the extended ranges needed to serve rural communities.[102] Other parties, including certain other Part 15 device manufacturers and wireless carriers, raise objections, arguing that higher power levels for certain Part 15 devices in rural areas would cause unacceptable levels of interference and that it would be difficult, if not impossible, to ensure that such higher power levels were used only in those areas.[103]

50. We remain committed to exploring more flexible spectrum policies for rural areas to help foster, where possible, a viable last mile solution for delivering Internet services, other data applications, or even video and voice services to underserved or isolated communities.[104] The record in the *Rural NOI* identifies legitimate issues under our Part 15 policies, such as interference with other Part 15 devices and how to design a framework that reasonably ensures that Part 15 devices operate using different parameters in different locations or under differing RF conditions.[105] Cognitive radio technologies, which permit radio systems to modify their performance in response to such external information, would appear to hold great promise in resolving such issues.[106] In this connection, we plan to initiate a proceeding shortly to consider how to leverage these technologies to permit more intensive use of spectrum in a number of situations, including possible rule changes that would permit greater use of spectrum in rural areas.[107] In this proceeding, we plan to invite comment on any specific factors that may need to be considered to allow cognitive radios to operate with higher power in rural America. This impending proceeding also will address power limits for the operation of "dumb" or "non-cognitive radio" unlicensed devices in rural areas.

b. Licensed Services

51. Two commenters responding to the *Rural NOI* address the issue of whether we should

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[102] *See, e.g., Rural NOI,* Airzip Internet Inc. Comments at 1, Patti Jones Comments at 1, and Waverider Communications at 4.

[103] *See, e.g., Rural NOI,* Dobson Comments at 12, Itron Comments at 1-2, WaveRider Comments at 4, and AT&T Wireless Reply at 15.

[104] The Commission is addressing the need for additional unlicensed spectrum in two ongoing proceedings. *See* Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band, *Notice of Inquiry*, 17 FCC Rcd 25632 (2002); Revision of Parts 2 and 15 of the Commission's Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band, *Notice of Proposed Rule Making,* 18 FCC Rcd 11581 (2003).

[105] *See, e.g., Rural NOI*, Dobson Communications Comments at 12, Itron Comments at 1-2, NTCH Comments at 5-6 and Reply at 8-9, South Dakota Telecommunications Association Comments at 17-19, UT Starcom Reply at 3, WaveRider Communications Comments at 4, AT&T Wireless Reply at 15. In addition, the Commission is initiating a proceeding that will explore rule changes to enable the use of advanced antenna technologies to increase spectrum efficiency for unlicensed devices. *See* "FCC Proposes Changes in Technical Regulations for Unlicensed Devices To Facilitate Deployment of Advanced Technologies and To Streamline Regulations To Increase Flexibility," *News Release*, ET Docket No. 03-201 (rel. Sept. 10, 2003).

[106] *See SPTF Report* at 67; "The Office of Engineering and Technology hosting Workshop on Cognitive Radio Technologies May 19, 2003 ET Docket No. 03-108," *News Release* at 1 (rel. May 16, 2003) (*Cognitive Radio Workshop News Release*).

[107] *See Cognitive Radio Workshop News Release* at 1.

modify our regulations to permit increased power levels in the context of mobile voice systems.[108] South Dakota Telecommunications Association (SDTA) points out that higher power levels could reduce the number of transmitters required to connect stretches of roadways between small rural towns and to serve ranches and farms beyond the highways.[109] SDTA cautions that, while it may be feasible to increase power and still safeguard urban and suburban operations, such safeguards must include "clear-cut interference definitions and protections."[110] CTIA, however, argues that an increase in base station power levels would not improve matters unless mobile station (*i.e.*, handset) power levels are increased as well.[111] CTIA contends that it is unlikely that handset manufacturers would make special "high power" handsets for rural areas due to the relatively small size of the areas where such handsets would be useful and the potential interference problems that such handsets may generate.[112] Specifically, CTIA notes that increased handset power levels could pose problems when roaming (*e.g.*, when a high power handset roams outside of rural areas.)[113]

52. Increasing the range of radio systems is one means of making it more economical to provide spectrum-based radio services in rural areas by potentially lowering infrastructure costs. One way to increase the range of radio systems is by increasing power levels.[114] While there may be challenges in implementing increased power levels for cellular-like mobile systems, we would like to further investigate whether power increases may be beneficial for other mobile or fixed services. In doing so, we must consider increasing power levels in rural areas in the context of base/mobile systems, point-to-point systems, and point-to-multipoint systems. Base/mobile systems (*e.g.*, cellular, PCS, SMR, private land mobile) consist of a base station antenna intended to provide coverage over a specific area,

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[108] *Rural NOI,* Space Data Corporation (Space Data) commented and raised a related issue, asking the Commission to consider adding flexibility in its licensing and service rules to permit implementation of stratospheric platform systems. In this vein, Space Data argued that increasing antenna height may eliminate the need to increase handset power by eliminating the path loss effects (deep fading and clutter losses) present when a signal path is over land. Space Data asks the Commission to explore granting wide area licenses and allocating frequency usage based on an "Interference Temperature Limit." Although the Spectrum Policy Task Force raised the idea of an Interference Temperature Limit in its report, the Commission has not yet explored this idea. Therefore, we will not address Space Data's request here. *See SPTF Report* at 27. *See also* Petition for a Declaratory Ruling, a Clarification or, in the Alternative, a Waiver of Certain Narrowband Personal Communications Services (PCS) Rules as they Apply to a High-Altitude Balloon-Based Communications System, *Memorandum Opinion and Order*, 16 FCC Rcd 16421 (WTB 2001).

[109] *Rural NOI,* SDTA Comments at 17.

[110] *Id.*

[111] *Rural NOI,* CTIA Comments at 9.

[112] *Id.*

[113] *Id.*

[114] The Commission took this approach for the Cellular Radiotelephone Service in 1986 when it increased the maximum power level for rural base stations from 100 Watts to 500 Watts, and again in 1988 when it extended this flexibility to all cellular base stations, subject to a coordination zone along market boundaries. *See* Amendment of the Commission's Rules for Rural Cellular Service, *First Report and Order*, 60 Rad. Reg. 2d (P&F) 1029 ¶ 29 (1986); Amendment of Parts 2 and 22 of the Commission's Rules to Permit Liberalization of Technology and Auxiliary Service Offerings in the Domestic Public Cellular Radio Telecommunications Service, *Report and Order*, 3 FCC Rcd 7033, 7036-37 ¶¶ 17-23 (1988).

and the mobile units that communicate with the base station. The base station operates at a sufficient power level to cover the desired area, while the battery-powered mobile units operate at relatively low power. The ability of the base station to reach a mobile unit is limited by, among other things, transmitter power, the propagation characteristics of the frequency band, antenna directionality (gain), antenna height, terrain, clutter, man-made obstructions, and the sensitivity of the mobile unit receiver. As stated above, there are challenges related to increasing power levels. First, increasing the base station power may cause unacceptable levels of interference to nearby systems. Second, simply guaranteeing that a mobile unit can "hear" the base station, however, is not sufficient for two-way communications. The low power mobile unit, which is likely located close to ground level, must also be able to return a signal to the base station antenna, *i.e.*, the base station must be able to "hear" the mobile unit. One can observe that, at the fringe of the base station coverage area, the most significant limiting factors to two-way transmissions are the power level and the location of the mobile unit. Thus, merely increasing the base station power level may not improve the communications range unless the mobile unit is capable of returning a signal to the base station antenna.

53. It is instructive to provide examples of the likely results of increasing base station power for specific types of base/mobile systems. Because received signal levels decrease exponentially as the receiver moves farther from the transmitter, we would expect that relatively large increases in power would yield only small increases in communications range. In the case of a rural 800 MHz cellular system, we found that increasing the base station power by 10 percent (500 W ERP to 550 W ERP) and 20 percent (500 W ERP to 600 W ERP) increased the base station range by 1.5 km (0.93 mi) and 3 km (1.86 mi) respectively.[115] We note, however, that our calculations show that a typical 0.5 W ERP mobile unit would not have sufficient range to reach the base station from the edge of the base station coverage area regardless of whether the base station power is 500 (maximum under the rules today), 550, or 600 W ERP. Similarly, in the case of a rural 1,900 MHz PCS system, we found that increasing the base station power by 10 percent (1,640 W EIRP to 1,804 W EIRP) and 20 percent (1,640 W EIRP to 1,968 W EIRP) increased the base station range by 1 km (0.62 mi) and 2 km (1.24 mi) respectively.[116] We note, however, that our calculations show that a typical 0.8 W EIRP mobile unit would not have sufficient range to reach the base station from the edge of the base station coverage area regardless of whether the base station power is 1,640 (maximum under the rules today), 1,806, or 1,968 W EIRP.

54. Microwave point-to-point systems generally consist of a highly directional, high gain transmitting antenna and a highly directional, high gain receive antenna separated by some distance along a path. System performance is impacted by, among other things, transmitter power,[117] propagation

[115] We based this example on licensed operating parameters of cell sites in rural, central South Dakota. Specifically, we utilized the Okumura Hata propagation model assuming an 800 MHz cellular base transmitter, flat terrain, average height AMSL of 250 m, open clutter, omni-directional antennas (9dBd gain), antenna centerlines (multiple cells) from 41 to 90 m AGL, mobile height of 3 m, received signal level of -102 dBm, and mobile power of 0.5 W ERP.

[116] We based this example on a theoretical system placed in rural, western Kansas. Specifically, we utilized the Okumura Hata propagation model assuming a 1,900 MHz PCS base transmitter, flat terrain, average height AMSL of 230 m, open clutter, omni-directional antennas (9dBd gain), antenna centerline (all sites) of 60 m AGL, mobile height of 3 m, received signal level of -102 dBm, and mobile power of 0.8 W EIRP.

[117] The maximum power and antenna limitations found in our rules were adopted in the 1970s in order to provide satisfactory performance while at the same time precluding diffraction or troposcatter propagation modes. *See* Amendment of the Commission's Rules To Establish a Private Operational-Fixed Microwave Radio Service (Part 94), Docket No. 19869, FCC 73-1162, 1973 WL 20973 (FCC) (rel. Nov. 26, 1973).

characteristics of the frequency band, antenna directionality (gain), height of transmit and receive antennas, terrain between the antennas, interference, clutter, man-made obstructions, weather, type of modulation, and sensitivity of the receiver. Unlike a base/mobile system, however, the system designer can increase the distance of the path by increasing transmitter power or using a higher gain antenna as well as elevating the receive antenna. Point-to-multipoint microwave systems share many of the characteristics of point-to-point microwave systems, except that there are multiple receive antennas situated in an area of desired service and the transmitting antenna may not be as highly directional. In either case, as with base/mobile systems, increasing the transmitter power may cause unacceptable levels of interference to neighboring paths, or limit the number of paths in a particular area.

55. For example, in the theoretical case of a typical rural microwave path in the 6.8 GHz band, a 45 percent increase in transmitter output power yields only a one km (0.62 mi) increase in path length. We seek comment on whether the benefits of such a modest increase in path length outweigh the potential for unacceptable levels of interference to neighboring paths, or siting limitations on new paths in the same area.[118]

56. We seek comment on whether it is beneficial, feasible, and advisable to increase the current power limits for stations located in rural areas licensed under Parts 22, 24, 27, 80, 87, 90, and 101.[119] A licensee can increase power by increasing transmitter output power and/or by using a directional antenna that focuses energy on the specific area to be covered and reduces energy in other directions, serving to limit interference potential, and potentially improving reception of signals from mobile units. Commenters should indicate which radio service(s) and power level(s) should be increased, specify a particular amount of additional power (either transmitter output power, EIRP, or both), specify directional antenna parameters if applicable (*e.g.*, front to back ratio or beamwidth), and quantify the benefits that one could expect from the power increase. In particular, we are interested in how such increases may increase the potential for unacceptable levels of interference to other stations, increase exposure to electromagnetic radiation for workers and consumers,[120] or limit future use of the spectrum in such areas.

57. We also seek comment on how best to define the term "rural" for purposes of permitting

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[118] In this example we assumed a 6.8 GHz band microwave path, dry climate, reliability of 99.999 percent, flat terrain, and receive threshold of -75 dBm. An increase from 316 kW EIRP to 459 kW EIRP (approximately 45 percent) increases the path length from 12.94 km (8.04 mi) to 13.94 km (8.66 mi). The calculations in this example were based on the Vigants multipath fading model.

[119] Because the Commission recently addressed this matter with respect to MVDDS stations licensed under Part 101, we exclude those stations from our inquiry. Specifically, the Commission opted to slightly increase power levels for all MVDDS stations, rather than increase power levels for certain stations in remote and less-populated areas. *See* Amendment of Parts 2 and 25 of the Commission's Rules to Permit Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems in the Ku-Band Frequency Range; Amendment of the Commission's Rules to Authorize Subsidiary Terrestrial Use of the 12.2 - 12.7 GHz Band by Direct Broadcast Satellite Licensees and Their Affiliates; and Applications of Broadwave USA, PDC Broadband Corporation, and Satellite Receivers, Ltd. To Provide a Fixed Service in the 12.2 - 12.7 GHz Band, *Fourth Memorandum Opinion and Order*, 18 FCC Rcd 8428 (2003).

[120] We note that some cellular handsets available today already approach the specific absorption rate limits specified in our rules. *See* 47 C.F.R. §§ 1.1310, 2.1091, and 2.1093. Therefore, commenters who advocate higher power level for cellular handsets may wish to consider whether other design considerations can compensate for increased power levels so that such handsets do not violate our electromagnetic radiation exposure rules.

increased power levels. In the case of base/mobile systems, would both the base stations and mobile stations need to be located in a rural area? For example, for base/mobile systems that utilize frequency or code re-use schemes (*e.g.*, TDMA, GSM, CDMA), it may not be desirable to use increased base station power levels or increased antenna heights for cells that are not sufficiently distant from urban areas. Such cell sites located just outside of urban areas could cause unacceptable levels of interference to urban cells by virtue of increased power or antenna height. For point-to-point and point-to-multipoint systems, would both ends of the transmission path need to be in a rural area? Rather than defining certain geographic areas as rural for these purposes, would some other measure (*e.g.*, taking into account a combination of terrain and nearby spectrum usage) be more appropriate?

58. We also seek comment on other measures that licensees may be using to minimize the costs associated with serving rural areas, and whether our rules and policies are sufficiently flexible to facilitate and encourage such innovations. For example, cellular and PCS licensees in rural areas may be using tower top amplifiers in order to boost incoming mobile signals, thus increasing the two-way communications range of cell sites.[121] In fact, Nortel Networks has developed a CDMA cell that uses a high power amplifier for forward link and a tower top amplifier for improved sensitivity in the reverse link. When installed on a hill or other high terrain, Nortel claims that this approach has demonstrated coverage of up to 240 km over water and 130 km over land without requiring higher powered handsets.[122] Similarly, licensees may deploy "smart antenna" systems capable of increasing base station range and suppressing interference from unwanted sources.[123] Commenters should identify specific rules or policies that may hinder the development and deployment of these and other technologies that could benefit persons in rural areas.

E. Appropriate Size of Geographic Service Areas

1. Background.

59. Over the past decade, the Commission has moved from the use of site-based licenses to the use of geographic areas for licensing commercial wireless services.[124] In selecting the initial size of geographic service areas for licenses with mutually exclusive applications (and thus competitive bidding), Section 309(j)(4)(C) directs the Commission to promote certain goals. Specifically, Section 309(j)(4)(C) requires the Commission to, consistent with other objectives, prescribe service areas "that promote (i) an equitable distribution of licenses and services among geographic areas, (ii) economic opportunity for a wide variety of applications, including small businesses, rural telephone companies, and businesses owned by members of minority groups and women, and (iii) investment in and rapid

[121] Tower top amplifiers improve system sensitivity by filtering and amplifying signals received at the base station antenna. While the gain delivered by a tower top amplifier may improve talkback signals from mobiles and portables greatly, its use must be limited to the extent it increases the system noise floor to undesirable or intolerable levels. *See, e.g.*, <http://www.top-cape.com/TTA.htm>.

[122] *See* <http://www.nortelnetworks.com/products/01/cdma_radio/rural/>.

[123] *See, e.g.*, "Smart Antenna Systems," <http://www.iec.org/online/tutorials/smart_ant/index.html>.

[124] Many commercial wireless licenses have site-based incumbents, including the 220 MHz, 800 MHz SMR, and paging services.

deployment of new technologies and services."[125]

60. The Commission's assignment of cellular licenses employed geographic service areas, despite the fact that this process preceded competitive bidding and the policy objectives found in Section 309(j)(4)(C). The Commission decided that, for cellular licenses, geographic service areas would be based on Metropolitan Statistical Areas (MSAs) and Rural Service Areas (RSAs), collectively designated Cellular Market Areas (CMAs), of which there are 734 for the United States as a whole.[126]

61. For broadband PCS licenses, in 1993 the Commission decided that, pursuant to Section 309(j)(4)(C), geographic service areas would be based on 493 Basic Trading Areas (BTAs) and 51 Major Trading Areas (MTAs).[127] The Commission initially designated four licenses for each of the smaller BTAs and two licenses for each of the larger MTAs. In making this determination for PCS licenses, the Commission concluded that smaller service areas, such as CMAs, were not necessary, because such smaller areas already had been made available with cellular licenses, and that larger areas, such as BTAs and MTAs, currently were demanded by potential providers.[128] The Commission determined that, in many cases, cellular licenses were aggregated by providers so as to create larger, even nationwide service areas and provide economies of scale.[129]

62. For WCS licenses, in 1997 the Commission decided to license the geographic areas for this service based on 12 Regional Economic Area Groupings (REAGs) and 52 Major Economic Areas (MEAs).[130] The Commission designated two licenses for each REAG and two for each MEA. In considering the different options for WCS geographic service areas, the Commission noted that commenters requested a variety of sizes, ranging from nationwide licenses to CMAs. The Commission decided that the larger REAs would accommodate those parties needing large areas to achieve economies of scale, facilitate interoperability, or provide innovative services, while the smaller MEAs would provide an opportunity for smaller providers to participate in the competitive bidding for WCS licenses.[131]

2. Discussion

63. We believe that the Commission's choice for the initial size of geographic service areas

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[125] 47 U.S.C. § 309(j)(4)(C).

[126] 47 C.F.R. § 22.909. There are 306 MSAs and 428 RSAs.

[127] 47 C.F.R. § 24.202. MTAs comprise aggregations of BTAs. MTAs and BTAs originally were developed by Rand McNally and modified, with permission, by the Commission in issuing broadband PCS licenses.

[128] Amendment of the Commission's Rules To Establish New Personal Communications Services, *Notice of Proposed Rulemaking and Tentative Decision*, 7 FCC Rcd 5676, 5699-701 ¶¶ 56-62, and Amendment of the Commission's Rules to Establish New Personal Communications Services, *Second Report and Order*, 8 FCC Rcd 7700, 7732-33 ¶¶ 73-75.

[129] *Id.*

[130] Amendment of the Commission's Rules to Establish Part 27, the Wireless Communications Service (WCS), *Report and Order*, 12 FCC Rcd 10785, 10814-15 ¶¶ 55-57 (1997).

[131] *Id.*

plays an important role in promoting a number of policy goals, including efficiency of spectrum use, competition among providers, and advancing service to rural areas. If geographic service area licenses are assigned with an initial size that does not represent the needs of service providers, then transaction costs are incurred, as carriers seek to acquire rights to spectrum in areas they wish to serve and divest their interest in areas they do not wish to serve. For example, if the initial size of geographic service areas is too small, then providers demanding large areas must aggregate, either during the auction or afterwards. If the initial size of geographic service areas is too large, then providers demanding small areas must disaggregate post-auction. In contrast, if the size of geographic service areas represents the needs of providers, substantial costs may be saved. For example, smaller license areas make it easier for small, regional, and/or rural providers to acquire needed spectrum without having to negotiate through secondary markets. While we hope that the Commission's recent efforts to facilitate the development of secondary markets will make these transaction costs less burdensome, we recognize that some costs to moving spectrum to its highest valued use will remain.

64. Since it is costly to aggregate or disaggregate spectrum, it is important that the Commission select initial license sizes and boundaries that are appropriate for the likely users and services to be provided. We recognize that there are tradeoffs between the use of large service areas and small service areas.[132] Large service areas provide economies of scale and reduce coordination costs. Economies of scale may be realized in manufacturing of equipment and in providing service with certain technologies, such as satellites, which have high fixed costs but low marginal costs to serve large geographic areas. Large service areas are likely to reduce several types of coordination costs, including standard setting, providing seamless roaming, and avoiding co-channel interference. On the other hand, smaller service areas allow local, independent operators to better tailor their services to local conditions and provide greater financial incentives to local licensees than if they were managers in very large enterprises. Adopting small license areas also may allow smaller enterprises with limited financing to acquire spectrum licenses. In addition, license boundaries, as well as license size, are a concern of the Commission, which has attempted to choose boundaries that combine people and firms who are part of the same community and who are likely to communicate with each other. The Commission also has attempted to avoid setting boundaries that would preclude incumbents from bidding on licenses because of cross-ownership rules. For example, in setting license areas for broadband PCS, the Commission attempted to create licenses whose boundaries were contiguous with cellular service areas.

65. We recognize that carriers are divided on the issue of the appropriate size of geographic service areas. In various Commission proceedings, representatives of small, regional, and rural providers have argued that CMAs are the most appropriate size.[133] These parties contend that if the geographic

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[132] Many of these tradeoffs between large service areas and small service areas are those between centralization and decentralization. *See* McAfee, R. Preston, *Competitive Solutions: A Strategist's Toolkit*, Princeton University Press (2003).

[133] *See e.g., Rural NOI*, Dobson Communications Corporation Reply Comments at 1-2; Comments of NTCA at 9-10; OPASTCO/RTG Joint Comments at 8-10; Comments of U.S. Cellular at 7-8; Comments of Rural Cellular Association at 3. *See also* Amendments to Part 1, 2, 27 and 90 of the Rules To License Services in the 216-220 MHz, 1390-1395 MHz, 1427-1429 MHz, 1429-1432 MHz, 1432-1435 MHz, 1670-1675 MHz, and 2385-2390 MHz Government Transfer Bands, *Report & Order*, 17 FCC Rcd 9980, 9990 ¶16 (2002) (citing Rural Telecommunications Group Comments at 2, Office of Advocacy, U.S. Small Business Administration, Reply Comments at 3-4) (*27 MHz Report and Order*); Service Rules for the 746-764 and 776-794 MHz Bands, and Revisions to Part 27 of the Commission's Rules, *First Report & Order*, 15 FCC Rcd 476, 499 ¶55 (2000) (citing Comments of Rural Telecommunications Group at 3) (*Upper 700 MHz Band Report and Order*); Reallocation and Service Rules for the 698-746 MHz Spectrum Band (Television Channels 52-59), *Report and Order*, 17 FCC Rcd

(continued....)

service areas are too large, then they will be unable to compete against large carriers in the auction.[134] Smaller carriers further argue that when licenses for large geographic areas are auctioned and acquired by large, nationwide carriers, it is costly and often impossible for small, regional, and rural carriers to negotiate partitioning and disaggregation agreements.[135] In contrast, representatives of large regional and nationwide CMRS providers and other parties have argued that service areas that are too small may be inefficient.[136] These parties contend that small areas may make it more difficult for providers to achieve economies of scale or otherwise impede their ability to provide cost-effective service. Still other parties have argued that the size of service areas should be tailored to the wireless service in question.[137]

66. We seek comment on the costs of partitioning post-auction as compared to the costs of aggregating spectrum during or after the auction process. We observe that spectrum aggregation within auctions is fairly common. While we recognize the concerns of small carriers regarding their access to spectrum in rural markets, especially when large geographic areas are used, we note that partitioning also is relatively common. Some carriers appear to be partitioning their licenses, indicating there is a market for partitioned spectrum.[138] Most partitioning occurs along county boundaries, but there have been instances of partitioning along "undefined areas."[139] There have been approximately 780 geographic-area licenses partitioned at least once.[140] Approximately 90 percent of all partitioned licenses are broadband PCS or 800 MHz SMR, which are spectrum bands used primarily for the provision of mobile telephony service. We note that over 60 percent of all counties in the broadband PCS service have been partitioned at least once.[141] Partitioning appears to be occurring across all regions of the country and

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1022, 1058 ¶ 88 (2001) (citing Comments of Cellular South at 6, Comments of CROW at 7-8, Reply Comments of Leap at 4, Comments of NTCA at 2, Comments of SDN at 5-6) (*Lower 700 MHz Band Report and Order*).

[134] *See, e.g., Rural NOI*, NTCA *Ex Parte* (filed Jan. 27, 2003), OPASTCO/RTG Joint Comments at 8-10.

[135] *Id.*

[136] *See, e.g., Rural NOI, Reply Comments of Space Data Corporation at 11-12. See also 27 MHz Report and Order* at 9990 ¶16 (citing Comments of AMTA at 6); *Upper 700 MHz Band Report and Order* at 499 ¶55 (citing Comments of AirTouch at 19-20, Comments of US West at 3); *Lower 700 MHz Band Report and Order* at 1058 ¶ 87 (citing Comments of Qwest at 7, ArrayComm *Ex Parte* at 5).

[137] *See Rural NOI*, Comments of AT&T Wireless Services, Inc. at 8-9, Comments of Western Wireless at 31-32.

[138] The statistics reported in this paragraph reflect analysis performed by Commission staff using publicly available data from the Commission's Universal Licensing System and population figures based on the 2000 Census.

[139] Undefined areas are considered geographic areas that cannot be expressed by county boundaries. An example of undefined area partitioning includes the Des Moines – Quad Cities Major Trading Area (MTA032), where one carrier has partitioned its license over 100 times to various small carriers.

[140] This total includes applications currently pending before the Commission and granted applications. The total number of licenses is represented by counting a license as being partitioned each time a license is listed on a partitioning application. Therefore, certain licenses may be counted more than once for the purposes of this analysis. A license can involve the partitioning of many counties or undefined areas.

[141] Those counties that make up this 60 percent estimate do not include counties where only a portion of the county has been partitioned (*i.e.*, undefined areas). Because, as described above, partitioning also occurs along undefined areas, we conclude that the actual number of partitioned counties is greater than 60 percent.

includes many counties that fall within the various definitions of "rural" that are proposed in Section II.A, above. For example, of the partitioned broadband PCS counties, 72 percent are counties with a population density of 100 persons per square mile or less. In addition, 77 percent of the partitioned broadband PCS counties are contained within RSAs. Furthermore, 71 percent of the partitioned broadband PCS counties are non-nodal EA counties. In addition, we observe that partitioning sometimes occurs to different degrees in different services, even when the same size of geographic service areas is used. For example, both 900 MHz SMR licenses and broadband PCS A and B Block licenses are licensed across MTAs, yet we see significant partitioning with broadband PCS licenses and very little with 900 MHz SMR licenses.

67. We seek comment on the lessons we should draw from the Commission's experience in choosing initial service area sizes. Is there evidence of net aggregation towards nationwide service areas for certain services such as cellular and PCS? Is there evidence of net partitioning for other services? To the extent partitioning is more common in some services and less so in others, is this trend indicative of some miscalculation by the Commission in choosing the initial size of service areas? Alternatively, could this activity reflect changes in the demand for services that could be provided in this band, or changes in technologies or other factors that affect what services could be supplied in this band? We also seek comment as to whether the difference in the level of partitioning across services could reflect the application of different Commission rules, such as build-out requirements. Finally, we note that there are certain transaction costs associated with any partitioning. Should we expect that licenses for highly valued spectrum, in highly valued services, will be more likely to be partitioned, given the greater likelihood that the value created by this trade will exceed the transaction costs? Similarly, as secondary markets develop and transaction costs decline, should we expect that partitioning through leasing arrangements will become more feasible in more services? To what extent might such partitioning be limited by a hold-out problem? That is, might licensees with large geographic areas refuse to make spectrum available to small providers that want to serve small or niche markets, which tend to be in rural areas?

68. We tentatively conclude that it is in the public interest for the Commission to balance the needs of different providers, including the larger carriers' need for economies of scale and the smaller carriers' need for license areas that more closely resemble their service areas. We recognize that, since users of spectrum have a variety of needs, one size of service area does not fit all. We intend to continue establishing geographic areas on a service-by-service basis, and we seek comment on steps we can take to effectively balance the competing needs of different users as we make these service area decisions. Would such an approach produce economically efficient results? Is such an approach necessary, given our expectation that secondary markets will become more prevalent in the future? We especially encourage commenters to use empirical evidence to support their assessment of partitioning costs, aggregation costs, and the efficiency of any approach they recommend.

69. In addition, while the largest geographic service area the Commission may adopt would be a nationwide area, there is some question as to what would be the smallest size that would still be functional. That is, at what point is it more appropriate for the Commission to use site-based licenses instead of very small geographic area licenses? Also, to the extent we believe small license areas are appropriate for specific bands, what size is most appropriate – CMAs, EAs, or some other measure? Are there particular frequencies that are better suited for allocations to small license areas? We also inquire as to whether it is possible that use of relatively small geographic areas would introduce an unreasonable risk of another type of hold-out problem. In particular, might such an approach result in many small incumbent licensees who could then frustrate post-auction attempts to aggregate licenses efficiently by refusing to sell except at excessive prices?

70. At the same time we seek comment on whether to use smaller service areas, we also seek

ways to make it easier for providers in need of larger areas to acquire them with minimal transaction costs. One way to achieve this objective may be to adopt bidding design mechanisms that permit the aggregation of geographic areas or spectrum blocks during an auction. Typically, the Bureau uses a simultaneous multiple-round auction design, which facilitates aggregation by making all licenses in the auction available at the same time. Under this approach, bidders may observe bidding activity on all licenses and make aggregation decisions based on such observations of relative prices. Recently, the Bureau selected a package bidding design for two auctions.[142] This relatively new approach to auctions allows bidders to submit all-or-nothing bids on combinations of geographic areas or spectrum blocks in addition to bids on individual licenses or authorizations. We believe that, in instances in which the Commission has determined that smaller size license areas are appropriate, a package bidding format may be helpful to bidders seeking to acquire larger geographic areas or spectrum blocks. We recognize, however, that in such circumstances, the use of package bidding may introduce significant computational complexities.

71. We also observe that choosing a geographic service area that represents a "middle solution" may be an inefficient approach. For example, if nationwide providers need large or nationwide service areas and regional or rural providers need very small areas, then the use of service areas that are medium sized in an attempt to find a "middle solution" may impose unnecessary transaction costs. In such cases, the likely users would have to either aggregate or partition in order to meet their spectrum needs. We note that, as an alternative to such a "middle solution" in which service area size represents a compromise that may not be ideal for either small or large service providers, there may be situations in which it is possible to create geographic service areas of mixed sizes. In particular, if there is sufficient bandwidth available, both large regional (or even national) and small local license areas can be created. We inquire as to whether such a mixed plan may reduce the aggregation/disaggregation transaction costs inherent in a single size geographic licensing scheme, and we seek comment on what other costs, as well as benefits, may be associated with such an approach. We recognize that, while a mixed approach may be useful in some bands with spectrum users that have very different needs, it may not be appropriate in other bands, and we conclude that our approach must be tailored to the needs of each band or service in question.

F. *Facilitating Access to Capital*

72. In this section we explore ways that we may facilitate increased access to capital to fund the build out and provision of spectrum-based facilities and services in rural and underserved areas. First, we seek comment on what, if any, further regulatory or policy changes should be made to complement the U.S. Department of Agriculture's RUS program, under which qualified wireless providers can obtain low interest loans for deployment of broadband facilities, and any other method of securing financing for rural build out and operations. We also seek comment regarding whether we should permit RUS to obtain security interests in spectrum licenses, whether we have the statutory authority to do so, and whether allowing RUS to take security interests in licenses is likely to provide licensees serving rural and other areas with greater opportunities to leverage the value of their licenses and the rights thereunder, thereby increasing their access to capital. Finally, we seek comment on

[142] "Auction of Regional Narrowband PCS Licenses Scheduled for September 24, 2003, Notice and Filing Requirements, Minimum Opening Bids, Upfront Payments, Package Bidding and Other Auction Procedures," *Public Notice*, DA 03-1994 (rel. June 18, 2003); "Auction of Licenses in the 747-762 And 777-792 MHz Bands Scheduled for June 19, 2002, Further Modification of Package Bidding Procedures And Other Procedures For Auction No. 31," *Public Notice*, 17 FCC Rcd 7049 (2002).

discontinuing application of the cellular cross-interest rule in RSAs with more than three competitors to avoid impeding opportunities for financing and investment in rural areas and shift to standard case-by-case review process for RSA cellular license transactions to safeguard competition in these markets.

1. Rural Utilities Service

a. Rural Loan Programs

(i) Background

73. The U.S. Department of Agriculture's RUS Telecommunications Program assists the private sector in developing, planning, and financing the construction of telecommunications infrastructure in rural America. Programs administered by RUS include: (1) infrastructure loans; (2) broadband loans and grants; (3) distance learning and telemedicine loans and grants; (4) weather radio grants; (5) local TV loan guarantees; and (6) digital translator grants. The largest of these programs are the infrastructure loan program and the broadband loan program.

74. The infrastructure loan program is technology neutral, requires broadband-capable facilities, and provides financing for infrastructure (*e.g.*, building and equipment), but not financing for the costs of operating the business. Within the infrastructure loan program, there are four types of financing: (1) hardship loans; (2) cost-of-money loans; (3) rural telephone bank loans; and (4) federal financing bank loans.[143] For fiscal year 2003, the total authorized loan level for these four programs is $670 million.[144]

75. The broadband loan program is technology neutral; requires provision of high-quality data transmission service and may provide voice, graphics, and video; and must enable a subscriber to transmit and receive at a rate of no less than 200 kilobits per second.[145] Similar to the infrastructure loan program, the broadband loan program finances the construction or acquisition of new facilities and facility improvements.[146] RUS makes broadband loans available to any legally organized entity that has sufficient authority to enter into a contract with RUS and carry out the purposes of the loan, so long as the entity is providing or proposes to provide service to an area that meets the following criteria: (1) there are no more than 20,000 inhabitants, and (2) the service area does not fall within a standard metropolitan statistical area..[147] For fiscal year 2003, RUS has $80 million for 4 Percent loans,[148] $80 million for

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[143] 7 C.F.R. §§ 1735.30 – 1735.33.

[144] *See* Slides of Roberta D. Purcell, Assistant Administrator, Telecommunications Program, Rural Utilities Service, Kick Off Meeting of the Federal Rural Wireless Outreach Initiative, July 2, 2003, available at <http://wireless.fcc.gov/outreach/presentations/JointFCC-RUSPresentation_1.pdf> (Purcell Slides). *See also* <http://wireless.fcc.gov/outreach/ruralinitiative/event20030702.html>.

[145] 7 C.F.R. § 1738.

[146] 7 C.F.R. § 1738.10(a).

[147] 7 C.F.R. §§ 1738.2,1738.16. Individuals or partnerships of individuals are not eligible entities. An entity is not eligible if it serves more than 2 percent of the telephone subscriber lines installed in the United States. A State or local government, including any agency, subdivision, or instrumentality thereof (including consortia thereof) shall be eligible for a broadband loan only if, not later than April 30, 2002, no other eligible entity is already offering or has committed to offer broadband service to the eligible rural community. RUS will determine whether the commitment is sufficient for purposes of this paragraph. 7 C.F.R. § 1738.16.

Guaranteed loans, and $1.3 billion for Treasury Rate loans.[149] In fiscal year 2004, the total loan level is anticipated to be $418 million.[150]

76. The Commission's Wireless Telecommunications Bureau (WTB) has partnered with RUS to sponsor the "Federal Rural Wireless Outreach Initiative" (FCC/RUS Outreach Partnership).[151] The FCC/RUS Outreach Partnership is designed to exchange program and regulatory information about rural development and wireless telecommunications access in rural areas. The four key goals of the FCC/RUS Outreach Partnership are to: (1) exchange information about products and services each agency offers to promote the expansion of wireless telecommunications services in rural America; (2) harmonize rules, regulations and processes whenever possible to maximize the benefits for rural America; (3) educate partners and other agencies about Commission, WTB and USDA/RUS offerings; and (4) expand the FCC/WTB and USDA/RUS partnership, to the extent that it is mutually beneficial, to other agencies and partners.

(ii) Discussion

77. We seek methods to help facilitate access to capital in rural areas in order to increase the ability of wireless telecommunications providers to offer service in rural areas. An important part of accomplishing this goal is through the promotion of federal government financing programs. We seek comment on how the Commission can assist in making the RUS loan programs more effective. We seek comment on whether there are any Commission regulations or policies that should be reexamined or modified to facilitate participation in the RUS programs by wireless licensees and service providers. In addition, we ask for comment on whether the FCC/RUS Outreach Partnership could be expanded to include other federal, state, or local government programs and, if so, which programs should be included in this FCC/RUS Outreach Partnership. We further seek comment on whether there is a role for non-governmental entities in the FCC/RUS Outreach Partnership and how such entities might be able to participate.

78. We also ask for suggestions regarding effective outreach programs and the groups that should be targeted. For example, we ask service providers; federal, state, and local governments; and other interested parties what outreach initiatives they have found most effective in the past. In addition, we ask for submission of lists of associations, government agencies, or other interested parties that would want to join in this FCC/RUS Outreach Partnership or receive future information regarding this program.

(Continued from previous page)

[148] To be eligible for a direct loan bearing a fixed interest rate of 4 percent, the applicant must be proposing to serve a community of 2,500 people or less, located in a county where the per capita income is 55 percent of the national average, with a population density is no more than 10 people per square mile, and where there is not currently broadband service (as defined by 7 CFR § 1738.11(b)). The loans are capped at $5 million. *See* Purcell Slides; 7 CFR § 1738.30(b).

[149] 7 C.F.R. § 1738.30. Some loan types have additional eligibility criteria. *Id.*

[150] *See* Purcell Slides.

[151] *See Federal Rural Wireless Outreach Initiative News Release.*

b. Security Interests

(i) Background

79. As a historical matter, the Commission has not permitted third parties to take a security interest in spectrum licenses. At the same time, the Commission's legal and policy bases for various restrictions on transactions involving licenses have evolved over the years. For instance, at one time, the policy of prohibiting the sale of bare licenses, as well as the policies against security and reversionary interests in licenses, were based on the Commission's interpretation of the Communications Act.[152] In various decisions, the Commission modified its views on the statutory basis for these policies in the context of cellular and other wireless licenses.[153] In 1992, the Commission examined these policies in connection with capital formation issues facing the broadcasting industry.[154] For all spectrum-based services, the Commission has expressly permitted licensees to grant security interests in the stock of the licensee, in the physical assets used in connection with its licensed spectrum, and in the proceeds from operations associated with the licensed spectrum.[155] The Commission and the courts have likewise determined that security interests in the proceeds of the sale of a license do not violate Commission policy.[156] In connection with the auction installment payment program, the Commission itself has taken an exclusive security interest in licenses subject to installment payments and a senior security interest in the proceeds of a sale of an auctioned license. In such circumstances, the Commission has allowed licensees to provide their lenders a subordinated security interest in the proceeds of a license sale.[157]

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[152] *See generally* Stephen F. Sewell, Assignments and Transfers of Control of FCC Authorizations Under Section 310(d) of the Communications Act of 1934, 43 Fed. Comm. L.J. 277, 330-31 (1991); William L. Fishman, *Property Rights, Reliance, and Retroactivity under the Communications Act of 1934*, 50 Fed. Comm. L.J. 1, 16-20 (1997); Nancy R. Selbst, *"Unregulation" and Broadcast Financing: New Ways for the Federal Communications Commission to Serve the Public Interest*, 58 U. Chi. L. Rev. 1423, 1439 (1991).

[153] *See* Bill Welch, *Memorandum Opinion and Order*, 3 FCC Rcd 6502, 6503 (1988) (approving for-profit sale of a permit for construction of a cellular telephone facility on ground that relevant provisions of the Communications Act of 1934 "do[ ] not bar the for-profit sale to a private party, subject to prior Commission approval, of whatever private rights a permittee has in its license") (footnotes omitted); Application of Walter O Cheskey, Trustee-in-Bankruptcy for N.C.P.T. Cellular, Inc. (Assignor) and Triad Cellular L.P. (Assignee), *Memorandum Opinion and Order*, 9 FCC Rcd 986 (Mobile Serv. Div., Comm. Car. Bur. 1994), application for review denied, 13 FCC Rcd 10656, 10660 (1998), application for review denied, *Amarillo CellTelCo v. FCC*, 1998 WL 796204 (D.C. Cir. 1998) (*Cheskey*).

[154] Review of the Commission's Regulations and Policies Affecting Investment in the Broadcast Industry, *Notice of Proposed Rule Making and Notice of Inquiry*, 7 FCC Rcd 2654 (1992) (*Broadcasting Capital Formation Notice*). *See also* Petition for Declaratory Ruling filed by Hogan & Hartson (Feb. 21, 1991), available at <http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=1035940001> and <http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=1035940002> (Hogan & Hartson Petition).

[155] *See* Commission Policy Regarding the Advancement of Minority Ownership in Broadcasting, 99 FCC 2d 1249, 1254 (1985).

[156] *See Cheskey*, 13 FCC Rcd at 10659-60 ¶ 7.

[157] 47 C.F.R. § 1.2110(g)(3).

Courts and commentators have been closely watching these policy developments.[158] In its *Secondary Markets Policy Statement*, the Commission considered ways in which licensees may be able to maximize their efficient use of spectrum by leveraging "the value of their retained spectrum usage rights to increase access to capital."[159] Specifically, the Commission said "we plan to evaluate our policies prohibiting security and reversionary interests in licenses."[160]

(ii) Discussion

80. Pursuant to our stated intent in the *Secondary Markets Policy Statement*, we initiate a discussion regarding whether we should permit RUS to obtain security interests in the spectrum licenses of their borrowers. We seek comment on whether, and to what extent, licensees in rural areas would benefit from the opportunity to pledge their licenses to RUS as collateral as a means of overcoming their difficulties in raising capital. Would modifying our current policy to allow RUS to take limited security interests in wireless licenses be likely to provide licensees seeking to build out and serve rural and underserved areas with additional assistance in capital formation?

81. As an initial matter, we limit the scope of our inquiry to commercial and private terrestrial wireless services.[161] We further limit our inquiry concerning security interests to licenses and licensees in rural and underserved areas that are seeking federal financial assistance through RUS loan programs. We believe that such licensees will benefit most in light of their apparently greater need for lower-cost capital and the new opportunities presented by RUS loans discussed below. Also with regard to the scope of our inquiry, we note that we do not intend to implement any policy change that would, in the case of a licensee operating under the installment payment program, compromise the Commission's exclusive or senior secured position with respect to the license and the proceeds of the sale of such license. Nevertheless, we seek comment on whether permitting RUS to obtain security interests in the spectrum licenses of their borrowers, as described below, could have unintended effects on installment licensees and the Commission's rights under these arrangements.

82. Our primary goal is to determine whether further relaxation of the security interest restrictions – by allowing at least a modified form of collateralization of FCC licenses by licensees

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[158] *See, e.g., FCC v. NextWave Personal Communications Inc.*, 123 S.Ct. 832, 842 (2003); *MLQ Investors, L.P. v. Pacific Quadracasting, Inc.*, 146 F.3d 746, 748 (9th Cir. 1998) (*MLQ Investors*); *Beach Television Partners v. George F. Mills, Jr.*, 38 F.3d 535, 537 (11th Cir. 1994) (*Beach Television Partners*); *In re PBR Communications Systems, Inc.*, 172 B.R. 132, 135 (Bankr. S.D. Fla. 1994); Timothy F. Boyce, *Collateralizing Nonassignable Contracts, Licenses, And Permits: Half a Loaf is Better Than No Loaf*, 52 Bus. Law. 559, 575 (1997); William L. Fishman, *Property Rights, Reliance, and Retroactivity Under the Communications Act of 1934*, 50 Fed. Comm. L.J. 1, 52 (1997); Lorin Brennan, *Financing Intellectual Property Under Revised Article 9: National And International Conflicts*, 23 Hastings Comm. & Ent. L.J. 313, 455 (2001); Edwin E. Smith, *Article 9 In Revision: A Proposal For Permitting Security Interests In Nonassignable Contracts and Permits*, 28 Loy. L.A. L. Rev. 335, 349 (1994); Thomas Hutton, *Lenders Seeking to Take a Security Interest in FCC Licenses Obtain Only Limited Protection By Structuring Loans Through Subsidiaries That Will Hold The Licenses*, 20 Nat'l L.J. B5, col. 1 (Jan. 26, 1998).

[159] Principles for Promoting the Efficient Use of Spectrum by Encouraging the Development of Secondary Markets, *Policy Statement*, 14 FCC Rcd 24178, 24187 ¶ 23 (2000) (*Secondary Markets Policy Statement*).

[160] *Id.* at 24187-88.

[161] *See* n.1, *supra.*

obtaining RUS funds – could increase opportunities to raise capital or avoid financial collapse. We therefore seek comment on the extent to which a licensee's ability to grant RUS a security interest directly in an FCC license would, in fact, create new financing opportunities and facilitate the construction, deployment and continuity of new and existing wireless services in rural and underserved areas. We also ask how this change in our policy would affect the ability of small businesses to obtain much needed startup capital.

83. On the other hand, despite these potential benefits, we recognize that a licensee's current ability to grant security interests in its stock and in the proceeds of a license sale may already provide it with financing opportunities that are similar to those we seek to foster by our proposal below. If so, it would appear that we may not significantly enhance financing opportunities. We ask all interested parties, including licensees, vendors, RUS, lenders and others to comment on these potential benefits and to identify any other specific benefits that could accrue from such a policy change.

84. We further note that any security interest granted to RUS would be expressly conditioned, in writing as part of all applicable financing documents, on the Commission's prior approval of any assignment of the license or any transfer of *de jure* or *de facto* control of the licensee to RUS. We discuss below the reasons for this limitation and seek comment on some specific concerns.

85. First, in addition to the benefits from lower costs of and greater access to capital, we seek comment on whether modifying our policy to permit RUS to take a security interest in FCC licenses is a natural outgrowth of the Commission and judicial developments discussed above, which recognize the value and ability of a lender obtaining a security interest in the licensee's stock, proceeds and other assets without infringing upon the Commission's statutory obligations.[162] For instance, in *MLQ Investors*, the U.S. Court of Appeals for the Ninth Circuit determined that a security interest in the proceeds of the sale of a broadcast license can be perfected prior to the sale of the license, and that "[g]overnment licenses, as a general rule, are considered to be 'general intangibles' under the Uniform Commercial Code, '*i.e.*, personal property interests in which security interests may be perfected.'"[163] The Ninth Circuit identified the Commission's primary policy concern by stating that "[t]he FCC may prohibit security interests in licenses themselves because the creation of such an interest could result in foreclosure and transfer of the license without FCC approval."[164] The Ninth Circuit went on to explain that the Commission's interest in regulating spectrum to promote the public interest is not implicated "by a security interest in the proceeds of licenses, which does not grant the creditor any power or control over the license."[165] We also note that application of state laws under Article 9 of the Uniform Commercial Code is generally limited in connection with the treatment of security interests of non-assignable "personal property" governed by federal law.[166] We seek comment on how cases like *MLQ Investors* and

[162] *See Cheskey, Beach Television Partners.*

[163] *See MLQ Investors*, 146 F.3d at 749.

[164] *Id.* at 748.

[165] *Id.*

[166] *See* U.C.C. § 9-104(a)(1995); U.C.C. [Revised] § 9-109(c)(1)(2000); *see also* Brennan, Financing Intellectual Property Under Revised Article 9: National And International Conflicts, 23 Hastings Comm. & Ent. L.J. 313 (2001) (noting that the UCC drafting committee modeled its approach on the "well-established" law that applies to FCC licenses); Weise, *The Financing of Intellectual Property Under Revised Article 9*, 74 Chi.-Kent L. Rev. 1077, 1092-93 (1999) (noting same).

the application of the UCC provisions have affected lending practices for FCC licensees and what, if any, impact the grant of security interests in spectrum licenses to RUS might have on established law in this area, including the appropriate method of how RUS would perfect a security interest in FCC licenses.

86. Next, we address the concerns that have led us to propose that any security interest granted to RUS be expressly conditioned on the Commission's prior approval of any assignment of the license or any transfer of *de jure* or *de facto* control. We ask whether it may be feasible for a licensee to grant RUS a security interest in an FCC license without compromising our obligation to maintain control of spectrum in the public interest, so long as we are completely able to fulfill our applicable mandates under the Communications Act of 1934, as amended.[167] For example, we must and will preserve our authority under Section 310(d) to review and approve license assignments and transfers of control, to assess and confirm the basic qualifications of assignees and transferees, and, more generally, to exercise our statutory responsibility to determine whether the Section 310(d) transaction in question will serve the public interest, convenience and necessity.[168] The Commission has historically disallowed granting security interests in FCC licenses, based upon its concern that such financing arrangements may interfere with its ability to regulate the assignment of licenses, the transfer of control over licenses, and, more generally, the use of spectrum.[169] If, however, we can ensure that appropriate prior approval of assignments and transfers is obtained, and if we further limit any grant of a security interest to RUS, a federal loan agency, do commenters believe that our policy and statutory concerns would be satisfactorily addressed, thus enabling us to promote flexibility and financing opportunities for licensees serving rural and underserved areas? In this regard, we note that we have seen no detectable erosion of our regulatory authority from our current policy of permitting licensees to engage in a very similar type of financing arrangement – that is, a licensee grant of a third party security interest in its stock and the proceeds of the sale of the license, along with third party perfection of that interest, *prior* to the sale of the subject license. We seek comment on the relative impact that such developments may have on our ability to implement and enforce our statutory obligations.

87. We recognize that permitting RUS to obtain security interests in FCC licenses would provide RUS with greater rights vis-à-vis the license and licensee than it currently can obtain. We therefore ask whether our proposed condition requiring prior FCC approval before RUS can foreclose on the license would satisfactorily and adequately preserve existing regulatory relationships. The type of security interest that we are seeking comment on would be a right between the licensee and RUS, exercisable only upon Commission approval. Would such a right be fully consistent with our responsibilities under the Communications Act? We ask whether it would not be different than granting RUS an option to purchase a license, for example. We note that we would review and require our approval of an assignment to RUS in accordance with our transfer and assignment policies *before* RUS could assume control of a license. Such a process is designed to ensure that the federal government

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[167] *See* 47 U.S.C. §§ 301, 304. Section 301 of the Act provides that the government can authorize the use but not the ownership of the spectrum ("channels of radio transmission"). Section 304 requires that any license applicant waive any claim to the use of the spectrum as against the regulatory power of the United States.

[168] *See* 47 U.S.C. § 310(d); *see also* 47 U.S.C. §§ 308, 309; Hogan & Hartson Petition, *supra* n. 154 at 25 ("Transfer of a license would continue to be subject to prior Commission approval."). In the *Secondary Markets* proceeding, we ask whether we should forbear from requiring prior Commission approval for certain categories of transfers of control and license assignments that do not raise public interest issues requiring prior Commission review. *See Secondary Markets News Release*.

[169] *See Beach Television Partners* at 537; *Broadcasting Capital Formation Notice* at ¶¶ 22-23.

retains appropriate control over use of the spectrum consistent with Sections 301 and 304 of the Act, and that the perfection of a security interest in a license does not interfere with these or other statutory obligations and policy prerogatives. For example, would a security interest in a license give RUS any rights that might conflict with the Commission's regulatory oversight (other than an unapproved foreclosure or assertion of control) that it could exercise against the licensee? Furthermore, in light of the fact that RUS is a federal government agency, we ask whether we may have greater statutory latitude to grant it a security interest while still ensuring that the federal government retains control over spectrum.

88. Our next concern relates to any unintended consequences that may result from this potential policy change, especially as it relates to existing and future financial and regulatory relationships and any new claims or conflicts that may arise. It appears that one of the main conceptual differences between the current limits on the scope of permissible security interests and our proposal is that a security interest in a license itself would link the secured party more directly to the Commission. It is our understanding that under current financing practices involving FCC licensees, the secured party's rights stem from its relationship as a lender (and possibly an equipment vendor, bondholder or stockholder) to the licensee, not directly to the Commission, even after default and foreclosure on the secured assets. We seek comment on whether the grant by a licensee of a contingent interest in a Commission authorization to RUS – without the Commission's permission or review – would undermine our regulatory authority embodied in Sections 301 and 304. We also ask how the existence of RUS, as a secured creditor, may affect the ability of the licensee to seek financing from other sources in this situation? In sum, we seek comment on what, if any, difference from the perspective of RUS, a third-party lender, or the licensee, would there be on a relaxation of the current security interest policies in the circumstances described above.

89. Finally, we seek comment on one other concern that had been raised in the past by the Commission in connection with prior similar proposals. In particular, in the context of broadcast licenses, the Commission expressed concern about the independence of broadcast stations and about the ability of creditors to have substantial influence over a borrower station.[170] We seek comment on whether such dangers exist in the connection with RUS's attainment of security interests in non-broadcasting wireless licenses, especially as it relates to preserving and protecting facilities-based competition and innovation by and among wireless service providers.

2. Cellular Cross-Interests in Rural Service Areas

90. We seek comment regarding whether our current rule against cellular cross-interests in all RSAs,[171] as set forth in Section 22.942 of the Commission's rules,[172] remains in the public interest. Given the importance of increasing capital formation options for licensees, we request comment on whether continued application of the existing cellular cross-interest rule in all RSAs may be impeding financing to and investment in rural areas. We seek comment below on a range of options for modifying or eliminating the current rule in a way that balances the need to safeguard competition in these markets with our efforts to remove unnecessary regulatory barriers to financing, constructing, and operating wireless systems in rural areas. Further, as discussed below, we tentatively conclude to retain the current

[170] *Broadcast Capital Formation Notice* at ¶ 23.

[171] For additional background regarding the adoption of RSAs, *see* our discussion at n. 11 and ¶¶ 10-11, *supra*.

[172] 47 C.F.R. § 22.942.

cellular cross-interest rule in RSAs with three or fewer CMRS competitors, and we seek comment on removing the rule as it applies to other RSAs and to non-controlling investments in all RSA licensees.

a. Background

91. Section 22.942 of the Commission's rules substantially limits the ability of parties to have interests in cellular carriers on different channel blocks in the same rural geographic area.[173] To the extent licensees on different channel blocks have any degree of overlap between their respective cellular geographic service areas (CGSAs) in an RSA,[174] Section 22.942 prohibits any entity from having a direct or indirect ownership interest of more than 5 percent in one such licensee when it has an attributable interest in the other licensee.[175] An attributable interest is defined generally to include an ownership interest of 20 percent or more or any controlling interest.[176] An entity may have a non-controlling and otherwise non-attributable direct or indirect ownership interest of less than 20 percent in licensees for different channel blocks in overlapping CGSAs within an RSA.[177]

92. The Commission initiated a comprehensive review of the cellular cross-interest rule in January 2001 as part of its 2000 biennial regulatory review of spectrum aggregation limits.[178] In addition to considering to what extent there was then meaningful economic competition in CMRS markets,[179] the Commission sought comment on whether spectrum management and other regulatory considerations justified retaining, modifying, or eliminating prophylactic spectrum aggregation limits.[180] In December

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[173] 47 C.F.R § 22.942. The original cellular cross-interest rule was adopted in 1991. *See* Amendment of Part 22 of the Commission's Rules to Provide for the Filing and Processing of Applications for Unserved Areas in the Cellular Service and to Modify Other Cellular Rules, *First Report and Order and Memorandum Opinion and Order on Reconsideration,* 6 FCC Rcd 6185, 6228-29 ¶¶ 103-06.

[174] Application of the cellular cross-interest rule requires comparison of the CGSAs of cellular licensees operating on A Block frequencies in an RSA with those of cellular licensees operating on B Block frequencies in the same RSA. Because cellular licensees are authorized on frequencies in either one or the other of these channel blocks, any geographic area within an RSA will fall within the CGSAs of no more than two cellular licensees (one on each channel block).

[175] 47 C.F.R. § 22.942(a).

[176] 47 C.F.R. § 22.942(d)(1), (2). Other rules for determining attributable interests are set forth elsewhere in Section 22.942(d). *See* 47 C.F.R. §§ 22.942(d)(3)-(9).

[177] 47 C.F.R. § 22.942(b).

[178] *See* 2000 Biennial Regulatory Review Spectrum Aggregation Limits for Commercial Mobile Radio Services, *Notice of Proposed Rulemaking,* 16 FCC Rcd 2763 (2001) (*Spectrum Cap Sunset NPRM*). Staff had recommended that the Commission consider cellular cross-ownership issues as part of the 2000 biennial regulatory review proceeding reviewing the need for the CMRS spectrum cap, 47 C.F.R. § 20.6. *See* Federal Communications Commission Biennial Regulatory Review 2000, CC Docket No. 00-175, *Updated Staff Report,* app. IV at 34, 69 (rel. Jan. 17, 2001).

[179] *See Spectrum Cap Sunset NPRM* at 2771-77 ¶¶ 13-25.

[180] For example, the Commission sought comment on any costs that prophylactic limits may impose on the development of advanced wireless services, the costs and benefits of bright-line standards, and whether such limits promote efficiency. *See id.* at 2777-83 ¶¶ 26-39.

2001, pursuant to Section 11 of the Communications Act,[181] the Commission released its *Spectrum Cap Sunset Order*[182] and, on the basis of the state of competition in CMRS markets, sunset the CMRS spectrum cap rule in all markets effective January 1, 2003.[183] In that order, the Commission also determined that cellular carriers in urban areas no longer enjoyed first-mover, competitive advantages, and it therefore eliminated the cellular cross-interest rule in MSAs on that basis, also pursuant to Section 11 of the Act.[184] While the Commission left the cross-interest rule in place in RSAs, it indicated that it would consider waiver requests and reassess the need for the rule at a future date.[185]

93. In March 2002,[186] the Commission sought comment on petitions filed by Dobson Communications Corporation, Western Wireless Corporation, and Rural Cellular Corporation (Dobson/Western/RCC) and Cingular Wireless LLC (Cingular) seeking reconsideration of the decision in the *Spectrum Cap Sunset Order* to retain the cellular cross-interest rule in RSAs.[187] Petitioners and commenting parties focused on the sufficiency of the competitive market analysis underlying the decision to retain the cellular cross-interest rule in RSAs, as well as the consequences of relying on case-by-case review to examine cellular competition in rural areas.[188] Parties also asserted that the waiver process established in the *Spectrum Cap Sunset Order* creates regulatory uncertainty and discourages potential transactions and financing that could benefit rural consumers.[189] These petitions remain pending and are

[181] Section 11 of the Communications Act requires the Commission, every two years, to review all regulations that apply to "the operations or activities of any provider of telecommunications service" and to "determine whether any such regulation is no longer necessary in the public interest as the result of meaningful economic competition between providers of such service." 47 U.S.C. §§ 161(a)(1), (2).

[182] *See* 2000 Biennial Regulatory Review Spectrum Aggregation Limits For Commercial Mobile Radio Services, *Report and Order*, 16 FCC Rcd 22668 (2001) (*Spectrum Cap Sunset Order*).

[183] *Id.* at 22669 ¶ 1.

[184] *Id.*

[185] *Id.* at 27708 ¶ 88.

[186] *See* "Petitions for Reconsideration of Action in Rulemaking Proceeding," *Public Notice*, Report No. 2540 (Mar. 15, 2002).

[187] Petition for Reconsideration filed by Cingular, WT Docket No. 01-14 (Feb. 13, 2002) (Cingular Petition); Petition for Reconsideration filed by Dobson/Western/RCC, WT Docket No. 01-14 (Feb. 13, 2002) (Dobson/Western/RCC Petition).

[188] *See generally id.* Sprint PCS L.P. d/b/a Sprint PCS (Sprint PCS) filed comments opposing the petitions. *See generally* Sprint PCS Opposition filed by Sprint PCS, WT Docket No. 01-14 (Apr. 5, 2002) (Sprint PCS Opposition). The Cellular Telecommunications & Internet Association (CTIA) and Verizon Wireless filed comments supporting the petitions. *See generally* Comments of the Cellular Telecommunications & Internet Association in Support of Petitions Seeking Reconsideration filed by CTIA, WT Docket No. 01-14 (Apr. 5, 2002) (CTIA Comments); Reply Comments on Petitions for Reconsideration filed by Verizon Wireless, WT Docket No. 01-14 (Apr. 15, 2002) (Verizon Wireless Reply Comments).

[189] Cingular Petition at 5; Dobson/Western/RCC Petition at 8-10; *see also* Reply to Opposition to Petition for Reconsideration filed by Cingular, WT Docket No. 01-14, 6-7 (Apr. 18, 2002) (Cingular Reply to Opposition); Reply to Sprint PCS Opposition filed by Dobson/Western/RCC, WT Docket No. 01-14, 4 (Apr. 18, 2002) (Dobson/Western/RCC Reply to Opposition); CTIA Comments at 4.

being consolidated into the instant rulemaking.[190]

94. In its December 2002 *Rural NOI*, the Commission sought comment on the cellular cross-interest rule as it reviewed its policies to encourage the provision of wireless services in rural areas. The Commission explained that its retention in 2001 of the cellular cross-interest rule in RSAs was designed to protect against the cellular incumbents developing cross interests that might create the incentive and ability to restrict the availability of spectrum-based services in those areas and thereby raise prices.[191] It then solicited comment on the extent to which retention of the rule actually advances the provision of such services to rural areas,[192] including whether the rule should be changed to further the provision of wireless services to rural areas.[193] The Commission received comments supporting either modification or elimination of the rule so as to facilitate investment and financing arrangements for rural cellular providers.[194]

b. Discussion

95. Adequate financing is a vital precondition for the development of wireless infrastructure and offering of services in both urban and rural CMRS systems. We seek comment on whether the continued application of the cellular cross-interest rule in all RSAs may impede market forces that drive investment and economic development in rural areas. The recent downturn in telecommunications markets, worsening financial condition of many carriers, and the ongoing need for capital investment to keep up with technological and regulatory changes, has made it more difficult for wireless carriers, especially those serving rural areas, to obtain financing. In light of the foregoing, we seek comment regarding whether we should modify the cellular cross-interest rule to promote investment while protecting against potential competitive harms. Specifically, we tentatively conclude to retain the cellular cross-interest rule as it applies only in RSAs with three or fewer CMRS competitors and we seek comment on removing the rule as it applies to other RSAs and to non-controlling investments in all RSA licensees.

96. In the *Spectrum Cap Sunset Order*, the Commission concluded that it would be more efficient and less costly to the Commission to maintain a prophylactic cross-interest rule applicable to all RSAs and to entertain waiver requests for the small subset of transactions in RSAs where competition

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[190] In addition to incorporating submissions from these parties into the instant proceeding, pursuant to the recommendation of staff, *see* Federal Communications Commission 2002 Biennial Regulatory Review, WT Docket No. 02-310, GC Docket No. 02-390, *Staff Report of the Wireless Telecommunications Bureau*, DA 03-129, app. IV at 56 (rel. Mar. 14, 2003), we also incorporate the comments of parties seeking elimination of the cellular cross-interest rule in the context of our 2002 biennial regulatory review. *See generally* 2002 Biennial Regulatory Review, *Report*, 18 FCC Rcd 4726 (2003).

[191] *See Rural NOI*, 17 FCC Rcd at 25561, ¶ 10.

[192] *See id.* at 25568, ¶ 24.

[193] *Id.*

[194] *See* United States Cellular Corporation Comments at 12-16 (supporting an increase in the permissible controlling interest threshold from 5 to 20 percent and adoption of a waiver criteria similar to that found in former Section 20.6, note 3 of the Commission's rules); Dobson Communications Corporation Comments at 8-9 ("Complete repeal of the cellular cross-interest rule will help rural carriers attract capital and promote the deployment of wireless services in rural areas.").

was more robust.[195] As a consequence of that decision, cellular licensees in MSAs are free to procure financing that involves ownership interests that fall below the threshold that triggers the cross-interest rule,[196] while cellular licensees in all RSAs are not. While the Commission attempted to address this barrier to investment in rural areas by providing a specific waiver process,[197] the transactions costs and regulatory uncertainty surrounding any waiver procedure may deter some beneficial investment in these areas.[198] For example, Dobson/Western/RCC claim that the cross-interest rule interferes with investment in rural areas by presumptively prohibiting certain financing in the RSA portions of a regional market but not in the MSA portions.[199]

97. We seek comment on whether changing the cellular cross-interest rule for RSAs that enjoy a greater degree of competition will spur needed investment in these rural areas and foster even more competition in others. As an initial matter, we seek comment regarding what constitutes a "competitor" for purposes of this rule. For example, we ask whether a "competitor" might be any CMRS provider with significant geographic overlap with the cellular licensee.[200] We also seek comment regarding whether, in the event we do eliminate the cellular cross-interest rule for RSAs with greater than three competitors, we should adopt a transition period after which time the rule would sunset for these RSAs. In the event that commenters support such a sunset period, we seek comment regarding the appropriate length of the sunset period.

98. We also ask commenters for additional suggestions regarding how we may modify our cellular cross-interest rule to promote investment in rural areas while retaining adequate competitive safeguards. For example, should we eliminate the cellular cross-interest restriction for all RSAs where the ownership interest being transferred, assigned or acquired is not a controlling interest (*i.e.*, where the interest is a non-controlling interest and where the transaction otherwise would not require prior FCC approval)? We ask parties to focus their comments on the effect of the cross-interest rule on licensees' acquisition of adequate capital in these areas. Commenters should also consider whether financing arrangements and investment deals are being hindered because of the transaction costs or the uncertainty of the existing waiver process. Because we received little empirical evidence on these questions and issues in response to our *Rural NOI* and our public notice seeking comment on the petitions for reconsideration of the *Spectrum Cap Sunset Order*, we stress that commenters supporting our proposal should identify and discuss specific past instances in which they have had difficulty obtaining financing in rural areas due to the cellular cross-interest rule. In answering these questions, we also request parties

[195] *See Spectrum Cap Sunset Order* at 22696 ¶ 56.

[196] 47 U.S.C. § 310(d).

[197] *See Spectrum Cap Sunset Order* at 22709 ¶ 90.

[198] Earlier this year, the Wireless Telecommunications Bureau (Bureau) did grant a request for waiver of the cellular cross-interest rule to allow CenturyTel Wireless, Inc. to acquire a 14 percent non-controlling limited partnership interest in Lafayette MSA LP. *See* CenturyTel Wireless, Inc. and Century Tel, Inc., *Memorandum Opinion and Order*, 18 FCC Rcd 1260 (WTB 2003). The Bureau found that the cellular cross-interests in the RSA overlap area did not involve a substantial likelihood of significant competitive harm, because the local market was generally competitive with six providers offering service at similar prices. *Id.* at 1266 ¶ 19.

[199] *See* Dobson/Western/RCC Petition at 7-10; *see also* CTIA Comments at 4.

[200] We have used "significant overlap" in the context of applying the CMRS spectrum cap rule and ask whether a similar concept could be used in the context of the cellular cross-interest rule. *See* 47 C.F.R. § 20.6(c).

to provide examples of the extent to which the waiver process has deterred or prevented acquisition of capital in a rural market(s). Thus, we seek specific market data and historical examples to assist our public interest determination of the extent to which application of the cellular cross-interest rule in RSAs impedes market forces that drive development in these rural and underserved areas.

99. We also seek comment on whether extension of the case-by-case review, as established in the *Spectrum Cap Sunset Order*, will promote investment and is sufficient to safeguard competition in RSAs with more than three competitors. Although we recognize the role that the cellular cross-interest rule has provided in the past against the possibility of significant additional consolidation of cellular providers in rural areas, we ask whether the public interest may be better served by the benefits of pure case-by-case review. In the *Spectrum Cap Sunset Order*, the Commission concluded that case-by-case review under Section 310(d) of the Act,[201] properly performed and with appropriate enforcement mechanisms, allows greater regulatory flexibility and greater attention to the actual circumstances of a particular transaction, thus promoting economic efficiency by reducing the possibility both of approving secondary market transactions that are not in the public interest and of impeding transactions that are actually in the public interest.[202] In the markets still covered by the cellular cross-interest rule, for example, the rule prevents the two cellular licensees from merging regardless of the competitive circumstances in a given market, but does not prevent one cellular licensee from merging with a PCS licensee, even though the competitive effect of both transactions might be very similar. We seek comment on whether this inequity may distort the market in any area in which more than just the two cellular licensees are operating and whether the better approach to safeguarding competition is to take account of the particular circumstances of each market through case-by-case competitive review. While case-by-case review does place greater resource demands on parties and the Commission, we are gaining significant experience performing case-by-case review with regard to other markets, and we believe that we can utilize this tool to promote competition and investment.

G. Infrastructure Sharing

1. Background

100. Both in the United States (U.S.) and the European Union (EU), commercial wireless providers have sought to minimize their capital expenditures and maximize their coverage by engaging in joint ventures with other providers to share infrastructure costs. Such arrangements are generally known as "infrastructure sharing," and they can take place at various levels. At the most basic level is sharing of passive elements such as antennas and towers, followed by sharing of active or "intelligent" elements of the networks such as switches and nodes, followed by sharing of spectrum.

101. In the United States, several infrastructure sharing arrangements have been announced in the past two years. In October 2001, Cingular Wireless and T-Mobile announced a joint venture to share their existing networks, with T-Mobile launching service using Cingular's infrastructure in California and Nevada, and Cingular launching service using T-Mobile's infrastructure in New York.[203] In January 2002, Cingular and AT&T Wireless announced an infrastructure sharing agreement in which these firms

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[201] 47 U.S.C. § 310(d).

[202] *See Spectrum Cap Sunset Order*, 16 FCC Rcd at 22670, 22693-94, 22695-96, 22695-96 ¶¶ 4, 49-50, 54.

[203] *See Seventh Competition Report* at 13001.

would cooperate to build a network over 3,000 miles of highways in the West and Midwest.[204] Recently, in January 2003, AT&T Wireless and Sprint PCS announced a similar arrangement to share the costs of building and maintaining new wireless towers.[205] The providers claim that such infrastructure sharing will allow them to cover a larger geographic area at lower cost.[206] In addition, because two or more providers share the infrastructure, these arrangements may allow for more providers to serve a market than otherwise would be possible. Finally, to the extent that these arrangements make it possible for providers to cover a larger geographic area, and thus serve a greater number of consumers, they may provide an important public interest benefit.

102. Infrastructure sharing arrangements that do not involve a transfer of control, as defined under Section 310(d),[207] do not require Commission review. Infrastructure sharing arrangements that do involve a transfer of control, like other arrangements, require Commission review. Also, while previous infrastructure sharing arrangements have not required Commission review, the Commission has taken no regulatory action to either promote or create incentives for parties to enter into such arrangements.

103. As compared to the U.S. market, infrastructure sharing has received more attention from regulators in the EU and its Member States, who tend to allow sharing of the passive elements and, to a certain extent, some of the active elements.[208] Within the past year, the European Commission announced a preliminary conclusion to favorably view two agreements for the provision of 3G services, one in the United Kingdom and one in Germany.[209] The European Commission noted that these arrangements should allow for faster rollout of service and greater coverage, especially in remote and rural areas.[210]

2. Discussion

104. As noted in the Introduction, because of the lower population density and smaller customer base found in rural areas, the economically efficient number of providers for these markets will be fewer than that for urban markets. With fewer customers over which to spread their costs, there will be fewer providers. Because infrastructure sharing helps lower capital costs and thus extend the coverage of providers, this practice may be particularly important in rural areas, for which geographic coverage is especially important. In addition, because infrastructure sharing may make it possible for more providers to operate in a given area, this practice again is important for rural markets that tend to

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[204] *Id.*

[205] *See Eighth Competition Report* at 14809 ¶ 46.

[206] *Id.*

[207] 47 U.S.C. § 310(d).

[208] A summary of EU Member States' policies on infrastructure sharing is available at the European Commission's website, at <http://europa.eu.int/information_society/topics/telecoms/radiospec/doc/word/nis_moods_20020823.doc>.

[209] "Commission intends to clear 3G network sharing agreements between T-Mobile and MM02 in the UK and Germany," press release, European Commission, Brussels, September 10, 2002, IP/02/1277.

[210] *Id. See also,* "Commission approves third-generation mobile network sharing in the UK," Europemedia.net, January 5, 2003, available at <http://www.europemedia.net/shownews.asp?ArticleID=16138&Print=true>.

have fewer competitors.

105. We continue to believe that, under certain circumstances, licensees should be able to engage in infrastructure sharing in order to further promote service in these markets. Thus, for infrastructure sharing in rural areas that involve no transfer of control, as defined by Section 310(d),[211] there are no requirements for Commission pre-clearance. For infrastructure sharing arrangements in rural areas that involve a transfer of control, we will maintain Section 310(d) review.[212] We note that in the *Secondary Markets* proceeding we have significantly streamlined the transfer of control and assignment process,[213] and we inquire as to whether there are other steps we should consider to further streamline this process.

106. We seek comment on the extent to which infrastructure sharing may promote service in rural markets. Are there particular types of infrastructure sharing arrangements that may be most effective in promoting this goal? Are there specific policy steps we should take as a regulatory matter to promote infrastructure sharing arrangements that, in turn, promote service in rural areas? We encourage comments from providers involved in infrastructure sharing in the U.S. and EU as well as those familiar with such arrangements.

107. We also seek comment on the potential costs and benefits of this proposed policy. With regard to the potential benefits, we note that comments by European Commission regulators in support of such arrangements in the E.U. generally focus on the ability of carriers to lower costs and increase their coverage area, especially to rural markets.[214] Can we assume similar benefits for rural areas in the U.S.? We recognize that the Commission has stressed the value of facilities-based competition, and that infrastructure sharing by definition limits competition between two potential competitors.[215] We note that, with the recent infrastructure sharing arrangement in the United Kingdom, an EU Competition Commissioner remarked that their decision to allow the venture "strikes the right balance between infrastructure competition in 3G markets and the immediate consumer benefit of having faster and wider rollout of advanced 3G services."[216] We seek comment on the factors we should consider in evaluating infrastructure sharing arrangements that require Section 310 approval so as to effectively balance promoting competition among providers and promoting expanded coverage in rural areas.

108. In addition, we recognize that, as in the case of secondary market spectrum leasing, infrastructure sharing may require reconsideration of our regulatory definitions of spectrum use. As described above, we propose that licensees that make their spectrum in rural areas available to other

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[211] 47 U.S.C. § 310(d).

[212] *Id.*

[213] *See Secondary Markets News Release.*

[214] "Commission approves third-generation mobile network sharing in the UK," Europemedia.net, January 5, 2003, available at <http://www.europemedia.net/shownews.asp?ArticleID=16138&Print=true>.

[215] The Commission has discussed the value of facilities-based competition in various proceedings. *See, e.g., Eighth Competition Report* at 14786-91 ¶¶ 3-8; *Spectrum Cap Sunset Order* at 22679-85 ¶¶ 27-34.

[216] "Commission approves third-generation mobile network sharing in the UK," Europemedia.net, January 5, 2003, available at http://www.europemedia.net/shownews.asp?ArticleID=16138&Print=true, quoting EU Competition Commissioner Marlo Monti.

parties *via* secondary markets are, in a sense, using that spectrum. Should we similarly consider spectrum involved in infrastructure sharing arrangements to be "used" and thus not subject to re-licensing or any other mechanism to make the spectrum available to third parties?

H. Rural Radiotelephone Service and Basic Exchange Telecommunications Radio Service

1. Background

109. The Rural Radiotelephone Service (RRS) was established to permit the use of certain VHF and UHF spectrum to provide radio telecommunications services, in particular, basic telephone service, to subscribers in locations generally deemed so remote that traditional wireline service or service by other means is not feasible.[217] The RRS operates in the paired 152/158 MHz and 454/459 MHz bands, which are also used by paging services.[218] In 1987, the Commission adopted rules that authorized the establishment of the Basic Exchange Telecommunications Radio Service (BETRS) within the RRS.[219] BETRS is authorized in the same paired spectrum bands as RRS and in addition, on fifty channel pairs in the 816-820/861-865 MHz band.[220] BETRS, which is essentially a type of technology used to provide RRS, utilizes a digital system that is more spectrally efficient than traditional analog RRS, provides private calling, and has a much lower call blocking rate than RRS. Only local exchange carriers that have been state certified to provide basic exchange telephone service (or others having state approval to provide such service) in the pertinent area are eligible to hold authorizations for BETRS.[221]

110. The *BETRS R&O* provided that traditional RRS and BETRS would be co-primary with other services that were authorized to use the same spectrum. Prior to the establishment of BETRS, RRS was licensed on a secondary, non-interfering basis. In 1997, the Commission established rules to auction the 152/158 MHz and 454/459 MHz bands and issue paging licenses on a geographic basis.[222] As a result, existing RRS and BETRS licensees authorized for these spectrum bands were afforded protection as incumbent licensees and could continue operating on a primary basis. However, we indicated that subsequent RRS and BETRS licenses in these bands would be issued on a secondary basis to the geographic area licensee. Similarly, in 1997, the Commission established rules to auction the 816-

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[217] 47 C.F.R. § 22.99.

[218] These spectrum bands are allocated on a primary basis to the Paging and Radiotelephone Service. *See* 47 C.F.R. § 22.561.

[219] *See* Basic Exchange Telecommunications Radio Service, *Report and Order*, 3 FCC Rcd 214 (1988) (*BETRS R&O*).

[220] The Commission recently proposed to eliminate the assignment of 800 MHz frequencies for BETRS. *See* Amendment of Part 22 of the Commission's Rules To Benefit the Consumers of Air-ground Telecommunications Services and Biennial Regulatory Review – Amendment of Parts 1, 22, and 90 of the Commission's Rules, *Notice of Proposed Rule Making*, 18 FCC Rcd 8380, 8408 ¶ 71 (2003). This spectrum band is allocated on a primary basis to the Specialized Mobile Radio (SMR) service. *See* 47 C.F.R. § 90.617(d).

[221] 47 C.F.R. § 22.702.

[222] *See Revision* of Part 22 and Part 90 of the Commission's Rules To Facilitate Future Development of Paging Systems - Implementation of Section 309(j) of the Communications Act - Competitive Bidding, *Second Report and Order and Further Notice of Proposed Rulemaking*, 12 FCC Rcd 2732 (1997) (*Paging Second R&O*).

820/861-865 MHz bands and issue SMR licenses on a geographic basis.[223] As a result, existing BETRS licensees authorized in the 800 MHz band were afforded protection as incumbent licensees and could continue operating on a primary basis. Again, we indicated subsequent BETRS licenses in these bands would be issued on a secondary basis to the geographic area licensee.[224] Today new RRS and BETRS licenses are issued on a secondary, non-interfering basis.

2. Discussion

111. Although RRS and BETRS have been available for some time to provide basic telecommunications services in rural areas where wireline service is not feasible or practical, we have very limited information about their effectiveness in addressing the telecommunications needs of rural consumers. We seek to establish a more complete record regarding these services in order to allow us to determine if certain rules and policy changes are needed to facilitate the use of RRS and BETRS. As discussed below, we seek comment on whether: (1) there is a current demand for RRS and BETRS; (2) other wireless services have supplanted RRS and BETRS as alternatives to wireline service; (3) access to spectrum is a limiting factor for RRS and BETRS and (4) current Commission rules and polices are prohibiting/limiting the effectiveness of RRS and BETRS to provide service in rural areas.

112. As an initial matter, we would like to determine the level of demand for RRS and BETRS. We reviewed licensing data, locations where basic exchange service does not appear to be available, and the availability of equipment for RRS and BETRS. Our records indicate there are RRS licenses covering a total of 520 locations and BETRS licenses covering a total of 71 locations. A majority of the locations are located in the western portions of the U.S. and in Alaska. In the last three years, only seven RSS licenses and three BETRS licenses were issued.[225] It appears, on the surface, certain areas that do not have basic telephone service might benefit from RRS or BETRS. For example, we note that no RUS or BETRS facilities are licensed in Mississippi, which according to 2000 Census data, has the lowest household telephone penetration rate in the U.S.[226] In addition to the relatively low number of licenses issued for these services, we cannot find evidence that 800 MHz BETRS equipment has ever been manufactured and made available in the U.S. Furthermore, we only found one company that claimed it provided new RRS and BETRS equipment.[227] We are very interested in determining if RRS and BETRS are being fully used as a tool to provide basic telecommunications services to rural America. We seek comment on whether there is still a demand for RRS and BETRS, beyond what is currently offered, and whether RRS and BETRS are viable options in the provision of basic telecommunications services. If there is a demand for these services, are there ways that RRS and BETRS could be used more efficiently and/or effectively?

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[223] *See* Part 90 of the Commission's Rules To Facilitate Future Deployment of SMR Systems in the 800 MHz Frequency Band, *Second Report and Order*, 12 FCC Rcd 19079 (1997).

[224] There is only one 800 MHz BETRS license and the licensee received a waiver to provide service other than BETRS.

[225] Two of the BETRS licenses were authorized with rule waivers that allow the licensee to provide services other than BETRS.

[226] U.S. Census Bureau, American Fact Finder, Census 2000 Summary File 3 (SF 3) – Sample Data (GCT-H8. Occupancy, Equipment, and Utilization of Occupied Housing Units), <http://factfinder.census.gov/>.

[227] The Commission found three companies with equipment authorizations for RRS and/or BETRS.

113. If there is a demand for basic communications services, other than wireline, and it is not being met using traditional RRS and BETRS spectrum, we are interested in exploring how the demand is being met. The Commission has embraced policies that provide many wireless licensees with added flexibility in providing various types of services (*i.e.*, fixed or mobile/voice or data). For example, licensees in the broadband PCS service may provide any mobile services on their assigned spectrum and in addition, may provide fixed services on a co-primary basis with mobile operations.[228] In turn, the added flexibility gives licensees the ability to provide a range of services using spectrum that was previously allocated, for example, for only mobile wireless use or only fixed wireless use. It is now possible that services (*i.e.*, basic exchange service) previously offered only by RRS and BETRS licensees could be offered by licensees in other wireless services, using other spectrum bands. Furthermore, it is possible with the proliferation of mobile telephony throughout the country, individuals that in the past would have been a prime candidate to receive RRS or BETRS may now have access to a mobile telephone that is the sole telephone used within a household. We are not able to determine how many licensees are providing basic exchange service to rural areas using alternative spectrum or how many licensees are providing services (*i.e.*, mobile telephony) and therefore could negate the need for RRS or BETRS in particular areas. We therefore seek comment on the effectiveness of non-RRS and BETRS licensees in providing the same services or alternative services in lieu of RRS and BETRS. Furthermore, we seek comment on whether additional flexibility is necessary in order to fully exploit capabilities of licensees in this context? In addition, we seek comment regarding to what, if any, extent unlicensed spectrum is being used to provide services that have traditionally been provided by RRS and BETRS licensees.

114. In some instances, there may be a demand for a service; however, access to the spectrum needed to provide such services may not be readily available. We noted in the *Secondary Markets* proceeding that facilitating spectrum leasing arrangements permits additional spectrum users to gain access to spectrum.[229] Furthermore, several commenters in the *Secondary Markets* proceeding specifically indicated that facilitating leasing arrangements would increase service offerings to rural customers by enabling rural telephone companies and others to access underutilized spectrum.[230] We seek comment on whether there is a problem for potential providers of RRS or BETRS in accessing spectrum and if so, whether parties feel secondary markets will provide the appropriate means for access to the desired spectrum.

115. We are also interested in determining if the Commission's current rules and policies for RRS and BETRS are limiting factors towards a more expansive use of these services. We note that currently there is an eligibility restriction for BETRS that restricts the issuance of a license to only those

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[228] 47 C.F.R. § 24.3.

[229] *See Secondary Markets News Release.*

[230] *See* Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Development of Secondary Markets, WT Docket No. 00-230, Blooston, Mordkofsky, Dickens, Duffy and Prendergast Comments at 2-3 (relaxation of policies and rules that stand in way of innovative spectrum use arrangements would help eliminate unnecessary inhibitions on secondary markets and create incentives for larger carriers to lease to rural telephone cooperatives, thereby helping to spur rapid deployment of services to all areas of the country); National Telephone Cooperative Association Comments at 1-4; Rural Telecommunications Group Comments at 2 (spectrum leasing would significantly increase the use of already-assigned spectrum bands and allow companies not holding licenses to offer a panoply of wireless services in unserved and underserved areas)).

entities that receive state approval to provide basic exchange telephone service.[231] We believe that this rule may be unnecessary and may serve as a potential regulatory hurdle towards a more rapid and efficient use of the BETRS spectrum. We therefore propose to remove the eligibility restrictions contained within Section 22.702 of our rules regarding state approval prior to the issuance of a BETRS license. Furthermore, the current service rules for RRS and BETRS provides that new licenses are issued on a secondary, non-interfering basis. This approach ensures that RRS and BETRS licensees are provided access to spectrum so long as they do not cause harmful interference to the primary licensee and must give up their facilities if the primary licensee decides to construct facilities within the same area. In a Petition for Rulemaking filed by several parties, which eventually lead to the establishment of BETRS, a request was made to provide 2 MHz of dedicated spectrum for the use of BETRS. At the time, we determined that the demand for BETRS was not clear and therefore made the decision not to provide discrete spectrum for the use of BETRS. However, we indicated that if the spectrum that was made available for BETRS proved to be insufficient at a future date, we would revisit the problem at that time.[232] We note that in the *Rural NOI* we sought comment on how we might revise existing RRS and BETRS rules to further facilitate the provision of wireless services to rural areas.[233] We did not receive any comments that specifically addressed the need to revise RRS or BETRS rules. In section II.D., above, we address the potential for increased power levels in rural areas and seek comment on whether it is beneficial, feasible, and/or advisable to increase the current power limits for stations located in rural areas. We seek comment on our proposal to remove the eligibility restrictions in Section 22.702 of the Commission's rules for BETRS licensees. Based on the current RRS and BETRS licensing scheme, we seek comment on whether there is a need for us to expand the secondary status for RRS and BETRS to other spectrum bands in order to facilitate and encourage construction in rural areas. For example, would allowing RRS and BETRS operations in other bands on a secondary, non-interfering basis provide a viable alternative to increase the level of RRS and BETRS services? If so, what spectrum bands could RRS and BETRS be expanded to include? Although we are not convinced that providing additional spectrum on a primary basis for BETRS is needed at this time, especially since secondary markets has not had a chance to mature, we are, however, interested in seeking comment on this issue. Specifically, if additional spectrum should be designated on a primary basis for BETRS, what band(s) would be viable? How much spectrum would be needed? Is there existing equipment or equipment that can be manufactured and made readily available for use in the band(s)?

116. As a final matter, and in light of the Commission's policies towards a more flexible-use, market-based approach to spectrum management, we believe it is appropriate at this time to determine if the current designation of RRS and BETRS as fixed services creates disincentives towards a more expansive use of the spectrum. Currently, the service rules for RRS and BETRS limit the use of the spectrum to fixed offerings, which are intended primarily to be used as a vehicle to provide basic communications services to rural areas using wireless technologies. We seek comment on whether providing additional flexibility to allow other types of service offerings using RRS and BETRS spectrum on a secondary basis would provide the proper incentives for these spectrum bands to be more fully utilized in providing telecommunications services to rural areas. If a more flexible use policy were created for RRS and BETRS, what considerations must the Commission consider in adopting rules and policies to facilitate such flexible use?

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[231] 47 C.F.R. § 22.702.

[232] See *BETRS R&O* at 216 ¶ 25.

[233] *Rural NOI* at 25569 ¶ 28.

III. PROCEDURAL MATTERS

A. Ex Parte Rules – Permit-But-Disclose Proceeding

117. This is a permit-but-disclose notice and comment rulemaking proceeding. *Ex parte* presentations are permitted, except during the Sunshine Agenda period, provided they are disclosed as provided in Commission rules. *See generally* 47 C.F.R. §§ 1.1202, 1.1203, and 1.1206.

B. Initial Regulatory Flexibility Analysis

118. As required by the Regulatory Flexibility Act, *see* 5 U.S.C. § 603, the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) of the possible impact on small entities of the proposals in the Notice of Proposed Rulemaking. The IRFA is set forth in the Appendix. Written public comments are requested on the IRFA. These comments must be filed in accordance with the same filing deadlines for comments on the Notice of Proposed Rulemaking, and they must have a separate and distinct heading designating them as responses to the Initial Regulatory Flexibility Analysis. The Commission's Consumer Information Bureau, Reference Information Center, will send a copy of this Notice of Proposed Rulemaking, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration, in accordance with the Regulatory Flexibility Act. *See* 5 U.S.C. § 603(a).

C. Initial Paperwork Reduction Act of 1995 Analysis

119. This NPRM seeks comment on a proposed information collection. As part of the Commission's continuing effort to reduce paperwork burdens, we invite the general public and the Office of Management and Budget (OMB) to take this opportunity to comment on the information collections contained in this NPRM, as required by the Paperwork Reduction Act of 1995, Public Law 104-13. Public and agency comments are due at the same time as other comments on this NPRM and must have a separate heading designating them as responses to the Initial Paperwork Reduction Analysis (IPRA). OMB comments are due 60 days from date of publication of this NPRM in the Federal Register. Comments should address: (a) whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (b) the accuracy of the Commission's burden estimates; (c) ways to enhance the quality, utility, and clarity of the information collected; and (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology. In addition to filing comments with the Secretary, a copy of any comments on the information collection(s) contained herein should be submitted to Judy Boley, Federal Communications Commission, Room 1-C804, 445 12th Street, S.W., Washington, D.C. 20554, or via the Internet to <jboley@fcc.gov> and to Edward Springer, OMB Desk Officer, Room 10236 NEOB, 725 17th Street, N.W., Washington, D.C. 20503, or *via* the Internet to <edward.springer@omb.eop.gov>.

D. Comment Dates

120. Pursuant to applicable procedures set forth in Sections 1.415 and 1.419 of the Commission's Rules,[234] interested parties may file comments on or before 45 days after publication in the Federal Register and reply comments on or before 75 days after publication in the Federal Register. Comments and reply comments should be filed in WT Docket No. 03-202. All relevant and timely

[234] 47 C.F.R. §§ 1.415, 1.419.

comments will be considered by the Commission before final action is taken in this proceeding. To file formally in this proceeding, interested parties must file an original and four copies of all comments, reply comments, and supporting comments. If interested parties want each Commissioner to receive a personal copy of their comments, they must file an original plus nine copies.

121. Comments also may be filed using the Commission's Electronic Comment Filing System (ECFS). *See* Electronic Filing of Documents in Rulemaking Proceedings, 63 Fed. Reg. 24,121 (1998). Comments filed through the ECFS can be sent as an electronic file via the Internet to <http://www.fcc.gov/cgb/ecfs>. Generally, only one copy of an electronic submission must be filed. Commenters should transmit one electronic copy of the comments to WT Docket No. 03-202. In completing the transmittal screen, commenters should include their full name, Postal Service mailing address, and the applicable docket or rulemaking number. Parties may also submit electronic comments by Internet e-mail. To receive filing instructions for e-mail comments, commenters should send an e-mail to ecfs@fcc.gov, and should include the following words in the body of the message, "get form <your e-mail address>." A sample form and directions will be sent in reply.

122. Parties who choose to file by paper must file an original and four copies of each filing. Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail (although we continue to experience delays in receiving U.S. Postal Service mail). The Commission's contractor, Natek, Inc., will receive hand-delivered or messenger-delivered paper filings for the Commission's Secretary at 236 Massachusetts Avenue, NE, Suite 110, Washington, DC 20002. The filing hours at this location will be 8:00 a.m. to 7:00 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes must be disposed of before entering the building. In addition, parties who choose to file by paper should provide a courtesy copy of each filing to Nicole McGinnis, Attorney Advisor, Commercial Wireless Division, Wireless Telecommunications Bureau, 445 12th Street, SW, Room 6223, Washington, DC 20554 or by email to Nicole McGinnis at Nicole.McGinnis@fcc.gov.

123. Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743. U.S. Postal Service first-class mail, Express Mail, and Priority Mail should be addressed to 445 12th Street, SW, Washington, DC 20554. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

If you are sending this type of document or using this delivery method...	It should be addressed for delivery to...
Hand-delivered or messenger-delivered paper filings for the Commission's Secretary	236 Massachusetts Avenue, NE, Suite 110, Washington, DC 20002 (8:00 to 7:00 p.m.)
Other messenger-delivered documents, including documents sent by overnight mail (other than United States Postal Service Express Mail and Priority Mail)	9300 East Hampton Drive, Capitol Heights, MD 20743 (8:00 a.m. to 5:30 p.m.)
United States Postal Service first-class mail, Express Mail, and Priority Mail	445 12th Street, SW Washington, DC 20554

124. Regardless of whether parties choose to file electronically or by paper, parties should also file one copy of any documents filed in this docket with the Commission's copy contractor, Qualex International, Portals II, 445 12th Street, SW, CY-B402, Washington, DC 20554 (see alternative addresses above for delivery by hand or messenger) (telephone 202-863-2893; facsimile 202-863-2898)

or via e-mail at qualexint@aol.com.

125. The full text of this document is available for public inspection and copying during regular business hours at the FCC Reference Information Center, Portals II, 445 12th Street, SW, Room CY-A257, Washington, DC, 20554. This document may also be purchased from the Commission's duplicating contractor, Qualex International, Portals II, 445 12th Street, SW, Room CY-B402, Washington, DC, 20554, telephone 202-863-2893, facsimile 202-863-2898, or via e-mail qualexint@aol.com. Alternative formats (computer diskette, large print, audio cassette and Braille) are available to persons with disabilities by contacting Brian Millin at (202) 418-7426, TTY (202) 418-7365, or at brian.millin@fcc.gov.

IV. ORDERING CLAUSES

126. Accordingly, IT IS ORDERED that, pursuant to the authority contained in Sections 4(i), 11, 303(r), 309(j) and 706 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 157, 161, 303(r), and 309(j), this NOTICE OF PROPOSED RULEMAKING is hereby ADOPTED.

127. IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of the Notice of Proposed Rulemaking and Further Notice of Inquiry, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch
Secretary