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

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| In the Matter of | ) | |
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| PanAmSat Corporation | ) | |
| | ) | File Nos. 180 through 181-SAT-P/LA-95, |
| Application for Authority to Construct, Launch, | ) | IBFS Nos. SAT-LOA-19950929-00130/131; |
| and Operate a Ka-band Satellite System in the | ) | IBFS Nos. SAT-LOA-19950929-00204 |
| Fixed-Satellite Service | ) | through 00208 |

## ORDER AND AUTHORIZATION

**Adopted: January 30, 2001** **Released: January 31, 2001**

By the Chief, International Bureau:

## I. INTRODUCTION

1. With this *Order and Authorization*, we modify PanAmSat Corporation's ("PanAmSat")' license to launch and operate a satellite system in the geostationary-satellite orbit ("GSO") to provide fixed-satellite service ("FSS") in a portion of the Ka-band.[1] In particular, we authorize PanAmSat to operate satellite links ("ISLs") and specify additional downlink operating frequencies for satellite-to-user transmissions.[2] By employing ISLs, PanAmSat's satellites will be able to communicate directly with each other, which, according to PanAmSat, will extend the coverage regions of satellite systems from different orbit locations. In addition, we assign milestone requirements for construction, launch, and operation of the satellite system. This will ensure that PanAmSat will make timely progress toward launching its satellites and making its advanced broadband communication systems services widely available to businesses and consumers. Failure by PanAmSat to meet its milestones will render this authorization null and void.

## II. BACKGROUND

*The PanAmSat License*

2. In May 1997, as part of the first Ka-band processing round, the International Bureau ("Bureau") authorized PanAmSat's predecessor-in-interest, Hughes Communications Galaxy, Inc.

[1] The Ka-band refers to the Earth-to-space (uplink) frequencies at 27.5-30.0 GHz and the corresponding space-to-Earth (downlink) frequencies at 17.7-20.2 GHz.

[2] ISLs are communication links between in-orbit satellites. ISLs operate in spectrum allocated to the inter-satellite service. International Telecommunication Union ("ITU") Radio Regulation S1.22.

("Hughes"), to launch and operate a GSO satellite system to provide FSS in the Ka-band.[3] The Authorization Order permitted Hughes to operate its service links--satellite transmission links to and from user units--in the 28.35-28.6 GHz and the 29.25-30.0 GHz bands for uplink transmissions and the 19.7-20.2 GHz band for its downlink transmissions.[4] This May 1997 Authorization Order did not include operating authority for inter-satellite link service, nor did it include additional downlink spectrum requested by Hughes.[5]

3. As the result of a subsequent merger between Hughes and PanAmSat, Hughes assigned a portion of its Ka-band authorization, comprising seven orbital locations,[6] to PanAmSat Corporation (formerly "Magellan International, Inc.").[7] We also awarded PanAmSat licenses for two satellites in the first Ka-band processing round.[8] We recently declared these licenses null and void for failure to meet the required construction commencement milestone.[9] PanAmSat has filed an application for review of the Revocation Order.[10] In this Order, we address only the licenses PanAmSat acquired from Hughes. We will

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[3] *See In the Matter of Hughes Communication Galaxy, Inc. Application for Authority to Construct, Launch, and Operate a Ka-band Satellite System in the Fixed Satellite Service and a Ku-band Broadcast Communications Satellite System*, 13 FCC Rcd. 1351 (Int'l Bur. 1997) (*"Authorization Order").*

[4] *Authorization Order* at 1358-59, ¶¶18,20.

[5] In its Ka-band application, Hughes also requested authority to provide service in additional frequency bands allocated to the Broadcast Satellite Service (BSS). As part of the Hughes Communications, Inc. and PanAmSat Transfer of Control that is discussed *infra*, the BSS applications were transferred to PanAmSat. In the Authorization Order, we indicated that because the BSS proposal involved outstanding international issues, we were not in a position to address that portion of Hughes's application. Due to subsequent U.S. efforts internationally, these locations are now available for U.S. BSS operations. In order not to delay implementation of PanAmSat's system as currently authorized, however, we will consider the BSS requests in a future proceeding.

[6] These are the 103º W.L., 36º E.L., 40º E.L., 48º E.L., 124.5º E.L., 149º E.L., and 173º E.L. orbit locations. *See Assignment of Orbital Locations to Space Stations in the Ka-Band*, Order, 13 FCC Rcd 1030 (Int'l Bur.1997) ("*Assignment Order*") and 12 FCC Rcd 22004 (Int'l Bur. 1997) ("*December 1997 Reassignment Order*") (reassigning PanAmSat's satellite at 67° W.L. to the 103° W.L. orbit location).

[7] S*ee In the Matter of Hughes Communications, Inc. and Affiliated Companies*, Order and Authorization, 12 FCC Rcd 7534 (1997). *See also* letter from John P. Janka, Counsel for Hughes Communications Galaxy, Inc., to William F. Caton, dated June 9, 1997, reflecting the consummation of Hughes' reorganization and the assignment from Hughes to PanAmSat.

[8] *See In the Matter of PanAmSat Licensee Corp., Application for Authority to Construct, Launch, and Operate a Ka-band Satellite System in the Fixed Satellite Service*, 13 FCC Rcd. 1405 (Int'l Bur. 1997) ("*PanAmSat Authorization Order"*).

[9] *See In the Matter of PanAmSat Licensee Corp., Application for Authority to Construct, Launch, and Operate a Ka-band Satellite System in the Fixed Satellite Service at Orbital Locations 58 degrees W.L. and 125 degrees W.*L., *Applications for Modification of License and for Extension of Milestone Schedule*, Memorandum Opinion and Order, DA 00-1266 (rel. June 26, 2000) ("*PAS Revocation Order*").

[10] *See In the Matter of PanAmSat Licensee Corp., Application for Authority to Construct, Launch, and Operate a Ka-band Satellite System in the Fixed Satellite Service at Orbital Locations 58 degrees W.L. and 125*

address PanAmSat's application for review in a separate proceeding.

*Inter-Satellite Links*

4. In its original application, Hughes proposed to use ISLs in the 22.55-23.55 GHz, 32.0-33.0 GHz, 54.25-58.2 GHz, and 59-64 GHz bands. When we issued Hughes its license in 1997, we deferred assigning ISL frequencies because none of these bands were available for assignment at that time for inter-satellite link service. [11]

5. Specifically, these bands were shared on a co-equal basis with U.S. Government operations, including ongoing operations in the inter-satellite and Earth exploration-satellite service. The National Telecommunications and Information Administration (NTIA) expressed concern regarding potential harmful interference between commercial ISL operations and these government services. In 1997, the United States presented proposals to the then-upcoming World Radiocommunication Conference (WRC-97) concerning ISL operations in the 54.25-59.3 GHz and 64-71 GHz bands.[12] These proposals were designed to allow us to assign ISLs to all first-round Ka-band system applicants requesting them, while addressing NTIA's interference concerns. In view of the uncertainty surrounding this issue, we deferred awarding ISL frequencies pending the outcome of WRC-97.

6. The WRC-97 allocated an additional band at 64-71 GHz for ISLs for both non-geostationary ("NGSO") and GSO systems, including those operating in the FSS.[13] The WRC also limited ISL operations in the 54.25-59.3 GHz band to communications between satellites in the geostationary-satellite orbit.[14] Additionally, ITU Radio Regulation S5.556A states that satellites operating in the bands 54.25-56.9 GHz, 57-58.2 GHz, and 59-59.3 GHz shall meet the specified power flux-density limit at all altitudes from 0 km to 1000 km above the Earth's surface.[15] In June 1998, the International Bureau requested that

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*degrees W.*L., *Applications for Modification of License and for Extension of Milestone Schedule*, Memorandum Opinion and Order, DA 00-1266, Application for Review and Request for Expedited Processing (filed July 26, 2000).

[11] *Authorization Order* at 1360, ¶24.

[12] *See United States Proposals for the Work of the [WRC-97] Conference*, Document USWRC-97.10-E, dated July 24, 1997, Proposals for Agenda Item 1.9.4.3, entitled "The Existing Frequency Allocations Near 60 GHz and, if Necessary, Their Respective Allocation, with a View to Protecting the Earth Exploration-Satellite (passive) Service Systems Operating in the Unique Oxygen Absorption Frequency Band from About 50 GHz to About 70 GHz. (A Consequential Allocation to the Inter-Satellite Service in the 65-71 GHz Bands) (JPDP 12)."

[13] *See* Final Acts of the 1997 World Radiocommunication Conference, Geneva (1997); ITU Radio Regulations Article S5 (frequency allocations).

[14] *Id.*

[15] ITU Radio Regulation S5.556A reads: "Use of the bands 54.25-56.9 GHz, 57-58.2 GHz and 59-59.3 GHz by the inter-satellite service is limited to satellites in geostationary-satellite orbit. The single-entry power flux-density at all altitudes from 0 km to 1000 km above the Earth's surface produced by a station in the inter-satellite service, for all conditions and for all methods of modulation, shall not exceed -147 dB ($W/m^2$/100 MHz) for all angles of arrival."

each Ka-band FSS licensee update its ISL request in light of the actions taken at WRC-97. In addition, the Bureau asked each applicant to provide the Bureau with the specific frequency bands on which it proposes to operate its ISL service and to coordinate its proposed frequency bands with the other Ka-band licensees before it presented its proposal to the Commission.[16] In response, the GSO FSS Ka-band licensees requesting ISL spectrum submitted a report in October 1998 (hereinafter the "*GSO FSS Sharing Report*"), concluding that their systems' ISLs could share the same frequencies with few constraints.[17]

7. At the same time, Teledesic LLC ("Teledesic"), the only NGSO licensee employing ISLs in the same frequency bands, also submitted a sharing report (hereinafter the "*Teledesic Sharing Report*").[18] The *Teledesic Sharing Report* concluded that its ISLs could operate on the same frequencies as the GSO system ISLs, except for possible mutual interference in the limited case of GSO networks using ISL links among satellites that are separated by 157 to 162 longitudinal degrees.

8. After reviewing the *GSO FSS Sharing Report*, the Bureau concluded that it needed additional information to support the report's findings. Accordingly, the Bureau sent a letter to each of the parties, including PanAmSat, requesting a description of its ISL arrangement, including which satellites at which licensed orbital locations will communicate with each other through ISLs, the amount of ISL spectrum required by each satellite, and the justification for the amount of the ISL spectrum requested.[19] In its letter, the Bureau noted that there are additional requests from applicants requesting ISL spectrum in the 40 GHz band, and that several of the applicants in the second Ka-band processing round also proposed systems using ISLs.[20] To maximize the number of systems that could operate in the bands available for ISLs, the Bureau said it would only authorize first round Ka-band licensees for the specific amount of ISL spectrum actually required for ISL operations.[21]

9. In response, PanAmSat requested four channels, each measuring between 800 megahertz and 1

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16 *Sharing of Various Frequency Bands Allocated to the Inter-Satellite Service* (dated October 9, 1998). The study did not examine sharing between GSO and non-GSO systems sharing the same ISL frequencies.

16 *Interference between Teledesic and GSO Inter-Satellite Links* (dated October 8, 1998).

16 *See, e.g.*, Letter from Thomas S. Tycz, Chief, Satellite and Radiocommunication Division, International Bureau, to Joseph A. Godles, PanAmSat (July 23, 1998).

17 *Sharing of Various Frequency Bands Allocated to the Inter-Satellite Service* (October 9, 1998). The study did not examine sharing between GSO and non-GSO systems sharing the same ISL frequencies. *See also* Letter from Joseph A. Godles, PanAmSat, to Thomas S. Tycz, Chief, Satellite and Radiocommunication Division, International Bureau (October 9, 1998) (PanAmSat specifying bands for ISL operation.)

18 *Interference between Teledesic and GSO Inter-Satellite Links* (October 8, 1998).

19 *See, e.g.*, Letter from Thomas S. Tycz, Chief, Satellite and Radiocommunication Division, International Bureau, to Joseph A. Godles, PanAmSat (December 22, 1999).

20 *Id.* These parties include four from the second Ka-band processing round and five from the 40 GHz processing round. The 40 GHz service links are in segments contained in the 36-51.4 GHz band.

21 *Id.*

gigahertz in bandwidth, depending on its transmission data rate, in the 54.25-58.2 GHz and 65-71 GHz frequency bands for ISLs.[22] PanAmSat represented that it intends to use ISLs in its seven licensed GSO orbital locations.[23]

*Service Downlink Bands*

10. In addition to the remaining issue regarding its ISL frequencies, there is also an outstanding issue regarding satellite-to-user frequencies. In its original application, Hughes requested 1000 MHz of spectrum at 19.2-20.2 GHz for its service downlink bands.[24] The Ka-band arrangement in effect at that time, however, designated only a portion of these bands -- specifically the 19.7-20.2 GHz bands-- for GSO FSS downlink operations.[25] Consistent with the plan, we were only able to authorize Hughes to operate on 500 MHz at 19.7-20.2 GHz for its service downlinks. We stated, however that Hughes could make up the remaining 500 MHz by operating in a portion of the 17.7-18.8 GHz frequency band, which was then designated for co-equal use between GSO FSS and the fixed service. Nevertheless, because Hughes had not applied for specific operating frequencies in this band, and because the Ka-band arrangement requires GSO FSS operations in this band to be conducted on a co-primary basis with other services, we found it was premature to grant Hughes operating authority in any portion of this band.[26] Rather, we directed Hughes to file a license modification application when it determined which 500 MHz it wished to use in the 17.7-18.8 GHz band.

11. Since that time, the Commission has released the *18 GHz Report and Order*, which designated the 18.3-18.8 GHz portion of the 17.7-18.8 GHz band for GSO FSS downlink operations.[27] Consequently, we are now in a position to assign additional downlink spectrum to PanAmSat.

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[22] *See* Letter from W. Kenneth Ferree, PanAmSat, to Thomas S. Tycz, Chief, Satellite and Radiocommunications Division, International Bureau (January 19, 2000). PanAmSat will not pursue the 22.55-23.55 GHz and 32.0-33.0 GHz bands as originally requested by Hughes.

[23] *Id*.

[24] *Authorization Order* at 1359¶ 20.

[25] *Rulemaking to Amend Parts 1,2, 21 and 25 of the Commission's Rules to Redesignate the 27.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services*, First Report and Order and Fourth Notice of Proposed Rulemaking, 11 FCC Rcd. 19005 (1996).

[26] *Authorization Order* at ¶ 20.

[27] *See Redesignation of the 17.7-19.7 GHz Frequency Band, Blanket Licensing of Satellite Earth Stations in the 17.7-20.2 GHz and 27.5-30.0 GHz Frequency Bands, and the Allocation of Additional Spectrum in the 17.3-17.8 GHz and 24.75-25.25 GHz Frequency Bands for Broadcast Satellite-Service Use*, IB Docket No. 98-172, Report and Order, 15 FCC Rcd 13430 (2000) ("*18 GHz Report and Order*"), *petition for review pending, Teledesic LLC v. FCC*, D.C. Cir. No. 00-1466 (filed November 6, 2000).

## III. DISCUSSION

*A. Inter-Satellite Links*

12. Given the sharing studies done by the licensees and the actions taken at WRC-97, we can now assign specific ISL spectrum to PanAmSat's system. First, the ISL sharing analyses performed by the GSO FSS licensees and Teledesic reasonably accommodate all of the first round licensees that requested ISLs. Second, WRC-97 addressed the technical issues with respect to Hughes's requested 54.25-58.2 GHz band. Specifically, the WRC-97 adopted a provision to limit these bands to GSO satellite transmissions and to establish a p.f.d. limit for ISL operations in these bands.[28] These p.f.d. limits are to protect Government and non-Government NGSO satellites operating in the space research (passive) and Earth exploration-satellite (passive) services. Any non-Government systems requesting to operate ISLs in these bands will be required to coordinate with U.S. Government systems through NTIA's Interdepartment Radio Advisory Committee's Frequency Assignment Subcommittee ("FAS"). In addition, the WRC-97 allocated Hughes's requested band at 65.0-71.0 GHz for ISLs for both NGSO and GSO systems operating in the FSS. Recognizing that this band was allocated on a co-primary basis for various Government services, NTIA suggested that implementing the WRC-97 allocations domestically would better accommodate existing Government and proposed non-Government satellite systems. Therefore, the Commission conducted a rulemaking proceeding to implement the WRC-97 Final Acts with respect to the 50.2-71.0 GHz frequency bands.[29] In that Order, the Commission also addressed allocations in this band. In this regard, the Commission deleted the non-Federal government allocation from the 56.9-57.0 GHz band, giving Federal agencies exclusive access to this spectrum. It also allocated the 65.0-71.0 GHz band for non-government ISLs.[30]

13. PanAmSat proposes to conduct ISL operations within the 54.25-58.2 GHz and 65.0-71.0 GHz bands based on its constellation deployment scenario. According to PanAmSat, its system will consist of seven satellites located at 103º W.L., 36º E.L., 40º E.L., 48º E.L., 124.5º E.L., 149º E.L., and 173º E.L. with each satellite inter-connected to two adjacent satellites forming a ring of interconnected satellites using ISLs.[31] Therefore, each satellite would require two ISL transmit channels and two ISL received channels, a total of four ISL channels per satellite. Each ISL will be operated at a data rate as high as 1Gbps using QPSK modulation with forward error correction and dual polarization. Given the data rate of 1Gbps, the polarization, and the modulation scheme, a 1000 megahertz bandwidth of ISL spectrum will be required to support each ISL channel between any two satellites. Therefore, each satellite would require a total of 4000 megahertz of spectrum for its ISLs operation. With the polarization technique used by the PanAmSat

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[28] ITU-RR 5.556A establishes a single entry p.f.d. at an altitude between 0 km to 1000 km above the Earth's surface produced by a space station in the inter-satellite service.

[29] *See Amendment of Part 2 of the Commission's Rules to Allocate Additional Spectrum to the Inter-Satellite, Fixed, and Mobile Services and to Permit Unlicensed Devices to Use Certain Segments in the 50.2-50.4 GHz and 51.4-71.0 GHz Bands*, ET Docket No. 99-261, Report and Order, FCC 00-442, at ¶ 45 (rel. December 22, 2000) at ¶ 46.

[30] *Id.* at ¶ 46.

[31] The ISL plan submitted by PanAmSat included two other orbital locations at 58° W.L. and 125° W.L., but these locations were cancelled by Commission Order as referenced above.

system, the satellites at different orbital locations will be capable of reusing the same frequency assignments.

14. Based on PanAmSat's representations, we find that it has demonstrated a need for 4000 megahertz of ISL spectrum. We will therefore authorize PanAmSat to conduct ISL operations on 4000 megahertz of spectrum within its requested 54.25-58.2 GHz and 65.0-71.0 GHz bands. Although PanAmSat did not specify its preferred operating frequencies within these ranges, we will assign PanAmSat specific ISL frequencies in this Order so as to not delay system implementation. Recognizing PanAmSat's plans to implement four 1000 megahertz channels per satellite, we authorize it to conduct its ISL operations in the 54-55 GHz, 57-58 GHz, 65-66 GHz and 68-69 GHz bands, subject to coordination among the licensees pursuant to the GSO FSS Sharing Report and the Teledesic Sharing Report. If PanAmSat prefers to operate on a different 4000 megahertz within its requested bands, it may file a request for license modification.

*B. Service Downlink Bands*

15. Recently, the Commission adopted rules for the deployment of services in the 17.7-20.2 GHz band ("18 GHz band").[32] These rules are designed to reduce potential interference among the terrestrial and satellite services allocated in the band. The new band arrangement redesignates much of the spectrum that had been designated for co-primary satellite and terrestrial use as exclusive spectrum for either service. This should reduce the need to coordinate with other services. Under the band arrangement adopted in the 18 GHz Report and Order, the Commission retained the 19.7-20.2 GHz band for GSO FSS primary use, and split the 17.7-18.8 GHz band, originally shared on a co-primary basis by GSO FSS and the terrestrial fixed-service ("FS"), into three designations. Specifically, the Commission designated 500 megahertz to FS for primary use in the 17.7-18.3 GHz band, 280 megahertz for co-primary use by GSO FSS and FS in the 18.3-18.58 GHz band, and 220 megahertz to GSO FSS for primary use in the 18.58-18.8 GHz band.[33] In adopting this band arrangement, the Commission stated that a total 720 megahertz of unshared GSO FSS downlink spectrum (the 18.58-18.8 GHz band along with the 19.7-20.2 GHz band), plus the flexible rules that permit sharing of 280 megahertz at 18.3-18.58 GHz, will enable each system to have ample spectrum and allow multiple systems to operate.[34]

16. In its original application, Hughes requested 1000 megahertz of downlink spectrum. We authorized Hughes to operate using 500 megahertz of spectrum at 19.7-20.2 GHz. At that time, however, we were not in a position to grant Hughes's request for the remaining 500 megahertz of downlink spectrum given the 18 GHz band arrangement then in effect. The 18 GHz Report and Order designated 500 megahertz of spectrum at 18.3-18.8 GHz for downlink GSO FSS operations. Consequently, on our own motion, we grant PanAmSat an additional 500 megahertz of downlink spectrum in the 18.3-18.8 GHz band in accordance with the 18 GHz Report and Order.

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[32] *See 18 GHz Report and Order*, 15 FCC Rcd 13430.

[33] *Id.* at 13443, ¶ 28.

[34] *Id.* at 13444, ¶ 30.

17. In addition, PanAmSat must coordinate with the U.S. Government systems operating in the 17.7-18.8 GHz band in accordance with footnote US 334 to the Table of Frequency Allocations.[35] We note that Government GSO and NGSO FSS networks are presently operating in the 18.3-18.6 GHz and 19.7-20.2 GHz bands, and plan to operate in accordance with the power flux-density limits contained in the current ITU Radio Regulations.[36] Additionally, we note that PanAmSat must also comply with footnote US 255 to the Table of Frequency Allocations which contains power flux-density limits to protect the Earth exploration-satellite service (passive) for the 18.6-18.8 GHz band.[37]

*C. Milestones*

18. When we granted Hughes its license in 1997, we were not in a position to assign to it a specific range of ISL frequencies. Consequently, we did not require Hughes to begin building its satellite system by including implementation milestones in its license. We did, however, state that we would impose a strict milestone schedule once ISL frequencies were authorized.[38]

19. In authorizing ISL frequencies in this Order, we are now in a position to impose system implementation milestones as a condition of PanAmSat's modified license. Requiring licensees to adhere to implementation deadlines prevents the valuable orbit-spectrum resource from being held indefinitely by licensees who are unable or unwilling to proceed with their plans. Specifically, Section 25.145(f) of the Commission's rules requires Ka-band GSO FSS licensees "[1] to begin construction of its 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 its assigned orbit locations within five years of grant, and [4] to launch the remainder of its satellites by the date required by the International Telecommunication Union [ITU] to assure international recognition and protection of those satellites."[39] Failure to meet any of these construction milestones will render those satellite authorizations null and void.

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[35] 47 C.F.R. § 2.106 US 334 (as revised in the *18 GHz Report and Order*, 15 FCC Rcd 13489). This footnote requires coordination of non-Government systems with U.S. Government GSO and NGSO FSS systems in the 17.8-20.2 GHz band.

[36] *See 18 GHz Report and Order*, 15 FCC Rcd 13473 ¶ 90. These power flux-density limits in the 18.3-18.6 GHz band are -115/-105 dB ($W/m^2$) in any 1 megahertz, 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, NTIA to Dale Hatfield, Chief, Office of Engineering and Technology, FCC (March 29, 2000).

[37] 47 C.F.R. § 2.106 US 255 (as revised in the *18 GHz Report and Order*, 15 FCC Rcd 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 -95 dB(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.

[38] *Id*. at 1361-62, ¶ 29

[39] 47 C.F.R. § 25.145(f). *See also 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*, CC Docket No. 92-297, Third Report and Order, 12 FCC Rcd 22310, 22334-35 ¶ 61 & n.77 (1997).

20. The dates by which the PanAmSat licensed satellites must be "brought into use" to protect the date priority of the ITU filings for its orbital locations are in June and July 2005.[40] We recognize that, in this case, applying these ITU "bringing into use" dates to the last implementation milestone has the incongruous result of our rules requiring PanAmSat to launch its satellites into each of its assigned orbit locations by January 2006, i.e., after the date PanAmSat 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 PanAmSat to launch its satellites into each licensed orbit location which "brings into use" all of the frequency assignments it plans to operate at that orbit location by the appropriate June and July 2005 ITU "bringing into use" date. This will protect the United States' and thus, PanAmSat's ability to coordinate and gain international recognition for the satellites at each of its assigned orbit locations. Moreover, we do not anticipate that meeting this milestone will present undue difficulties. First, PanAmSat has had almost four years since we granted its license in May 1997 in which to finalize its system design for everything but its ISLs. Second, the launch milestone imposed still provides PanAmSat with over four years from now to incorporate ISLs into its system and to launch its satellites. Further, in light of the actions taken at WRC-97 regarding ISLs, and the licensees' 1998 studies demonstrating that they can share ISL spectrum, we expect that PanAmSat will have already made significant progress in incorporating its requested ISLs into its system.

*D. Miscellaneous Matters*

21. Consistent with our *December 1997 Reassignment Order*, in which we modified the orbital locations available for PanAmSat by substituting the 103° W.L. orbit location for the 67° W.L. orbital position,[41] we modify PanAmSat's license, accordingly. This action is taken without prejudice to any further decision we may make regarding the Ka-band orbital assignment plan.

## IV. CONCLUSION

22. Accordingly, upon review, we modify PanAmSat's Ka-band system license to include ISL frequencies and additional downlink frequencies. In addition, we assign milestone requirements for construction, launch and operation of the satellite system. These actions provide PanAmSat with the opportunity to provide a variety of advanced broadband communication services to businesses and consumers around the world.

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[40] The exact date is nine years after the date of ITU publication of the Advanced Publication Information for each orbit location. *See* ITU Radio Regulations S.11.44, as modified by Final Acts of the 2000 World Radiocommunication Conference, Istanbul (2000). Thus, the ITU Radio Regulations require that:

the satellite licensed at 36°E.L. be brought into use by July 2, 2005;
the satellite licensed at 40°E.L. be brought into use by July 2, 2005;
the satellite licensed at 48° E.L. be brought into use by July 2, 2005;
the satellite licensed at 124.5 ° E.L. be brought into use by July 16, 2005;
the satellite licensed at 149° E.L. be brought into use by July 23, 2005;
the satellite licensed at 173° E.L. be brought into use by July 23, 2005;
and the satellite licensed at 103° W.L. be brought into use by June 25, 2005.

[41] *December 1997 Reassignment Order*, 12 FCC Rcd 22004 (1997).

## V. ORDERING CLAUSES

23. Accordingly, IT IS ORDERED that the license granted to Hughes Communication Galaxy, Inc. pursuant to Order and Authorization, 13 FCC Rcd 1351 (Int'l Bureau 1997), as modified by the consummation of Hughes's reorganization and the assignment of orbit locations from Hughes to PanAmSat, *In the Matter of Hughes Communications, Inc. and Affiliated Companies*, Order and Authorization, 12 FCC Rcd 7534 (1997), IS MODIFIED to substitute the 103° W.L. orbit location for the previously assigned 67° W.L. for one of the authorized satellites.

24. Accordingly, IT IS FURTHER ORDERED that this license IS MODIFIED to authorize PanAmSat Corporation to operate inter-satellite links in the 54-55 GHz, 57-58 GHz, 65-66 GHz, and 68-69 GHz bands, in accordance with *In the Matter of Amendment of Part 2 of the Commission's Rules to Allocate Additional Spectrum to the Inter-Satellite, Fixed, and Mobile Services and to Permit Unlicensed Devices to Use Certain Segments in the 50.2-50.4 GHz and 51.4-71.0 GHz Bands*, ET Docket No. 99-261, Report and Order, FCC 00-442 (rel. December 22, 2000).

25. IT IS FURTHER ORDERED that PanAmSat Corporation must coordinate its inter-satellite link operations in accordance with the report submitted to the Commission entitled, "Sharing of Various Frequency Bands Allocated to the Inter-Satellite Service," (October 9, 1998) and "Interference Between Teledesic and GSO Inter-Satellite Links" (October 9, 1998), with the other Ka-band licensees that are included in the referenced reports.

26. IT IS FURTHER ORDERED that PanAmSat Corporation shall coordinate its inter-satellite link operations in the 54-55 GHz, 57-58 GHz, 65-66 GHz, and 68-69 GHz bands through NTIA's Interdepartment Radio Advisory Committee's Frequency Assignment Subcommittee.

27. IT IS FURTHER ORDERED that PanAmSat Corporation is authorized for an additional 500 megahertz for its downlink operations in the 18.3-18.8 GHz band in accordance with *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 Use*, Report and Order, 15 FCC Rcd 13430 (2000) ("*18 GHz Report and Order"*), *petition for review pending, Teledesic LLC v. FCC*, D.C. Cir. No. 00-1466 (filed November 6, 2000).

28. IT IS FURTHER ORDERED that PanAmSat Corporation. must coordinate all of its Ka-band downlink operations with the U.S. government systems in accordance with footnote US 334 to the Table of Frequency Allocations, 47 C.F.R. § 2.106.

29. IT IS FURTHER ORDERED that PanAmSat Corporation'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 the authorization by the following dates:

| | Commence Construction |
|---|---|
| First Satellite | January 2002 |

| | |
|---|---|
| Remaining Satellites | January 2003 |
| | Launch and Operate |
| Satellite licensed at 36°E.L. | July 2, 2005 |
| Satellite licensed at 40°E.L | July 2, 2005 |
| Satellite licensed at 48° E.L. | July 2, 2005 |
| Satellite licensed at 124.5 ° E.L. | July 16, 2005 |
| Satellite licensed at 149° E.L | July 23, 2005 |
| Satellite licensed at 173° E.L. | July 23, 2005 |
| Satellite licensed at 103° W.L. | June 25, 2005 |

30. IT IS FURTHER ORDERED that PanAmSat Corporation is subject to all terms and conditions in the Hughes Communications Galaxy, Inc. Authorization Order, 13 FCC Rcd. 1351 (Int'l Bur 1997) that apply to the licenses assigned by Hughes to PanAmSat as referenced herein.

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

32. IT IS FURTHER ORDERED that PanAmSat Corporation is afforded thirty days from the date of the release of this *Order and Authorization* to decline this authorization as conditioned. Failure to respond within that period will constitute formal acceptance of the authorization as conditioned.

33. This *Order and Authorization* 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 and Authorization* (*see* 47 C.F.R. § 1.4(b)(2)).

**FEDERAL COMMUNICATIONS COMMISSION**

Donald Abelson
Chief, International Bureau