

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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

REPLY COMMENTS OF HUGHES NETWORK SYSTEMS, INC.

Hughes Network Systems, Inc. (“HNS”) submits these Reply Comments in response to commentary submitted in the Commission’s Notice of Proposed Rulemaking regarding increased flexibility and the deployment of spectrum-based services in rural areas. HNS offers the following views from its perspective as a licensee of satellite networks in the Fixed Satellite Service (FSS), as a leading manufacturer and operator of very small aperture earth terminal (VSAT) networks that operate in the FSS bands, and as a provider of FSS satellite broadband services throughout the United States.

At the outset, HNS notes that the Commission has specifically excluded changes to its satellite policies and regulations from the scope of this proceeding:

While the policies and proposals discussed herein are targeted at promoting wireless services to consumers in rural areas, certain of our proposals have

broader application to non-rural areas as well. *While satellite-based services present another viable means to serve rural and underserved areas, we do not propose any rule changes to our policies or regulations governing satellite-based services at this time, nor do we address regulations governing the provision of broadcast, wireline telecommunications or information services.*¹

Consistent with this express limitation, of the 18 commenters in this proceeding, virtually no one has commented on a satellite-related issue. The only exception is MDS America, Inc., who seeks to use this proceeding to advance a previously failed initiative to increase the permitted power levels of newly-authorized terrestrial transmitters in spectrum that DBS operators, such as DIRECTV, currently use to provide competitive MVPD service. The issues raised by MDS America are specifically being addressed by HNS's affiliate, DIRECTV. HNS wishes to address more generally the problems presented by increasing the permitted levels of terrestrial usage of satellite spectrum.

I. INCREASED TERRESTRIAL POWER IN SATELLITE BANDS IN RURAL AREAS

HNS is well aware that the Spectrum Policy Task Force Report, on which this NPRM draws heavily, posits that “spectrum in rural areas is typically the least congested,”² and notes that “certain parties” advocate “higher permissible power standards for rural areas.”³ The SPTF Report then recommends that the Commission consider using “licensing areas that

¹ *In the Matter of Facilitating the Provision of Spectrum-Based Services to Rural Areas and Promoting Opportunities for Rural Telephone Companies to Provide Spectrum-Based Services, 2000 Biennial Regulatory Review Spectrum Aggregation Limits for Commercial Mobile Radio Services, Increasing Flexibility to Promote Access to and the Efficient and Intensive Use of Spectrum and the Widespread Deployment of Wireless Services, and to Facilitate Capital Formation, Notice of Proposed Rulemaking, FCC 03-222 at n.1 (rel. Oct. 6, 2003) (“NPRM”)(emphasis added).*

² Spectrum Policy Task Force Report at 59, ET Docket No. 02-135 (rel. Nov. 2002)(“SPTF Report”).

³ *Id.*

distinguish between rural and urban areas.”⁴ HNS is very concerned about any change in Commission rules that could result in higher power terrestrial operations in rural and remote areas interfering with satellite services in frequency bands that are shared between satellite and terrestrial users. Any such change could have a particularly burdensome impact on the many businesses and individuals in rural areas who rely on satellite-delivered services as their only or primary means of service.

Satellites are uniquely suited to extend service to rural and remote customers who otherwise would be unserved or underserved by terrestrial networks. Because of their broad geographic coverage, satellite systems can extend service to these areas on a cost basis that is distance-insensitive. In fact, in many places, satellite is the most attractive, and sometimes the only, option available to those seeking multichannel video, broadband internet, mobile, advanced data, and basic business telecommunications services. Allowing higher-power terrestrial services in rural or remote areas could preclude the ability to provide satellite service in those areas, and therefore could harm the very businesses and consumers who have limited or no alternatives for their telecommunications needs.

Rural and remote areas are, by definition, less densely populated than urban areas. That, of course, does not mean that the needs of businesses and consumers in those areas are any less important than the needs of those in urban areas. In fact, limiting the ability of satellite systems to serve rural and remote areas could cause such users disproportionate harm because of the very limited alternative sources for service in those areas, and because of the reliance of those users on satellite services, particularly for residential broadband and small and medium enterprise communications.

⁴ *Id.* at 60.

Moreover, any attempt to define rural (versus suburban and urban) areas for purposes of allowing high-power operations poses serious logistical and definitional problems. For example, it is not feasible to define these areas on a county basis, because many counties that are classified as rural have urban components.⁵ Classifying an entire county as rural and allowing higher-power operations in that entire county therefore could cause interference, and disrupt communications, in nearby urban centers. Second, any "rural" classification of a given service area presumably would need to be constantly revisited to account for future growth in that area. Third, consideration would need to be given to "powering down" those terrestrial transmitters once the formerly "rural" area reached a certain level of development, and it is not all clear how or whether the Commission could effectively require those services to "power down" simply because the population of the area had grown.

In short, any attempt to allow higher-power terrestrial operations in rural areas in frequency bands that are shared with satellite services, in the end, could greatly constrain the ability to provide satellite services in those areas. The importance of satellite services to rural and remote users makes it all the more important that the Commission proceed with extreme caution before changing any of the terms under which satellite systems share spectrum with terrestrial networks.

II. INTERFERENCE FROM UNLICENSED DEVICES IN SATELLITE BANDS

The threat of higher power levels by terrestrial services in rural areas is even greater if those services are provided on an unlicensed basis. Just two years ago, the Commission was compelled to take immediate action to stop the continued manufacture and sale of unlicensed radar detectors that were emitting unprecedented levels of RF emissions in the Ku band VSAT

⁵ Bay County, Michigan, for example, "is predominately rural but has an urban center (Bay City) near its southern end." See <http://medc.michigan.org/miinfo/places/BayCounty/>.

spectrum. Because of this "real world" experience of satellite services experiencing severe interference problems with unlicensed devices,⁶ HNS urges the Commission to proceed cautiously in considering the proliferation of unlicensed devices in satellite bands.

When the Commission adopted standards for Part 15 unintentional radiators, it arguably exempted receivers tuning to frequencies above 960 MHz from the Part 15 emission limits.⁷ The radar detection industry took advantage of these circumstances by producing devices emitting at levels that caused extensive interference to VSATs and other satellite systems operating in the Ku band. After numerous cases of interference were brought to its attention, the Commission revised its rules on a prospective basis to address this interference issue.⁸ Although the Commission acted responsibly and with as much speed as one could reasonably expect consistent with the requirements of the Administrative Procedure Act, its actions could not undo the damage that had already occurred, and there remains, in operation, a large installed base of existing radar detectors that interfere with satellite operations. To avoid comparable problems in the future, the Commission should not authorize additional operations on an unlicensed basis in bands used by satellite systems unless there is conclusive evidence, including valid test results, demonstrating that satellite services will be adequately protected. Moreover, the Commission should create a mechanism by which it can establish effective constraints on the continued operation of existing unlicensed devices already in the marketplace if it discovers that interference from those units is causing harm to licensed spectrum users. Such an enforcement

⁶ See, e.g., *Review of Part 15 and Other Parts of the Commission's Rules*, First Report and Order, 17 FCC Rcd 14063 (2002) (requiring radar detectors to comply with Part 15 radiated emissions limits to protect VSATs) ("*Radar Detector Order*").

⁷ See 47 C.F.R. §§ 15.101(b), 15.109.

⁸ See *Radar Detector Order*, *supra* n. 6.

tool is critical if increased flexibility is considered in any way for unlicensed operations in satellite bands.

In addition, the Commission should take into account that many of the satellite bands are already heavily encumbered and are subject to extensive sharing arrangements between multiple satellite services (e.g., between GSO and NGSO systems and between fixed satellite and mobile satellite systems), between satellite services and licensed terrestrial services (e.g., between fixed satellite systems and terrestrial microwave systems in C band and extended Ku band, and between DBS systems and MVDDS systems in the 12.2-12.7 GHz band), and between satellite services and unlicensed terrestrial services (e.g., between fixed satellite systems and unlicensed Part 15 and ultra wideband devices).⁹

If unlicensed uses are permitted in satellite bands without adequate regulatory consideration, a community of users may develop that will make it difficult for the Commission to enforce policies that are required to protect satellite systems, service providers and the consumers of their services. It is essential that satellite operators and service providers who have invested billions of dollars in the deployment of satellite systems and consumer equipment, and who rely on them for numerous services, including broadband deployment, critical infrastructure and national security services, receive adequate interference protection. History demonstrates that in this arena, an ounce of prospective prevention is worth a ton of after-the-fact cure.

III. CONCLUSION

HNS strongly supports the Commission's goal of providing high quality service to rural communities. Satellite services achieve that goal today. HNS also urges the Commission to limit the scope of this proceeding so as not to encompass satellite-related issues.

⁹ Some of these sharing arrangements remain subject to reconsideration or review based on claims that they cause harmful interference to satellite services.

If and when the Commission does address the possibility of increased terrestrial usage of satellite bands, the Commission should proceed with extreme caution. If satellite services remain truly protected from terrestrial interference and service providers remain able to develop more spectrum-efficient ways to deliver essential satellite-based services, the Commission can have every expectation that the satellite industry will continue to grow and provide outstanding and innovative services and service quality to American consumers, businesses, government agencies, and the U.S. military.

Respectfully submitted,

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By: /s/ _____

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