

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

In the Matter of)
)
Inquiry Concerning Deployment of) CC Docket No. 98-146
Advanced Telecommunications Capability to)
All Americans in a Reasonable And Timely)
Fashion, and Possible Steps To Accelerate)
Such Deployment Pursuant To Section 706)
of the Telecommunications Act of 1996)

COMMENTS OF HUGHES NETWORK SYSTEMS, HUGHES COMMUNICATIONS
GALAXY, INC. AND HUGHES COMMUNICATIONS, INC.

Hughes Network Systems, a division of Hughes Electronics Corporation, Hughes Communications Galaxy, Inc., and Hughes Communications, Inc. (collectively, “Hughes”) hereby comment on the Third Notice of Inquiry¹ in this proceeding. Hughes has a strong interest in this proceeding because the delivery of satellite-based broadband services is a vitally important part of Hughes’ current and future business plans. Hughes currently operates the DIRECWAY (formerly known as DIRECPC) broadband satellite service via existing Ku band satellite networks. Hughes is also the licensee of the SPACEWAY Ka band geostationary

¹ *Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable And Timely Fashion, and Possible Steps To Accelerate Such Deployment Pursuant To Section 706 of the Telecommunications Act of 1996*, FCC 01-223 (rel. Aug. 10, 2001) (“*Third NOP*”).

satellite system,² scheduled to begin service in early 2003, which will deliver next-generation, interactive, advanced broadband communications services.

In the Third NOI, the Commission asks for information regarding whether advanced telecommunications capability is being deployed to “all Americans.”³ The Commission has previously recognized in this proceeding the apparent widening of the “Digital Divide” between the “information rich” and the “information poor.”⁴ Recognizing again that certain groups of consumers might be particularly vulnerable to not receiving timely deployment of advanced telecommunications capability through market forces alone, the Commission indicates its willingness to take steps to remove barriers to broadband deployment.⁵

Satellite-delivered broadband services are essential to narrowing the “Digital Divide” for rural and consumer broadband users and are uniquely suited to achieve the Commission’s stated policy goal of broadband deployment that is fast, ubiquitous, competitive, and open. The Commission cannot rely on terrestrial providers alone to achieve that goal. Both terrestrial wireline and terrestrial wireless service providers have disappointingly fallen short in providing the services so urgently needed by these communities. To solve this problem, the Commission should fulfill its statutory mandate to ensure the deployment of advanced services to all Americans by making adequate spectrum available for satellite-based systems to serve the unmet needs for very-high-speed Internet services.

² *Hughes Communications Galaxy, Inc.*, 13 FCC Rcd. 1351 (1997); *Hughes Communications, Inc.*, DA-01-1686 (rel. Aug. 3, 2001).

³ Third NOI at § IV.

⁴ Third NOI at ¶ 1.

⁵ *Id.*

I. SATELLITE-DELIVERED BROADBAND SERVICES WILL BE THE ONLY CHOICE FOR MANY USERS FOR SOME TIME

As Hughes has previously indicated to the Commission,⁶ satellite systems present the only practical near-term alternative to provide broadband services in rural and other underserved areas. Satellite systems have nationwide coverage areas and are able to offer high-quality, ubiquitous service as soon as the satellite system is launched and operational. As such, satellite systems offer instantaneous deployment to low-population density and low-income areas that may not have enough demand to justify a terrestrial build-out. In addition, satellites offer ubiquitous service at prices that are distance insensitive, in contrast to the distance-based prices that are characteristic of many terrestrial networks. These advantages allow satellite operators to provide first- and last-mile connectivity more cost-effectively than terrestrial systems, which have historically focused their deployment on high-density urban areas.⁷

Indeed, Hughes believes that its DIRECWAY service and SPACEWAY satellite system – along with other broadband service satellite systems – are likely to be the *only* broadband technology available for a significant portion of small businesses and consumers in the United States. Terrestrial broadband deployment is highly focused on larger businesses, metropolitan areas and affluent suburbs.⁸ Large portions of the U.S. are not, and may never be,

⁶ See Comments of Hughes Communications Galaxy, Inc., WT Docket No. 99-266 (filed November 9, 1999); Reply Comments of Hughes Communications Galaxy, Inc., WT Docket No. 99-266 (filed March 14, 2000).

⁷ See Extending Wireless Telecommunications Services to Tribal Lands, *Notice of Proposed Rulemaking*, FCC 99-205, WT Docket No. 99-266 (released August 18, 1999) at ¶ 24.

⁸ See, e.g., COMMUNICATIONS DAILY, March 20, 2000, at 11 (“While cable operators are rolling out advanced services in larger markets, most small and medium-sized markets won't see such services for at least another 2 years, according to another new study. Report by Cahners In-Stat Group found that most cable operators serving areas outside

served by either cable or DSL due to the cost of wiring those remote areas, or because of technical limitations due to distance from the telephone company's central office. Even where DSL was once deployed, many DSL customers have lost access to broadband service when their service provider has ceased operations or declared bankruptcy, and many consumers therefore have limited, if any, terrestrial alternatives.

Further, it is not realistic to expect that the broadband needs of underserved areas will be met by terrestrial wireless providers, because wireless operators have concentrated on urban/suburban areas. As the Commission is well aware, the networks of many terrestrial wireless providers are experiencing significant financial difficulties, and investment in some networks has slowed considerably, if not stopped entirely. Three major fixed wireless companies are now operating under bankruptcy protection and are at risk of ceasing operations. As with DSL, the failure of any of those companies could leave many users without access to broadband service. Even if these companies were to recover, there is no reason to believe they will turn their focus away from deploying in heavily populated urban areas, due to the high cost of extending terrestrial wireless networks outside those areas.

In sum, satellite broadband systems, including DIRECWAY and SPACEWAY provide a critical means to serve those users who are, and will likely remain, unserved by terrestrial service providers.

II. THE HUGHES COMMITMENT TO DEPLOY SATELLITE-DELIVERED BROADBAND SERVICES

Through DIRECWAY services and the SPACEWAY satellite system, which is scheduled to commence service in 2003, Hughes has made a substantial commitment to provide affordable broadband services to *all* Americans. Hughes was the first to offer broadband

biggest markets don't intend to launch digital cable, high-speed data or telephone service

satellite service through its two-way DIRECWAY service, which operates at Ku band using small, consumer-friendly antennas. While other technologies, such as DSL and cable, are available in select areas, DIRECWAY makes high-speed two-way capability available to both business and residential consumers nationwide, and makes it accessible from virtually *any* location in the United States.⁹

In June 2001, DIRECWAY introduced its satellite-return broadband service that provides Internet access at speeds comparable to DSL and cable. Hughes continues to make significant investments in DIRECWAY's infrastructure and technology, including acquisition of substantial additional space-segment capacity to support this service

Hughes' commitment to providing advanced satellite services to all Americans is further evidenced by its \$1.4 billion investment¹⁰ in the SPACEWAY Ka band satellite system. Three spacecraft designed to serve the U.S. are in various stages of construction, with the first spacecraft scheduled to commence service to America in early 2003. SPACEWAY will be a new satellite platform, providing advanced services through small, mass-marketed, ubiquitous subscriber terminals. SPACEWAY users will enjoy super-fast download speeds of up to 30 Mbps, and uplink rates ranging from 512 Kbps for individual users, to tens of Mbps for businesses and major hubs.

in the next 24 months.”).

⁹ To receive service, subscribers must have an unobstructed view of the satellite.

¹⁰ The first phase of the SPACEWAY system will consist of two satellites and one spare to serve North America.

III. SATELLITE SYSTEMS NEED SUFFICIENT SPECTRUM TO FULLY IMPLEMENT THEIR PROMISE

In the Third NOI, the Commission asks what it can do to fulfill its statutory mandate to encourage the deployment of advanced services to all Americans.¹¹ The single largest barrier to advanced services deployment for Hughes and other satellite providers is the lack of sufficient unshared Ka band spectrum that is suitable for the next generation of services to small, low-cost, ubiquitous antennas. To provide the greatest number of urban and rural users with affordable, advanced services, Hughes and other broadband satellite providers must have sufficient spectrum. Lack of clear spectrum will hinder satellite providers from providing this competitive alternative to terrestrial broadband service throughout the country, including rural and other underserved areas.

The SPACEWAY satellites will be one of the most efficient spacecraft ever built with regard to spectrum usage. A single SPACEWAY satellite will offer more capacity than six conventional satellites today. The amount of available bandwidth directly affects the capacity of each SPACEWAY satellite and determines the number of users that can be accommodated. Thus, any limitation in the Ka band spectrum available for the SPACEWAY system will diminish the number of users that SPACEWAY can serve.

Ever since Hughes first applied for the SPACEWAY system in 1993, SPACEWAY was built around the availability of a full 1 GHz of spectrum for widely-deployed, ubiquitous earth terminals. Hughes demonstrated throughout the 28 GHz proceeding why any reduction below 1 GHz of the Ka band spectrum available for ubiquitous terminals would have a material and significant impact on the cost to users of the SPACEWAY system. The Commission accepted Hughes' arguments and validated the need for 1 GHz of uplink and

¹¹ NOI at ¶ 43.

downlink spectrum for systems like SPACEWAY through its decision in the 28 GHz proceeding.¹² Unfortunately, when the Commission subsequently addressed the terms for using the companion 18 GHz downlink band, the Commission imposed rules that prevent systems like SPACEWAY from using ubiquitous terminals in 280 MHz of the Ka band, or 28% of the available spectrum.¹³ Hughes has filed for reconsideration of that decision. In response to the Commission's inquiry here about actions that could be taken to hasten the deployment of advanced services, Hughes renews its request that the Commission change its decision in the 18 GHz Order to make only 720 MHz of Ka band downlink spectrum available for service to ubiquitously-deployed satellite terminals.¹⁴

IV. CONCLUSION

Through its significant investments in its DIRECWAY satellite service and the SPACEWAY satellite system, Hughes has made a substantial commitment to provide high quality broadband service to all Americans. However, in order to ensure that advanced services remain available to all Americans and competitive with terrestrial alternatives, it remains essential that SPACEWAY and the other satellite licensees have sufficient spectrum. Any Commission action that provides less than 1 GHz of bandwidth for use by ubiquitously deployed small Ka band earth terminals will have a significant adverse impact on the ability of consumers,

¹² *In the Matter of Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission's Rules to Redesignate the 27.5 - 29.5 GHz Frequency Band, to Reallocate the 29.5 - 30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services*, 11 FCC Rcd 19005, ¶¶ 57-58, 78 (1996).

¹³ *See Redesignation of the 17.7-19.7 GHz Frequency Band, Blanket Licensing of Satellite Earth Stations in the 17.7-20.2 GHz and 27.5-30.0 GHz Frequency Bands, and the Allocation of Additional Spectrum in the 17.3-17.8 GHz and 24.75-25.25 GHz Frequency Bands for Broadcast Satellite-Service Use*, IB Docket No. 98-172, 15 FCC Rcd 13430, 13456 (2000).

especially those living in rural and other underserved communities, to receive advanced, fully interactive Internet connectivity.

Respectfully submitted,

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¹⁴ See Petition for Partial Reconsideration of Hughes Electronics Corporation, IB Docket No. 98-172, RM-9005, RM-9118 (Oct. 6, 2000).