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**Before the  
Federal Communications Commission  
Washington, DC 20554**

In the Matter of	)	
	)	
Facilitating the Provision of Spectrum-Based	)	WT Docket No. 02-381
Services to Rural Areas and Promoting	)	
Opportunities for Rural Telephone Companies	)	
to Provide Spectrum-Based Services	)	
	)	
2000 Biennial Regulatory Review	)	WT Docket No. 01-14
Spectrum Aggregation Limits for Commercial	)	
Mobile Radio Services	)	
	)	
Increasing Flexibility to Promote Access to	)	WT Docket No. 03-202
and the Efficient and Intensive Use of	)	
Spectrum and the Widespread Deployment of	)	
Wireless Services, and to Facilitate Capital	)	
Formation	)	

To: The Commission

**COMMENTS OF CINGULAR WIRELESS LLC**

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## SUMMARY

Cingular opposes the adoption of new rules or policies designed to *require* incumbent carriers to provide service in rural areas. Absent evidence of a market failure, the Commission should not deviate from its “market-oriented approach to spectrum policy that, where possible, has allowed economic forces to determine build-out of wireless facilities and the provision of wireless services.” Adopting rules requiring the deployment of CMRS in certain rural areas is inconsistent with basic economic principles.

There is no evidence of a CMRS market failure. To the contrary, the Commission has found the CMRS industry to be highly competitive and has recognized that there is effective competition in rural areas. In a competitive market, services will be provided where there is a return on capital invested. Requiring carriers to deploy where this basic economic criterion is not met creates inefficiencies and could potentially force certain carriers to exit areas currently served, or to exit the marketplace altogether.

Moreover, such requirements would undermine auction integrity and jeopardize many business plans that were created based on the existing build-out and performance obligations. Incumbent CMRS licensees purchased licenses – either in private transactions or pursuant to auction – based on a number of valuation criteria. One of the central factors in the valuation process was build-out obligations. In determining how much to pay for a license, prospective purchasers had to determine how long it would take for a system to become profitable. This analysis required a valuation of the Commission’s build-out obligations and relied upon the renewal expectancy associated with CMRS licenses. Altering these obligations in an adverse manner after an auction would undermine auction integrity. As Cingular has previously explained, “[u]ncertain or ill-defined rights make it difficult for both buyers and sellers to value properties; they cause markets to work less efficiently.”

The Commission recently adopted rules to facilitate spectrum leasing. These rules should address any concern regarding access to spectrum in underserved areas and should be given an opportunity to work before the Commission intervenes. Further, as noted in the *Report and Order* and by the Commission’s Spectrum Policy Task Force, the merits of easements/underlays in existing services should not be addressed until the success of the Commission’s Secondary Markets initiative can be evaluated. The FCC’s secondary market program provides ease of entry through spectrum leasing and joint operating arrangements. This is the best solution to promote the most efficient use of spectrum in rural areas.

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	)	

To: The Commission

**COMMENTS**

Cingular Wireless LLC (“Cingular”), by its attorneys, hereby submits comments in response to the *Further Notice of Proposed Rulemaking* in the above-captioned proceeding which seeks comments regarding possible approaches for facilitating the deployment of additional wireless services in rural areas.<sup>1</sup> There is no need for Commission action at this time.

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<sup>1</sup> *Facilitating the Provision of Spectrum-Based Services to Rural Areas and Promoting Opportunities For Rural Telephone Companies to Provide Spectrum-Based Services*, WT Docket No. 02-381, *Report and Order and Further Notice of Proposed Rulemaking*, 19 F.C.C.R. 19078 (2004) (“*Order and FNPRM*”).

## INTRODUCTION

Cingular supports the Commission's goal of promoting the deployment of wireless services in rural areas, but cautions against adopting extensive rule changes. The Commission has a long-standing policy of relying on the marketplace, rather than regulation, whenever possible to accomplish its objectives.<sup>2</sup>

[W]e believe that trusting in the operation of market forces generally better serves the public interest than regulation. The Commission should consider imposition of regulation when there is an identifiable market failure and imposition of the regulation would serve the public interest because it is targeted to correct that failure. Even in those situations, the Commission should endeavor to craft narrowly any regulation to impose only the minimum restraint on the market necessary to achieve the public interest.<sup>3</sup>

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<sup>2</sup> See, e.g., *Telephone Company-Cable Television Cross-Ownership Rules*, CC Docket No. 87-266, *Further Notice of Proposed Rulemaking, First Report and Order and Second Further Notice of Inquiry*, 7 F.C.C.R. 300, 305 (1991) (noting that “[m]arket demand, rather than governmental edict, should stimulate the construction and use of advanced telecommunications networks, including broadband networks”); *Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Development of Secondary Markets*, WT Docket No. 00-230, *Report and Order and Further Notice of Proposed Rulemaking*, 18 F.C.C.R. 20604, 20607 (2003) (noting that spectrum leasing policies should “continue our evolution toward greater reliance on the marketplace”); *2002 Biennial Regulatory Review — Review of the Commission's Broadcast Ownership Rules and Other Rules Adopted Pursuant to Section 202 of the Telecommunications Act of 1996*, MB Docket 02-277, *Report and Order and Notice of Proposed Rulemaking*, 18 F.C.C.R. 13620, 13828 (2003); *Amendment of the Commission's Rules Concerning Maritime Communications*, PR Docket No. 92-257, *Second Memorandum Opinion and Order and Fifth Report and Order*, 17 F.C.C.R. 6685, 6687 (2002); *Southwestern Bell Mobile Systems, Inc.*, 14 F.C.C.R. 19898, 19902 (1999); *Revision of Part 22 and Part 90 of the Commission's Rules to Facilitate Future Development of Paging Systems*, WT Docket No. 96-18, *Memorandum Opinion and Order on Reconsideration and Third Report and Order*, 14 F.C.C.R. 10030, 10036 (1999); see also 47 U.S.C. §§ 160, 161.

<sup>3</sup> *1998 Biennial Regulatory Review — Spectrum Aggregation Limits for Wireless Telecommunications Carriers*, WT Docket No. 98-205, *Notice of Proposed Rulemaking*, 13 F.C.C.R. 25132, 25135 (1998).

There is no evidence of a CMRS market failure that would warrant the imposition of regulations designed to further spur the deployment of services in rural areas. To the contrary, the Commission has recognized that “our current policies are working to provide wireless services in rural areas.”<sup>4</sup> In its *Ninth CMRS Competition Report*, the Commission analyzed CMRS competition in rural areas and concluded that “CMRS providers are competing effectively in rural areas.”<sup>5</sup> In reaching this conclusion, the Commission noted that there was an average of 3.7 mobile competitors in rural areas.<sup>6</sup> Thus, the Commission’s existing rules and market forces are working to push wireless services into previously unserved rural areas.

Despite these facts, the Commission now seeks comment on measures to promote the provision of service in these high-cost and underserved areas by either existing carriers or new entrants.<sup>7</sup> This inquiry is premature. Cingular agrees with the Commission’s conclusion that:

Instead of attempting at this time to dramatically manipulate market-based spectrum policies that have yielded tremendous benefits in prices in services for the overwhelming majority of American consumers, we believe the better approach is to gain more experience with secondary markets . . .<sup>8</sup>

Nevertheless, Cingular hereby comments on specific proposals set forth in the *FNPRM*.

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<sup>4</sup> *Order and FNRPM*, 19 F.C.C.R. at 19081. The Commission also agreed “with the majority of commenters that the Commission’s market-oriented policies largely have been successful in promoting facilities-based competition in the rural marketplace, especially with respect to CMRS.” *Id.* at 19082.

<sup>5</sup> *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993*, WT Docket No. 04-111, *Ninth Report*, 19 F.C.C.R. 20597, 20643 (2004).

<sup>6</sup> *See id.*

<sup>7</sup> *See Order and FNRPM*, 19 F.C.C.R. at 19089.

<sup>8</sup> *Id.*

**I. THE COMMISSION SHOULD NOT ADOPT NEW RE-LICENSING MEASURES FOR EXISTING SERVICES OR ALTER THE SUBSTANTIAL SERVICE RENEWAL SHOWING**

The Commission correctly recognizes that “new wireless service providers will choose to enter rural markets and existing rural service providers will extend their presence further into the rural areas where they operate” as long as they have economic incentives to do so.<sup>9</sup> Accordingly, the *FNPRM* seeks comment on a *narrow issue* – what rule changes could be adopted to facilitate deployment in rural areas where licensees have no economic incentives to provide service.<sup>10</sup>

The Commission seeks comment primarily on whether two rule changes would spur deployment in areas where there is no economic incentive to do so – a new “keep what you use” re-licensing approach and a tougher substantial service renewal requirement. Neither approach should be adopted.

**A. Re-Licensing – The Keep What You Use Approach**

The re-licensing approach would essentially impose the cellular build-out model on other wireless services. Under this model, a licensee would have a specified period of time to serve the entire geographic area associated with its license. Any area unserved at the end of this period would be made available to others and re-licensed. The *FNPRM* correctly identifies a litany of drawbacks to this proposal,<sup>11</sup> but nevertheless seeks comment at the behest of a small number of

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<sup>9</sup> *Id.* at 19146.

<sup>10</sup> *Id.*

<sup>11</sup> *Id.* at 19157-58.

rural carriers and rural trade groups.<sup>12</sup> This approach should be rejected because the drawbacks outweigh any potential benefits.

Re-licensing does not guarantee the establishment of additional competitors throughout rural areas. For example, even though the Cellular Radiotelephone Service was subject to a re-licensing requirement, portions of many very rural markets either remain unserved by cellular carriers or are served by a single cellular provider. The fact that cellular unserved areas still exist underscores the Commission's conclusion that licensees will provide service only where there is an economic incentive to do so.<sup>13</sup> These economic factors cannot simply be ignored because, as the Commission has recognized, "if there were more than an efficient number of providers in a market, absent other support such as subsidies, in the long run these providers would go out of business, causing a loss of service and other inconvenience to consumers."<sup>14</sup> Accordingly, the Commission should not adopt rules requiring carriers to deploy wireless service in areas lacking an economic justification for doing so.

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<sup>12</sup> *Id.* at 19156-57. In addition there are many more opportunities to access spectrum today, including spectrum leasing, newly available spectrum that will be available as initial licenses or through secondary market transactions, *e.g.*, Auction 58, and, in the future, AWS and 700 MHz spectrum. Also, many parties interested in serving rural areas are deploying commercial services using unlicensed spectrum.

<sup>13</sup> *Id.* at 19146.

<sup>14</sup> *Facilitating the Provision of Spectrum-Based Services to Rural Areas and Promoting Opportunities For Rural Telephone Companies to Provide Spectrum-Based Services*, WT Docket No. 02-381, *Notice of Proposed Rulemaking*, 18 F.C.C.R. 20802, 20807 (2003) ("*NPRM*"). As Dobson previously noted: "[t]he bottom line is that wireless carriers are in the business of providing service in areas where people can use it" and "[i]t is unreasonable to expect that any carrier will extend service into an area in which costs make that service uneconomic." Dobson Comments, WT Docket No. 02-381 at 7-8 (filed Dec. 29, 2003).

The imposition of a new re-licensing regime also would undermine auction integrity and existing rules designed to spur deployment in rural areas. Incumbent CMRS licensees purchased licenses – either in private transactions or pursuant to auction – based on a number of valuation criteria. One of the central factors in the valuation process was build-out obligations. In determining how much to pay for a license, prospective purchasers had to determine how long it would take for a system to become profitable. This analysis required a valuation of the Commission’s build-out obligations and relied upon the renewal expectancy associated with CMRS licenses. Altering these obligations in a manner adverse to a previous auction winner would undermine the integrity of the auction itself.

The current rules promote regulatory certainty by recognizing the reasonable expectations held by incumbent licensees when they purchased the spectrum at auction. These expectations formed the basis of business plans which, as a general matter, prioritize expansion based on what can be justified economically. This long range planning benefits *all parties* by promoting long-term economic viability of wireless carriers through the efficient allocation of limited resources. This, in turn, benefits rural consumers by allowing smart and steady expansion.

A fundamental component of long-range planning necessarily includes unused spectrum that is designated for future growth. Understandably, this can be particularly frustrating for consumers who reside in small rural communities with low population densities. As the Commission has recognized, however, carriers will build cells wherever they make economic sense.<sup>15</sup>

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<sup>15</sup> See *Order and FNRPM*, 19 F.C.C.R. at 19146.

The imposition of additional build-out or other performance obligations would wreak havoc on business plans and could drive a number of smaller carriers out of the market. The Commission would be setting dangerous precedent that build-out obligations are fluid, which in turn would inhibit capital formation in CMRS markets.<sup>16</sup> The Commission risks market failure when it allocates rights that may be subject to significant change by regulators in the future. As Cingular previously explained, “[u]ncertain or ill-defined rights make it difficult for both buyers and sellers to value properties; they cause markets to work less efficiently.”<sup>17</sup>

The Commission’s existing rules along with market forces are currently “working to promote access to ‘unused’ spectrum” and “facilities-based competition in the rural marketplace.”<sup>18</sup> Existing licensees continue to expand in response to market forces as well as to satisfy build-out requirements. Cingular, through its affiliates and subsidiaries, has entered into partitioning and disaggregation agreements covering hundreds of rural counties.<sup>19</sup> These agreements, which expedited the provision of wireless services in rural America, may never have materialized if all wireless services were subject to a re-licensing approach. Rather than negotiate partition and disaggregation agreements, many entities may have opted to wait until the end of the build-out period to see whether they could obtain the spectrum for free or at a sharply discounted price.

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<sup>16</sup> See Cingular Wireless LLC Comments, ET Docket 02-135 at 7 (filed Jan. 27, 2003) (“2003 SPTF Comments”).

<sup>17</sup> *Id.*

<sup>18</sup> *Order and FNRPM*, 19 F.C.C.R. at 19156, 19082.

<sup>19</sup> This includes agreements entered into by AT&T Wireless Services, which recently merged into Cingular. See AT&T Wireless Services Comments, WT Docket No. 02-381 at 1-2 (filed Dec. 29, 2003).

The imposition of re-licensing also would have a chilling effect on the development of secondary markets. Re-licensing would interfere with natural market forces by creating an incentive to wait for spectrum rather than seek it out in secondary markets. Instead of leasing spectrum today, many parties may opt to wait and see if the spectrum becomes available less expensively at a later date.

These flaws, along with those previously identified in this proceeding,<sup>20</sup> outweigh any perceived benefits from re-licensing.

#### **B. Substantial Service Renewal Showing**

The Commission also seeks comment on whether a more rigorous substantial service renewal requirement would foster additional deployment in rural areas.<sup>21</sup> As discussed *supra*, the market is operating effectively and, therefore, wireless licensees will provide service in all areas where it is economically viable. Thus, there is no reason to believe – and certainly no record evidence – that carriers will fail to deploy services where there is an economic justification. Adoption of a more rigorous substantial service requirement would interfere with the effective functioning of market forces by requiring licensees to deploy where it is not economically viable to do so or risk losing their licenses.

Moreover, the economic assumptions of a CMRS licensee do not preclude deployment. If a CMRS licensee concludes that service in an area is not economically viable, the licensee certainly would be willing to lease to another party that has reached a different conclusion.

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<sup>20</sup> See *Order and FNRPM*, 19 F.C.C.R. at 19157-58.

<sup>21</sup> *Id.* at 19159-60.

In sum, the CMRS market is competitive in rural areas and Commission intervention is unnecessary. Rather than adopt new policies and rules mandating the deployment of service in rural areas, the Commission should let the marketplace operate without interference. The recent adoption of rules designed to promote secondary markets should be sufficient to address any FCC concerns regarding the ability of interested parties to access spectrum in underserved areas. A robust and effective secondary market – one that provides for opportunities such as spectrum leasing and joint operating arrangements – is the best solution for more efficient and pervasive use of spectrum in rural areas.

## **II. EASEMENTS SHOULD NOT BE PERMITTED**

For similar reasons, the Commission should forbear from creating easements and underlays in rural markets.<sup>22</sup> Rural CMRS licensees should be permitted to lease any of their exclusive spectrum which, in turn, would generate revenue for additional deployment and service improvements in rural areas. Unlicensed overlays within supposedly exclusive spectrum bands destroy such incentives and preclude the development of spectrum-sharing arrangements through market forces.<sup>23</sup> Parties would be less inclined to enter into leases that require payments for spectrum usage. Instead, parties would avail themselves of existing underlays or seek the creation of new easements that would permit the usage of spectrum for free.

Moreover, the Commission's request for further comment is inconsistent with the conclusions reached in the *Report and Order*. There, the Commission admits that "it is

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<sup>22</sup> Cingular has previously argued against the implementation of easements and underlays. See 2003 SPTF Comments at 14-38. These comments are incorporated by reference.

<sup>23</sup> See Cingular Wireless LLC Comments, WT Docket 00-230 at 10 (filed Dec. 5, 2003).

premature at this time to adopt the use of easements”<sup>24</sup> because of its current efforts to facilitate access to unused spectrum through leasing in secondary markets. Noting that less than one year had passed since the introduction of its spectrum leasing rules, the Commission concluded that too little time had elapsed “for an efficient secondary market to develop and for its impact to be seen.”<sup>25</sup> The Commission also concluded that it would evaluate spectrum access mechanisms such as easements “in the context of specific service rulemakings.”<sup>26</sup> Clearly, this proceeding is not a “specific service rulemaking.”

Given the Commission’s considered decision not to implement easements at this time, it is unclear why the Commission nevertheless sought comments on easements and underlays now. The Commission should heed its own advice and allow secondary markets to develop before even considering the effectiveness or necessity for easements and underlays. It is too early for commenting parties to present evidence that a change in this policy is necessary (or even helpful) for achieving the goal of opening up spectrum access in rural areas; for now, the Commission should continue to rely on market-based policies, such as spectrum leasing, to accomplish its goals.

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<sup>24</sup> *Order and FNRPM*, 19 F.C.C.R. at 19160. The Spectrum Policy Task Force also concluded that easements/underlays should not be considered for existing services until the effectiveness of secondary markets can be evaluated. See Spectrum Policy Task Force Report, ET Docket No. 02-135 at 47, 53, 55-57, 66-67 (Nov. 15, 2002), at [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/DOC-228542A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-228542A1.pdf) (“SPTF Report”). At a minimum, the Commission should refrain from implementing underlays/easements until it has compiled extensive noise floor data and completed comprehensive field tests. SPTF Report at 5, 28; Report of the Interference Protection Working Group at 18-19 (Nov. 15, 2002), at <http://www.fcc.gov/sptf/files/IPWGFinalReport.pdf>.

<sup>25</sup> *Order and FNRPM*, 19 F.C.C.R. at 19100.

<sup>26</sup> *Id.*

**A. Easements and Overlays Will Discourage Deployment of Additional Wireless Services in Rural Areas**

Unlicensed overlays or easements in exclusively licensed bands will inhibit, rather than promote, additional deployment in rural areas. Currently, spectrum leasing facilitates rural deployment because (i) carriers can lease spectrum in unserved rural areas to entities that are willing to provide service in the near term, and (ii) revenue generated by leasing can be used to finance expansion into rural areas.<sup>27</sup> If overlays or easements are mandated by the Commission for unlicensed operations in rural areas, some entities may reject leasing in favor of unlicensed operations, making it less likely that such areas will receive reliable licensed service now or in the future. Moreover, unlicensed operators would be under little or no regulatory supervision and may be unwilling or unable to fulfill the public safety and homeland security obligations that are imposed on licensed operators, such as E911 service.

The establishment of easements and overlays also will exacerbate interference issues faced by CMRS carriers in rural areas.<sup>28</sup> As the Commission has recognized, the creation of overlays and easements require the establishment of an interference temperature based on a thorough analysis of the noise floor.<sup>29</sup> It is well established that the noise floor is lower in rural areas than in urban areas and rural wireless systems are engineered to take advantage of this fact in order to expand coverage. This fact makes rural areas more sensitive to interference than

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<sup>27</sup> Cingular Wireless LLC Comments, WT Docket No. 02-381 at 8 (filed Dec. 29, 2003) (“Rural Comments”).

<sup>28</sup> Cingular Wireless LLC Comments, ET Docket No. 02-135 at 49 (filed July 8, 2002) (“2002 SPTF Comments”).

<sup>29</sup> *See* SPTF Report at 56, 58.

urban areas.<sup>30</sup> Thus, a noise floor/interference temperature record must be developed specifically for rural areas before easements or overlays can be considered.

The Commission must recognize that in modern, well-engineered cellular/PCS systems, harmful interference will do more than simply disrupt a single phone conversation or a single user. Increased levels of interference will impact not only the call quality or data throughput, but can affect the entire cell and possibly even the network as a whole through a decrease in network capacity and coverage. It is a well established cellular system engineering principle that coverage, quality, and capacity are inter-related and when one is affected then all are affected, thus reducing the overall performance and efficiency of the system.<sup>31</sup> The Commission should be wary of causing such detrimental effects, particularly in rural areas where service to customers can be a critical public safety concern.

The Commission has previously recognized the problems that could result in rural areas from unlicensed devices operating in the same spectrum as licensed devices. In the *3650 MHz Band NPRM*, the Commission acknowledged that “even a moderate presence of potentially ubiquitous terrestrial services under a licensed allocation could hamper or preclude the operation of unlicensed devices in large geographic areas – including, especially, rural America where the need is greatest.”<sup>32</sup> If the Commission continues to feel that more unlicensed spectrum must be

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<sup>30</sup> 2002 SPTF Comments at 49 (“[B]ecause the environmental noise floor is typically lower in rural areas, rural systems may take advantage of the increased noise margin to expand coverage and thus may be highly sensitive to interference from new spectrum uses.”).

<sup>31</sup> Cingular Wireless LLC and BellSouth Corporation Comments, ET Docket No. 03-237 at 17 (filed Apr. 5, 2004) (“IXTemp Comments”).

<sup>32</sup> *Unlicensed Operations in the Band 3650-3700 MHz*, ET Docket No. 04-151, *Notice of Proposed Rulemaking*, 19 F.C.C.R. 7545, 7554 (2004).

available in rural areas, it should allocate such spectrum in a band reserved solely for unlicensed spectrum so that the use of such spectrum is not hampered and is functional for rural consumers.

The Commission should refrain from adopting new regulatory policies that have the potential to interfere with market-based policies that are working effectively in rural areas.<sup>33</sup> The spectrum leasing rules address the Commission’s concerns regarding the ability of interested parties to access spectrum in underserved areas. “[A] robust and effective secondary market ... is the best solution for more efficient and pervasive use of spectrum in rural areas.”<sup>34</sup>

**B. The Establishment of Easements and Overlays Lead to A Tragedy of the Commons that Will be Impossible to Remedy**

Establishing easements and overlays will inevitably lead to a “tragedy of the commons,” where effective use would be very limited due to interference from both other unlicensed devices and licensed operators.<sup>35</sup> Once interference from unlicensed operations occurs, it will be nearly impossible for the Commission to remedy the problem and return licensees to their original state.<sup>36</sup> Once unlicensed units are in use, there is no way to stop them from being used for many

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<sup>33</sup> See *Order and FNPRM*, 19 F.C.C.R. at 19082-83 (citing *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993*, WT Docket No. 02-379, *Eighth Report*, 18 F.C.C.R. 14783, 14793-94 (2003)) (“95 percent of the total U.S. population live in counties with access to three or more different mobile telephony providers.”).

<sup>34</sup> Rural Comments at 9.

<sup>35</sup> Cingular Wireless LLC and BellSouth Corporation Reply Comments, ET Docket No. 03-237 at 17 (filed May 5, 2004) (“IXTemp Reply Comments”).

<sup>36</sup> IXTemp Comments at 10. Moreover, as the Spectrum Policy Task Force recognized, the embedded user base of unlicensed devices will develop “squatters’ rights” that will continue to diminish the usefulness of the licensed spectrum they share. SPTF Report at 58 (“[O]nce unlicensed devices begin to operate in an easement, it may be difficult legally or politically to shut down their operations even if they begin to cause interference or otherwise limit the licensed user’s flexibility. Thus, . . . the potential for ‘squatters’ rights’ issues to arise is another downside of the easement model that must be addressed.”).

years to come.<sup>37</sup> Without licenses, the units are beyond any effective means of Commission control. The Commission will have no record of who owns the units or where they are being used. Moreover, sources of unlicensed interference will be movable and ubiquitous, and thus difficult or impossible to identify and track down. Users of licensed networks will not be able to discern whether interference comes from unlicensed devices – perhaps even in their own homes or offices – and will hold their licensed service provider responsible.<sup>38</sup> When interference is caused, the licensee is unlikely to be able to identify its source so as to seek enforcement action, and thus reports of harmful interference are unlikely to be generated.

**C. Licensees Will Not Have Incentives to Create More Spectrally Efficient Equipment Once Easements/Overlays are Adopted**

The creation of easements and overlays in rural areas also would preclude licensees from implementing technologies that may improve efficiencies and allow reception of its licensed service at levels where effective communication may not *currently* be possible. In essence, easements and overlays would permit unlicensed operations below the interference temperature, which would establish the “worst-case” scenario for conducting licensed operations based on *current* technology and usage conditions. This approach, however, would preclude rural licensees from improving this scenario as technology evolves. For example, when CDMA was developed, it allowed licensees to operate at signal levels previously viewed as commercially

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<sup>37</sup> This is especially true where the unlicensed devices are used by consumers. Once there is an embedded base of consumer units, many of those units will continue to be used as long as they continue to function, even long after the units are taken off the market, because some consumers will resist upgrading to new units using a different frequency as long as their existing units work, even if the new units have additional features.

<sup>38</sup> IXTemp Reply Comments at 16 (citing CTIA Comments, Docket No. 03-237 at 14 (filed Apr. 5, 2004)).

unattainable (*i.e.*, “below the noise floor”). It lowered the operating point for licensees deploying CDMA technology by displacing analog technology that generated a higher “interference temperature.” If an interference temperature threshold had been established based on the previously accepted analog signal levels, it is unlikely that CDMA technology would have ever developed. There would have been no reason to invest in the new technology if interference from unlicensed operations were allowed at such high levels.<sup>39</sup> The existence of a predetermined interference temperature would tend to force licensed users toward the lowest common denominator, thus limiting their spectral efficiency.

The central issue is that licensees’ interference tolerance changes over time, and licensees should be given incentives to use their spectrum *more* efficiently rather than less so.<sup>40</sup> The Commission itself in the *Further Notice of Proposed Rulemaking* stressed that its goal “is to ensure that the highest valued use of spectrum is not affected significantly by regulatory methodologies that may artificially constrain the choice of technology used and services provided.”<sup>41</sup> Requiring incumbents to share spectrum with new unlicensed uses, however, penalizes the most innovate and efficient users of radio spectrum and precludes the use of new, more efficient technologies. In essence, the Commission will be freezing – and therefore

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<sup>39</sup> As another example, the system noise floor has been reduced by improvements in base station receiver performance, with the noise figure dropping from about 8 dB to about 4 dB, permitting a further reduction of about 4 dB in the received noise floor. These developments permit high-quality service to be extended to units in areas that would have been marginal, at best, a decade ago. If the interference temperature had been established during the time when the noise floor was 8 dB, cellular licensees would never have been able to improve efficiency by taking advantage of the lowered noise and interference levels in the cellular system. IXTemp Comments at 14-16.

<sup>40</sup> *Id.* at 14.

<sup>41</sup> *Order and FNRPM*, 19 F.C.C.R. at 19089.

artificially constraining – the current efficiency of equipment upon imposition of easements and underlays.

**D. The Commission Cannot Permit Cognitive Radio Use Via Easements or Overlays until It Determines Cognitive Radios Can Co-Exist in CMRS Spectrum**

Noting the myriad of objections (including its own) to easements,<sup>42</sup> the Commission nevertheless specifically sought comment on whether easements could play a role in providing incentives to third parties to develop new cognitive radios that will increase access to spectrum in frequency bands restricted currently to exclusive license holders.<sup>43</sup> The Commission noted that the ability to take advantage of unused portions of licensed spectrum could encourage the development of such equipment at lower costs, which could specifically benefit rural areas.

However, as noted by Cingular in the *Cognitive Radio NPRM*, there is no hard evidence that cognitive radios can operate harmoniously with CMRS services.<sup>44</sup> It is highly questionable that cognitive radio technology will actually be capable of gauging licensed CMRS usage sufficiently to determine the existence of temporarily available spectrum and then use it in a manner that does not pose an interference threat to licensed operations. Logically, the Commission should first determine that cognitive radios can effectively co-exist with licensed CMRS services before it determines the role of easements in promoting such devices.

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<sup>42</sup> *Id.* at 19160-61.

<sup>43</sup> *Id.* at 19161.

<sup>44</sup> Cingular Wireless LLC and BellSouth Corporation Comments, ET Docket No. 03-108 at 18 (filed May 3, 2004).

## CONCLUSION

For the foregoing reasons, the Commission should not adopt any new policies or regulations that *require* additional CMRS deployment in rural areas or create easements for unlicensed operations. There has been no market failure and, therefore, Commission intervention is unnecessary. The recent adoption of rules regarding the creation of secondary markets should address any concerns regarding the ability of interested parties to access spectrum in underserved areas. It is premature to consider additional steps to foster additional deployment in rural areas until sufficient time has elapsed to evaluate whether the secondary market rules adequately promote deployment in rural areas. At a minimum, the Commission must ensure that any steps taken here to promote additional rural development do not undermine secondary markets and the auction regime.

Respectfully submitted,

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