

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
)	
Wireless Operations in the 3650-3700 MHz Band)	ET Docket No. 04-151
)	
Rules for Wireless Broadband Services in the 3650-3700 MHz Band)	WT Docket No. 05-96
)	
Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band)	ET Docket No. 02-380
)	
Amendment of the Commission’s Rules with Regard to the 3650-3700 MHz Government Transfer Band)	ET Docket No. 98-237
)	

COMMENTS OF TDS TELECOMMUNICATIONS CORP.

The pending petitions for reconsideration filed in response to the Commission’s *Report and Order* announcing new rules for wireless broadband services in the 3650-3700 MHz band (the “3650 MHz band”) enable the Commission to further one of its principal goals, as reiterated in the *Report and Order*: to “further deploy ... advanced telecommunications services and technologies to all Americans, especially in the rural heartland.”¹ TDS Telecommunications Corp. (“TDS Telecom”), a longstanding provider of communications services to rural and suburban populations in 28 states,² supports that goal but, like the petitioners, believes that it can

¹ *Wireless Operations in the 3650-3700 MHz Band*, 20 FCC Rcd 6502, 6503 ¶ 2 (2005) (“*Report and Order*”).

² TDS Telecom provides high-quality telecommunications services, including full-service local exchange service, local distance service, and Internet access to residential and business customers in over nine hundred rural and suburban communities through its facilities-based incumbent local exchange carrier (ILEC) subsidiaries and competitive local exchange carrier (CLEC) subsidiaries. Use of the 3650 MHz band could dramatically enhance TDS Telecom’s ability to provide broadband services to rural and suburban communities.

only be achieved if the Commission reconsiders its decision to allocate the 3650 MHz band on a nonexclusive, national basis.³

Six petitions for reconsideration express the same concern regarding nonexclusive licensing of the 3650 MHz band, and propose a variety of alternatives. In acting on these petitions, the Commission should adopt an approach that will both provide the interference protection necessary to support high-quality broadband services *and* enable small, rural and suburban broadband providers to hold licenses in the 3650 MHz band. Accordingly, TDS Telecom urges the Commission to (1) allocate the 3650 MHz band into two 25 MHz blocks to be licensed on an exclusive basis, and (2) auction both blocks on a Metropolitan Service Area (“MSA”)/Rural Service Area (“RSA”) basis, thereby allowing rural and suburban providers affordable access to the spectrum.⁴

³ See Petition for Reconsideration of Wireless Communications Assoc. Int’l., Inc., WT Docket No. 05-96, ET Docket Nos. 02-380, 98-237 and 04-151 (filed June 10, 2005) (“WCA Petition”); Petition for Reconsideration of Motorola Inc., WT Docket No. 05-96, ET Docket Nos. 02-380, 98-237 and 04-151 (filed June 10, 2005) (“Motorola Petition”); Petition for Reconsideration of the Enterprise Wireless Alliance, WT Docket No. 05-96, ET Docket Nos. 02-2380, 98-237 and 04-151 (filed June 10, 2005) (“EWA Petition”); Petition for Reconsideration of WiMAX Forum, ET Docket Nos. 02-380, 98-237 and 04-151 (filed June 10, 2005) (“WiMAX Forum Petition”); Petition for Reconsideration of Intel Corp., Redline Communications, Inc. and Alvarion, Inc., ET Docket Nos. 02-380, 98-237 and 04-151 (filed June 10, 2005) (“Intel/Redline/Alvarion Petition”); Petition for Reconsideration of Redline Communications, Inc., ET Docket Nos. 02-380, 98-237 and 04-151 (filed June 10, 2005) (“Redline Petition”).

⁴ This proposal is a combination of suggestions advocated in the petitions for reconsideration of Motorola and WCA. See Motorola Petition at 2 (“To enable the rapid and successful deployment of broadband wireless services, the Commission should issue exclusive licenses. The 50 MHz band should be allocated in two 25 MHz blocks.”); WCA Petition at 14 (“[B]y auctioning the exclusive block based on the 734 MSAs and RSAs, rather than some larger geographic area, the Commission can assure that rural service providers have a meaningful opportunity to secure a license that is narrowly tailored to meet its needs.”).

I. TO STIMULATE WIRELESS BROADBAND DEPLOYMENT THROUGHOUT THE UNITED STATES, THE COMMISSION SHOULD EXCLUSIVELY LICENSE TWO 25 MHz-WIDE BLOCKS IN THE 3650-3700 MHz BAND.

As a provider working to increase the delivery of broadband to the rural and suburban communities it serves, TDS Telecom applauds the Commission for establishing rules intended to “minimi[ze] regulatory barriers to encourage multiple entrants in the 3650 MHz band and to stimulate the rapid expansion of broadband services.”⁵ Achievement of these goals, however, depends upon enforceable interference standards for licensees for at least part of the band. The *Report and Order* has instead proposed methods of interference mitigation – use of a contention-based protocol and mandatory registration of base stations – that will not reliably prevent interference among licensees. Without protection from interference, small providers with limited resources will have insufficient certainty to justify investment in services using the 3650 MHz band. As explained below, the Commission should accordingly allocate the 3650 MHz band on an exclusively licensed basis, including in rural and suburban areas.

There are four principal reasons that the nonexclusive licensing regime established by the *Report and Order* will not reliably prevent interference. *First*, users in the 3650 MHz band will be transmitting at relatively high power levels that can travel for many miles; power levels of this magnitude are essential if providers are to reach consumers in sparsely populated rural areas.⁶ Petitioners have documented, however, that contention-based protocols, which “listen” for other radiofrequency signals in the band to determine whether a non-interfering transmission is possible, cannot prevent interference over long distances. As

⁵ *Report and Order*, 20 FCC Rcd at 6508 ¶ 15.

⁶ The *Report and Order* allows fixed operating stations to operate at a maximum peak EIRP of 25 Watts per 25 MHz bandwidth and mobile devices to operate at a maximum peak EIRP of 1 Watt over a 25 megahertz bandwidth. *Id.* at ¶¶ 50-51.

Motorola explains, “Where the transmitting device can communicate over long distances, it is often very difficult to determine whether a channel is truly clear.”⁷ Not “hearing” that another nearby licensee is already transmitting in the spectrum, licensees will frequently, though inadvertently, cause harmful interference to one another under the nonexclusive regime created by the *Report and Order*. TDS Telecom agrees with Intel that attempting to apply the contention-based protocol technique “to dozens or even hundreds of simultaneous users would make a network virtually useless – thereby undercutting the Commission’s assumption that the rules will ‘allow efficient use of this spectrum by multiple users without *significant* degradation of service.’”⁸

Second, in a nonexclusive licensing regime, there is no “first-in-time” right, and an established provider lacks any enforceable right to prevent another party’s interfering use of the spectrum.⁹ Thus, the requirement that nonexclusive licensees register base stations is of little practical help; simply locating the source of interference does not mean that the offending transmission will cease. The *Report and Order* merely suggests that nonexclusive licensees attempt to “cooperate and resolve” any interference “by mutually satisfactory arrangements.”¹⁰ As usage of the 3650 MHz band grows, the transaction costs of achieving such arrangements would be prohibitive. Also, the lack of certainty concerning interference protection will discourage investment.

⁷ Motorola Petition at 4.

⁸ Intel Petition at 14, *citing Report and Order*, 20 FCC Rcd at 6512 ¶ 27.

⁹ *See Report and Order*, 20 FCC Rcd at 6513 ¶ 31.

¹⁰ *Id.* at App. A.

Third, with no limitation on the number of licensees in the 3650 MHz band, the spectral “noise floor” will gradually but significantly rise to levels at which that will render productive uses of the 3650 MHz band impossible. This trend would be irreversible and continually escalating. At some point, the band will suffer from the “tragedy of the commons,” whereby no user is able to enjoy the benefits of radiocommunication. As Thomas Hazlett has explained, because of the commons problem, “the right to access ‘free’ spectrum can be worth nothing at all.”¹¹ Faced with these fundamental shortcomings in the nonexclusive licensing regime proposed by the *Report and Order*, rural and suburban providers with limited resources may conclude that the low cost of entry in the 3650 MHz band is outweighed by the risk that harmful interference will ultimately cripple whatever service the provider launches using that spectrum.

Fourth, nonexclusive licensing would cause spectrum in the 3650 MHz band to lay fallow for much longer than under a licensed approach. The Commission could quickly establish service rules for an exclusively licensed 3650 MHz band, while designing “licensing” rules for the contention-based protocol would require years of deliberation. As the Wireless Communications Association International, Inc. (“WCA”) notes in its petition, “there is no evidence that a single protocol is available at the present time or could be developed in short order [and] the process of bringing all of the various ‘industry’ parties interested in the band to a consensus would itself be contentious.”¹² Nonexclusive licensing of the 3650 MHz band

¹¹ Thomas Hazlett, *Missing the Next (Radio) Wave*, Barron’s (Aug. 2, 2004), available at http://www.manhattan-institute.org/html/_barrons-missing_the_next.htm (last visited Aug. 10, 2005).

¹² WCA Petition at 6.

would thus undercut the Commission’s goal of making timely and efficient use of the scarce spectrum resource.

In contrast, by allocating the 3650 MHz band for exclusive licensing, the Commission would encourage rapid investment in wireless broadband services and efficient use of spectrum. For providers that cannot afford the risk of investment in a service that does not enjoy reliable interference protection, the exclusively licensed spectrum would facilitate launch of robust broadband service to rural and suburban areas. This allocation would further the Commission’s statutory responsibility to “encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans.”¹³

Moreover, the Commission should not limit exclusive licensing of the 3650 MHz band to urban markets, as some petitioners have suggested.¹⁴ Although it is likely that the “tragedy of the commons” described above will materialize more quickly in a densely-populated market, the same fate would ultimately overtake nonexclusively licensed services in rural and suburban markets. Interest by rural and suburban providers in the exclusively licensed 700 MHz spectrum highlights the importance of interference protection to these providers.¹⁵ In contrast, interference among users in the 5 GHz unlicensed band has dissuaded many rural and suburban

¹³ Telecommunications Act of 1996 § 706, 47 U.S.C. § 157.

¹⁴ See, e.g., Intel Petition at 18-19 (proposing that the FCC retain the rules announced in the *Report and Order* outside the top 50 MSAs).

¹⁵ See Megan O’Donnell, *Polar Sees Long-term Appeal of 700 MHz Spectrum*, Rural Telecommunications, at 44 (Sept. 1, 2004) (“In the hierarchy of licensed and unlicensed spectrum, licensed spectrum is always a better option in terms of interference and the assurance of a clear channel. [The FCC’s auction] provided 700 MHz spectrum at a price that was very reasonable for small, rural carriers.”).

providers from deploying services using that spectrum.¹⁶ Rural and suburban populations deserve the same, interference-free broadband access enjoyed by their urban counterparts. The Commission should ensure that an exclusively licensed block is available in those markets as well.

II. TO PERMIT MEANINGFUL PARTICIPATION BY RURAL AND SUBURBAN PROVIDERS, THE COMMISSION SHOULD APPORTION THE EXCLUSIVELY LICENSED SPECTRUM BASED ON MSA/RSAs.

While creating an exclusively licensed band will provide sufficient interference protection to sustain broadband services in the 3650 MHz band, it is important that the Commission not lose sight of the *Report and Order*'s driving principle: "bringing broadband services to all Americans including consumers living in less densely populated rural and suburban areas."¹⁷ If the two blocks in the 3650 MHz band were auctioned in large geographic areas, only the national wireless carriers would have a chance of obtaining access to the spectrum. For rural and suburban providers with limited resources to have widespread access to the 3650 MHz band, the 3650 MHz spectrum should be offered through a traditional simultaneous multi-round auction according to smaller geographical areas.¹⁸ The 734 MSA/RSAs would be well suited to that purpose.¹⁹

¹⁶ See, e.g., Liching Sung, *The Latest Greatest WiMax on the Horizon*, Rural Telecommunications, at 28 (March 1, 2005) ("5.8 GHz is not always usable in rural America due to interference. Furthermore, since unlicensed spectrum is more chaotic, the 5.8 GHz band is not suited for providing business-grade service.").

¹⁷ *Report and Order*, 20 FCC Rcd 6511-12 ¶ 27.

¹⁸ Such an auction should be conducted without package bidding. Package or combinatorial bidding subjects smaller providers to the so-called "threshold problem" – making it difficult for them to compete against large companies and potentially undoing the benefits of smaller license sizes. Also, TDS Telecom assumes that if the Commission allocated the 3650 MHz band for exclusive licensing, it would allow such licenses to be leased like other wireless licensees in the (continued...)

The Commission has ample precedent to find that licensing of the 3650 MHz band on an MSA/RSA basis would best ensure access to the spectrum for providers serving rural and suburban markets. In the recent *Report and Order* concerning the “provision of spectrum-based services to rural areas,” the Commission recognized that “the initial size of geographic service areas plays an important role in providing the requisite access to spectrum that would stimulate competition and result in greater wireless services in rural areas.”²⁰ It then announced that “in developing rules for licensing individual services, we will consider using smaller service areas in some spectrum blocks in order to encourage deployment in rural areas for the service in question.”²¹ Similarly, in the proceeding to establish service rules for Advanced Wireless Services (“AWS”) in the 1.7 GHz and 2.1 GHz band, the Commission found that “MSAs and RSAs permit entities who are only interested in serving rural areas to acquire spectrum licenses for these areas alone and avoid acquiring spectrum licenses with high population densities that make purchase of license rights too expensive for these type of entities.”²² And just last week, the Commission modified the AWS band plan to “increase[] the amount of spectrum licensed on

secondary marketplace. See *Promoting Efficient Use of Spectrum Through Elimination of Barriers to the Development of Secondary Markets*, 19 FCC Rcd 17503 (2004).

¹⁹ See WCA Petition at 14 (“[B]y auctioning the exclusive block based on the 734 MSAs and RSAs, rather than some larger geographic area, the Commission can assure that rural service providers have a meaningful opportunity to secure a license that is narrowly tailored to meet its needs.”).

²⁰ *Facilitating the Provision of Spectrum-Based Services to Rural Areas and Promoting Opportunities for Rural Telephone Companies To Provide Spectrum-Based Services*, 19 FCC Rcd 19078, 19090 ¶ 18 (2004).

²¹ *Id.* at 19080 ¶ 2.

²² *Service Rules for Advanced Wireless Services in the 1.7 GHz and 2.1 GHz Bands*, 18 FCC Rcd 25162, 25177 ¶ 39 (2004).

a small geographic area basis ... in order to provide greater opportunities for smaller rural or regional providers to obtain access to this spectrum at auction.”²³

The other geographic licensing areas historically used by the Commission would be far too large to facilitate successful bids by rural and suburban providers. For example, when nationwide spectrum is divided into Major Trading Areas (“MTAs”), only 51 licenses are available.²⁴ A license divided into such a large service area will typically cover urban, suburban, *and* rural areas, and accordingly MTA licenses are much costlier at auction than an RSA license that covers just a smaller, less populated area. As one rural commenter critiquing large geographic licenses recently explained, “in such circumstances, the spectrum is sold relatively cheap to a few large companies with access to capital in the public markets.”²⁵ Given the Commission’s goal of facilitating rural and suburban broadband access through use of the 3650 MHz band, licensing by RSA/MSA is clearly appropriate for this spectrum.

²³ *FCC Modifies Advanced Wireless Service Rules to Provide Greater Flexibility and Access to Spectrum for Small and Rural Providers*, FCC News Release (rel. Aug. 5, 2005).

²⁴ See Wireless Telecommunications Bureau, *The 51 Major Trading Areas (MTAs)*, available at <http://wireless.fcc.gov/auctions/data/maps/mta.pdf> (last visited Aug. 4, 2005).

²⁵ Petition for Reconsideration of the Rural Cellular Association, WT Docket No. 02-353, at 6-7 (filed March 8, 2004).

CONCLUSION

TDS Telecom applauds the Commission for reaffirming the importance of bringing wireless broadband services to all Americans, including those in rural and suburban markets. The nonexclusive licensing regime announced in the *Report and Order* for the 3650 MHz band, however, would not provide sufficient protection from interference to support widespread investment in services using that spectrum. The Commission should instead exclusively license two 25 MHz-wide blocks within the 3650 MHz band, and auction those blocks according to MSA/RSA boundaries so that rural and suburban providers have meaningful access to the spectrum.

Respectfully submitted,



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