

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

In the Matter of
KaStarCom, World Satellite, LLC
Application for Authority to Construct,
Launch, and Operate a Ka-Band Satellite
System in the Fixed-Satellite Service
File Nos. 102-SAT-P/LA-98
IBFS Nos. SAT-LOA-19980312-00018
SAT-AMD-20010607-0050
Call Sign S2355

ORDER AND AUTHORIZATION

Adopted: November 13, 2001

Released: November 13, 2001

By the Chief, International Bureau:

I. INTRODUCTION

1. With this Order and Authorization, we complete action on KaStarCom, World Satellite, LLC's ("KaStarCom") application to launch and operate a satellite system in the geostationary-satellite orbit to provide fixed-satellite service ("FSS") in the Ka-band. Specifically, we modify KaStarCom's authorization to operate at the 73° W.L. and 109.2° W.L. orbital locations. This action allows KaStarCom the 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. KaStarCom was 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 ("Bureau") licensed 13 applicants to launch and operate GSO satellite systems as part of the first Ka-band processing round ("First Round"). 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 in this round. On August 3, 2001, the Bureau adopted the Second Round GSO Assignment Order that assigned orbit locations to 11 companies to operate GSO Ka-band satellites at a total of 34 orbit locations. The Second Round GSO Assignment Order, assigned KaStarCom to the 111° W.L. orbital location.

1 For purposes of this order, the term "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 KaStarCom to operate in a portion of these frequency bands indicated in this order.

2 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).

3 Second Round Assignment of Geostationary Satellite Orbit Locations to Fixed Satellite Service Space

3. KaStarCom, a Delaware limited liability company, filed its application on December 22, 1997.⁵ In its application, KaStarCom requested authority to launch and operate two satellites at the 175° W.L. and 52° E.L. orbital locations.⁶ On June 7, 2001, KaStarCom filed an amendment to change its previously requested orbital locations and to change the manner in which it proposes to operate its system.⁷ In its amended application, KaStarCom proposed to launch and operate one Ka-band satellite at the 111° W.L. orbit location.⁸ In addition, KaStarCom requested authority to share the 73° W.L. and 109.2 ° W.L. orbital locations with WB Holdings, a first round licensee authorized to launch and operate satellites using 500 megahertz of Ka-band spectrum at these orbital locations.⁹ Specifically, KaStarCom and WB Holdings jointly proposed to construct and own a single satellite at each location with each licensee operating on 500 megahertz of spectrum.¹⁰ KaStarCom proposes to provide high-speed, switched data, video, and video telephone satellite communications services to individual and business users on a non-common carrier basis.¹¹ On June 19, 2001, the Bureau placed the amendment on Public Notice.¹² In August 2001, the Bureau acted on a portion of KaStarCom's amended application and authorized it to launch and operate one satellite at the 111° W.L. orbital location. This satellite was

Stations in the Ka-Band, Order, DA 01-1693 (Int'l Bur. rel. August 3, 2001) ("Second Round GSO Assignment Order").

⁴ See also *KaStarCom. World Satellite, LLC, Application for Authority to Construct, Launch and Operate a Ka-band Satellite in the Fixed Satellite Service, Order and Authorization, Order and Authorization, DA 01-1687 (Int'l Bur. rel. August 3, 2001) ("KaStarCom 111° W.L. Order and Authorization")*.

⁵ See Application of KaStarCom. World Satellite, LLC, File Nos. 101-SAT-P/LA-98 and 102-SAT-P/LA-98; IBFS Nos. SAT-LOA-19980312-00019 and SAT-LOA-19980312-00018 (December 22, 1997) ("KaStarCom Application").

⁶ *Id.*

⁷ See Letter from Stephen E. Coran, Counsel to KaStarCom. World Satellite, LLC to Magalie Roman Salas, Secretary, Federal Communications Commission (June 1, 2001). See also Letter from Stephen E. Coran, Counsel to KaStarCom. World Satellite, LLC to Magalie Roman Salas, Secretary, Federal Communications Commission (June 7, 2001). See also Public Notice, Satellite Policy Branch Information, Applications Accepted for Filing, KaStarCom. World Satellite, LLC, SAT-AMD-20010607-0050 (June 19, 2001).

⁸ *Id.*

⁹ See *In the Matter of KaStar Satellite Communications Corporation Application for Authority to Construct, Launch, and Operate a Ka-band Satellite System in the Fixed-Satellite Service*, 13 FCC Rcd 1366 (1997) ("WB Authorization Order"). In a series of name changes and pro forma transfers of control and assignments, Ka-Star became iSky, which in turn, became Wildblue Communications, Inc. Wildblue Communications, Inc. is the parent company of WB Holdings 1 LLC. See letter from William M. Wiltshire, Counsel, WB Holdings 1 LLC, to Magalie Roman Salas, Secretary, Federal Communications Commission (November 3, 2000). See also letter from William M. Wiltshire, Counsel, WB Holdings 1 LLC, to Magalie Roman Salas, Secretary, Federal Communications Commission (January 8, 2001). Request for Pro Forma Assignment of License of KaStar 73 Acquisition, LLC to WB 1 LLC (File No. SAT-ASG-20010108-00004).

¹⁰ See Letter from Stephen E. Coran, Counsel to KaStarCom. World Satellite, LLC to Magalie Roman Salas, Secretary, Federal Communications Commission (June 7, 2001).

¹¹ KaStarCom Application at p. 8.

¹² See Public Notice, Satellite Policy Branch Information, Applications Accepted for Filing, KaStarCom. World Satellite, LLC, SAT-AMD-20010607-0050 (June 19, 2001).

authorized to use 1000 megahertz of Ka-band spectrum.¹³ The Bureau deferred action on KaStarCom's request to share two satellites at the 73° W.L. and 109.2 ° W.L. orbital locations with WB Holdings until the Bureau had an opportunity to review the pleadings filed in response to this request.¹⁴

4. KaStarCom proposes to operate the 73° W.L. orbit location at 29.50-30.0 GHz for uplink (Earth-to-space) communications and 19.7- 20.2 GHz bands for downlink (space-to-Earth) operations. It proposes to operate the 109.2 ° W.L. orbital location at the 28.35-28.6 and 29.25-29.5 for uplink (Earth-to-space) communications and the 18.3-18.8 GHz bands for downlink (space-to-Earth) operations.¹⁵ KaStarCom also requests authority to conduct its tracking, telemetry and command ("TT&C") functions during transfer-orbit operations in the C-band frequencies.¹⁶ Finally, it requests authority to operate inter-satellite links ("ISLs") in the 69.0-70.0 GHz frequency bands.¹⁷

5. Several Second Round Ka-band applicants filed petitions to deny KaStarCom's initial application.¹⁸ Pegasus Development Corp. ("Pegasus") argued that KaStarCom's ownership interest in DirectCom Networks, Inc. ("DirectCom"), another Second Round applicant, should be considered when assigning orbital locations. Pegasus argued that KaStarCom should not be treated as a new entrant because of its ownership interest in WB Holdings, a first-round licensee. Accordingly, Pegasus argued that KaStarCom should not be assigned any orbital locations within that portion of the geostationary satellite orbital arc that is capable of serving the contiguous United States. Pegasus raises these same issues in its Petition to Deny KaStarCom's amendment. These issues were addressed in the *Second Round GSO Orbital Assignment Order*.¹⁹

6. DirectCom and Pegasus also argue that pursuant to Section 25.140(e), the rule that limits the number of orbital locations that may be assigned to each applicant, the Bureau should limit KaStarCom to two orbital locations in each frequency band.²⁰ We also addressed this argument in the *Second Round GSO Assignment Order*. In that Order, the Bureau waived Section 25.140(e), for the

¹³ See *KaStarCom 111° W.L. Order and Authorization*.

¹⁴ The pleading cycle closed on July 13, 2001.

¹⁵ See Letter from Stephen E. Coran, Counsel to KaStarCom. World Satellite, LLC to Magalie Roman Salas, Secretary, Federal Communications Commission (June 1, 2001). See also Letter from Stephen E. Coran, Counsel to KaStarCom. World Satellite, LLC to Magalie Roman Salas, Secretary, Federal Communications Commission (June 7, 2001).

¹⁶ *Id.* KaStarCom requests authority to conduct transfer orbit command functions in the 5856.5-5860 MHz and 6420.5-6424 MHz band and its telemetry functions in the 3700-3703.5 MHz bands and 4196-4199.5 MHz bands.

¹⁷ 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.

¹⁸ Consolidated Reply to Oppositions of Pegasus, July 2, 1999, Consolidated Petition to Deny filed by Pegasus Development Corporation, filed May 25, 1999, Motorola's Consolidated Petition To Deny And Comments, filed May 21, 1999 and Consolidated Petitions to Dismiss, Deny or Defer of Hughes Communications Galaxy, Inc. and Hughes Communications Inc., filed May 21, 1999.

¹⁹ *Second Round GSO Assignment Order*. See also *KaStarCom 111° W.L. Order and Authorization*.

²⁰ Petition to Deny of DirectCom Networks, Inc., filed July 5, 2001 and Petition to Deny filed by Pegasus Development Corporation, filed July 5, 2001.

Second Round applicants because an assignment plan was adopted that accommodated all requested satellites.²¹

III. DISCUSSION

A. Treatment of Amendment

7. DirectCom and Pegasus oppose KaStarCom's amended application claiming it is a major amendment because it seeks changes in orbital assignments and that the "addition" of a third orbital slot increases frequency conflicts.²² In its initial application, KaStarCom requested 1000 megahertz of Ka-band spectrum at the 175° W.L. and 52° E.L. orbital locations.²³ It later amended its application and changed its requested orbital locations to the 73° W.L. and 109.2° W.L. orbital locations using 500 megahertz of Ka-band spectrum at each orbital location and 1000 megahertz at the 111° W.L. orbital location.

8. Under Section 25.116 of the Commission's rules, if a space station application amendment is characterized as a "major" amendment the entire application must be treated as newly filed and the applicant loses its status in any ongoing processing round.²⁴ The Commission's rules also provide an exception for applications that do not create new or increased frequency conflicts.²⁵ In the *Second Round GSO Orbital Assignment Order*, we adopted an assignment plan that accommodated all requested satellites.²⁶ In that case, there were no frequency or orbital conflicts because all applicants could be accommodated. In fact, there are a sufficient number of Ka-band orbit locations available to meet the requests of KaStarCom. Here KaStarCom's amendment is for same amount of spectrum initially requested. Although KaStarCom also requested an additional orbital location, this request does not increase the potential for interference nor does it create new or increased frequency conflicts. In fact, KaStarCom's request actually increased the number of unencumbered orbital slots available for assignment in the Second Ka-band Round.²⁷ For these reasons, we will consider KaStarCom's amendment as part of the Second Ka-Band Processing Round.

²¹ *Second Round GSO Assignment Order* at ¶ 16-17. The rule limiting orbit locations was also waived in the first Ka-band FSS processing round. *Assignment of Orbital Locations to Space Stations in the Ka-Band*, DA 97-967, 13 FCC Rcd 1030 ¶ 24 (Int'l Bur. 1997) ("*First Round Assignment Order*").

²² Petition to Deny of DirectCom Networks, Inc., filed July 5, 2001 and Petition to Deny of Pegasus, filed July 5, 2001.

²³ *Id.*

²⁴ 47 C.F.R. § 25.116(c). See *Volunteers in Technical Assistance for Authority to Construct, Launch and Operate a Non-Voice, Non-Geostationary Mobile Satellite System*, Memorandum Opinion and Order, 11 FCC Rcd 1358 (1995) *aff'd* 12 FCC Rcd 13995 (1997) (application for additional frequencies treated as ineligible for consideration as part of first round little LEO processing group but considered in second processing round).

²⁵ 47 C.F.R. § 25.116(c)(4).

²⁶ See *Second Round GSO Orbital Assignment Order*.

²⁷ See Letter from Stephen D. Baruch, Counsel to TRW Inc. to Magalie Roman Salas, Secretary, Federal Communications Commission (July 5, 2001). TRW Inc. ("TRW") filed a letter in support of KaStarCom's amended application and states that grant of the 73° W.L. and 109.2° W.L. to KaStarCom is in the public interest, and would assist in the resolution of assignments in the second Ka-band processing round.

B. Qualifications

9. 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 FSS applicants and licensees, including this space station application for GSO FSS in the Ka-band frequencies. The Commission modified the Part 25 FSS rules in 1997 to incorporate the particular technical requirements for operations in the Ka-band frequencies.²⁸ As in all other FSS licenses issued 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

10. 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.²⁹ 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.³⁰ 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.³¹ 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.³² In the Second Round, we determined that we could accommodate all pending requests for space stations, with room for additional entry.³³ We therefore again waive application of the Commission rule limiting GSO FSS orbit locations. Consequently, we will not, as Pegasus and DirectCom request, limit the number of assignments to KaStarCom.

2. Technical Qualifications

11. 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.³⁴

²⁸ *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*, Third Report and Order, FCC 97-378, 12 FCC Rcd 22310 (1997) ("Ka-Band FSS Rules Order"); Memorandum Opinion and Order, FCC 01-172 (rel. May 25, 2001) (order on petitions for clarification or reconsideration).

²⁹ 47 C.F.R. § 25.140(e).

³⁰ 47 C.F.R. § 25.140(f).

³¹ *WAIT Radio v. FCC*, 418 F.2d 1153, 1157 (D.C. Cir. 1969).

³² *Ka-Band FSS Rules Order*, 12 FCC Rcd at 22320 ¶ 24.

³³ For a more detailed discussion, see *Second Round GSO Assignment Order*, at ¶ 17.

³⁴ *Licensing of Space Stations in the Domestic Fixed-Satellite Service*, 54 Rad. Reg. 2d (P&F) 577, 589 (1983) ("Two-Degree Spacing Order").

12. 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.³⁵ 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.

13. The one exception to the two-degree spacing requirement in this Second Round is an orbit location assignment made at the request of the short-spaced (*i.e.* less than two-degrees apart) licensee and applicant affected. KaStarCom, is licensed to launch and operate a satellite at the 111° W.L. orbit location. This assignment is only 1.8 degrees away from the 109.2° W.L. orbit location.³⁶ TRW states that in the event KaStarCom is granted use of the 111° W.L. orbit location, it should be prepared to coordinate its use with other operators in this portion of the orbital arc, so that the short spacing proposed between 109.2° W.L. and 111° W.L. does not unreasonably impinge upon the use of the 113° W.L. orbit location.³⁷ We believe that by authorizing the 109.2° W.L. and 111° W.L. orbital locations to a single licensee, KaStarCom will be in a better position to minimize the potential for interference to other licensees.

14. 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*.³⁸ In both orders, rules affecting two-degree orbital spacing were adopted. We remind KaStarCom of its continuing obligation to meet all Part 25 rules governing system operations, including Sections 25.202 (frequencies, frequency tolerances, and emission limitations) and Section 25.210 (technical requirements for space stations in the Fixed-Satellite service).³⁹ Further, KaStarCom must meet the current Ka-band power flux-density ("pfd") limits of Section 25.208 which were adopted after KaStarCom filed its application.⁴⁰ As a condition of this authorization, KaStarCom must meet these revised pfd limits.

3. Financial Qualifications

15. 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.⁴¹ We have waived these rules, however, in those cases where we can

³⁵ *Ka-Band FSS Rules Order*, 12 FCC Rcd at 22320 ¶ 23.

³⁶ *See KaStar Satellite Communications Corporation Application for Authority to Construct, Launch, and Operate a Ka-band Satellite System in the Fixed-Satellite Service*, DA 01-231, 13 FCC Rcd 1366 (1997). *See also Second Round GSO Assignment Order* at fn. 16.

³⁷ *See* Letter from Stephen D. Baruch, Counsel to TRW Inc. to Magalie Roman Salas, Secretary, Federal Communications Commission (July 5, 2001).

³⁸ *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*, FCC 00-212, 15 FCC Rcd 13,430 (2000) ("*18 GHz Band Report and Order*").

³⁹ 47 C.F.R. §§ 25.202 and 25.210.

⁴⁰ 47 C.F.R. §25.208.

⁴¹ 47 C.F.R. § 25.140(b)-(e).

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 others while they attempt to arrange financing to construct and launch the licensed system. Where all applicants can be accommodated, however, granting a license to an under-capitalized applicant will not prevent another applicant from going forward.⁴² In addition, there is a pro-competition public interest benefit in licensing all applicants, if possible. We waived the financial qualifications 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.⁴³ In the *Second Round GSO Assignment Order*, we also determined that we can accommodate all pending Second Round applicants' requests for FSS space stations in the Ka-band, and still have orbital locations available for future entrants. We therefore waive the financial qualification requirements for Second Round applicants. Consequently, it is unnecessary to rule on KaStarCom's financial qualifications.

B. Spectrum Assignments

1. Service Links

16. 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 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 service operations and 220 megahertz of spectrum between 18.58 and 18.8 GHz for primary GSO FSS operations.⁴⁵

17. In its amended application, KaStarCom proposes to operate the 73° W.L. orbital location on the 29.50-30.0 GHz and the 109.2° W.L. orbital location on the 28.35-28.6 and 29.25-29.5 GHz bands for uplink communications. This request is consistent with the 28 GHz band plan, and we will therefore authorize KaStarCom to operate on these frequencies, subject to the sharing rules adopted in the *28 GHz Band First Report and Order*.

⁴² 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 at ¶ 26 (1994) ("*Big LEO Report and Order*").

⁴³ See *Ka-Band FSS Rules Order*, 12 FCC Rcd at 22318 ¶ 18.

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*").

⁴⁵ See *18 GHz Band Report and Order*. 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).

18. In its amended application, KaStarCom proposes to operate the 73° W.L. orbit on the 19.7-20.2 GHz bands and the 109.2° W.L. orbital location on the 18.3-18.8 GHz bands for downlink operations. We grant this request consistent with the 18 GHz band plan.⁴⁶ 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 these terrestrial operations.

19. In addition, KaStarCom must coordinate with U.S. Government systems operating 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 operate in accordance with the power flux-density limits contained in the current International Telecommunication Union ("ITU") Radio Regulations.⁴⁸ KaStarCom 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

2. Inter-Satellite Links

20. KaStarCom proposes to use ISLs between adjacent satellites to provide connectivity between the coverage regions of different satellite orbit locations. KaStarCom proposes to link the satellites licensed to WB Holdings in the first processing round at the 73° W.L. and 109.2° W.L. orbital locations with the 111° W.L. orbit location. When we authorized KaStarCom for the 111° orbit location,⁵⁰ we deferred action on KaStarCom's request to use ISLs because at that time we authorized KaStarCom for only one orbit location. We are now in a position to assign KaStarCom ISLs for use with the 111° W.L. location.

21. KaStarCom's proposed satellite system will consist of three geostationary satellite orbit satellites located at the 73° W.L., 109.2° W.L. and 111° W.L. orbital locations, with each satellite interconnected to the other two satellites.⁵¹ Each satellite will be equipped with two inter-satellite links with each inter-satellite link supporting four 125-megahertz transmit channels and four 125-megahertz receive channels. Each 125-megahertz channel will be operating at a data rate as high as 155 Mbps, using QPSK modulation.⁵² KaStarCom proposes to use the same satellites as WB Holdings at the 73° W.L. and 109.2°

⁴⁶ See *28 GHz Band First Report and Order*, 11 FCC Rcd 19005, as modified in *18 GHz Band Report and Order* 15 FCC Rcd 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/m²) 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 US255 (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.

⁵⁰ See *KaStarCom 111° W.L. Order and Authorization*.

⁵¹ Letter from Stephen E. Coran, Counsel to KaStarCom. World Satellite, LLC to Magalie Roman Salas, Secretary, Federal Communications Commission (June 7, 2001).

⁵² KaStarCom Application at p. 64

W.L. orbital location. KaStarCom therefore asserts it requires the same amount of ISL spectrum that was authorized to WB Holdings in order to inter-connect with its propose satellite located at the 111° W.L. orbital location.⁵³ The KaStarCom satellite located at 111° W.L. will require the same 1000 megahertz of spectrum for its ISLs in order to support the data traffic to and from WB Holdings's system. With the use of dual polarization, each satellite within the system will be capable of re-using the same spectrum. The use of ISLs will provide direct satellite-to-satellite communication, thereby avoiding the need for double-hop connectivity and increase system level reliability.

22. KaStarCom proposes to use 1000 megahertz of spectrum in the 69.0-70.0 GHz band for ISL communication.⁵⁴ Based on KaStarCom's representations, we find that it has demonstrated a need for 1000 megahertz of ISL spectrum. 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 licensees.⁵⁵ Consequently, we will authorize KaStarCom to conduct ISL operations in the 69.0-70.0 GHz band, subject to coordination among the First and Second Round ISL licensees, and with U.S. Government ("non-ISL") operations through NTIA's Interdepartment Radio Advisory Committee's Frequency Assignment Subcommittee.

3. Tracking, Telemetry and Command

23. 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.⁵⁶ KaStarCom proposes to conduct TT&C functions in the system service band. We authorize KaStarCom to conduct TT&C operations in these service bands.

24. KaStarCom also requests authority to conduct TT&C operations outside its Ka-band service frequencies. Specifically, KaStarCom proposes to conduct its command functions in the 5856.5-5860 MHz and 6420.5-6424 MHz bands and its telemetry functions in the 3700-3703.5 MHz and 4196-4199.5 MHz bands. All of these requested operations are within the C-band frequencies, which are not the system's service band. Thus, the request is not consistent with Section 25.202(g), 47 C.F.R. § 25.202(g), of the rules.⁵⁷ As the Commission indicated, this rule serves the valid purpose of simplifying coordination among satellites at adjacent orbital locations, and promoting efficient spectrum use.⁵⁸ KaStarCom 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 KaStarCom's request. KaStarCom should be

⁵³ We licensed WB for 1000 megahertz of inter-satellite spectrum in the 69.0-70.0 GHz band for its two satellites located at 73° W.L. and 109.2° W.L.

⁵⁴ Letter from Stephen E. Coran, Counsel to KaStarCom. World Satellite, LLC to Magalie Roman Salas, Secretary, Federal Communications Commission (June 7, 2001)

⁵⁵ 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).

⁵⁶ 47 C.F.R. § 25.202(g).

⁵⁷ See *Amendment of the Commission's Rules With Regard to the 3650-3700 MHz Government Transfer Band*, FCC 00-363, 15 FCC Rcd 20488, 20538 ¶ 129 (the rule "effectively limits FSS operators to operating TT&C links in the same frequency bands as their FSS operations").

⁵⁸ *Id.* at 12 FCC Rcd at 22333 ¶¶ 129-130.

aware that there are potential allocation and electromagnetic compatibility issues in the 5850-5925 MHz band, therefore, the band may not be available to support its TT&C requirements.⁵⁹

C. Regulatory Treatment

25. 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.⁶⁰ The Commission extended this treatment to satellite operators in the Ka-band in the *Ka-Band FSS Rules Order*.⁶¹ Consequently, Second Round Ka-band applicants may elect their regulatory status. KaStarCom has elected to operate on a non-common carrier basis, and we authorize it to do so.⁶²

D. License Conditions

1. Milestone Schedule

26. 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.

27. 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 to assure international recognition and protection of those satellites."⁶³ Failure to meet any of these construction milestones will render those satellite authorizations null and void without further action by the Commission.

28. The date by which KaStarCom'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 and October 7, 2006.⁶⁴ With respect to the 109.2° W.L. orbit location, we recognize that, in this case, comparing this

⁵⁹ See 47 C.F.R. § 2.106 US245. See also NTIA Report-83-115, *Spectrum Resource Assessment in the 5650-5925 MHz Band*; and FCC 77-349 (rel. May 23, 1977) (which includes discussion of the sharing issues between the radiolocation and fixed-satellite service operations in the band 5850-5925 MHz).

⁶⁰ 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*").

⁶¹ *Ka-band FSS Rules Order*, at 22333 ¶¶ 58-60.

⁶² See KaStarCom Application, FCC Form 312.

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

⁶⁴ Specifically, the satellite at 109.2° W.L. must be brought into use by June 25, 2005 and the satellites at 73° W.L. must be brought into use by October 7, 2006. ITU Radio Regulations require that these satellites be brought into use 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 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

ITU “bringing into use” date to our last implementation milestone has the incongruous result of our rules requiring KaStarCom to launch a satellite into one of its assigned orbit locations by October 2006, *i.e.*, after the dates by which KaStarCom would be required to bring its satellite locations into use to protect the date priority of the U.S. ITU filing for one its orbital location. To address this misalignment, we require KaStarCom 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 appropriate ITU “bringing into use” date. This will protect the United States filings at these locations and thus, KaStarCom’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.⁶⁵ KaStarCom will have nearly four years in which to launch its satellites into their assigned locations by the ITU “bringing into use” dates.

2. Reporting Requirements

29. 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 date, and a detailed description of the use made of each transponder on its in-orbit satellite.⁶⁶ KaStarCom must file this report on June 30 of each year, containing information current as of May 31 of that year.

3. International Coordination

30. In general, we will follow the applicable advance-publication, coordination, and notification procedures as set forth in the ITU Radio Regulations in coordinating KaStarCom’s satellite with other affected administrations. We will also require that KaStarCom provide the Commission with the international coordination information required by our rules.⁶⁷ The orbit location assigned today may be co-located or within two degrees of a non-U.S. licensed satellite filing having 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.

IV. CONCLUSION

31. Upon review of KaStarCom’s application, we find that KaStarCom 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.

V. ORDERING CLAUSES

32. IT IS ORDERED that Application File Nos. 102-SAT-P/LA-98, SAT-LOA-19980312-00018 and SAT-AMD-20010607-0050 ARE GRANTED IN PART, as discussed above, and KaStarCom. World Satellite, LLC IS AUTHORIZED to launch and operate one GSO FSS satellite to provide fixed-satellite service in the 18.3-18.8 GHz and 28.35-28.60 and 29.25- 29.50 GHz frequency bands at the

KaStarCom fall in this category, their July 2005 and October 2006 bring into use dates cannot be further extended.

⁶⁵ 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....”).

⁶⁶ See 47 C.F.R. § 25.210(1)(1)(2)(3).

⁶⁷ See 47 C.F.R. § 25.111(b).

109.2° W.L. orbital location and one GSO FSS satellite at the 29.50-30.0 GHz and 19.7- 20.2 GHz bands at the 73° W.L. orbital location.

33. IT IS FURTHER ORDERED that the *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) is MODIFIED to assign KaStarCom. World Satellite, LLC to the 73° W.L. 109.2° W.L. orbital locations.

34. IT IS FURTHER ORDERED that KaStarCom World Satellite, LLC is authorized to operate inter-satellite link operations in the 69.0-70.0 GHz frequency band.

35. IT IS FURTHER ORDERED that KaStarCom. World Satellite, LLC'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:

	<u>Construction Commenced</u> ⁶⁸	<u>Launch and Operate</u>
Satellite at 73° W.L.	November 2002	October 7, 2006
Satellite at 109.2° W.L.	November 2002	June 25, 2005

36. IT IS FURTHER ORDERED that KaStarCom. World Satellite, LLC 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 at ¶ 90.

37. IT IS FURTHER ORDERED that KaStarCom. World Satellite, LLC shall conduct its operations pursuant to this authorization in a manner consistent with the power flux-density requirements of 47 C.F.R. § 2.106 US255 and 47 C.F.R. § 25.208 of the Commission's Rules.

38. IT IS FURTHER ORDERED that KaStarCom World Satellite, LLC shall coordinate its inter-satellite link operations in the 69.0-70.0 GHz band through the National Telecommunications and Information Administration's Interdepartmental Radio Advisory Committee's Frequency Assignment Subcommittee. KaStarCom World Satellite, LLC must also coordinate its FSS inter-satellite operations with all other non-government inter-satellite link operations in those frequency bands.

39. IT IS FURTHER ORDERED that the license term for the space station is ten years and will begin to run on the date KaStarCom. World Satellite, LLC, 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.

40. IT IS FURTHER ORDERED that KaStarCom. World Satellite, LLC 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 Radio Regulations. We also remind KaStarCom. World Satellite, LLC that no protection from interference caused by radio stations authorized by other

⁶⁸ See e.g. *In the Matter of Loral Space & Communications Corporation Request for Extension of Time to Construct, Launch, and Operate a Ka-band Satellite System in the Fixed-Satellite Service*, Order, 16 FCC Rcd 11044 (2001). We recognize that WB Holdings is required to commence construction of its first satellite in January 2002 and its second satellite in January 2003. Nothing in this Order tolls or extends that milestone. WB Holdings' decision to share a space station platform with KaStarCom is a business decision wholly in the control of the licensee, and does not justify an extension of its implementation milestone. Extensions of the milestone schedule are granted only when delay in implementation is due to circumstances beyond the licensee's control.

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).

41. IT IS FURTHER ORDERED that KaStarCom World Satellite, LLC is obliged to comply with the applicable laws, regulations, rules, and licensing procedures in those countries it proposes to serve.

42. IT IS FURTHER ORDERED that the temporary assignment of any orbital location to KaStarCom. World Satellite, LLC 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 KaStarCom. World Satellite, LLC 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.

44. 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