Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	File No. 49-SAT-P/LA-98; Call Sign S2342
	)	New IBFS No. SAT-LOA-19971222-00215
DirectCom Networks, Inc.	)	SAT-AMD-19990526-00058
	)	SAT-AMD-20001222-00170
	)	
Application for Authority to Construct,	)	File No. 49-SAT-P/LA-98; Call Sign S2343
Launch, and Operate a Ka-Band Satellite	)	New IBFS No. SAT-LOA-19971222-00214
System in the Fixed-Satellite Service	)	SAT-AMD-19990526-00057
		SAT-AMD-20001222-00169

ORDER AND AUTHORIZATION

Adopted: August 2, 2001 **Released: August 3, 2001**

By the Chief, International Bureau:

I. INTRODUCTION

1. By this Order, we authorize DirectCom Networks, Inc. ("DirectCom") to launch and operate a satellite system in geostationary-satellite orbit to provide fixed-satellite services in the Ka-band.[1] In a companion order issued today, we assign DirectCom's satellites to the 127° W.L. and 123° W.L. orbital locations.[2] This will allow DirectCom an opportunity to provide consumers access to a variety of competitive satellite communications services in a frequency band suitable for advanced broadband, interactive services.

II. BACKGROUND

2. DirectCom is one of 12 applicants seeking authority to operate geostationary-satellite orbit ("GSO") satellites in the second Ka-band processing round. In May 1997, the International Bureau licensed 13 applicants to launch and operate GSO satellite systems as part of the first Ka-band processing round ("First Round").[3] In October 1997, the Bureau established a second processing round ("Second Round"), inviting interested parties to file applications on or before December 22, 1997 for consideration

[1] For purposes of this order, the terms "Ka-band" or "28 GHz band" refer to the space-to-Earth communications (downlink) in radio frequencies at 17.7-20.2 GHz and the corresponding Earth-to space communications (uplink) in frequencies at 27.5-30.0 GHz. We authorize DirectCom to operate in a portion of these frequency bands indicated in this Order.

[2] *In the Matter of Second Round Assignment of Geostationary Satellite Orbit Locations to Fixed Satellite Service Space Stations in the Ka-Band*, Order, DA 01-1693 (Int'l Bur. rel. August 3, 2001) ("*Second Round GSO Assignment Order*").

[3] The Bureau also licensed one non-geostationary-satellite orbit (NGSO) Ka-Band system. *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 (Int'l Bur. 1997).

in this round. The Second Round GSO licenses and, in one case, reservation of orbit locations for a non-U.S.-licensed satellite system, will enable new entrants to offer competitive services to those licensed in the First Round and will allow First Round licensees an opportunity to expand and improve the capabilities and service offerings of their licensed systems.

3. DirectCom is a wholly owned subsidiary of UV Corporation, which is in turn a wholly owned subsidiary of TV Guide, Inc. ("TVG"), which is in turn a wholly-owned subsidiary of Gemstar-TV Guide International ("Gemstar-TVG"). DirectCom has applied to launch and operate a two-satellite GSO Ka-band system, with the satellites communicating directly with each other through inter-satellite links ("ISLs").[4] It proposes to provide a wide range of high speed, switched data, video and video telephone satellite communications services to individuals and businesses throughout the United States, on a non-common carrier basis. In its application, it requests the 93° W.L. and 103° W.L. orbit locations.[5] DirectCom subsequently suggested 107° W.L., 117° W.L., and 109.2° W.L. as alternate orbital locations.[6]

4. DirectCom proposes to use spectrum in the 28.35-28.6 GHz and 29.25-30.0 GHz frequency bands for uplink (Earth-to-space) communications, and spectrum in the 18.3-18.8 GHz and 19.7-20.2 GHz frequency bands for downlink (space-to-Earth) communications. DirectCom also requests authority to conduct its tracking, telemetry and command ("TT&C") functions during transfer orbit operations in the extended C-band frequencies.[7] DirectCom also requests authority to operate ISLs in 500 megahertz of spectrum in each transmission direction, per satellite, in the 54.25-58.25 GHz or 65-71 GHz bands.

5. On May 26, 1999 and December 22, 2000, DirectCom filed amendments to its application in which it reported ownership changes due to the consummation of several transactions by its parent companies that resulted in its present ownership structure.[8] Because such ownership changes might be construed as major amendments to its underlying application that would require the Commission to treat the underlying application as being a newly filed application, each amendment requested exemption from the "cut-off" rule pursuant to Section 25.116 of the Commission's rules in order to permit continued processing of DirectCom's application in the Second Round.[9]

6. Loral Space and Communications, Ltd. ("Loral"), Hughes Communications Galaxy, Inc. and

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[4] ISLs are communication links between in-orbit satellites. ISLs operate in spectrum allocated to the inter-satellite service. *See* International Telecommunication Union Radio Regulation S1.22.

[5] DirectCom recognizes that these two orbital locations were reassigned to first round licensees a few days before it filed its application. *See* DirectCom application at 1. DirectCom indicates that it had based the engineering portion of its application on these orbital locations and did not have time to redo this portion of the application before the cut-off date, but would amend the application at the Commission's request.

[6] Consolidated Response of DirectCom Networks, Inc., filed June 11, 1999, at p. 4. Additionally, the 109.2° W.L. orbital location was requested as part of "Settlement Plan A." *See* Letter of CAI Data Systems, Inc., DirectCom Networks, Inc. and Pegasus Development Corporation to Magalie R. Salas, Secretary, FCC, dated August 11, 2000. DirectCom reiterated its request for 500 megahertz of spectrum at the 109.2° orbital location in lieu of a full 1 gigahertz of spectrum at another full-CONUS orbital location. *See* DirectCom Networks, Inc.'s, Petition to Deny KaStarCom World Satellite, LLC's Amendment to its pending Second Round Application, File No. SAT-AMD-20010607-00050, (filed July 5, 2001).

[7] DirectCom requests authority for TT&C links using spectrum in the 3.6-3.7 GHz and 6.425-6.525 GHz frequency bands for use during transfer orbit and on orbit, as a back-up to Ka-band TT&C. Once on station, the satellites will communicate with TT&C stations through the Ka-band. DirectCom Application at pp. 41,46.

[8] *See* Amendment of DirectCom Networks, Inc., filed May 26, 1999, SAT-AMD-19990526-00057; SAT-AMD-19990526-00058 ("DirectCom 1999 Amendment") and. Amendment of DirectCom Networks, Inc., filed December 22, 2000, SAT-AMD-20001222-00169; SAT-AMD-20001222-00170 ("DirectCom 2000 Amendment").

[9] 47 C.F.R. § 25.116.

Hughes Communications, Inc. ("Hughes"), Motorola, Inc. ("Motorola"), and Pegasus Development Corporation ("Pegasus") filed comments and petitions to dismiss or deny DirectCom's application.[10] These filings relate to three issues: choice of orbital locations; financial qualifications; and financial interests in First Round licensees.[11]

III. DISCUSSION

A. Qualifications

7. All applicants requesting authority to launch and operate satellite space stations must present information sufficient to establish their legal, technical, and financial qualifications to hold a Commission license. The rules set forth in Part 25 of the Commission's rules govern fixed-satellite service ("FSS") applicants and licensees, including this application for GSO FSS in the Ka-band frequencies. The Commission modified the Part 25 FSS rules in 1997 to incorporate particular technical requirements for operations in the Ka-band frequencies.[12] In this and other licenses issued to Second Round FSS applicants in the Ka-band, we will generally apply all Part 25 FSS rules, specifically noting, however, where we decide not to apply existing rules.

1. Number of Orbit Locations

8. The Commission's Part 25 FSS rules include a limit on the number of orbit locations that may initially be assigned to a qualified GSO FSS applicant.[13] The rules also limit the number of additional, expansion orbit locations that may be assigned to applicants with previously licensed systems using the same frequency bands.[14] Generally, the Commission may grant a waiver of its rules in a particular case only if the relief requested would not undermine the policy objective of the rule in question, and would otherwise serve the public interest.[15] The Commission waived the assignment limit rules in the first Ka-band GSO FSS round because the applicants had agreed to an arrangement that accommodated all pending applications for space stations and left room for additional assignments.[16] In this Second Round, we have determined that we can also accommodate all pending requests for space stations with room for additional entry. We therefore again waive application of the Commission rule limiting GSO FSS orbit locations.[17] Consequently, we will not, as some applicants request, limit the

[10] *See* Consolidated Petition of Hughes Communications, Inc. to Dismiss, Deny or Defer, at 19 (filed May 21, 1999)("Hughes Petition"); *see also* Comments of Loral Space & Communications Ltd., at 3 (filed May 21, 1999)("Loral Comments"); Consolidated Petition to Deny and Comments of Motorola, Inc., at 12-13 (filed May 21, 1999) ("Motorola Petition"); Consolidated Petition to Deny of Pegasus Development Corporation at i-*ii*, 8-12 (filed May 21, 1999) ("Pegasus Petition").

[11] We address all issues relating to the assignment of orbit locations, financial qualifications, and two-degree spacing in the *Second Round GSO Assignment Order* released today. We note, however, that as DirectCom acknowledges, the orbit locations it requested initially were assigned to First Round licensees Loral and PanAmSat Corp. We therefore assigned DirectCom to the 127° W.L. and 123° W.L. orbit locations.

[12] *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* Service, Third Report and Order, *("Ka-Band FSS Rules Order")*, 12 FCC Rcd. 22310 (1997), *Memorandum Opinion and Order*, FCC 01-172 (rel May 25, 2001) (order on petitions for clarification or reconsideration).

[13] 47 C.F.R. § 25.140(e).

[14] 47 C.F.R. § 25.140(f).

[15] *WAIT Radio v. FCC*, 418 F.2d 1153, 1157 (D.C. Cir. 1969).

[16] *Ka-Band FSS Rules Order*, 12 FCC Rcd at 22320 ¶ 24.

[17] For a more detailed discussion, *see Second Round GSO Assignment Order*, DA 01-1693, at ¶ 17.

number of assignments to Second Round applicants.

2. Technical Qualifications

9. Applicants for FSS space station authorizations must meet the technical qualification requirements set forth in the Commission's Part 25 rules. These requirements are designed primarily to implement two-degree orbital spacing between GSO FSS satellites. The Commission's two-degree spacing policy, which was established in 1983, was designed to maximize the number of satellites in orbit by ensuring that satellites in geostationary-satellite orbit can operate without causing harmful interference to other GSO satellites located as close as two degrees.[18]

10. In the *Ka-Band FSS Rules Order*, the Commission adopted its proposal to extend its two-degree spacing policy between in-orbit satellites to space stations in the Ka-band.[19] We believe that it remains in the public interest to maximize the number of satellites that can be accommodated in orbit by extending the Commission's existing two-degree GSO spacing policy to Ka-band orbital assignments in the Second Round. All GSO FSS licensees in the Second Round will therefore be required to be two-degree GSO spacing compliant.

11. DirectCom indicates that its system design is consistent with operation in a two-degree spacing environment.[20] Our review of DirectCom's application finds nothing to preclude operation in a two-degree spacing environment. The Second Round Ka-band applications were received subsequent to the *Ka-Band FSS Rules Order* but prior to the *18 GHz Band Report and Order*.[21] In both orders, rules affecting two-degree orbital spacing were adopted. We remind DirectCom of its continuing obligation to meet all Part 25 rules governing system operations, including Sections 25.202 (frequencies, frequency tolerances, and emission limitations) and 25.210 (technical requirements for space stations in the fixed-satellite service).[22] Further, DirectCom must meet the current Ka-band power flux-density ("pfd") limits of Sections 2.106 US255 and 25.208,[23] which were adopted after DirectCom filed its application. As a condition of its authorization, DirectCom must meet these revised pfd limits.

3. Financial Qualifications

12. The Commission's FSS rules require that an applicant for a new fixed-satellite system possess sufficient financial resources to cover the construction, launch, and first-year operating costs of each proposed satellite.[24] We have waived these rules, however, in those cases where we can accommodate all pending applications. The Commission's financial qualification rules are designed to prevent under-capitalized licensees from holding valuable orbit spectrum resources to the exclusion of

[18] *Licensing of Space Stations in the Domestic Fixed-Satellite Service*, 54 Rad. Reg. 2d (P&F) 577, 589 (1983) ("*Two-Degree Spacing Order*").

[19] *Ka-Band FSS Rules Order*, 12 FCC Rcd at 22320 ¶ 23.

[20] DirectCom Application at p. 63.

[21] *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 ("18 GHz Band Report and Order")*, FCC 00-212, 15 FCC Rcd 13,430 (2000).

[22] 47 C.F.R. §§ 25.202 and 25.210.

[23] 47 C.F.R. §§ 2.106 USS255 and 25.208.

[24] 47 C.F.R. § 25.140(b)-(e).

others while they attempt to arrange financing to construct and launch the licensed system.[25] Where all applicants can be accommodated, however, granting a license to an under-capitalized applicant will not prevent another applicant from going forward.[26] In addition, there is a pro-competition public interest benefit in licensing all applicants, if possible. We waived the financial qualification rules for the First Round applicants because all of those applicants could be accommodated in the available orbital locations and there were additional orbital locations available for future entrants.[27] In the accompanying *Second Round GSO Assignment Order*, we also determine that we can accommodate all pending Second Round applicants' requests for GSO FSS space stations in the Ka-band, and still have some orbital locations available for future entrants. We therefore waive the financial qualification requirements for Second Round applicants. Consequently, it is unnecessary to rule on DirectCom's financial qualifications. The petitions to deny filed by Motorola and Hughes raising issues regarding DirectCom's financial qualifications are therefore moot.

B. Exemption From Cut-Off Rule

13. After DirectCom filed its application, it changed its ownership structure on two occasions and amended its Ka-band application to report these changes.[28] In its original application, DirectCom was a wholly-owned subsidiary of United Video Satellite Group ("UVSG"), a publicly-traded satellite communications company, with voting control held by Tele-Communications, Inc. ("TCI"). DirectCom is now a subsidiary of UV Corporation, which is in turn a wholly-owned subsidiary of TV Guide, Inc. ("TVG"),[29] which in turn is a wholly-owned subsidiary of Gemstar-TV Guide International ("Gemstar-TVG"). The majority stockholders of Gemstar-TVG are News Corp. and Liberty Media Corporation ("Liberty"). Although Liberty is now a wholly-owned subsidiary of AT&T, a majority of the individuals that comprise Liberty's board of directors was designated by TCI, and thus the shares of TVG owned by Liberty continue to be controlled by management designated by TCI.[30]

14. Under Section 25.116(b)(3) of the Commission's rules, an amendment is construed as a major amendment if it "specifies a substantial change in beneficial ownership or control (*de jure* or *de facto*) of an applicant such that the change would require, in the case of an authorized station, the filing of a prior assignment or transfer of control application…."[31] The rule also states that "any application will be considered to be a newly filed application if it is amended by a major amendment …after a "cut-off" date applicable to the application" *unless* an applicant requests an exemption from the cut-off date and the Commission finds that the change in ownership or control reflected by the amendment is in the public interest.[32]

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[25] *See generally Amendment of the Commission's Rules to Establish Rules and Policies Pertaining to a Mobile Satellite Service in the 1610-1626/2483.5-2500 MHz Frequency Bands, Report and Order*, 9 FCC Rcd 5936, 5948 ¶ 26 (1994) ("*Big LEO Report and Order"*).

[26] *Id.*

[27] *See Ka-Band FSS Rules Order*, 12 FCC Rcd at 22318 ¶ 18.

[28] *See* DirectCom 1999 Amendment at 2-3; DirectCom 2000 Amendment at 2-3.

[29] In connection with these transactions, USVG changed its name to TV Guide, Inc. *Id.* at 5.

[30] *See* DirectCom 1999 Amendment at 2-3. n.3. *See also* DirectCom 2000 Amendment at 3, n.5. In the 2000 amendment, DirectCom reported that a series of transactions are contemplated in which News Corp. will acquire Liberty's interest in Gemstar-TVG, but that consummation of this separate transaction will not alter the ultimate control of DirectCom as reported in the amendment.

[31] 47 C.F.R. § 25.116(b)(3). *See, e.g. ICO-Teledesic Global Limited*, Memorandum Opinion, Order and Authorization, DA 01-6 (Int'l Bur., rel. January 9, 2001) at ¶ 12.

[32] 47 C.F.R. §§ 25.116(c); 25.116(c)(2).

15. We conclude that DirectCom's changes in ownership constitute major amendments. Control of DirectCom now rests with Gemstar-TVG rather than with USVG/TCI and would have required transfer of control applications for each change in ownership if DirectCom's space station had been already licensed.[33] If we were to reach this conclusion, DirectCom requests an exemption from the cut-off rule and continued consideration in the Second Round.

16. In addressing requests for an exemption from the cut-off rule applicable to a particular processing round, the Commission seeks to determine whether: (1) the proposed transaction had a legitimate business purpose; and (2) whether the change in ownership otherwise served the public interest.[34] If it does, the Commission has granted an exemption.

1. 1999 Amendment

17. In its 1999 amendment, DirectCom outlined a series of transactions wherein (1) DirectCom's parent corporation, UVSG, acquired from a subsidiary of News Corporation Limited ("News Corp.") two corporations that publish TV Guide magazine and distribute TV Guide Online; and (2) UVSG acquired from Liberty three corporations which own approximately 40% of Superstar/Netlink Group LLC (bringing UVSG's ownership interest in that entity to approximately 80%) and the Netlink Wholesale Division, that includes businesses that provide satellite-transmitted programming services and programming packages to satellite master antenna television systems. At that time, Liberty was a wholly-owned subsidiary of TCI. In connection with these transactions, UVSG changed its name to TV Guide, Inc. (TVG).[35] Additionally, certain former subsidiaries of UVSG, including DirectCom, became subsidiaries of UV Corporation, which is a wholly-owned subsidiary of TVG. DirectCom argues that the transactions reflected in this amendment were driven by DirectCom's parent company, USVG, and were intended to expand USVG's core business by integrating it with companies providing complementary services. USVG's primary business was marketing and delivering satellite video programming to satellite dish owners and dealers.[36] The complementary services it acquired include TV Guide's on-screen and interactive program guides and promotional services; satellite entertainment and data services; and consumer management and billing services.[37] DirectCom further asserts that its Ka-band application was ancillary to these transactions, which required USVG to pay substantial sums in stock and other consideration in exchange for other business assets it was acquiring from TVG.[38] DirectCom also asserts that the public interest would be served by DirectCom's access to greater expertise in the provision of satellite programming as a result of these transactions due to the complementary nature of the businesses

[33] *See* 47 C.F.R. §§ 25.119(b)(1) and (2).

[34] *Loral Space and Comm. and Orion Network Systems*, 13 FCC Rcd 4592, 4599, ¶ 17 (1998). *See also Constellation Communications*, 10 FCC Rcd 2258 (1995), *aff'd* 11 FCC Rcd 18502 (1996**)**.

[35] DirectCom 1999 Amendment at p. 2.

[36] The following group of companies comprise USVG's "core" business: Prevue Networks, a provider of current entertainment information; UVTV, that markets and delivers, via satellite, programming from superstations and other sources; Superstar Satellite Entertainment, a provider of video programming to satellite dish owners and dealers, in addition to supplying specialized business services to commercial telecommunications clients; SSDS, a national systems integrator that provides business-driven technology solutions through information architecture and solutions; and Spacecom Systems, that provides satellite broadcast services and equipment for wide-area audio and data networks. DirectCom Application at 3.

[37] DirectCom 1999 Amendment at 5.

[38] *Id*. at 2, 5. These include two corporations that publish TV Guide and other online and printed television program listings guides and businesses that provide satellite-transmitted programming services and programming packages to satellite master antenna television systems. These acquisitions parallel USVG's core businesses. As a result of these transactions, USVG decided to change its name to TV Guide, presumably for its name recognition value.

that were acquired, (*i.e.*, satellite entertainment and data services) [39] and that an exemption from the rules would not prejudice any party or deprive other applicants of substantive or procedural rights.[40]

18. We agree that the 1999 amendment reveals that the ownership change rendered by the underlying transactions was designed to effectuate an expansion of DirectCom's parent corporation USVG through the acquisition of like businesses. The acquisition therefore serves a legitimate business purpose and was not related to DirectCom's Ka-band license applications. Consequently, we grant DirectCom an exemption of the cut-off rule with respect to its 1999 amendment.

2. 2000 Amendment

19. In its 2000 amendment, DirectCom reported that its corporate parent, TVG, merged with Gemstar in a stock for stock purchase under which TVG became a wholly-owned subsidiary of Gemstar. In connection with this transaction, Gemstar changed its name to Gemstar-TV Guide International (Gemstar-TVG). DirectCom asserts that the merger transaction between TVG and Gemstar was made for compelling business reasons independent of DirectCom's interest in the Ka-band and that the DirectCom Ka-band application was ancillary to the transaction reflected by this amendment. DirectCom indicates that Gemstar, as a developer of user-friendly technologies as well as a provider of interactive electronic program-guide services, combined with TVG's core businesses (*e.g.*, on-screen and interactive program guides and promotional services, as reflected above), will create a strong competitor in the global market for interactive, on-screen program guides built into consumer television equipment.[41] Finally, DirectCom argues that an exemption from the rules would not prejudice any party or deprive other applicants of substantive or procedural rights.[42]

20. The 2000 amendment reflects a transaction under which Gemstar, a competitor in one of TVG's chief businesses, on-screen and interactive program guides (*i.e.*, TV listings), acquired TVG. Thus, the transaction serves a legitimate business purpose that is not directed at the acquisition of the DirectCom Ka-band application. Therefore, we find that the 2000 amendment reflects a transaction that "serves an independent business purpose, and is not primarily for the purpose of acquiring pending applications."[43] Thus, we exempt DirectCom from the cut-off rule with respect to its 2000 amendment and allow its applications to continue to be processed as part of the Ka-band Second Round.

C. Spectrum Assignments

1. Service Links

21. In the *28 GHz Band First Report and Order*, the Commission adopted a band segmentation plan that designated one gigahertz of spectrum in each transmission direction for GSO FSS Ka-band systems.[44] For uplink (Earth-to-space) transmissions, the Commission designated 250 megahertz of spectrum between 28.35 and 28.6 GHz, 250 megahertz of spectrum between 29.25 and 29.5 GHz (shared

[39] *Id.*

[40] *Id.* at 6.

[41] DirectCom 2000 Amendment at 4.

[42] *Id.*

[43] *See Airsignal International*, 81 F.C.C. 2d 472 (1980).

[44] *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*, FCC 96-311, 11 FCC Rcd 19005 (1996) *("28 GHz Band First Report and Order").*

on a co-primary basis with non-geostationary satellite orbit, mobile satellite service feeder links), and 500 megahertz of spectrum between 29.5 and 30.0 GHz for GSO FSS operations. For downlink (space-to-Earth) communications the Commission designated 1100 megahertz of spectrum between 17.7 and 18.8 GHz for GSO FSS operations (shared on a co-primary basis with terrestrial fixed-service) and 500 megahertz of spectrum between 19.7 and 20.2 GHz for primary GSO FSS operations. The Commission later refined the downlink plan for the frequency band between 17.7 and 18.8 GHz, by designating 280 megahertz of spectrum between 18.3 and 18.58 GHz for co-primary GSO FSS and terrestrial fixed operations and 220 megahertz of spectrum between 18.58 and 18.8 GHz for primary GSO FSS operations.[45]

22. In its application, DirectCom proposes to use one gigahertz of spectrum at the 28.35-28.6 GHz and 29.25-30.0 GHz frequency bands for its service uplinks. We grant this request consistent with the *28 GHz* band plan, and we will therefore authorize DirectCom to operate in these frequencies, subject to the sharing rules adopted in the *28 GHz Band First Report and Order*.

23. In its application, DirectCom proposes to use one gigahertz of spectrum in the 18.3-18.8 GHz and 19.7-20.2 GHz bands for its service downlink bands. We grant this request consistent with the 18 GHz band plan.[46] Specifically, we authorize DirectCom to operate its service downlinks in the 18.3-18.8 GHz and 19.7-20.2 GHz bands. Because the 280 megahertz of spectrum at 18.3-18.58 GHz is to be shared on a co-primary basis with terrestrial-fixed services, GSO FSS operations in this band must be coordinated with those terrestrial operations.

24. In addition, DirectCom must coordinate with U.S. Government systems in accordance with footnote US334 to the Table of Frequency Allocations.[47] This footnote requires coordination of commercial systems with U.S. Government GSO and NGSO FSS systems that are presently operating throughout the 17.8-20.2 GHz frequency band. These Government systems plan to operate in accordance with the power flux-density limits contained in the current International Telecommunication Union ("ITU") Radio Regulations.[48] DirectCom must also comply with footnote US255 to the Table of Frequency Allocations that contains power flux-density limits to protect the Earth exploration satellite service (passive) for the 18.6-18.8 GHz band.[49]

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[45] *18 GHz Band Report and Order*, 15 FCC Rcd 13,430 (2000). Stations operating in primary services are protected against interference from stations of "secondary" services. Moreover, stations operating in a secondary service cannot claim protection from harmful interference from stations of a primary service. "Co-Primary" services have equal rights to operate in particular frequencies. *See* 47 C.F.R §§ 2.104(d) and 2.105(c).

[46] *See 28 GHz Band First Report and Order*, 11 FCC Rcd 19005 (1996), as modified in *18 GHz Band Report and Order* at 13443, ¶ 28.

[47] *See* 47 C.F.R. § 2.106 US334.

[48] *See 18 GHz Report and Order*, 15 FCC Rcd at 13473 ¶ 90. The power flux-density limits in the 18.3-18.6 GHz band are -115/-105 dB (W/m^2) in any one megahertz band, depending upon the angle of arrival. There are currently no power flux-density limits in the 19.7-20.2 GHz band. *See* Letter from William T. Hatch, National Telecommunications and Information Administration, to Dale Hatfield, Chief, Office of Engineering and Technology, Federal Communications Commission (March 29, 2000).

[49] 47 C.F.R §2.106 US 255 (as revised in the *18 GHz Band Report and Order*, 15 FCC Rcd at 13489) states: In addition to any other applicable limits, the power flux-density across the 200 MHz band 18.6-18.8 GHz produced at the surface of the Earth by emissions from a space station under assumed free-space propagation conditions shall not exceed –95db(W/m2) for all angles of arrival. This limit may be exceeded by up to 3 dB for no more than 5% of the time.

2. Inter-Satellite Links

25. DirectCom proposes to use inter-satellite links ("ISLs") between adjacent satellites to provide connectivity between coverage regions of different satellite orbit locations.[50] This will avoid the need for double-hop connectivity and increase system level reliability. DirectCom's Ka-band satellite system will consist of two inter-connected satellites located at two different orbital locations. Each satellite will require one transmit and one receive ISL channel. DirectCom proposes to use 1000 MHz (500 MHz x 2) of spectrum within the 54.25-58.2 GHz band or 1000 MHz within the 65.0-71.0 GHz band for ISL communication. DirectCom asserts that each channel will require a bandwidth of 500 MHz to support a data rate of 500 Mbps using QPSK modulation. Based on DirectCom's representations, we find that it has demonstrated a need for 1000 megahertz of ISL spectrum in each transmission direction.

26. Sharing studies done by the First Round Ka-Band licensees concluded that those applicants could share the ISL spectrum with minimal constraints. We expect the same conclusion to be reached by Second Round applicants.[51] Consequently, we will authorize DirectCom to conduct ISL operations in 1000 megahertz of spectrum within either the 54.25-58.2 GHz band or 1000 megahertz within the 65.0-71.0 GHz band, subject to coordination with the First and Second Round ISL licensees, and with U.S. Government (non-ISL) operations through the National Telecommunications and Information Administration ("NTIA")'s Interdepartmental Radio Advisory Committee's Frequency Assignment Subcommittee. Within 30 days after the release of this Order, DirectCom must inform the Commission which specific spectrum it has chosen for its ISL operations.

3. Tracking, Telemetry and Command

27. Under the Commission's rules, tracking, telemetry, and command ("TT&C") operations may be provided at the edges of the frequency bands in which the particular satellite will be providing service.[52] DirectCom proposes to operate command carrier and telemetry beacons near the upper and lower edges of Ka-band allocations, at 29.985 GHz and 20.1995 GHz, respectively. We authorize DirectCom to conduct TT&C operations in these service bands.

28. DirectCom also requests authority to conduct TT&C operations outside its Ka-band service frequencies. DirectCom proposes to conduct its TT&C operations during transfer orbit maneuvers, and on orbit, as required, in the extended C-band. Specifically, DirectCom proposes to conduct its command functions in the 6425-6525 MHz band and its telemetry functions in the 3600-3700 MHz bands.[53] All of these requested operations are within the C-band frequencies, which are not the system's service band.

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[50] ISLs are communication links between in-orbit satellites. ISLs operate in spectrum allocated to the inter-satellite service. *See* International Telecommunication Union Radio Regulation S1.22.

[51] For a detailed discussion of spectrum available for ISL operations, *see Amendment of Part 2 of the Commission's Rules to Allocate Additional Spectrum to the Inter-Satellite, Fixed, and Mobile Services*, ET Docket No. 99-261, *Report and Order*, FCC 00-442, at ¶ 45 (rel. Dec. 22, 2000).

[52] 47 C.F.R § 25.202(g).

[53] DirectCom Application at pp. 5, 41,46. The Commission has proposed to modify Section 25.202 to permit TT&C operations in the 3.65-3.7 GHz frequencies, if the applicant makes a "particularized showing of need." *Amendment of the Commission's Rules With Regard to the 3650-3700 MHz Government Transfer Band*, FCC 00-363 15 FCC Rcd 20488, 20539 at ¶ 130 (2000). The Commission specifically sought comment on the types of showings that would warrant such an authorization. *Id.* at ¶ 131. DirectCom made no such showing. Additionally, we note that the Government operates high-power radar within the 3600-3650 MHz band. Therefore, because proposed TT&C functions are crucial to satellite operations and do not appear to be compatible with the Government's radar operations, we will not consider any request to operate in the 3600-3650 GHz band. *See* Letter from William T. Hatch, Acting Associate Administrator, NTIA, to Dale, N. Hatfield, Chief, Office of Engineering and Technology, FCC, dated November 2, 1999.

Thus, the request is not consistent with Section 25.202 of the rules.[54] As the Commission recently indicated, this rule serves the valid purpose of simplifying coordination among satellites at adjacent orbital locations, and promoting efficient spectrum use.[55] DirectCom has not provided a showing to demonstrate that a waiver of Section 25.202(g) for TT&C operations outside its service band would be consistent with the basic purpose of the rule, or that the public interest otherwise requires a waiver. Thus we deny DirectCom's request.

D. Regulatory Treatment

29. In the *DISCO I Order*, the Commission determined that all fixed-satellite service operators in the C-band and Ku-band could elect to operate on a common carrier or non-common carrier basis.[56] The Commission extended this treatment to satellite operators in the Ka-band in the *Ka-Band FSS Rules Order*.[57] Consequently, Second Round Ka-band applicants may elect their regulatory status. DirectCom has elected to operate on a non-common carrier basis,[58] and we authorize it to do so.

E. License Conditions

1. Milestone Schedule

30. As in all other satellite services, all Second Round Ka-band licensees will be required to adhere to a strict timetable for system implementation. This ensures that licensees are building their systems in a timely manner and that the orbit-spectrum resource is not being held by licensees unable or unwilling to proceed with their plans. The implementation schedules for GSO FSS systems in the Ka-band generally track the schedules imposed in other satellite services.

31. Specifically, Section 25.145(f) of the Commission's rules requires Ka-band GSO FSS licensees "[1] to begin construction of [their] first satellite within one year of grant, [2] to begin construction of the remainder within two years of grant, [3] to launch at least one satellite into each of [their] assigned orbit locations within five years of grant, and [4] to launch the remainder of [their] satellites by the date required by the International Telecommunication Union (ITU) to assure international recognition and protection of those satellites."[59] Failure to meet any of these construction milestones will render those satellite authorizations null and void without further action by the Commission.

32. The date by which DirectCom's satellites must be "brought into use" to protect the date priority of the U.S. ITU filings for its service links at these orbital locations is June 25, 2005.[60] We

[54] *See Amendment of the Commission's Rules With Regard to the 3650-3700 MHz Government Transfer Band*, 15 FCC Rcd at 20538 ¶ 129 (the rule "effectively limits FSS operators to operating TT&C links in the same frequency bands as their FSS operations").

[55] *Id.* at ¶¶ 129-130.

[56] *See In the Matter of Amendment to the Commission's Regulatory Policies Governing Domestic Fixed Satellites and Separate International Satellite Systems and DBSC Petition for Declaratory Rulemaking Regarding the Use of Transponders to Provide International DBS Service*, 11 FCC Rcd 2429, 2436 (1996) (*"DISCO I Order"*).

[57] *Ka-Band FSS Rules Order*, 12 FCC Rcd at 22333-34, ¶¶ 58-60.

[58] DirectCom Application at p. 4.

[59] 47 C.F.R. § 25.145(f). *See Ka-Band FSS Rules Order*, 12 FCC Rcd at 22334-35 ¶ 61 & n.77 (1997).

[60] Specifically, the satellites at 127° W.L. and 123° W.L. must be brought into use by June 25, 2005. ITU Radio Regulations require that these satellites be brought into use at the ITU no later than nine years from the date the ITU publishes the advance publication information. The ITU initially required that these locations be brought into use within six years after receipt of their advance publication information, with an option to extend that date by an additional three years upon request. Since WRC-2000, satellite networks at orbit locations whose advance (continued....)

recognize that, in this case, comparing this ITU "bringing into use" date to the launch milestone has the incongruous result of our rules requiring DirectCom to launch its satellites into each of its assigned orbit locations by August 2006, *i.e.*, after the date by which DirectCom is required to bring its satellite locations into use to protect the date priority of the U.S. ITU filings for its orbital locations. To address this misalignment, we require DirectCom to launch its satellites into each licensed orbit location and "bring into use" all of the frequency assignments it plans to operate at that orbit location by the ITU "bringing into use" date. This will protect the United States filings at these locations and thus, DirectCom's ability to coordinate and gain international recognition for the satellite at each of its assigned orbit locations. Moreover, we do not anticipate that meeting this milestone will be unduly difficult. Under standard industry practice, it generally takes two to three years to construct and launch a satellite.[61] DirectCom will have nearly four years in which to launch its satellites into their assigned locations by the June 25, 2005 ITU "bringing into use" date.

2. Reporting Requirements

33. We will follow the Part 25 rules for reporting requirements for FSS systems, including an annual report describing the status of satellite construction and anticipated launch dates, and a detailed description of the use made of each transponder on each of the in-orbit satellites.[62] DirectCom must file this report on June 30 of each year, containing information current as of May 31 of that year.

3. International Coordination

34. In general, we will follow the applicable advance-publication, coordination, and notification procedures as set forth in the ITU Radio Regulations in coordinating DirectCom's satellites with other affected administrations. We will also require that DirectCom provide the Commission with the international coordination information required by our rules.[63] The orbit locations assigned today may be co-located or within two degrees of a non-U.S.-licensed satellite filing having ITU date priority in its ITU filings. Under these circumstances, U.S. licensees assigned to these locations are reminded that they take these licenses subject to the outcome of the international coordination process, and that the Commission is not responsible for the success or failure of the required international coordination.

IV. CONCLUSION

35. Upon review of DirectCom's application, we find that DirectCom 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 *Second Round GSO Assignment Order*, we have assigned DirectCom to the 127° W.L and 123° W.L. orbital locations.

(...continued from previous page)
publication information was received by the ITU before November 22, 1997 have been automatically granted the optional three-year extension. Because the two orbit locations assigned to DirectCom fall in this category, their June 25, 2005 bringing into use date cannot be further extended.

[61] *See, e.g., In the matter of the Application of Comsat Corporation*, 12 FCC Rcd 12059, 12075 ¶ 33 n. 68 (Int'l Bur. 1997) ("It has been our experience that it takes an average of two years to construct and launch a satellite….").

[62] *See* 47 C.F.R. § 25.210(l)(1)(2)(3).

[63] *See* 47 C.F.R. § 25.111(b).

V. ORDERING CLAUSES

36. IT IS ORDERED that Application File Nos. SAT-LOA-19971222-00214 and 00215, ARE GRANTED IN PART, as discussed above, and DirectCom Networks, Inc. IS AUTHORIZED to launch and operate two GSO FSS satellites, to provide fixed-satellite service in the 28.35-28.6 GHz, 29.25-30.0 GHz, 18.3-18.8 GHz, and 19.7-20.2 GHz frequency bands at the 127° W.L, and 123° W.L. orbital locations.

37. IT IS FURTHER ORDERED that DirectCom Networks, Inc.'s authorization shall become NULL and VOID with no further action on the Commission's part in the event the space station is not constructed, launched, and placed into operation in accordance with the technical parameters and terms and conditions of this authorization by the following dates:

Construction Commenced		Launch and Operate	
First satellite	August 2002	127° W.L. Orbit Location	June 25**,** 2005
Second satellite	August 2003	123° W.L. Orbit Location	June 25**,** 2005

38. IT IS FURTHER ORDERED that DirectCom Networks, Inc. must coordinate its Ka-band downlink operations with U.S. Government systems, including Government operations to earth stations in foreign countries, in accordance with footnote US334 to the Table of Frequency Allocations, 47 C.F.R. § 2.106, and in accordance with the *18 GHz Report and Order*, 15 FCC Rcd at 13473 ¶ 90.

39. IT IS FURTHER ORDERED that DirectCom Networks, Inc., within thirty days from the date of the release of this Order and Authorization, must inform the Commission which specific spectrum, in either the 54.25-58.2 GHz or 65-71 GHz band, it has chosen for its inter-satellite link operations, and must coordinate its FSS inter-satellite link operations in this chosen spectrum through the National Telecommunications and Information Administration's Interdepartmental Radio Advisory Committee's Frequency Assignment Subcommittee. DirectCom must also coordinate its FSS inter-satellite operations with all other non-government inter-satellite link operations in these frequency bands.

40. IT IS FURTHER ORDERED THAT DirectCom Networks, Inc. shall conduct its operations pursuant to this authorization in a manner consistent with the power flux-density requirements of footnote US255 to the Table of Frequency Allocations, 47 C.F.R. § 2.106, and 47 C.F.R. § 25.208, of the Commission's Rules.

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

42. IT IS FURTHER ORDERED that DirectCom Networks, Inc. will prepare any necessary submissions to the International Telecommunication Union and to affected administrations for the completion of the appropriate coordination and notification obligations for these space stations in accordance with the International Telecommunication Union Radio Regulations. We also remind DirectCom Networks, Inc. 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).

43. IT IS FURTHER ORDERED that the temporary assignment of any orbital location to DirectCom Networks, 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.

44. IT IS FURTHER ORDERED that DirectCom Networks, Inc. is afforded 30 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.

45. This Order is issued pursuant to Section 0.261 of the Commission's rules on 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

Donald Abelson
Chief, International Bureau