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June 15, 2012

**VIA ECFS**

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

**Re: *Amendment of Part 27 of the Commission's Rules to Govern the Operation of Wireless Communications Services in the 2.3 GHz Band, WT Docket No. 07-293; IB Docket No. 95-91; GEN Docket No. 90-357***  
**WRITTEN EX PARTE PRESENTATION ON PERFORMANCE REQUIREMENTS**

Dear Ms. Dortch:

Concurrent with this filing, AT&T Inc. ("AT&T") and Sirius XM Radio Inc. ("Sirius XM") are submitting a package of compromise proposals to resolve open technical issues on reconsideration in the above-captioned docket.<sup>1</sup> That package will enable the adoption of technical rules satisfactory to both interests and should allow licensees in the 2.3 GHz Wireless Communications Service ("WCS") band to exploit the most efficient new mobile broadband standards, including LTE, while limiting the potential interference to satellite radio reception to acceptable levels. Reforming the WCS technical rules in this way will "make more spectrum available for broadband and improve the efficiency of its use"<sup>2</sup> to help address the capacity challenges the country will face in the coming years.<sup>3</sup>

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<sup>1</sup> Written *Ex Parte* Presentation of AT&T Inc. and Sirius XM Radio Inc. (filed June 15, 2012) ("AT&T and Sirius XM Joint Submission").

<sup>2</sup> Julius Genachowski, Chairman, FCC, Remarks to the Georgetown Center for Business and Public Policy at 3 (Nov. 7, 2011), *available at* <http://www.fcc.gov/document/genachowski-georgetown-center-business>.

<sup>3</sup> *Cf.* Federal Communications Commission, *Connecting America: The National Broadband Plan* at 85-86 (2010) (recommending the "accelerat[ion] of efforts to ensure that the WCS spectrum is used productively for the benefit of all Americans" as part of making substantially more spectrum available for broadband services), *available at* <http://download.broadband.gov/plan/national-broadband-plan.pdf>.

Deploying mobile broadband service over WCS would end the significant underutilization of the band, which has persisted since the Commission allocated the spectrum 15 years ago. Despite a variety of attempts throughout this period,<sup>4</sup> WCS licensees have been unable to use the band intensively due to the technical limitations imposed on them to protect adjacent band operations by Satellite Digital Audio Radio Service (“SDARS”) and Aeronautical Mobile Telemetry (“AMT”) licensees and the prolonged effort to relax those limitations to allow more robust WCS use.<sup>5</sup> When the Commission promulgated revised rules two years ago in the *Report & Order*, it believed it had developed a compromise that would satisfy all sides, enabling WCS licensees to deploy mobile broadband services while protecting SDARS customers and AMT users from harmful interference.<sup>6</sup> Instead, Sirius XM, AT&T, and the WCS Coalition all believed that the rules required further work before the WCS band could be used for mobile broadband service and filed petitions for partial reconsideration of the WCS technical rules, which are pending before the Commission.<sup>7</sup>

Assuming the Commission adopts the compromise AT&T has reached with Sirius XM, the revised technical rules will remove a significant barrier to WCS licensees developing and deploying mobile broadband technology in the WCS A and B Blocks. To justify the significant investments that will need to be made, however, WCS licensees also will need the Commission to make its performance requirements reasonably achievable.

As discussed in AT&T’s Petition for Partial Reconsideration, WCS licensees will not be able to deploy FDD LTE technology for mobile broadband services in the WCS A and B Blocks within the current build-out deadlines.<sup>8</sup> Even if the rules Sirius and AT&T jointly propose are

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<sup>4</sup> See, e.g., *Applications of Horizon Wi-Com, LLC*, Memorandum Opinion and Order, 24 FCC Rcd. 359, 361-62 ¶¶ 7-12 (Mobility Div., WTB 2009) (discussing Horizon’s attempt), review pending; *Consolidated Request of the WCS Coalition for Ltd. Waiver of Construction Deadline for 132 WCS Licenses*, Order, 21 FCC Rcd. 14134, 14139-40 ¶ 10 n.46, 14140-41 ¶ 12 & n.53 (WTB 2006) (discussing the attempts of AT&T, BellSouth, and Comcast).

<sup>5</sup> *Amendment of Part 27 of the Comm’n’s Rules to Govern the Operation of Wireless Commc’ns Servs. in the 2.3 GHz Band; et al.*, Report and Order and Second Report and Order, 25 FCC Rcd. 11710, 11714 ¶ 5 (2010) (“*Report & Order*”) (noting that the WCS Band lacks “a permanent regulatory framework” – largely due to the “difficulty of resolving potential interference among the proposed operations of SDARS and WCS licensees in a manner that will permit the two services to co-exist”). The historical background of the FCC’s efforts to draft technical rules that would permit mobile broadband services to be deployed in the 2.3 GHz WCS band is set forth in detail in the *Report & Order*. *Id.* at 11714-23 ¶¶ 5-27.

<sup>6</sup> *Id.* at 11712 ¶ 2.

<sup>7</sup> Green Flag Wireless, LLC, AARL, the National Association for Amateur Radio, and Stratos Offshore Services Company also filed petitions. The AMT community opposed the AT&T Petition.

<sup>8</sup> Petition for Partial Reconsideration of AT&T Inc. at 8-10 (filed Sept. 1, 2010) (“AT&T Petition”); see also Petition of the WCS Coalition for Partial Reconsideration at 1-2 (filed Sept. 1, 2010) (“WCS Coalition Petition”).

adopted promptly, it will take time to develop standards and equipment before widespread deployment can occur. As AT&T and the WCS Coalition also argued, the technical limitations imposed on the C and D Blocks severely constrain the services that can be provided over this spectrum and make the Commission's enhanced performance requirements "unduly aggressive and more likely to limit than to advance deployment."<sup>9</sup> Accordingly, AT&T urges the Commission instead

- to require coverage of 40 percent of the population in an A or B Block license area within four years of the effective date of the revised technical rules;
- to require coverage of 75 percent of the population in an A or B Block license area within ten years of the effective date of the revised technical rules;
- to impose penalties for failure to meet a performance requirement on an A or B Block license equivalent to those that apply to 700 MHz licensees, including the automatic loss of unserved areas if the final performance requirement is not met;<sup>10</sup> and
- to apply a traditional "substantial service" requirement at the renewal of C and D Block licenses.<sup>11</sup>

## ARGUMENT

### **I. ATTAINABLE TIMELINE**

Based on its own extensive experience constructing mobile broadband networks and discussions with equipment vendors, AT&T believes that an aggressive build-out of its planned WCS network to reach the 40 percent of population benchmark is likely to require at least four and one-half years from the time it submits the work item to 3GPP to add the U.S. 2.3 GHz WCS band to the LTE standard. The following chart shows the various stages of the process, and the

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<sup>9</sup> AT&T Petition at 22; *see* WCS Coalition Petition at 3-4.

<sup>10</sup> While both the first and second benchmarks for the A and B Blocks are expressed in terms of coverage for mobile or point-to-multipoint services, the same deadlines should apply to licensees providing fixed, point-to-point services to allow customer demand instead of deadlines to drive technology choices. *See* AT&T Petition at 11 n.36. In addition, lower build-out requirements should be retained for A and B Block license areas where 25 percent or more of the population is within a coordination zone as defined by 47 C.F.R. § 27.73(a). *See* 47 C.F.R. § 27.14(p)(1).

<sup>11</sup> Proposed changes to 47 C.F.R. § 27.14 are attached hereto.

discussion below explains the time needed to satisfy each of the interim milestones that must be met in order to reach 40 percent coverage.<sup>12</sup>

STAGE	1Q 1	2Q 1	3Q 1	4Q 1	1Q 2	2Q 2	3Q 2	4Q 2	1Q 3	2Q 3	3Q 3	4Q 3	1Q 4	2Q 4	3Q 4	4Q 4	1Q 5	2Q 5	
Standards																			
Equipment Design																			
Equipment Testing																			
Site Design																			
Site Construction																			

This schedule relies on overlapping a number of tasks that are ordinarily performed sequentially. As explained below, there are a number of points where unexpected technical complications or a third party’s failure to complete a task on schedule would delay the attainment of 40 percent coverage. Despite these risks, AT&T is asking for six months’ *less time* to reach this benchmark than likely would be required to meet this aggressive schedule. Because of the importance of making productive use of the WCS band after years of technical and regulatory limbo, AT&T is proposing that A and B Block licensees have four years to cover 40 percent of their licensed populations. Adhering to this schedule will require significant efforts, focused attention, and – frankly – the absence of any delays caused by circumstances outside of the licensee’s control.

**A. LTE Standards Process (12 months)**

3GPP is the standards body responsible for the development of LTE standards. Adding the U.S. 2.3 GHz WCS band to the LTE standard will require adding a new band class to the standard. This process begins when a sponsor introduces a work item, and ordinarily takes up to 18-24 months. Successful prosecution of a work item requires both a degree of certainty as to the technical rules applicable to the band and an industry consensus supporting the band class addition.

Because the standards process is cyclical, the time needed to add a band class varies according to when in the cycle the work item is introduced. A fortuitous point in the cycle is approaching later this year, and the schedule presented here depends on submitting the work item for prioritization in time for consideration at the December 2012 3GPP plenary.<sup>13</sup> If the work

<sup>12</sup> In this chart, black cells reflect the work that is pacing the timeline to completion while grey cells reflect continuing work that can (but ordinarily would not) be overlapped by the next step. When the time projected for this continuing work is a range, solid grey cells are used to show the shorter end of the range while hashed grey cells are used to show the longer end of the range.

<sup>13</sup> Ideally, the Commission would release final WCS technical rules before August 2012 in advance of the September 2012 3GPP plenary meeting. In any case, AT&T would need a clear indication from the Commission of the content of the final technical rules by November 2012 to

item is prioritized by then, the basic technical specifications should emerge from the 3GPP process within 12 months and final band specifications within 18-24 months.<sup>14</sup> With full commitment from equipment vendors, however, AT&T can use the basic technical specifications to launch the next phase, equipment design, 12 months after submitting the work item to 3GPP.

The schedule likely will be affected if (a) the Commission does not provide a clear indication by November 2012 that it is adopting the rule changes proposed jointly by AT&T and Sirius XM; (b) equipment vendors do not commit fully to advancing the work item; or (c) the work item is delayed after introduction, for example by opposition from other 3GPP participants or competing claims on the 3GPP agenda.

### **B. Equipment Design (6 months)**

Equipment design is done by vendors and is not within AT&T's control. AT&T will ask vendors to initiate the equipment design process just as soon as the standards process gate is cleared, hopefully, 12 months after the work item is introduced.<sup>15</sup> With full commitment from vendors, AT&T would expect to have prototype equipment, suitable for validation testing, six months later. While AT&T plans to proceed to equipment testing at this point, an additional six months of design work will be needed to create the equipment that, subject to validation, actually will be produced.

The schedule likely will be affected if equipment manufacturers encounter significant problems designing to the new standards, for example, the filter designs necessary to meet the WCS out-of-band emissions mask.

### **C. Equipment Testing (9 months)**

The prototype equipment from vendors will be lab tested by AT&T to validate its performance. AT&T will verify conformance with the 3GPP standard, compliance with the FCC's rules, and interoperability with the network environment. AT&T expects the lab testing to take nine months. This would be followed by three to six months of field testing, which would overlap the site design phase. The field testing would not be a gating event, unless serious problems were discovered during testing.

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make representations to equipment vendors and other 3GPP members to build support for giving the work item priority in December 2012.

<sup>14</sup> This assumes that the Commission adopts the changes to the WCS technical rules proposed jointly by AT&T and Sirius XM. *See* AT&T and Sirius XM Joint Submission. A work item adding a band class and, additionally, to change the LTE standard itself – which would be required for certain provisions of the current technical rules that AT&T and Sirius XM propose to eliminate – would require significantly more time.

<sup>15</sup> This is an expedited schedule, increasing the risks to all involved. Ordinarily, equipment design begins after final approval of the new standard.

The schedule probably will be affected if testing shows significant problems meeting the new standards or the FCC rules.

**D. Site Design (3 months)**

Once the equipment designs are validated, AT&T will have the technical information necessary to begin designing the base sites.<sup>16</sup> AT&T expects this phase to take three months, culminating in the RF design sheets used for construction. As noted above, during this time field testing will also be conducted, but it is not expected to be a gating event.

**E. Construction (24 months)**

The construction process begins with site acquisition, which is followed by the actual work of modifying or building base sites. To reach 40 percent population coverage in its initial build-out, AT&T generally will overlay WCS on existing AT&T sites. Constructing the required number of sites to reach 40 percent population coverage in 24 months is a very aggressive target.

If significant numbers of existing sites cannot accommodate an additional antenna, AT&T may need to find new locations or erect towers, which could delay the site acquisition process for those sites substantially. The schedule also could be affected if there were a shortage of equipment or skilled labor, neither of which is within AT&T's control.

**F. Timeline – Conclusion**

Notwithstanding the above schedule, with more aggressive overlapping of gating tasks, and if everything proceeds smoothly, AT&T believes that 40 percent population coverage is possible in four years. For this four-year schedule to be met, however, each gate must be cleared on time, and some must be achieved ahead of the timetable described above. And with this many complex, interdependent tasks, there easily could be setbacks. In particular, the schedule will be affected (i) if the Commission does not provide timely certainty with respect to the technical rules; (ii) if the Commission does not adopt the joint proposals of AT&T and Sirius XM; (iii) if the equipment manufacturers do not fully commit to the project, from beginning to end; (iv) if the standards process is delayed; (v) if there are problems meeting the standard or the FCC rules; (vi) if equipment manufacturers could not supply equipment at a sufficient rate to support the build-out; or (vii) if insufficient skilled labor is available to support the build-out. Nevertheless, AT&T will commit significant resources to drive this deployment forward as rapidly as possible.

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<sup>16</sup> This phase must follow, rather than overlap with, the lab testing phase because the lab testing is done on hand-built prototypes that may not match production units with respect to some parameters necessary for site design, such as size, weight, power consumption, etc.

## **II. THIS BUILD-OUT SCHEDULE IS AGGRESSIVE IN LIGHT OF PAST AND ONGOING COMMERCIAL MOBILE WIRELESS DEPLOYMENTS**

The history of past successful build-outs and the rules applicable to recently licensed bands demonstrate that extending the initial build-out requirements as described above is entirely reasonable. For example, Commission rules afforded Broadband PCS licensees a full five years to provide adequate service to one-third or one-quarter of the population in their service area, depending on the Block.<sup>17</sup> Similarly, cellular licensees had five years to expand their system within their markets – keeping the areas they covered at the end of that time<sup>18</sup> – and after the five-year period could file applications to extend coverage into unserved areas.<sup>19</sup> Even licensees in the 700 MHz Upper C and Lower A, B, and E Blocks were given four years from when the spectrum was cleared for use to cover 40 percent of the population (Upper C) or 35 percent of the geographic license area (Lower A, B, and E).<sup>20</sup> Moreover, even with the same four-year deadline, these 700 MHz licensees have more time to deploy equipment than WCS A and B Block licensees because the 700 MHz Blocks already had final LTE standards in place at the time the spectrum was cleared for use.<sup>21</sup> Therefore, allowing WCS licensees four years to provide coverage to 40 percent of the population is stricter than the build-out requirements for these other bands.

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<sup>17</sup> 47 C.F.R. § 24.203.

<sup>18</sup> *Id.* § 22.947.

<sup>19</sup> *Id.* § 22.949.

<sup>20</sup> *Id.* § 27.14(g)-(h). In adopting this four-year deadline, the Commission emphasized the difficulty of accomplishing a build-out in less time:

We are concerned that the proposed three-year benchmark may not provide sufficient time for providers of advanced services to acquire and deploy 4G technologies. Such 4G network build-out will require the commercial availability of end-to-end integrated systems, including subscriber terminals, radio access network, core network, and transport network, in addition to flexible enhanced services and integrated back-office and customer support centers. To achieve a commercial availability benchmark, teams of service providers, vendors and integrators must complete several parallel processes, including completion of the standards, product development, field trials, interoperability testing and larger scale trials, followed by deployment. Such an implementation is challenging and it may not be possible for carriers to complete these tasks prior to the end of the three-year benchmark that was proposed in the *700 MHz Further Notice*.

*Serv. Rules for the 698-746, 747-762 & 777-792 MHz Bands*, Second Report and Order, 22 FCC Rcd. 15289, 15350 ¶ 159 n.385 (2007).

<sup>21</sup> *Overview of 3GPP Release 8 V0.2.6 (2012-03)* at 7 (“3GPP Release 8 Overview”), available at [http://www.3gpp.org/ftp/Information/WORK\\_PLAN/Description\\_Releases/Rel-08\\_description\\_20120316.zip](http://www.3gpp.org/ftp/Information/WORK_PLAN/Description_Releases/Rel-08_description_20120316.zip).

The extension of the WCS A and B block build-out requirements to cover 75 percent of a license area's population within ten years is consistent with the build-out requirements of other spectrum bands. For example, for 30 MHz PCS licenses, the Commission provided the initial license term of ten years to reach coverage of two-thirds of the license area's population.<sup>22</sup> Similarly, the Commission gave licensees in the 700 MHz Upper C and Lower A, B, and E Blocks the initial license term of ten years to provide coverage to 75 percent of the licensed population and 70 percent of the geographic license area, respectively.<sup>23</sup>

There is no evidence in the record to suggest that WCS licensees would have the ability to reach these proposed benchmarks faster than licensees in these other bands have been able to do. Indeed, Release 8 of the 3GPP standard, which contained the 700 MHz band specifications for LTE,<sup>24</sup> was already well along when the FCC's 700 MHz performance rules were adopted<sup>25</sup> and, as noted above, had been finalized by the time the spectrum was cleared for mobile use. This head start reduced the time required to design and construct networks compared to WCS, where the final technical rules have not been released and no work item has yet been submitted to 3GPP to begin the standards process.

Although AT&T may have some existing network facilities that could be used in conjunction with building out LTE in WCS, this is not true of all WCS licensees, and it would be contrary to the public interest to adopt a build-out schedule that licensees would be unable to meet.<sup>26</sup>

### **III. THE RESTRICTIONS ON C AND D BLOCK LICENSEES REQUIRE A TRADITIONAL "SUBSTANTIAL SERVICE" STANDARD**

The C and D Blocks are handicapped from the start by being unpaired. AT&T has agreed with Sirius XM that mobile and portable transmitters should be prohibited from these Blocks. Moreover, the proposed retention, to a significant degree, of the outdoor antenna ban for low-power fixed customer premises equipment ("CPE") coupled with the limited power levels allowed for C and D Block links also render them insufficient to support backhaul in many

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<sup>22</sup> 47 C.F.R. § 24.203.

<sup>23</sup> *See id.* § 27.14(g)-(h).

<sup>24</sup> *3GPP Release 8 Overview* at 38.

<sup>25</sup> *Id.* at 7.

<sup>26</sup> *See Alliance for Cannabis Therapeutics v. DEA*, 930 F.2d 936, 940 (D.C. Cir. 1991) (holding that "[i]mpossible requirements imposed by an agency are perforce unreasonable" and, thus, arbitrary and capricious); *see also Nuvio Corp. v. FCC*, 473 F.3d 302, 303 (D.C. Cir. 2006) (stating that "inquiries" by the FCC into "the technical and economic feasibility of the deadline [established in a rulemaking are] . . . made necessary by the bar against arbitrary and capricious decision-making").



places.<sup>27</sup>

Given the severe limitations imposed on the C and D Blocks, the FCC should welcome any use of the spectrum that can be developed. New niche uses will have to be created – uses that are unlikely to generate enough demand to satisfy the new quantitative performance requirements. Aggressive performance requirements diminish licensee willingness to invest in deployment, for fear of losing that investment as well as the spectrum if they cannot jump the high hurdle.<sup>28</sup> The C and D Blocks are so impaired that any performance requirements are unduly aggressive and more likely to limit than to advance deployment. Accordingly, a traditional “substantial service” requirement should be applied to C and D Block licenses. Such a standard – with a case-by-case qualitative review – will free licensees to offer valuable niche services.<sup>29</sup>

#### **IV. A “KEEP WHAT YOU USE” RULE WILL ENCOURAGE MORE INVESTMENT IN WCS BROADBAND FACILITIES**

A “keep what you use” rule should apply at the final build-out deadline, consistent with the practice in other commercial mobile bands. Under such a rule, a WCS licensee that had made good-faith efforts to build facilities but, nevertheless, missed its final construction benchmark in a particular service area would have its authorization revoked automatically in the portions of the service area that it failed to cover. Automatically terminating an entire license for failure to meet a performance benchmark – as the current rules provide – even if, for example, the carrier covers 74 percent of the population – would cut off service to users, strand

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<sup>27</sup> Declaration of Douglas Duet ¶¶ 26-27, Attachment to AT&T Petition.

<sup>28</sup> AT&T Petition at 12 (“Even the larger licensees will be reluctant to make the substantial investments that will be required to meet the performance standards when achieving them is dubious, there is no assurance that achieving them will warrant a renewal, and the entire investment could be lost since the Commission refused to allow licensees to ‘keep what they use.’”).

<sup>29</sup> See, e.g., *Amendment of Parts 1, 21, 73, 74 & 101 of the Comm’n’s Rules to Facilitate the Provision of Fixed & Mobile Broadband Access, Educ. & Other Advanced Servs. in the 2150-2162 & 2500-2690 MHz Bands, et al.*, Order on Reconsideration and Fifth Memorandum Opinion and Order and Third Memorandum Opinion and Order and Second Report and Order, 21 FCC Rcd. 5606, 5719-5721 ¶¶ 276-278 (2006) (stating that fixed construction requirements do “not necessarily demonstrate adequate deployment in rural areas, to niche markets, or to discrete populations or regions with special needs” and that “a standard based on substantial service . . . may better be able to respond to these various concerns”); *Amendment of Parts 2 & 90 of the Comm’n’s Rules to Provide for the Use of 200 Channels Outside the Designated Filing Areas in the 896-901 MHz & the 935-940 MHz Bands Allotted to the Specialized Mobile Radio Pool, et al.*, Second Report Order and Second Further Notice of Proposed Rule Making, 10 FCC Rcd. 6884, 6898 ¶ 41 (1995) (“We also conclude that a showing of “substantial service” is appropriate for 900 MHz because several current offerings in this band are cutting-edge niche services.”).

investment, and disserve the public interest. A “keep what you use” rule would provide sufficient incentive for WCS licensees to meet the performance requirements, would not risk leaving consumers without service, and would treat WCS licensees consistently with wireless operators in other commercial mobile bands.

### CONCLUSION

For the foregoing reasons, it would be in the public interest for the Commission to revise the WCS service rules

- to require coverage of 40 percent of the population in an A or B Block license area within four years of the effective date of the revised technical rules;
- to require coverage of 75 percent of the population in an A or B Block license area within ten years of the effective date of the revised technical rules;
- to impose penalties for failure to meet a performance requirement on an A or B Block license equivalent to those that apply to 700 MHz licensees, including the automatic loss of unserved areas if the final performance requirement is not met;<sup>30</sup> and
- to apply a traditional “substantial service” requirement at the renewal of C and D Block licenses.

Respectfully submitted,

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*/s/ Joan Marsh*

Attachment

cc: Rick Kaplan  
Julius Knapp  
Ruth Milkman  
Tom Peters  
Ron Repasi  
Patrick Forster  
Roger Noel  
John Leibovitz  
Tom Derenge

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<sup>30</sup> As discussed in footnote 10 above, the same deadlines should apply to licensees providing fixed, point-to-point services, and the lower build-out requirements should be retained for A and B Block license areas where 25 percent or more of the population is within a coordination zone as defined by 47 C.F.R. § 27.73(a).

## Proposed Revisions to WCS Service Rules

### § 27.14 Construction requirements; Criteria for renewal.

(a) AWS and WCS licensees, with the exception of WCS licensees holding authorizations for Block A in the 698–704 MHz and 728–734 MHz bands, Block B in the 704–710 MHz and 734–740 MHz bands, Block E in the 722–728 MHz band, Block C, C1, or C2 in the 746–757 MHz and 776–787 MHz bands, Block D in the 758–763 MHz and 788–793 MHz bands, Block A in the 2305–2310 MHz and 2350–2355 MHz bands, and Block B in the 2310–2315 MHz and 2355–2360 MHz bands, ~~Block C in the 2315–2320 MHz band, and Block D in the 2345–2350 MHz band,~~ must, as a performance requirement, make a showing of “substantial service” in their license area within the prescribed license term set forth in § 27.13. “Substantial service” is defined as service which is sound, favorable and substantially above a level of mediocre service which just might minimally warrant renewal. Failure by any licensee to meet this requirement will result in forfeiture of the license and the licensee will be ineligible to regain it.

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(j) In the event that a licensee’s authority to operate in a license area terminates automatically under paragraphs (g), (h), ~~(i)~~ or ~~(ip)~~ of this section, such areas will become available for reassignment pursuant to the following procedures:

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(p) This section enumerates performance requirements for licensees holding authorizations for Block A in the 2305–2310 MHz and 2350–2355 MHz bands, and Block B in the 2310–2315 MHz and 2355–2360 MHz bands, ~~Block C in the 2315–2320 MHz band, and Block D in the 2345–2350 MHz band.~~

(1) For mobile or point-to-multipoint systems, a licensee must provide reliable signal coverage and offer service to at least 40 percent of the license area’s population by ~~March 4, 2014,~~ four years from effective date, and to at least 75 percent of the license area’s population by ~~September 1, 2016,~~ ten years from effective date. If, when filing the construction notification required under § 1.946(d) of this chapter, a WCS licensee demonstrates that 25 percent or more of the license area’s population for Block A, ~~B~~ or ~~DB~~ is within a coordination zone as defined by § 27.73(a) of the rules, the foregoing population benchmarks are reduced to 25 and 50 percent, respectively. The percentage of a license area’s population within a coordination zone equals the sum of the Census Block Centroid Populations within the area, divided by the license area’s total population.

(2) For point-to-point fixed systems, except those deployed in the Gulf of Mexico license area, a licensee must construct and operate a minimum of 15 point-to-point links per million persons (one link per 67,000 persons) in a license area by ~~March 4, 2014,~~ four years from effective date, and 30 point-to-point links per million persons (one link per 33,500 persons) in a licensed area by ~~September 1, 2016,~~ ten years from effective date. The exact link requirement is calculated by dividing a license area’s total population by 67,000 and 33,500 for the respective milestones, and then rounding upwards to the next whole number. For a link to be counted towards these

benchmarks, both of its endpoints must be located in the license area. If only one endpoint of a link is located in a license area, it can be counted as a one-half link towards the benchmarks.

(3) For point-to-point fixed systems deployed on any spectrum block in the Gulf of Mexico license area, a licensee must construct and operate a minimum of 15 point-to-point links by ~~March 4, 2014,~~ **four years from effective date**, and a minimum of 15 point-to-point links by ~~September 1, 2016,~~ **ten years from effective date**.

(4) Under paragraph (p)(2) and (p)(3) of this section, each fixed link must provide a minimum bit rate, in bits per second, equal to or greater than the bandwidth specified by the emission designator in Hertz (e.g., equipment transmitting at a 5 Mb/s rate must not require a bandwidth of greater than 5 MHz).

(5) If an initial authorization for a license area is granted after ~~September 1, 2010,~~ **effective date**, then the applicable benchmarks in paragraphs (p)(1), (p)(2) and (p)(3) of this section must be met within ~~42~~**48** and ~~72~~**120** months, respectively, of the initial authorization grant date.

(6) Licensees must use the most recently available U.S. Census Data at the time of measurement to meet these performance requirements.

(7) Licensees must certify compliance with the applicable performance requirements by filing a construction notification with the Commission, within 15 days of the expiration of the relevant performance milestone, pursuant to § 1.946(d) of this chapter. Each construction notification must include electronic coverage maps, supporting technical documentation, and any other information as the Wireless Telecommunications Bureau may prescribe by public notice. Electronic coverage maps must accurately depict the boundaries of each license area (Regional Economic Area Grouping, REAG, or Major Economic Area, MEA) in the licensee's service territory. Further, REAG maps must depict MEA boundaries and MEA maps must depict Economic Area boundaries. If a licensee does not provide reliable signal coverage to an entire license area, its map must accurately depict the boundaries of the area or areas within each license area not being served. Each licensee also must file supporting documentation certifying the type of service it is providing for each REAG or MEA within its service territory and the type of technology used to provide such service. Supporting documentation must include the assumptions used to create the coverage maps, including the propagation model and the signal strength necessary to provide reliable service with the licensee's technology.

(8) If a licensee **holding an A or B Block license** fails to meet ~~any applicable performance requirement, its~~ **the first benchmark in subparagraph (p)(1), (p)(2), or (p)(3) of this section, as applicable, by the date specified therein, then the period within which it must meet its final benchmark in subparagraph (p)(1), (p)(2), or (p)(3) of this section, as applicable, will be reduced by two years, and such licensee may be subject to enforcement actions including forfeitures. If such a licensee fails to meet the final benchmark in subparagraph (p)(1), (p)(2), or (p)(3) of this section, as applicable, by [ten years from effective date or eight years from effective date, as applicable], that licensee's** authorization will terminate automatically without further Commission action as of the applicable performance milestone and the licensee will be ineligible to regain it **Commission action for those geographic portions of its license in which the licensee is not providing service, and those unserved areas will become available for reassignment in accordance with the procedures in paragraph (j) of this section, except that areas smaller than a contiguous area of at least 130 square kilometers (50 square miles) will not be deemed unserved.**