spectrum holdings of each of the rival service providers. The Commission notes that it is important to recognize that many transactions are more than spectrum transfers; they involve the disappearance of a separate business enterprise as an ongoing potential competitive constraint and source of innovations in services and marketing.

144. In the Mobile Spectrum Holdings NPRM, the Commission asked if it should adopt guidelines setting forth the factors that will be considered during any review of a licensee's mobile spectrum holdings or delegate authority to the Wireless Telecommunications Bureau to do so.

145. Discussion. The Commission retains the authority to consider all factors that could affect the likely competitive impact of proposed transactions, and declines to adopt a formal set of guidelines at this time. It does not find sufficient evidence in the record to support the adoption of the specific standards advocated by commenters regarding spectrum utilization or spectrum weighting. Nonetheless, the Commission retains the right to consider such factors in specific future transactions. In addition, parties are free to bring such matters to the Commission's attention. It affirms its continued use of the factors considered in the Commission's case-by-case analyses to date of the potential competitive impacts of further concentration of spectrum in particular markets. The Commission continues to hold the view

that band concentration may be a relevant factor to consider in its case-by-case analysis, and recognize that changes in technology and the marketplace may result in band-specific concentrations warranting increased scrutiny.

146. Certain frequencies possess distinct characteristics for the provision of mobile wireless services, and a service provider is best positioned if it holds spectrum licenses for both low- and high-band spectrum. The Commission finds that spectrum holdings by service provider in the limited low- (i.e., below-1-GHz) bands have become particularly concentrated. The Commission has concerns about the potential effects of further concentration of below-1-GHz spectrum on competition and innovation in the mobile wireless services marketplace. The Commission decided not to adopt a separate below-1-GHz screen or cap at this time. Building on the Commission precedent in the past few years, however, it will treat certain further concentration of below-1-GHz spectrum as an enhanced factor in its case-by-case analysis of the potential competitive harms posed by individual transactions.

147. The Commission currently considers a variety of factors in its case-by-case analysis of spectrum acquisition through transactions—including, but not limited to the total number of rival service providers; the number of rival firms that can offer competitive service plans; the coverage by technology of the firms' respective networks; the rival firms' market shares; the amount of spectrum suitable for the provision of mobile telephony/broadband services controlled by the combined entity; the spectrum holdings of each of the rival service providers; the acquisition of below-1-GHz spectrum nationwide; and concentration in a particular band with an important ecosystem. In analyzing spectrum acquisitions based on these factors, the Commission generally determines, based on the totality of the circumstances, whether there is an increased ability or incentive for the acquiring firm to successfully raise prices or otherwise engage in anti-competitive behavior. The Commission then employs a balancing test weighing any potential public interest harms against any potential public interest benefits, and the applicants bear the burden of proving, by a preponderance of the evidence, that the proposed transaction, on balance, will serve the public interest.

148. In implementing this approach going forward, the Commission anticipates that any entity that would end up with more than one third of below-1-GHz spectrum as a result of a proposed transaction would facilitate its case-by-case review with a detailed demonstration regarding why the public interest benefits outweigh harms. When the other factors the Commission ordinarily considers indicate a low potential for competitive or other public interest harm, the acquisition of below-1-GHz spectrum resulting in holdings of approximately one-third or more of such spectrum will not preclude a conclusion that a proposed transaction, on balance, furthers the public interest. Absent that, however, any transaction that would result in an entity holding approximately one-third or more of suitable and available below-1-GHz spectrum will more likely be found to cause competitive harm in its case-by-case review.

149. Consistent with its overall concerns about the potential public interest harms regarding the concentration of below-1-GHz spectrum, the Commission anticipates it likely would have even greater concerns where the proposed transaction would result in an assignee or transferee that already holds approximately one-third or more of below-1-GHz spectrum in a market acquiring additional below-1-GHz spectrum in that market, especially with regard to paired low-band spectrum. In these cases, the demonstration of the public interest benefits of the proposed transaction would need to clearly outweigh the potential public interest harms associated with such additional concentration of below-1-GHz spectrum, irrespective of other factors. For instance, applicants could provide a particularly detailed showing in such cases that they currently are maximizing the use of their spectrum and how the proposed transaction is necessary to maintain, enhance, or expand services provided to consumers. The Commission believes such a showing would be required to achieve its goal of ensuring that the ability of rival service providers to offer a competitive response to any price increase or to offer new innovative services is not eliminated or significantly lessened.

150. The Commission finds that considering additional below-1-GHz spectrum concentration as an enhanced factor in its review of secondary market transactions will help ensure that further

concentration of such spectrum will not have adverse competitive effects either in particular local markets or on a broader regional or national level.

151. In addition, although the Commission declines to adopt specific weighting factors for each band, or for groups of bands, it recognizes that differences between spectrum bands can be relevant to a determination of the public interest in the context of reviewing transactions. It will consider such differences in its case-by-case review of specific transactions. For example, applications involving small amounts of high-band spectrum, particularly EBS spectrum, likely would present limited potential for public interest harms.

H. Remedies

152. In the Mobile Spectrum Holdings NPRM, the Commission sought comment on the remedies, including divestitures that would be appropriate for it to prevent competitive harm resulting from spectrum acquisitions. In particular, it sought comment on whether different approaches or types of divestitures would best serve the Commission's goals, and whether the Commission should adopt different criteria for divestiture based on whether the spectrum to be divested is from lower or upper frequency bands or is immediately "useable" by another licensee. It sought comment on the extent to which the Commission should remedy the potential harms posed by a transaction by placing other conditions, such as, for example, requirements to offer leasing, roaming or collocation, in conjunction with, or in lieu of, requiring divestitures.

153. Based upon the record in this proceeding, the Commission believes it is unnecessary to change its existing approach to protecting and promoting the public interest, including competition, through the application of transaction-specific remedies. Its case-by-case analysis allows the Commission to carefully tailor remedies that address and ameliorate public interest harms or alternatively ensure that proposed public interest benefits are realized by consumers. The Commission does not believe, and the record does not indicate, that the narrowly-tailored, fact-specific remedies it has required in recent transactions have discouraged transactions that generally are in the public interest, and it does not

conclude that any greater specificity with regard to remedies would significantly affect parties' willingness to enter into transactions. The Commission finds that the public interest benefits and public interest harms often are specific to each transaction, and that limiting possible remedies ex ante would undercut the benefits of case-by-case review, that is, the tailoring of the review, and remedies, to the specific circumstances of any given transaction. The Commission does not see any evidence in the record that the use of tailored remedies has inhibited competitiveness-enhancing transactions, and it finds that there are the pro-competitive effects of the Commission's policies on remediation. The Commission declines to limit possible remedial action as AT&T suggests. The Commission's public interest analysis, which considers the near and long-term competitive effects of spectrum aggregation, and which may have an impact beyond the local markets involved should not be limited to a particular geographic location or spectrum band in proposing remedies to protect the public interest.

V. ATTRIBUTION OF INTERESTS IN LICENSE HOLDINGS

154. In the Mobile Spectrum Holdings NPRM, the Commission proposed to codify the attribution threshold and sought comment on proposed section 20.21 of the Commission's Rules, which would apply to mobile spectrum holdings. Pursuant to the proposal, all controlling interest and non-controlling interests of ten percent or more would be attributable. In addition, non-controlling interests of less than ten percent would be attributable if the Commission determined that the interest confers de facto control, including but not limited to partnership and other ownership interests and any stock interest in a licensee. The Commission also sought comment on whether to include a specific waiver provision if it codified the rule. In addition, consistent with its current practice, the Commission proposed to attribute long-term de facto transfer leasing arrangements and long-term spectrum manager leasing arrangements to the lessees, lessors, sublessees, and sublessors.

155. The Commission finds insufficient evidence in the record to support any modifications to its current practices for attribution. The Commission has developed its current practices over the years through its case-by-case review of secondary market transactions and related transfer of control

applications. Therefore, the Commission finds that retaining the current ten percent attribution threshold will serve the public interest. Accordingly, all controlling interests and non-controlling interests of ten percent or more would be attributable. In addition, interests of less than ten percent would be attributable if the interest confers de facto control, including but not limited to partnership and other ownership interests and any stock interest in a licensee. The Commission also codifies these rules for purposes of determining spectrum holdings amounts before an auction. The Commission finds that codifying the rules will provide additional transparency and clarity for applicants and prospective auction participants. The Commission also concludes that the general waiver standard provided in Section 1.925 of the Commission's rules provides sufficient guidance for applicants seeking to waive of these attribution rules.

156. Consistent with its current practice, the Commission also attributed long-term de facto transfer leasing arrangements and long-term spectrum manager leasing arrangements to the lessor and the lessee, including sublessors and sublessees. Spectrum leasing arrangements are arrangements between a licensed entity and a third-party entity in which the licensee leases certain of its spectrum usage rights in the licensed spectrum to the third-party entity, the spectrum lessee. Leasing provides lessees the flexibility to lease a small or large quantity of spectrum for short or longer time periods depending on their business needs. The Commission will attribute only the long-term spectrum leasing arrangements, with limited exceptions, to both lessee and lessor. The attribution rule will apply to determine partial ownership and other interests in spectrum holdings for purposes of: (1) applying a mobile spectrum holding limit to the licensing of spectrum through competitive bidding; and (2) applying the initial spectrum screen to secondary market transactions. Consistent with current practices, if, after applying the initial screen, the Commission's analysis of a particular market reveals concerns with respect to attribution due to a particular organizational or financial relationship, it may evaluate such relationships in the context of the relevant secondary market transaction.

VI. PROCEDURAL MATTERS

A. Final Regulatory Flexibility Analysis

157. The Regulatory Flexibility Act (RFA) requires that agencies prepare a regulatory flexibility analysis for notice-and-comment rulemaking proceedings, unless the agency certifies that “the rule will not have a significant economic impact on a substantial number of small entities.” Accordingly, the Commission has prepared a Final Regulatory Flexibility Analysis (FRFA) concerning the possible impact of the rule changes contained in the R&O on small entities.

158. As required by the Regulatory Flexibility Act of 1980, as amended (RFA), an Initial Regulatory Flexibility Analysis (IRFA) was incorporated in the Notice of Proposed Rulemaking. The Wireless Telecommunications Bureau (WTB) sought written public comment on the proposals in the Notice, including comment on the IRFA. This present Final Regulatory Flexibility Analysis (FRFA) conforms to the RFA.

159. The Commission believes that it would serve the public interest to analyze the possible significant economic impact on small entities of the policy and rule changes in the R&O. Accordingly, this FRFA contains an analysis of this impact in connection with the adoption in the R&O of mobile spectrum holdings rule changes meant to protect and promote competition for the benefit of consumers, while facilitating greater transparency and predictability to better allow service providers to make investment and transactional decisions.

B. Need for, and Objectives of, the Report and Order

160. The Commission is under a Congressional mandate to manage spectrum to promote economic opportunity, competition, innovation, and service accessibility. In the wake of recent industry trends, both in service evolution and marketplace structure, the Commission has revisited its mobile spectrum holdings rules and policies. The Commission adopts several mobile spectrum holdings policies today: entering the spectrum screen into FCC rules; specifying which spectrum blocks are included in the spectrum screen; replacing case-by-case, post-auction spectrum screen analysis with consideration of

auction specific spectrum limits; and reserving a certain amount of 600 MHz spectrum in order to ensure against excessive concentration in holdings of below-1-GHz spectrum. These policies will promote consumer choice and competition among multiple service providers, and consistent with its statutory mandate, will promote the efficient and intensive use of scarce spectrum as well as maximizing economic opportunity and the deployment of innovative technologies. The Commission seeks to minimize the risk of the lessening of competition in the future due to the likelihood that an insufficient number of service providers would have access to the mix of low- and high-band spectrum needed to ensure robust competition in the mobile wireless marketplace.

B. Summary of Significant Issues Raised by Public Comments in Response to the IRFA

161. There were no comments filed that specifically addressed the rules and policies proposed in the IRFA.

C. Description and Estimate of the Number of Small Entities to Which the Proposed Rules Would Apply

162. The RFA directs agencies to provide a description of, and, where feasible, an estimate of, the number of small entities that may be affected by the rules adopted herein. The RFA generally defines the term “small entity” as having the same meaning as the terms “small business,” “small organization,” and “small governmental jurisdiction.” In addition, the term “small business” has the same meaning as the term “small business concern” under the Small Business Act. A “small business concern” is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA).

163. **Small Businesses, Small Organizations, and Small Governmental Jurisdictions.** Its action may, over time, affect small entities that are not easily categorized at present. The Commission therefore describes here, at the outset, three comprehensive, statutory small entity size standards. First, nationwide, there are a total of approximately 27.5 million small businesses, according to the SBA. In addition, a “small organization” is generally “any not-for-profit enterprise which is independently owned

and operated and is not dominant in its field.” Nationwide, as of 2007, there were approximately 1,621,315 small organizations. Finally, the term “small governmental jurisdiction” is defined generally as “governments of cities, towns, townships, villages, school districts, or special districts, with a population of less than fifty thousand.” Census Bureau data for 2011 indicate that there were 89,476 local governmental jurisdictions in the United States. The Commission estimates that, of this total, as many as 88,506 entities may qualify as “small governmental jurisdictions.” Thus, the Commission estimates that most governmental jurisdictions are small.

164. **Cellular Licensees.** The SBA has developed a small business size standard for small businesses in the category “Wireless Telecommunications Carriers (except satellite).” Under that SBA category, a business is small if it has 1,500 or fewer employees. The census category of “Cellular and Other Wireless Telecommunications” is no longer used and has been superseded by the larger category “Wireless Telecommunications Carriers (except satellite).” The Census Bureau defines this larger category to include “establishments engaged in operating and maintaining switching and transmission facilities to provide communications via the airwaves. Establishments in this industry have spectrum licenses and provide services using that spectrum, such as cellular phone services, paging services, wireless Internet access, and wireless video services.”

165. In this category, the SBA has deemed a wireless telecommunications carrier to be small if it has fewer than 1,500 employees. For this category of carriers, Census data for 2007, which supersede similar data from the 2002 Census, shows 1,383 firms in this category. Of these 1,383 firms, only 15 (approximately 1%) had 1,000 or more employees. While there is no precise Census data on the number of firms in the group with fewer than 1,500 employees, it is clear that at least the 1,368 firms with fewer than 1,000 employees would be found in that group. Thus, at least 1,368 of these 1,383 firms (approximately 99%) had fewer than 1,500 employees. Accordingly, the Commission estimates that at least 1,368 (approximately 99%) had fewer than 1,500 employees and, thus, would be considered small under the applicable SBA size standard.

166. **Wireless Telecommunications Carriers (except satellite).** This industry comprises establishments engaged in operating and maintaining switching and transmission facilities to provide communications via the airwaves. Establishments in this industry have spectrum licenses and provide services using that spectrum, such as cellular phone services, paging services, wireless Internet access, and wireless video services. The appropriate size standard under SBA rules is for the category Wireless Telecommunications Carriers. The size standard for that category is that a business is small if it has 1,500 or fewer employees. For this category, census data for 2007 show that there were 11,163 establishments that operated for the entire year. Of this total, 10,791 establishments had employment of 999 or fewer employees and 372 had employment of 1,000 employees or more. Thus under this category and the associated small business size standard, the Commission estimates that the majority of wireless telecommunications carriers (except satellite) are small entities that may be affected by its proposed action.

167. **2.3 GHz Wireless Communications Services.** This service can be used for fixed, mobile, radiolocation, and digital audio broadcasting satellite uses. The Commission defined “small business” for the wireless communications services (“WCS”) auction as an entity with average gross revenues of \$40 million for each of the three preceding years, and a “very small business” as an entity with average gross revenues of \$15 million for each of the three preceding years. The SBA approved these definitions. The Commission conducted an auction of geographic area licenses in the WCS service in 1997. In the auction, seven bidders that qualified as very small business entities won 31 licenses, and one bidder that qualified as a small business entity won a license.

168. **1670-1675 MHz Services.** This service can be used for fixed and mobile uses, except aeronautical mobile. An auction for one license in the 1670-1675 MHz band was conducted in 2003. The Commission defined a “small business” as an entity with attributable average annual gross revenues of not more than \$40 million for the preceding three years, which would thus be eligible for a 15 percent discount on its winning bid for the 1670-1675 MHz band license. Further, the Commission defined a “very small business” as an entity with attributable average annual gross revenues of not more than \$15

million for the preceding three years, which would thus be eligible to receive a 25 percent discount on its winning bid for the 1670-1675 MHz band license. The winning bidder was not a small entity.

169. **3650-3700 MHz Band Licensees.** In March 2005, the Commission released an order providing for the nationwide, non-exclusive licensing of terrestrial operations, utilizing contention-based technologies, in the 3650 MHz band (i.e., 3650–3700 MHz). As of April 2010, more than 1270 licenses have been granted and more than 7433 sites have been registered. The Commission has not developed a definition of small entities applicable to 3650–3700 MHz band nationwide, non-exclusive licensees. However, the Commission estimated that the majority of these licensees are Internet Access Service Providers (ISPs) and that most of those licensees are small businesses.

170. **Wireless Telephony.** Wireless telephony includes cellular, personal communications services, and specialized mobile radio telephony carriers. As noted, the SBA has developed a small business size standard for Wireless Telecommunications Carriers (except Satellite). Under the SBA small business size standard, a business is small if it has 1,500 or fewer employees. Census data for 2007 shows that there were 1,383 firms in the Wireless Telecommunications Carriers (except Satellite) category that operated that year. Of those 1,383, 1,368 had fewer than 100 employees, and 15 firms had more than 100 employees. Thus under this category and the associated small business size standard, the majority of firms can be considered small. According to Trends in Telephone Service data, 434 carriers reported that they were engaged in wireless telephony. Of these, an estimated 222 have 1,500 or fewer employees and 212 have more than 1,500 employees. Therefore, approximately half of these entities can be considered small. Similarly, according to Commission data, 413 carriers reported that they were engaged in the provision of wireless telephony, including cellular service, Personal Communications Service (PCS), and Specialized Mobile Radio (SMR) Telephony services. Of these, an estimated 261 have 1,500 or fewer employees and 152 have more than 1,500 employees. Consequently, the Commission estimates that approximately half or more of these firms can be considered small. Thus, using available data, the Commission estimates that the majority of wireless firms can be considered small.

171. **Broadband Personal Communications Service.** The broadband PCS spectrum is divided into six frequency blocks designated A through F, and the Commission has held auctions for each block. The Commission initially defined a “small business” for C- and F-Block licenses as an entity that has average gross revenues of \$40 million or less in the three previous years. For F-Block licenses, an additional small business size standard for “very small business” was added and is defined as an entity that, together with its affiliates, has average gross revenues of not more than \$15 million for the preceding three years. These small business size standards, in the context of broadband PCS auctions, have been approved by the SBA. No small businesses within the SBA-approved small business size standards bid successfully for licenses in Blocks A and B. There were 90 winning bidders that claimed small business status in the first two C-Block auctions. A total of 93 bidders that claimed small and very small business status won approximately 40 percent of the 1,479 licenses in the first auction for the D, E, and F Blocks. On April 15, 1999, the Commission completed the re-auction of 347 C-, D-, E-, and F-Block licenses in Auction No. 22. Of the 57 winning bidders in that auction, 48 claimed small business status and won 277 licenses.

172. On January 26, 2001, the Commission completed the auction of 422 C and F Block Broadband PCS licenses in Auction No. 35. Of the 35 winning bidders in that auction, 29 claimed small business status. Subsequent events concerning Auction 35, including judicial and agency determinations, resulted in a total of 163 C and F Block licenses being available for grant. On February 15, 2005, the Commission completed an auction of 242 C-, D-, E-, and F-Block licenses in Auction No. 58. Of the 24 winning bidders in that auction, 16 claimed small business status and won 156 licenses. On May 21, 2007, the Commission completed an auction of 33 licenses in the A, C, and F Blocks in Auction No. 71. Of the 14 winning bidders in that auction, six claimed small business status and won 18 licenses. On August 20, 2008, the Commission completed the auction of 20 C-, D-, E-, and F-Block Broadband PCS licenses in Auction No. 78. Of the eight winning bidders for Broadband PCS licenses in that auction, six claimed small business status and won 14 licenses.

173. AWS Services (1710–1755 MHz and 2110–2155 MHz bands (AWS-1); 1915–1920 MHz, 1995–2000 MHz, 2020–2025 MHz and 2175–2180 MHz bands (AWS-2); 2155–2175 MHz band (AWS-3)). For the AWS-1 bands, the Commission has defined a “small business” as an entity with average annual gross revenues for the preceding three years not exceeding \$40 million, and a “very small business” as an entity with average annual gross revenues for the preceding three years not exceeding \$15 million. In 2006, the Commission conducted its first auction of AWS-1 licenses. In that initial AWS-1 auction, 31 winning bidders identified themselves as very small businesses. Twenty-six of the winning bidders identified themselves as small businesses. In a subsequent 2008 auction, the Commission offered 35 AWS-1 licenses. Four winning bidders identified themselves as very small businesses, and three of the winning bidders identified themselves as a small business. For AWS-2 and AWS-3, although the Commission does not know for certain which entities are likely to apply for these frequencies, the Commission noted that the AWS-1 bands are comparable to those used for cellular service and personal communications service. The Commission has not yet adopted size standards for the AWS-2 bands but has proposed to treat both AWS-2 similarly to broadband PCS service and AWS-1 service due to the comparable capital requirements and other factors, such as issues involved in relocating incumbents and developing markets, technologies, and services.

174. On March 31, 2014, the Commission adopted rules for spectrum in the 1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz bands (collectively, “AWS-3”) that make available an additional sixty-five megahertz of commercial spectrum for the provision of mobile broadband services. The Commission indicated that the Commission will assign AWS-3 licenses by competitive bidding, offering five megahertz and ten megahertz blocks. The Spectrum Act states that the Commission shall grant new initial licenses for these bands by February 23, 2015.

175. In December 2012, the Commission adopted licensing, operating, and technical rules for stand-alone terrestrial mobile wireless operations in the AWS-4 spectrum. The Commission concluded that it would assign the AWS-4 spectrum to the incumbent Mobile Satellite Service (MSS) operators in order to make this spectrum available efficiently and quickly for flexible, terrestrial use, such as mobile

broadband. The Commission also determined that it would assign AWS-4 licenses to DISH, as the incumbent MSS operator in that spectrum, and established a concrete, proven process for efficient relocation of incumbent operations from 2180-2200 MHz.

176. In June 2013, the Commission implemented the Spectrum Act provisions pertaining to the H Block by adopting service rules for the band, including pairing the two 5 megahertz blocks establishing EAs as the license area, and generally adopting Part 27 flexible use rules. On February 27, 2014 the Commission concluded its auction of H Block licenses, with DISH placing the winning bids on all 176 licenses across the nation.

177. **Lower 700 MHz Band Licenses.** The Commission previously adopted criteria for defining three groups of small businesses for purposes of determining their eligibility for special provisions such as bidding credits. The Commission defined a “small business” as an entity that, together with its affiliates and controlling principals, has average gross revenues not exceeding \$40 million for the preceding three years. A “very small business” is defined as an entity that, together with its affiliates and controlling principals, has average gross revenues that are not more than \$15 million for the preceding three years. Additionally, the Lower 700 MHz Service had a third category of small business status for Metropolitan/Rural Service Area (“MSA/RSA”) licenses —“entrepreneur”— which is defined as an entity that, together with its affiliates and controlling principals, has average gross revenues that are not more than \$3 million for the preceding three years. The SBA approved these small size standards. An auction of 740 licenses was conducted in 2002 (one license in each of the 734 MSAs/RSAs and one license in each of the six Economic Area Groupings (EAGs)). Of the 740 licenses available for auction, 484 licenses were won by 102 winning bidders. Seventy-two of the winning bidders claimed small business, very small business, or entrepreneur status and won a total of 329 licenses. A second auction commenced on May 28, 2003, closed on June 13, 2003, and included 256 licenses. Seventeen winning bidders claimed small or very small business status and won 60 licenses, and nine winning bidders claimed entrepreneur status and won 154 licenses. In 2005, the Commission completed an auction of 5

licenses in the lower 700 MHz band (Auction 60). All three winning bidders claimed small business status.

178. In 2007, the Commission reexamined its rules governing the 700 MHz band in the 700 MHz Second Report and Order. An auction of A, B and E block licenses in the Lower 700 MHz band was held in 2008. Twenty winning bidders claimed small business status (those with attributable average annual gross revenues that exceed \$15 million and do not exceed \$40 million for the preceding three years). Thirty three winning bidders claimed very small business status (those with attributable average annual gross revenues that do not exceed \$15 million for the preceding three years). In 2011, the Commission conducted Auction 92, which offered 16 lower 700 MHz band licenses that had been made available in Auction 73 but either remained unsold or were licenses on which a winning bidder defaulted. Two of the seven winning bidders in Auction 92 claimed very small business status, winning a total of four licenses.

179. **Upper 700 MHz Band Licenses.** In the 700 MHz Second Report and Order, the Commission revised its rules regarding Upper 700 MHz licenses. On January 24, 2008, the Commission commenced Auction 73 in which several licenses in the Upper 700 MHz band were available for licensing: 12 Regional Economic Area Grouping licenses in the C Block, and one nationwide license in the D Block. The auction concluded on March 18, 2008, with three winning bidders claiming very small business status (those with attributable average annual gross revenues that do not exceed \$15 million for the preceding three years) and winning five licenses.

180. Pursuant to the Spectrum Act, Congress provided for the deployment of a nationwide public safety broadband network in the 700 MHz band, including reallocating the Upper 700 MHz D Block from a commercial spectrum block to public safety use. On September 7, 2012, the Public Safety and Homeland Security Bureau adopted a Report and Order to reallocate the D Block for “public safety services.” Congress established FirstNet as an independent authority within the National Telecommunications and Information Administration (NTIA), and required the Commission to grant a

license to FirstNet for the use of both the existing public safety broadband spectrum (763-768/793-798 MHz) and the Upper D Block. On November 15, 2012, the Public Safety and Homeland Security Bureau granted FirstNet the license prescribed by statute, under call sign WQQE234.

181. **700 MHz Guard Band Licenses.** In 2000, the Commission adopted the 700 MHz Guard Band Report and Order, in which it established rules for the A and B block licenses in the Upper 700 MHz band, including size standards for “small businesses” and “very small businesses” for purposes of determining their eligibility for special provisions such as bidding credits. A small business in this service is an entity that, together with its affiliates and controlling principals, has average gross revenues not exceeding \$40 million for the preceding three years. Additionally, a very small business is an entity that, together with its affiliates and controlling principals, has average gross revenues that are not more than \$15 million for the preceding three years. SBA approval of these definitions is not required. An auction of these licenses was conducted in 2000. Of the 104 licenses auctioned, 96 licenses were won by nine bidders. Five of these bidders were small businesses that won a total of 26 licenses. A second auction of 700 MHz Guard Band licenses was held in 2001. All eight of the licenses auctioned were sold to three bidders. One of these bidders was a small business that won a total of two licenses.

182. **Specialized Mobile Radio.** The Commission adopted small business size standards for the purpose of determining eligibility for bidding credits in auctions of SMR geographic area licenses in the 800 MHz and 900 MHz bands. The Commission defined a “small business” as an entity that, together with its affiliates and controlling principals, has average gross revenues not exceeding \$15 million for the preceding three years. The Commission defined a “very small business” as an entity that, together with its affiliates and controlling principals, has average gross revenues not exceeding \$3 million for the preceding three years. The SBA has approved these small business size standards for both the 800 MHz and 900 MHz SMR Service. The first 900 MHz SMR auction was completed in 1996. Sixty bidders claiming that they qualified as small businesses under the \$15 million size standard won 263 licenses in the 900 MHz SMR band. In 2004, the Commission held a second auction of 900 MHz SMR licenses and three winning bidders identifying themselves as very small businesses won 7 licenses. The auction of 800

MHz SMR licenses for the upper 200 channels was conducted in 1997. Ten bidders claiming that they qualified as small or very small businesses under the \$15 million size standard won 38 licenses for the upper 200 channels. A second auction of 800 MHz SMR licenses was conducted in 2002 and included 23 Basic Economic Area (“BEA”) licenses. One bidder claiming small business status won five licenses.

183. The auction of the 1,053 800 MHz SMR licenses for the General Category channels was conducted in 2000. Eleven bidders who won 108 licenses for the General Category channels in the 800 MHz SMR band qualified as small or very small businesses. In an auction completed in 2000, a total of 2,800 Economic Area licenses in the lower 80 channels of the 800 MHz SMR service were awarded. Of the 22 winning bidders, 19 claimed small or very small business status and won 129 licenses. Thus, combining all four auctions, 41 winning bidders for geographic licenses in the 800 MHz SMR band claimed to be small businesses.

184. In addition, there are numerous incumbent site-by-site SMR licensees and licensees with extended implementation authorizations in the 800 and 900 MHz bands. The Commission does not know how many firms provide 800 MHz or 900 MHz geographic area SMR pursuant to extended implementation authorizations, nor how many of these providers have annual revenues not exceeding \$15 million. One firm has over \$15 million in revenues. In addition, the Commission does not know how many of these firms have 1,500 or fewer employees. The Commission assumes, for purposes of this analysis, that all of the remaining existing extended implementation authorizations are held by small entities, as that small business size standard is approved by the SBA.

185. **1.4 GHz Band Licensees.** The Commission conducted an auction of 64 1.4 GHz band licenses in the paired 1392-1395 MHz and 1432-1435 MHz bands, and in the unpaired 1390-1392 MHz band in 2007. For these licenses, the Commission defined “small business” as an entity that, together with its affiliates and controlling interests, had average gross revenues not exceeding \$40 million for the preceding three years, and a “very small business” as an entity that, together with its affiliates and

controlling interests, has had average annual gross revenues not exceeding \$15 million for the preceding three years. Neither of the two winning bidders claimed small business status.

186. **Broadband Radio Service and Educational Broadband Service.** Broadband Radio Service systems, previously referred to as Multipoint Distribution Service (“MDS”) and Multichannel Multipoint Distribution Service (“MMDS”) systems, and “wireless cable,” transmit video programming to subscribers and provide two-way high speed data operations using the microwave frequencies of the Broadband Radio Service (“BRS”) and Educational Broadband Service (“EBS”) (previously referred to as the Instructional Television Fixed Service (“ITFS”). In connection with the 1996 BRS auction, the Commission established a “small business” as an entity that had annual average gross revenues of no more than \$40 million in the previous three years. The BRS auctions resulted in 67 successful bidders obtaining licensing opportunities for 493 Basic Trading Areas (“BTAs”). Of the 67 auction winners, 61 met the definition of a small business. BRS also includes licensees of stations authorized prior to the auction. At this time, the Commission estimated that of the 61 small business BRS auction winners, 48 remain small business licensees. In addition to the 48 small businesses that hold BTA authorizations, there are approximately 392 incumbent BRS licensees that are considered small entities. After adding the number of small business auction licensees to the number of incumbent licensees not already counted, the Commission finds that there are currently approximately 440 BRS licensees that are defined as small businesses under either the SBA or the Commission’s rules. In 2009, the Commission conducted Auction 86, which resulted in the licensing of 78 authorizations in the BRS areas. The Commission offered three levels of bidding credits: (i) a bidder with attributed average annual gross revenues that exceed \$15 million and do not exceed \$40 million for the preceding three years (small business) will receive a 15 percent discount on its winning bid; (ii) a bidder with attributed average annual gross revenues that exceed \$3 million and do not exceed \$15 million for the preceding three years (very small business) will receive a 25 percent discount on its winning bid; and (iii) a bidder with attributed average annual gross revenues that do not exceed \$3 million for the preceding three years (entrepreneur) will receive a 35 percent discount on its winning bid. Auction 86 concluded in 2009 with the sale of 61 licenses. Of the

ten winning bidders, two bidders that claimed small business status won four licenses; one bidder that claimed very small business status won three licenses; and two bidders that claimed entrepreneur status won six licenses.

187. In addition, the SBA's Cable Television Distribution Services small business size standard is applicable to EBS. There are presently 2,032 EBS licensees. All but 100 of these licenses are held by educational institutions. Educational institutions are included in this analysis as small entities. Thus, the Commission estimated that at least 1,932 licensees are small businesses. Since 2007, Cable Television Distribution Services have been defined within the broad economic census category of Wired Telecommunications Carriers; that category is defined as follows: "This industry comprises establishments primarily engaged in operating and/or providing access to transmission facilities and infrastructure that they own and/or lease for the transmission of voice, data, text, sound, and video using wired telecommunications networks. Transmission facilities may be based on a single technology or a combination of technologies." For these services, the Commission uses the SBA small business size standard for the category "Wireless Telecommunications Carriers (except satellite)," which is 1,500 or fewer employees. To gauge small business prevalence for these cable services the Commission must, however, use the most current census data. According to Census Bureau data for 2007, there were a total of 955 firms in this previous category that operated for the entire year. Of this total, 939 firms employed 999 or fewer employees, and 16 firms employed 1,000 employees or more. Thus, the majority of these firms can be considered small.

D. Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements for Small Entities

188. The R&O implements several rule and policy modifications: (1) codifying the Commission's policies for attributing spectrum holdings for certain purposes; (2) including in the initial spectrum screen applied to the Commission's review of transactions the AWS-4 band, AWS H Block, additional BRS spectrum, most of the EBS spectrum and the AWS-3 band (on a market-by-market basis);

(3) replacing the current application of the mobile spectrum screen in case-by-case analysis of post-auction applications with a determination for each auction of whether to apply mobile spectrum holding limits to that auction; and (4) reserving a certain amount of 600 MHz spectrum (to be determined by a market-based mechanism during the Incentive Auction) for qualified bidders. These modifications should have minimal, if any reporting, recordkeeping or compliance impact on small entities, which tend to have relatively small spectrum holdings and rarely engage in the sort of large mergers and spectrum acquisitions that would trigger the spectrum screen and competitive scrutiny. All four rule modifications are intended to provide a clear framework for the Commission's competitive review of spectrum acquisitions in auctions and secondary markets – a framework that focuses, among other things, on facilitating access by multiple providers, including small entities, to a mix of low-band and high-band spectrum. Rule modification 3 is intended to facilitate access to 600 MHz spectrum for the entry and expansion of multiple providers, including small entities.

E. Steps Taken to Minimize Significant Economic Impact on Small Entities and Significant Alternatives Considered

189. The rule modifications the Commission implements in the R&O are intended to promote competition in the provision of mobile services by, among other measures, facilitating access to spectrum by multiple providers, including small entities. The Commission has done so by imposing a minor new regulatory requirement on small firms, namely that such firms (and others) certify their qualification to bid on the reserved 600 MHz spectrum. After careful review, the Commission has determined that imposing this qualification to bid on reserved spectrum, is necessary to help preserve spectrum for small entities. This certification process saves time and resources for small entities making them better equipped to compete in spectrum auctions.

F. Report to Congress

190. The Commission will send a copy of the R&O, including this FRFA, in a report to be sent to Congress pursuant to the Congressional Review Act. In addition, the Commission will send a

copy of the R&O, including this FRFA, to the Chief Counsel for Advocacy of the SBA. A copy of the R&O and FRFA (or summaries thereof) will also be published in the Federal Register.

G. Paperwork Reduction Act Analysis

191. The Report and Order contains new or modified information collection requirements subject to the Paperwork Reduction Act of 1995 (PRA), Public Law 104-13. It will be submitted to the Office of Management and Budget (OMB) for review under section 3507(d) of the PRA. OMB, the general public, and other Federal agencies will be invited to comment on the new or modified information collection requirements contained in this proceeding in a separate Federal Register notice. In addition, the Commission notes that pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, see 44 U.S.C. 3506(c)(4), the Commission previously sought specific comment on how the Commission might further reduce the information collection burden for small business concerns with fewer than 25 employees.

192. In this present document, the Commission has assessed the effects of modifying reporting rules, and finds that doing so does not change the burden on small businesses with fewer than 25 employees.

VII. ORDERING CLAUSES

193. ACCORDINGLY, IT IS ORDERED, pursuant to sections 1, 4(i), 201, 301, 303, 307, 308, 309, 310, 316, and 332 of the Communications Act of 1934, as amended, and sections 6003, 6401, 6402, 6403, and 6404 of the Middle Class Tax Relief Act of 2012, Pub. L. 112-96, 126 Stat. 156, 47 U.S.C. 151, 154(i), 201, 301, 303, 307, 308, 309, 310, 316, 332, 1403, 451, and 1452, that this Report and Order IS HEREBY ADOPTED.

194. IT IS FURTHER ORDERED that the rules adopted herein WILL BECOME EFFECTIVE [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]

195. IT IS FURTHER ORDERED that, pursuant to section 801(a)(1)(A) of the Congressional Review Act, 5 U.S.C. 801(a)(1)(A), the Commission SHALL SEND a copy of the R&O to Congress and to the Government Accountability Office.

196. IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this R&O, including the Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

List of Subjects in Part 20

Communications common carriers, Communications equipment, Radio

FEDERAL COMMUNICATIONS COMMISSION.

Marlene H. Dortch,

Secretary.

For the reasons discussed in the preamble, the Federal Communications Commission amends

47 CFR part 20 as follows:

PART 20 – COMMERCIAL MOBILE SERVICES

1. The authority citation for part 20 continues to read as follows:

Authority: 47 U.S.C. 154, 160, 201, 251-254, 301, 303, 316, and 332 unless otherwise noted.

Section 20.12 is also issued under 47 U.S.C. 1302.

2. Add § 20.22 to read as follows:

§ 20.22 Rules Governing Mobile Spectrum Holdings

(a) Applicants for mobile wireless licenses for commercial use, for assignment or transfer of control of such licenses, or for long-term de facto transfer leasing arrangements as defined in § 1.9003 of this chapter and long-term spectrum manager leasing arrangements as identified in § 1.9020(e)(1)(ii) must demonstrate that the public interest, convenience, and necessity will be served thereby. The Commission will evaluate any such license application consistent with the policies set forth in Policies Regarding Mobile Spectrum Holdings, Report and Order, FCC 14-63, WT Docket No. 12-269, adopted May 15, 2014.

(b) Attribution of interests. (1) The following criteria will apply to attribute partial ownership and other interests in spectrum holdings for purposes of:

(i) Applying a mobile spectrum holding limit to the licensing of spectrum through competitive bidding;
and

(ii) Applying the initial spectrum screen to secondary market transactions.

(2) Controlling interests shall be attributable. Controlling interest means majority voting equity ownership, any general partnership interest, or any means of actual working control (including negative control) over the operation of the licensee, in whatever manner exercised.

(3) Non-controlling interests of 10 percent or more in spectrum shall be attributable. Interests of less than 10 percent in spectrum shall be attributable if such interest confers de facto control, including but not limited to partnership and other ownership interests and any stock interest in a licensee.

(4) The following interests in spectrum shall also be attributable to holders:

(i) Officers and directors of a licensee shall be considered to have an attributable interest in the entity with which they are so associated. The officers and directors of an entity that controls a licensee or applicant shall be considered to have an attributable interest in the licensee.

(ii) Ownership interests that are held indirectly by any party through one or more intervening corporations will be determined by successive multiplication of the ownership percentages for each link in the vertical ownership chain and application of the relevant attribution benchmark to the resulting product, except that if the ownership percentage for an interest in any link in the chain exceeds 50 percent or represents actual control, it shall be treated as if it were a 100 percent interest. (For example, if A owns 20% of B, and B owns 40% of licensee C, then A's interest in licensee C would be 8%. If A owns 20% of B, and B owns 51% of licensee C, then A's interest in licensee C would be 20% because B's ownership of C exceeds 50%).

(iii) Any person who manages the operations of a licensee pursuant to a management agreement shall be considered to have an attributable interest in such licensee if such person, or its affiliate, has authority to make decisions or otherwise engage in practices or activities that determine, or significantly influence, the nature or types of services offered by such licensee, the terms upon which such services are offered, or the prices charged for such services.

(iv) Any licensee or its affiliate who enters into a joint marketing arrangement with another licensee or its affiliate shall be considered to have an attributable interest in the other licensee's holdings if it has authority to make decisions or otherwise engage in practices or activities that determine or significantly influence the nature or types of services offered by the other licensee, the terms upon which such services are offered, or the prices charged for such services.

(v) Limited partnership interests shall be attributed to limited partners and shall be calculated according to both the percentage of equity paid in and the percentage of distribution of profits and losses.

(vi) Debt and instruments such as warrants, convertible debentures, options, or other interests (except non-voting stock) with rights of conversion to voting interests shall not be attributed unless and until converted or unless the Commission determines that these interests confer de facto control.

(vii) Long-term de facto transfer leasing arrangements as defined in § 1.9003 of this chapter and long-term spectrum manager leasing arrangements as identified in § 1.9020(e)(1)(ii) that enable commercial use shall be attributable to lessees, lessors, sublessees, and sublessors for purposes of this section.

(c) 600 MHz Band holdings. (1) The Commission will reserve licenses for up to 30 megahertz of the 600 MHz Band, offered in the Incentive Auction authorized by Congress pursuant to 47 U.S.C. 309(j)(8)(G), for otherwise qualified bidders who do not hold an attributable interest in 45 megahertz or more of the total 134 megahertz of below-1-GHz spectrum which consists of the cellular (50 megahertz), the 700 MHz (70 megahertz), and the SMR (14 megahertz) spectrum in a Partial Economic Area (PEA), as calculated on a county by county population-weighted basis, utilizing 2010 U.S. Census data. The amount of reserved and unreserved 600 MHz Band licenses will be determined based on the market-based spectrum reserve set forth in Policies Regarding Mobile Spectrum Holdings, Report and Order, FCC 14-63, WT Docket No. 12-269, adopted May 15, 2014, as well as subsequent Public Notices. Nothing in this paragraph will limit, or may be construed to limit, an otherwise qualified bidder that is a non-nationwide

provider of mobile wireless services from bidding on any reserved or unreserved license offered in the Incentive Auction.

(2) For a period of six years, after initial licensing, no 600 MHz Band license, regardless of whether it is reserved or unreserved, may be transferred, assigned, partitioned, disaggregated, or long term leased to any entity that, after consummation of the transfer, assignment, or leased on a long term basis, would hold an attributable interest in one-third or more of the total suitable and available below-1-GHz spectrum as calculated on a county by county population-weighted basis in the relevant license area, utilizing 2010 U.S. Census data.

(3) For a period of six years, after initial licensing, no 600 MHz Band reserved license may be transferred, assigned, partitioned, disaggregated, or leased on a long term basis to an entity that was not qualified to bid on that reserved spectrum license under paragraph (c)(1) of this section at the time of the Incentive Auction short-form application deadline.

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