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

In the Matter of **Hughes Communications Galaxy, Inc.** Application for Authority to Construct, Launch, and Operate a Ka-Band Satellite Systems in the Fixed-Satellite Service and a Ku-band Broadcast Communications Satellite System	File Nos. 3/4-DSS-P/LA-94 CSS-94-021 through CSS-94-025 174 through 181-SAT-P/LA-95 ~~36~~-SAT-AMEND-96 34

ORDER AND AUTHORIZATION

Adopted: May 8, 1997 Released: May 9, 1997

By the Chief, International Bureau:

Introduction

1. With this Order, we authorize Hughes Communications Galaxy, Inc. ("Hughes") to launch and operate a satellite system in geostationary-satellite orbit ("GSO") to provide fixed-satellite services ("FSS") in the Ka-band.[1] This will allow Hughes to provide a variety of advanced broadband communication services to businesses and consumers around the globe. We defer action on Hughes's request to provide broadcast-satellite services ("BSS") in the Ku-band.

[1] The term "Ka-band" generally refers to the space-to-earth (downlink) frequencies at 17.7-20.2 GHz and the corresponding earth-to-space (uplink) frequencies at 27.5-30.0 GHz, or the "28 GHz band." We authorize Hughes to operate in a portion of these frequencies as indicated herein.

Background

2. Hughes, a wholly-owned subsidiary of Hughes Communications, Inc., proposes to construct, launch and operate a global integrated hybrid Ka-band FSS and Ku-band BSS satellite system, "Galaxy/Spaceway."[2] The proposed constellation will be comprised of twenty-one satellites located in sixteen orbital locations around the world. Hughes proposes two Ka-band only satellites at each of the following locations: 101° W.L., 99° W.L., 49° W.L.; 25° E.L., and 111° E.L. It also proposes to operate one Ka-band-only satellite at each of the following locations: 101° E.L., 54° E.L., and 164° E.L. One hybrid Ka/Ku-band satellite would be located at each of the 36° E.L.; 40° E.L.; 48° E.L.; 124.5° E.L; 149° E.L; 173° E.L. and 67° W.L. orbit locations. In addition, Hughes requested one Ku-band satellite at 135° E.L.

3. Hughes proposes to utilize spectrum from both Ka-band FSS and Ku-band BSS frequencies. Hughes requests to use the 29.0-30.0 GHz band for Ka-band service uplink operations in the U.S. and the 19.2-20.2 GHz band for service downlink operations, in the U.S. For international operations, Hughes requests authority to operate in the 27.5 -30.0 GHz frequency band for uplink operations and 17.7-20.2 GHz for its downlink operations. It also requests authority to use inter-satellite links in the 22.55-23.55, 32.0-33.0, 54.25-58.2 and 59-64 GHz bands. It also proposes to conduct its its tracking, telemetry, and command ("TT&C") during transfer orbit operations in the Ku-band frequencies. It proposes BSS operations at 11.7 to 12.2 GHz (downlink) and 17.3 - 17.8 GHz (uplink).

4. Hughes proposes to offer services such as direct-to-home services and high speed personal computer access to the Internet and on-line services, telephony, narrow-band data, high-speed data, videoconferencing, high capacity two-way communications. Hughes proposes to offer services on a non-common carrier basis.

5. Each Galaxy/Spaceway satellite will support 68 simultaneously active channels (or transponders) on both uplink and downlink. Sixty-four of these channels, each 125 MHz bandwidth, will be allocated to the user terminal frequency band, and four channels, each 250 MHz will be allocated to the gateway terminal frequency band. Hughes proposes to use multiple spot beam coverage, on-board processing, digital transmission at medium and high data rates, orthogonal polarization and steerable antennas. A Time Division Multiplexed

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[2] *See* Public Notices, Report No. SPB-20, DA 95-1689 (released July 28, 1995) and Report No. SPB-29, 10 FCC Rcd 13753 (1995). Hughes filed its original "Spaceway" application in December 1993 and, in July 1994, Hughes amended its application to expand the "Spaceway" system. All applications were filed by the cut-off date established for consideration of the first processing group of 28 GHz band applications.

(TDM)/Frequency Division Multiple Access (FDMA) scheme is to be used on the user terminal uplinks. On user terminal downlinks, a 130 Mbps TDM signal will be transmitted in each beam from each satellite.

6. Several other GSO FSS applicants filed petitions to deny and other pleadings in response to Hughes's application. As further discussed below, these pleadings and petitions to deny were subsequently withdrawn by all of the GSO FSS applicants. Motorola Satellite Communications, Inc. also filed a petition to deny all of the GSO FSS Ka-band applications, arguing that grant would conflict with its requested frequencies for feeder links for its "Big LEO" system. These concerns are resolved by the 28 GHz band plan. Motorola also requests the Commission deny Hughes' request for inter-satellite link to the extent there is overlap with Motorola's inter-satellite links.[3]

Relevant Domestic Decisions

1. DISCO I

7. In January 1996, the Commission, in the *DISCO I Report and Order*,[4] abolished all distinctions between U.S. domestic satellites and international separate system satellites. This allows all U.S. - licensed satellites to provide any mix of domestic or international satellite services they choose, subject only to the licensee obtaining all applicable international approvals and authorizations by other administrations to provide service to, from, or within their respective territories. Therefore, all FSS licensees in the Ka-band are permitted to provide any combination of domestic and international services without obtaining separate approval from the Commission for specific service areas.

2. 28 GHz Band Segmentation Decision

8. In July 1996, the Commission adopted a band plan for U.S. commercial operations in the Ka-band. This band plan designates discrete band segments in the 17.7-20.2 GHz and 27.5-30.0 GHz frequency bands for the Local Multipoint Distribution Service ("LMDS"), the fixed service, the GSO FSS service, the non-geostationary satellite orbit ("NGSO") FSS

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[3] Motorola was authorized inter-satellite links in the 2318-23.38 GHz bands. *See* Motorola Satellite Communications, Inc., 10 FCC Rcd 2268 (1995).

[4] *See* In the Matter of Amendment of the Commission's Regulatory Policies Governing Domestic Fixed Satellites and Separate International Satellite Systems, 11 FCC Rcd 2429 (1996) (*DISCO I Report and Order*).

service, and feeder links for certain NGSO mobile satellite service ("MSS") systems.[5] Of the total 2.5 GHz of spectrum available in each transmission direction, we concluded, based on the representations of the GSO FSS applicants, that 1 GHz of spectrum in both transmission directions was needed to support GSO FSS systems. The 28 GHz band plan designates the following frequencies for U.S. commercial GSO FSS systems for primary service operations. We note any other services that are designated in the band plan to share the band with GSO FSS systems on an equal basis:[6]

GSO FSS-Designated Band Segment	Other Co-Primary Designations
17.7-18.8 GHz (downlink)[7]	Fixed
19.7-20.2 GHz (downlink)	
28.35-28.6 GHz (uplink)	
29.25-29.5 GHz (uplink)	NGSO MSS feeder links
29.5-30.0 GHz (uplink)	

3. Orbital Assignments

9. In May 1996, the International Bureau, acting on delegated authority, assigned orbit locations to those 28 GHz GSO FSS applicants in the first processing round that proposed to provide international FSS from their GSO systems.[8] This assignment plan was the result of the GSO FSS applicants' successful efforts to resolve their conflicts over orbit

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5 *See* 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, *First Report and Order and Fourth Notice of Proposed Rulemaking*, 11 FCC Rcd 19005 (1996) (*28 GHz Band First Report and Order*). This decision is subject to petitions for reconsideration.

6 The U.S. Table of Frequency Allocations, 47 C.F.R. § 2.106, also contains allocations for other services in several of these bands. These are discussed at paras. 16-21 below.

7 The band plan designates a total of 1.6 GHz of downlink frequencies for GSO FSS systems given the expected coordination difficulties with other systems in the 17.7-18.8 GHz band. *See* paras. 19-21 below.

8 *See* In the Matter of Assignment of Orbital Locations to Space Stations in the Ka-Band, 11 FCC Rcd 13737 (1996).

locations for satellites in the 62° W.L. to 175.25° E.L. region of the orbital arc. In the Assignment Order, we indicated that the assignments were conditioned on the grant of assignments in the orbital arc capable of providing U.S. domestic service. Specifically, the May 1996 Ka-Band Assignment Order assigned locations to Hughes at: 49° W.L.; 25° E.L.; 36° E.L.; 40° E.L.; 48° E.L.; 54° E.L.; 101° E.L; 111° E.L; 124.5° E.L; 149° E.L; 164° E.L.; and 173° E.L.

10. In February 1997, the first-round GSO FSS applicants, due to their continued efforts, reached an agreement regarding conflicts over locations in the remainder of the orbital arc. Specifically, this agreement covered locations between 67° W.L. to 148° E.L., which are best suited for providing service to the United States. As part of this agreement, the GSO FSS applicants also agreed to withdraw their petitions to deny and other pleadings filed with respect to each others' 28 GHz band applications.[9] This agreement effectively eliminated all obstacles to quick grant of the GSO FSS applications. By a separate Order issued today, we adopt an Assignment Plan implementing the orbital assignment agreement. The Assignment Plan assigns three additional locations to Hughes at 101° W.L., 99° W.L., and 67° W.L.

Discussion

A. Qualifications

11. Before the Commission authorizes any space station applicant, we first need to determine whether an applicant is legally, technically, and financially qualified to hold a Commission license. The rules set forth in Part 25 of the Commission's rules governing the FSS apply, in general, to FSS systems in the Ka-band. We recognize we will need to modify these rules, to some extent, to incorporate operations at 28 GHz. Such modifications are the subject of an ongoing rulemaking. We expect to release a Report and Order in this proceeding shortly. Nevertheless, because Hughes's system is not mutually exclusive with any other U.S. commercial satellite applications on file, and can be evaluated under current Part 25 rules, we do not view the rulemaking as a bar to considering Hughes's license now. Rather, we will condition any grant to Hughes on it complying with all rules adopted in the 28 GHz Band Satellite Report and Order.

Financial Qualifications

12. Although financial qualification requirements for GSO FSS systems will be discussed in greater detail in the forthcoming 28 GHz Band Satellite Report and Order, the

[9] *See* Letter from GSO Ka-band applicants to Thomas S. Tycz, Chief, Satellite and Radiocommunication Division, International Bureau (February 10, 1997).

Commission has in the past, based financial requirements for satellite services on the basis of entry opportunities in the particular service being licensed. In cases where we can accommodate all pending applications and where there is sufficient remaining capacity to address additional requests that may arise, we have not looked to current financial ability as a prerequisite to a license grant.[10] This is because the grant of an authorization to one applicant will not prevent another qualified applicant from going forward with a proposal in the same service.[11] We ensure that licensees timely build their systems by requiring them to meet specified implementation milestones. In contrast, where applications for satellites exceed the number of satellites we can accommodate, we have adopted a standard that requires applicants to demonstrate evidence of internal assets or committed financing sufficient to cover construction, launch, and first year operating costs.[12] This is based on our experience that under-financed licensees have significant difficulty in raising the requisite financing.

13. Because all of the first-round 28 GHz GSO applicants agreed to orbit locations and because other orbit locations remain available for additional GSO FSS satellites, authorization of all proposed systems does not preclude use of this band by other applicants for GSO FSS systems. Consequently, it is not necessary to rule on any of the first-round 28 GHz applicants' financial qualifications. We previously granted a similar waiver to Norris Satellite, Inc., which was awarded a license to provide satellite services in the 28 GHz band in 1992.[13] We intend to rigorously enforce the system milestone schedule to ensure that Hughes proceeds in a timely manner and does not tie up valuable orbital locations and spectrum to the exclusion of other qualified applicants.

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[10] *See* Amendment of the Commission's Rules to Allocate Spectrum for, and to Establish Other Rules and Policies Pertaining to, a Radiodetermination Satellite Service, 104 FCC 2d 650 (1986). Because all pending RDSS applicants could be accommodated and future entry was possible, the Commission required applicants to provide a detailed business plan.

[11] *See generally* In the Matter of Amendment of the Commission's Rules to Establish Rules and Policies Pertaining to a Mobile Satellite Service in the 1610-1626.5/2483.5-2500 MHz Frequency Band at ¶ 26, 9 FCC Rcd 5936 (1994) (*"Big LEO Report and Order"*).

[12] *See* 47 C.F.R. § 25.140(b)-(e).

[13] *See* Norris Satellite Communications, Inc., 7 FCC Rcd 4289, 4290 (1992). Norris's authorization was subsequently declared null and void for failing to begin timely system construction. *See* In the Matter of Norris Satellite Communications, Inc. For Authority to Construct, Launch, and Operate a Ka-band Satellite System, 11 FCC Rcd 5402 (1996). This decision is subject to an Application for Review.

Technical Qualifications

14. Applicants for space station authorization also must meet certain technical qualification requirements. In its application, Hughes represents that it intends to operate under the existing technical rules for the FSS in Part 25 of the Commission's rules. After examining its application, it appears Hughes can do so. As noted, however, we will need to modify these rules somewhat, to incorporate operations in the 28 GHz band. For example, we envision that we will need to modify the definition of full frequency reuse for systems employing circular polarization. Nothing in Hughes's application suggests its system will not be able to operate within modified Part 25 technical parameters. Rather than delaying action on Hughes's application until these modifications are adopted, we condition Hughes's authorization on it complying with the forthcoming rules concerning technical qualifications for GSO FSS systems in the 28 GHz band.

B. Spectrum Issues

15. In the following text we discuss specific issues related to the frequency bands Hughes proposes for its BSS services, Ka-band service uplinks, Ka-band service downlinks, its inter-satellite links, and its TT&C functions during transfer orbit operations.

Ku-Band BSS

16. At this time we are not in a position to address Hughes's request for BSS frequencies as part of its Spaceway/Galaxy system. Hughes proposes to provide BSS from orbit locations that are not designated to the United States under the international plan for BSS adopted at past World Administrative Radio Conferences (WARCs). The U.S. is in the process of submitting information to the International Telecommunication Union regarding a modification to the BSS Plan. Once modifications to the BSS plan have been approved, we will be in a position to consider Hughes's proposes Ku-band operations. We will not hold up Hughes's Ka-band licenses until these issues are resolved, however.

Service Uplinks

17. As noted, the 28 GHz band plan designates spectrum in the 28.35-28.6 and the 29.25-30.0 GHz band for uplink GSO FSS operations. Two hundred fifty megahertz of this spectrum at 29.25-29.5 GHz is to be shared on a co-primary basis with NGSO MSS feeder links.

18. In its application, which it filed before the final band plan was adopted, Hughes proposes to use 1000 megahertz at 29.0-30.0 GHz for its service uplinks.[14] Hughes's request for the 750 megahertz from 29.25-30.0 is consistent with our band plan and we will grant it. Hughes's request for spectrum from 29.0-29.25 is not in conformance with the band plan. In the interest of expediting the licensing process, and because we believe Hughes will have no difficulty complying with the band segmentation scheme adopted in the *28 GHz Band First Report and Order*, we will also authorize Hughes to operate its service uplinks for the other 250 megahertz it requests at 28.35-28.60.[15] Operations in the shared 250 megahertz at 29.25-29.5 GHz are, of course, subject to the sharing rules adopted in the *28 GHz Band First Report and Order*.[16]

Service Downlink Bands

19. The 28 GHz band plan designates the 17.7-18.8 GHz and 19.7-20.2 GHz bands for GSO FSS operations, with the entire 17.7-18.8 GHz band to be shared on a co-primary basis with the fixed service. In adopting the band plan, we noted that GSO FSS operations in the 17.7-18.8 GHz band will be restricted by: the need to protect the broadcast satellite service in the 17.7-17.8 GHz band segment (after April 2007), power flux density limits to protect the earth exploration-satellite service in the 18.6-18.8 GHz band, and the need to coordinate with, and comply with a pfd limit to protect the fixed services throughout the band. We concluded that the GSO FSS systems should be able to coordinate sufficient spectrum with other users within this 1.1 GHz band, to give them, together with the 500 MHz designated at 19.7-20.2 GHz, access to sufficient downlink spectrum. to correspond with the 1000 MHz of uplink spectrum designated for GSO FSS in the 27.5-30.0 GHz range.[17]

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[14] We authorize Hughes to provide services to, from, or within the United States. With respect to Hughes's requested frequencies for international operations, the coordination issues concerning commercial U.S.-licensed 28 GHz satellite systems will be discussed in the 28 GHz Band Satellite Service Rules.

[15] The Commission recently waived the construction permit requirement for space stations. This decision, effective April 21, 1997, means that applicants no longer need Commission authorization in order to build their proposed satellites. Any construction prior to obtaining an operating license is, however, solely at the applicant's own risk and will not predispose the Commission to grant it launch and operating authority. *See* Streamlining the Commission's Rules and Regulations for Satellite Application and Licensing Procedures, *Report and Order*, FCC 96-425 (released December 16, 1996), 62 FR 5924 (February 10, 1997).

[16] *28 GHz Band First Report and Order* at ¶¶ 72-74.

[17] *Id.* at ¶ 78.

20. Hughes proposes to use 1000 megahertz of spectrum at 19.2-20.2 GHz for its service downlink bands. To expedite licensing, we grant here that portion of Hughes downlink request that is consistent with the 28 GHz band plan and where specific operating frequencies can be authorized. Specifically, we authorize Hughes to operate a system with service downlinks in the 19.7-20.2 GHz band. We will not give Hughes operating authority in its other requested downlink bands. Its request to use 19.2-19.7 GHz is inconsistent with the band plan and will be denied. Nevertheless, we recognize that Hughes has asked for 1000 MHz of downlink spectrum, an amount that is consistent with our band plan. We have already authorized Hughes for 500 MHz at 19.7-20.2 GHz. We will allow Hughes to make up its 500 MHz shortfall in the 17.7-18.8 GHz bands. As noted, the 1.1 GHz of spectrum at 17.7-18.8 GHz is to be shared on a co-primary basis with other services, constraining GSO FSS operations in this band and requiring coordination with other users. Consequently, it is premature to grant operating authority in any portion of the GSO FSS designated 17.7-18.8 GHz band. Once Hughes has determined exactly which 500 MHz it wishes to use in the 17.7-18.8 GHz band, it should file a modification application to operate in these frequencies. In the interim, Hughes is of course free to begin construction in these bands at its own risk.

21. In addition, Hughes must coordinate with the U.S. Government systems operating in the 17.7-18.8 and 19.7-20.2 GHz bands in accordance with footnote US 334 to the Table of Frequency Allocations.[18] This footnote requires coordination of commercial systems with U.S. Government systems in the 17.8-20.2 GHz band.

Transfer Orbit Telemetry

22. Hughes proposes to conduct its TT&C operations during transfer orbit maneuvers in the Ku-band. Specifically, Hughes proposes to conduct its command functions in the 173050.0 MHz band and its telemetry functions in the 11700.5 MHz bands.[19]

23. Under the U.S. Table of Frequency Allocations, TT&C operations may be provided in frequency bands allocated to the Space Operations Service or within the bands in which the particular satellite system will be providing service.[20] Hughes proposes to conduct transfer orbit TT&C functions for its 28 GHz system in the Ku-band, which is neither allocated to the Space Operations Service nor is the system's service band. Consequently, the proposed TT&C operations would constitute a non-conforming use of the Table of Frequency

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[18] *See* 47 C.F.R. § 2.106 US334.

[19] Hughes application at 74.

[20] 47 C.F.R. § 2.106.

Allocations. The Commission has, however, permitted non-conforming uses in situations where the non-conforming use would not interfere with any conforming service and grant would otherwise serve the public interest.[21] Here, Hughes would make only temporary use of the Ku-band, and would do so because there is no Ka-band global network yet in place by which it can monitor a satellite's launch and early operations. Nevertheless, Hughes has not provided a technical showing that it can conduct Ku-band TT&C operations on a non-interference basis. Thus, we will not grant Hughes's request. If Hughes wishes to pursue Ku-band transfer orbit operations, it must file a modification application in which to do so, accompanied by either (1) an exhibit demonstrating Hughes's operations will not interfere with other conforming operations in the band; or (2) a showing that it has successfully coordinated its proposed operations with all affected operators in the band.

Inter-Satellite Links

24. Hughes proposes to use inter-satellite links between adjacent satellites to provide connectivity between the coverage regions of different satellite orbit locations. Hughes proposes the following frequencies for its inter-satellite link operations: 22.55-23.55; 32.0-33.0; 54.25-58.2 and 59-64 GHz band for these operations. We are not now in a position, however, to assign specific spectrum to Hughes for inter-satellite link service.

25. The National Telecommunications and Information Administration (NTIA), has informed the Commission that the Government has existing users, including NASA's space research service (deep space, space-to-Earth) operations in the band in the bands 22.55-23.55 and 32-33 GHz. NTIA has expressed some concerns over potential harmful interference between commercial inter-satellite service operations and its systems. Therefore, until we know more information about Hughes's inter-satellite link operations in the 22.55-23.55 and 32.0-33.0 GHz bands, we will not authorize any such operations. Motorola has also requested that we deny Hughes's request to use these freqeuncies for its inter-satellite links to the extent there is overlap with Motorola's "Big LEO" inter-satellite links. If Hughes decides to continue to pursue inter-satellite links in these bands, we will address Motorola's concern at that point. Therefore, Hughes should identify which specific frequencies it wishes to use, and inform the Commission. The Commission, in turn, will work with NTIA through the Frequency Assignment Subcommittee ("FAS") of the Interdepartmental Radio Advisory Committee ("IRAC") to coordinate these frequencies with Government operations.

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[21] *See, e.g.*, Qualcomm, Inc. Application for Blanket Authority to Construct and Operate a Network of 12/14 GHz Transmit/ Receive Mobile and Transportable Earth Stations and a Hub Earth Station, *Memorandum Opinion Order and Authorization*, 4 FCC Rcd 1543 (1989).

26. The 59-64 GHz band is allocated domestically and internationally on a co-primary basis to the inter-satellite service, the fixed service, the mobile service, and the radiolocation service. These bands are also shared on a co-equal basis with U.S. Government operations. There appears to be significant interference problems associated with commercial GSO and NGSO operations and government operations at 59-64 GHz.[22]

27. Licensing inter-satellite link operations in the 54.25-58.2 GHz band, however, is similarly premature. This band is allocated domestically and internationally on a co-primary basis to the earth exploration-satellite service, fixed, mobile, space research and inter-satellite services. Use of these bands is shared on a co-equal basis between U.S. government operations and commercial operations. GSO FSS operators must meet a power flux density (pfd) limit at any altitude between 0 and 1000 kilometers to protect passive NGSO satellite systems. The appropriate pfd limit is the subject of study within the ITU Radiocommunication Sector and will be finalized at WRC-97. Any GSO inter-satellite link operation in these bands would be subject to coordination with U.S. Government operations in the band and the appropriate pfd limit.

28. The Commission and the NTIA have had discussions regarding the interference problems that would be associated with commercial GSO FSS operations at 54.25-58.2 GHz and 59-64 GHz. The 54.25-58.25 GHz band appears more promising for commercial GSO operations. We are also working with NTIA to develop a U.S. proposal for WRC-97 for an allocation in the 65-71 GHz band for inter-satellite service links for NGSO and GSO FSS systems.[23] We are optimistic that we will obtain sufficient spectrum internationally to support the inter-satellite link operations of all licensed 28 GHz band systems. Once suitable spectrum is available, we will allow Hughes to revise its requested inter-satellite link bands accordingly.

29. Nevertheless, we will not delay Hughes's license pending the allocation of suitable spectrum for inter-satellite links. We will require Hughes to apply for operating authority on specific operating frequencies once these frequencies have been identified. Further, because Hughes will not be able to proceed beyond the initial phases of construction until the inter-satellite link issues are resolved, we will not impose any system implementation milestones until we grant Hughes authority to launch and operate a GSO FSS system using specific inter-satellite link spectrum. Although we are not imposing specific milestones at

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[22] *See* Letter from Richard Parlow, Associate Administrator, National Telecommunications and Information Administration to Richard Smith, Chief Office of Engineering and Technology, FCC, (May 4, 1995); *see also* Interdepartment Radio Advisory Committee (IRAC) Document 29253 (March 13, 1995).

[23] *See* United States Draft Proposal 12 for WRC-97.

this time, we will hold Hughes to a strict milestone schedule once its inter-satellite link frequencies are authorized. Specific implementation milestones for 28 GHz band satellite systems, will be discussed further in the 28 GHz Band Satellite Report and Order. In the interim, Hughes is, of course, free to begin construction at its own risk.

C. Regulatory Treatment

30. In our *DISCO I Report and Order*, we determined that all fixed-satellite operators in the C-band and Ku-band could elect to operate on a common carrier or non-common carrier basis.[24] As we will discuss in more detail in the 28 GHz Satellite Report and Order on service rules, we see no reason to treat Ka-band FSS licensees any differently.

31. Hughes proposes to sell and /or long term lease the capacity on its satellites on a non-common carrier basis. The Commission traditionally has evaluated requests to operate on a non-common carrier basis using the analysis set forth in *National Association of Regulatory Utility Commissioners v. FCC*,[25] (*NARUC I*). Under *NARUC I*, we may regulate an entity as a private carrier unless: (1) there is or should be any legal compulsion to serve the public indifferently; or (2) there are reasons implicit in the nature of the service to expect that the entity will in fact hold itself out indifferently to the eligible user public.[26]

32. We have already authorized one 28 GHz FSS operator in the United States.[27] Today we are authorizing thirteen more. Dozens of FSS satellites are now operating in the C- and Ku-band. In addition, the recent World Trade Organization agreement will open the U.S. market to foreign licensed satellites. Thus, with respect to the first prong of *NARUC I*, sufficient competitive capacity is and will continue to be available to assure the U.S. public access to FSS. With regard to the second prong of *NARUC I*, we see no reasons why 28 GHz operators will hold themselves out indifferently to the public. We will therefore allow Hughes to operate on a non-common carrier basis.

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[24] *DISCO I Report and Order* at 2436.

[25] National Ass'n of Regulatory Utility Commissioners v. FCC, 525 F.2d 630 (D.C. Cir.), *cert. denied*, 425 U.S. 992 (1976); 47 U.S.C. § 153(44).

[26] *NARUC I*, 525 F.2d at 642.

[27] *See* Teledesic Corporation Application for Authority to Construct, Launch, and Operate a Low Earth Orbit Satellite System in the Domestic and International Fixed Satellite Service, *Order and Authorization*, 12 FCC Rcd 3154 (1997).

D. International Coordination

33. In general, we will follow the applicable advance-publication, coordination, and notification procedures as set forth in the ITU Radio Regulations in coordinating Hughes's satellites with other affected administrations. We will discuss in more detail international coordination procedures among U.S.-licensed FSS Ka-band systems, both GSO and NGSO, in the 28 GHz Band Satellite Report and Order.

E. Exclusive Arrangements

34. To facilitate global competition, we are planning to adopt limitations on 28 GHz FSS licensees' ability to enter into exclusive arrangements with other countries.[28] These restrictions will be discussed in more detail in the 28 GHz Band Satellite Report and Order on service rules. We intend to construe these arrangements bearing in mind that spectrum coordination and availability in particular countries may limit the ability of 28 GHz licensees to provide service to those countries. Accordingly, Hughes must comply with any such restrictions adopted.

Conclusion

35. Accordingly, upon review of Hughes's application to implement a global 28 GHz GSO satellite system to provide FSS, we find that Hughes is qualified to be a Commission licensee and that, pursuant to Section 309 of the Communications Act of 1934, as amended, 47 U.S.C. § 309, grant of this application will serve the public interest, convenience, and necessity. As specified in the *Assignment of Orbital Locations to Space Stations in the Ka-Band*, we have assigned Hughes to the 101° W.L., 99° W.L, 67° W.L., 49° W.L. 25° E.L, 36° E.L, 40° E.L, 48° E.L, 54° E.L, 101° E.L, 111° E.L, 124.5° E.L, 149° E.L, 164° E.L., and 173° E.L orbital locations.

Ordering Clauses

36. IT IS ORDERED that Application File Nos. 3/4-DSS-P/LA-94, CSS-94-021 through CSS-94-025, 174 through 184-SAT-P/LA-95, and 36-SAT-AMEND-96 ARE GRANTED IN PART and DEFERRED IN PART, as discussed above, and Hughes

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[28] Such limitations were adopted in the Big LEO service. *See* Amendment of the Commission's Rules to Establish Rules and Policies Pertaining to a Mobile Satellite Service in the 1610-1626.5/2483.5-2500 MHz Frequency Band, *Memorandum Opinion and Order*, 11 FCC Rcd 12861 (1996) at ¶¶ 54-55; 47 C.F.R. § 25.143(h) (prohibiting Big LEO satellite systems from entering into exclusive arrangements to serve particular countries).

Communications Galaxy, Inc. IS AUTHORIZED to launch and operate twenty GSO FSS satellites, to provide fixed-satellite service in the United States in the frequency bands 19.7-20.2, 28.35-28.6 and 29.25-29.5 GHz, in accordance with the *Assignment of Orbital Locations to Space Stations in the Ka-Band*, DA 97-967 (adopted May 8, 1997), consistent with the Commission's Part 25 rules governing satellite operations, unless specifically waived herein, and any modifications to our rules that we adopt for 28 GHz GSO FSS systems in the forthcoming 28 GHz Band Satellite Report and Order.

37. IT IS FURTHER ORDERED that Hughes Communications Galaxy, Inc. must comply with all rules to be adopted for GSO FSS systems in the 28 GHz Band Satellite Report and Order and must file a letter with the Commission, within 60 days of the effective date of this Report and Order, representing that it will construct its system in compliance with any rules adopted in this Report and Order. Failure to submit such a letter within this time frame is grounds for rendering this authorization null and void.

38. IT IS FURTHER ORDERED that Hughes Communications Galaxy, Inc. must coordinate all of its Ka-band downlink operations with the U.S. Government systems in accordance with footnote US334 to the Table of Frequency Allocations, 47 C.F.R. § 2.106.

39. IT IS FURTHER ORDERED that the license term for each space station is ten years and will begin to run on the date Hughes Communications Galaxy, Inc. certifies to the Commission that the satellite has been successfully placed into orbit and the operations fully conform to the terms and conditions of this authorization.

40. IT IS FURTHER ORDERED that this authorization is subject to the completion of consultations under Article XIV of the INTELSAT Agreement. Upon completion of these consultations, and notification by the Department of State that the United States has fulfilled its international obligations with respect to INTELSAT, no further action by this Commission will be required.

41. IT IS FURTHER ORDERED that Hughes Communications Galaxy, Inc. will prepare any necessary submissions to the International Telecommunication Union (ITU) and to affected administrations for the completion of the appropriate coordination and notification obligations for these space stations in accordance with the ITU Radio Regulations. We also remind all licensees that no protection from interference caused by radio stations authorized by other Administrations is guaranteed unless coordination procedures are timely completed or, with respect to individual administrations, by successfully completing coordination agreements. Any radio station authorization for which coordination has not been completed may be subject to additional terms and conditions as required to effect coordination of the frequency assignments of other Administrations, 47 C.F.R. § 25.111(b).

42. IT IS FURTHER ORDERED that the temporary assignment of any orbital location to Hughes Communications Galaxy, Inc. is subject to change by summary order of the Commission on 30 days' notice and does not confer any permanent right to use the orbit and spectrum. Neither this authorization nor any right granted by this authorization, shall be transferred, assigned or disposed of in any manner, voluntarily or involuntarily, or by transfer of control of any corporation holding this authorization, to any person except upon application to the Commission and upon a finding by the Commission that the public interest, convenience and necessity will be served thereby.

43. IT IS FURTHER ORDERED that Hughes Communications Galaxy, Inc. is afforded thirty days from the date of the release of this order and authorization to decline this authorization as conditioned. Failure to respond within that period will constitute formal acceptance of the authorization as conditioned.

44. This Order is issued pursuant to Section 0.261 of the Commission's rule or delegations of authority, 47 C.F.R. § 0.261, and is effective upon release. Petitions for reconsideration under Section 1.106 or applications for review under Section 1.115 of the Commission's rules, 47 C.F.R. § § 1.106, 1.115, may be filed within 30 days of the date of public notice of this order (see 47 C.F.R. § 1.4(b)(2)).

FEDERAL COMMUNICATIONS COMMISSION

Peter F. Cowhey
Chief, International Bureau