

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

In the Matter of	)	
	)	
<b>Astrolink International LLC</b>	)	
	)	File No. 35-SAT-MP/ML-98
Application for Authority to Construct, Launch, and	)	IBFS No. SAT-MOD-19971222-00200
Operate a Ka-band Satellite System in the Fixed-	)	Call Sign: S2193
Satellite Service	)	

**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 modify Astrolink International LLC’s (“Astrolink”) 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.<sup>1</sup> In particular, we authorize Astrolink to use additional uplink and downlink operating frequencies for international service. Astrolink seeks authority to expand its authorized operations into spectrum that is designated for primary non-geostationary satellite (“NGSO”) FSS use, Local Multipoint Distribution Service (“LMDS”) operations, and terrestrial fixed service for domestic and international operations. We grant in part and dismiss in part portions of the application, without prejudice. This action will allow Astrolink to expand and improve a variety of advanced broadband communication services to business and consumers around the globe.

**II. BACKGROUND**

2. In 1996, the Commission developed a band segmentation plan for the 28 GHz band designed to accommodate both terrestrial and satellite communication systems.<sup>2</sup> This plan designates discrete spectrum bands for specific types of systems, including LMDS providers, FSS, and feeder links for

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<sup>1</sup> The term “Ka-band” or “28 GHz band” generally refers to the space-to-earth (downlink) frequencies at 17.7-20.2 GHz and the corresponding earth-to-space (uplink) frequencies at 27.5-30.0 GHz.

<sup>2</sup> *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 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services*, First Report and Order and Fourth Notice of Proposed Rulemaking, 11 FCC Rcd 19005 (1996) (“28 GHz Band Plan Order”).

certain Mobile Satellite Service systems.<sup>3</sup> Under this plan, certain FSS systems have priority with respect to other FSS systems. In the 28.6-29.1 GHz segment, for example, NGSO FSS systems have operating priority over GSO FSS systems. Likewise, in the 28.35-28.6 GHz and 29.5-30.0 GHz band segments, GSO FSS systems have operating priority over NGSO FSS systems. System providers without priority must operate on an unprotected, non-harmful interference basis to the systems or services having priority.<sup>4</sup>

3. In May 1997, as part of the first Ka-band processing round, we authorized Astrolink to launch and operate a GSO satellite system to provide FSS in the Ka-band.<sup>5</sup> Astrolink intends to use this system to provide global Internet service, video conferencing, distance learning, telemedicine, high-speed data networks and “bandwidth on demand.” The system consists of nine interconnected GSO FSS satellites assigned to five orbit locations.<sup>6</sup> In the first phase system implementation, the first four of the nine satellites are scheduled for launch in 2003, followed by the launch of the next three satellites at six-month intervals.<sup>7</sup> In the second phase, Astrolink plans to launch a single satellite into the 175.25° E.L. location, and a second satellite into each of the four other authorized locations. The Astrolink Authorization Order permits Astrolink 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 downlink transmissions. In a separate Order, we granted Astrolink’s request for an additional 500 megahertz of downlink spectrum by authorizing it to operate in the 18.3-18.8 GHz frequency band.<sup>8</sup> These bands are designated for primary or co-primary GSO FSS services.

4. In December 1997, as part of the second Ka-band processing round, Astrolink filed an application to modify its licensed first round system.<sup>9</sup> Astrolink seeks authority to operate its system domestically and internationally in the 27.85-28.35 GHz and 28.6-29.1 GHz frequency bands for uplink (Earth-to-space) communications, in addition to its currently authorized frequencies.<sup>10</sup> Astrolink proposes

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<sup>3</sup> *28 GHz Band Plan Order*, 11 FCC Rcd at 19007.

<sup>4</sup> *Rulemaking to Amend Parts 1, 2, 21 and 25 of the Commission’s Rules to Redesignate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and Fixed Satellite Services*, Third Report and Order, 12 FCC Rcd 22310, 22326 (1997) (“*Ka-Band Service Rules*”). Stations operating in primary services are protected against interference from stations of secondary services. Stations operating in the secondary service cannot cause harmful interference to or 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); *Ka-Band Service Rules*, 12 FCC Rcd at 22325.

<sup>5</sup> See *In the Matter of Lockheed Martin Corporation Application for Authority to Construct, Launch, and Operate a Ka-band Satellite System in the Fixed Satellite Service*, 12 FCC Rcd 23014 (Int’l Bur. 1997) (“*Astrolink Authorization Order*”).

<sup>6</sup> The five orbital locations are 97° W.L., 21.5° W.L., 2° E.L., 130° E.L., and 175.25° E.L.

<sup>7</sup> See *In the Matter of Astrolink International LLC Application to Modify the Astrolink System Authorization*, 15 FCC Rcd. 23738 (Int’l Bur. 2000) at ¶ 3.

<sup>8</sup> See *In the Matter of Astrolink International LLC Application for Authority to Construct, Launch, and Operate a Ka-band Satellite System in the Fixed Service*, 16 FCC Rcd. 2421 (Int’l Bur. 2001).

<sup>9</sup> See *Application of Lockheed Martin Corporation to Modify the Astrolink™ System*, File No. 35-SAT-MP/ML-98 IBFS No. SAT-MOD-19971222-00200 (filed December 22, 1997) (“*Astrolink Modification Application*”); see also Letter from John J. Wengryniuk, Executive Director, Regulatory Affairs, Astrolink to Magalie Roman Salas, Secretary, Federal Communications Commission (dated July 12, 2001).

<sup>10</sup> See *Astrolink Modification Application* at p. 7; see also Letter from John J. Wengryniuk, Executive Director, Regulatory Affairs, Astrolink to Magalie Roman Salas, Secretary, Federal Communications Commission (dated July 12, 2001).

to use spectrum domestically and internationally in the 17.8-18.3 GHz and 18.8-19.3 GHz frequency bands for downlink (space-to-Earth) communications. Astrolink also requests authority to conduct its tracking, telemetry, and command (“TT&C”) operations during transfer orbit and on-orbit operations in the extended C-band frequencies with respect to the 175.25° E.L. orbital location.<sup>11</sup> Astrolink states that use of these additional frequencies will enhance its ability to provide high-quality service, increase the capacity of its system, and provide a more cost-effective service for domestic and international communications services. The Bureau acted on part of Astrolink’s modification in November 2000.<sup>12</sup>

5. Hughes Communications Galaxy, Inc. and Hughes Communications, Inc. (“Hughes”) filed a consolidated Petition to Dismiss or Deny against several second round Ka-band applications, including Astrolink.<sup>13</sup> Specifically, Hughes raises technical objections to Astrolink’s proposed operation in portions of the Ka-band designated for other services on a primary basis.<sup>14</sup> Because Astrolink did not demonstrate that it can operate on a secondary, non-interference basis to NGSO systems, Hughes states that the modification application should be denied.<sup>15</sup>

### III. DISCUSSION

#### A. Spectrum Assignments

##### 1. Service Links

6. In the *28 GHz Band Plan Order*, the Commission adopted a band segmentation plan that designated one gigahertz of spectrum in each transmission direction for GSO FSS Ka-band systems.<sup>16</sup> 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

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<sup>11</sup> Astrolink requests authority for TT&C links in the 3650-3700 GHz and 6425-6525 GHz frequency bands. See *Astrolink Modification Application* at p 15 and Exhibit D-1.

<sup>12</sup> See *In the Matter of Astrolink International, LLC, Application to Modify the Astrolink System Authorization, Order and Authorization*, DA 00-2671 (Int’l Bur. rel. Nov. 29, 2000) (“*Astrolink TT&C Order*”). In that Order, we granted Astrolink’s request for Telemetry, Tracking, and Command Frequencies in the extended C-band (“TT&C”) for the first four satellites in the system, to be located at the 97° W.L., 21.5° W.L., 2° E.L., 130° E.L orbit locations. We deferred action on Astrolink’s request for TT&C frequencies with respect to the 175.25 E.L. orbit location and for co-located satellites at the other four locations. In addition, we modified Astrolink’s license to substitute the 2° E.L. location for the 38° E.L. orbital position originally specified consistent with our separate order regarding the orbital assignment plan for geostationary Ka-Band satellites. See *Assignment of Orbital Locations to Space Stations in the Ka-Band*, 12 FCC Rcd 22004 (Int’l Bur. 1997). See *Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission’s Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services*, Memorandum Opinion and Order, FCC 01-172 (rel. May 25, 2001) (order on petitions for clarification or reconsideration).

<sup>13</sup> Consolidated Petitions to Dismiss, Deny or Defer of Hughes Communications Galaxy, Inc., and Hughes Communications, Inc., filed May 21, 1999 (“*Hughes Consolidated Petition*”) at 13.

<sup>14</sup> See Section III.A for a complete discussion of this issue.

<sup>15</sup> *Id.* at 16.

<sup>16</sup> See *28 GHz Band First Report and Order*.

later refined the downlink plan for the frequency band between 17.7 and 18.8 GHz, by allocating 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.<sup>17</sup>

**a. Uplink Transmissions**

7. In its modification application, Astrolink proposes to modify its system to use 1000 MHz of additional uplink spectrum for domestic use and for use outside the United States in the 27.85-28.35 GHz and 28.6-29.1 GHz frequency bands on a secondary basis. As previously mentioned, the spectrum at 27.85-28.35 GHz is designated for GSO FSS operations on a secondary basis to the primary LMDS, a terrestrial-fixed service. Astrolink's requested spectrum at 28.6-29.1 GHz is designated on a primary basis to non-geostationary satellite orbit ("NGSO") FSS, while GSO FSS operations have secondary status and is allocated internationally for FSS, on a primary basis.<sup>18</sup> The domestic allocation contains a primary designation for NGSO systems. Therefore, Astrolink is required to demonstrate that it can operate domestically on a secondary or "non-harmful interference" basis both to the LMDS and NGSO FSS services. To facilitate such a sharing arrangement, Astrolink proposes to cease transmissions to and from its GSO satellites whenever an interference alignment situation with respect to operational NGSO FSS satellite occurs. Astrolink explains that it is prepared to either tolerate communications link outages or rely on GSO satellite diversity in order to mitigate expected disruptions of its transmission links.<sup>19</sup>

8. Astrolink and other concerned parties acknowledge that before GSO FSS systems can be permitted to operate on a secondary basis to NGSO FSS systems, at a minimum, an appropriate interference protection level must be established to protect NGSO FSS operations.<sup>20</sup> At this time however, technical studies analyzing the protection of NGSO FSS systems from GSO FSS systems' interference have not been completed. We recognize that in the absence of established NGSO FSS protection interference criteria, satellite operators cannot fully assess the impact that proposed GSO and NGSO FSS sharing would have on NGSO FSS operations. We further note that without such criteria Astrolink cannot make the required technical showing that its system can operate on a non-harmful interference basis in the designated NGSO FSS-primary bands.<sup>21</sup> We, therefore, do not have sufficient evidence on the record to consider Astrolink's request to operate its GSO FSS system in the 28.6-29.1 GHz frequency band. Therefore, we dismiss Astrolink's request to operate in this GSO FSS/NGSO FSS shared spectrum without prejudice pending the establishment of protection criteria for GSO FSS and NGSO FSS systems in these bands for both domestic use and for use outside of the United States. Once

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<sup>17</sup> *18 GHz Band Report and Order*, 15 FCC Rcd 13430.

<sup>18</sup> *Astrolink Modification Application* at 9. Astrolink refers to the 1997 World Radiocommunication Conference ("WRC") which adopted provisional power flux density ("pfd") limits to allow NGSO systems to operate in GSO primary spectrum. At WRC 2000, final pfd limits were approved for both the Ka- and Ku- frequency bands, however the Commission has not adopted these technical limits for the Ka-band. *See* Final Acts World Radiocommunication Conference (Istanbul, 2000), Partial Revision of the Radio Regulation, Article S22. The WRC rules, however, did not address how GSO systems may operate on a secondary basis with respect to NGSO systems as Astrolink proposes.

<sup>19</sup> *See Astrolink Modification Application* at 10.

<sup>20</sup> Lockheed Martin Corporation Consolidated Opposition at pp. 39-40 and n. 109.

<sup>21</sup> *See* Letter from John J. Wengryniuk, Executive Director, Regulatory Affairs, Astrolink to Magalie Roman Salas, Secretary, Federal Communications Commission (dated July 12, 2001). Astrolink acknowledges that certain decisions have been taken by the Commission since the time of submission of the Modification Application that may restrict the availability of some of these frequency bands for GSO FSS use in the United States. Astrolink asks that the Commission authorize the use of these additional frequency bands domestically at such time as the Commission is in a position to do so.

such criteria are established, Astrolink may file an application to modify its license to operate on this additional spectrum, together with a showing that its proposed secondary operations meet the established measures and criteria for non-interfering GSO FSS operations. Hughes' petition to deny Astrolink's application as it pertains to Astrolink's request to share the NGSO FSS spectrum bands is therefore moot.

9. Similarly, Astrolink's request to use spectrum in the 27.85-28.35 GHz frequency band on a secondary basis to the primary LMDS service for domestic use is also dismissed without prejudice as protection criteria from FSS to LMDS operations have not been established. Astrolink may file a license modification application requesting this additional spectrum once protection criteria for GSO FSS and LMDS operations have been established.

10. Astrolink also requests authority to use the 27.85-28.35 GHz frequency band for uplink transmissions outside of the United States.<sup>22</sup> Unlike the domestic allocation, which contains a primary designation for LMDS, the 27.85-28.35 GHz frequency band is allocated internationally for FSS, on a primary basis. The Commission recently clarified its policy for use of the 27.5-28.35 GHz band by U.S.-licensed FSS operators outside of the United States.<sup>23</sup> We will authorize Astrolink's operations in the 27.5-28.35 GHz band in accordance with the conditions specified in this Order as well as the *Reconsideration of Ka-Band FSS Rules Order*.

#### **b. Downlink Transmissions.**

11. In its modification application, Astrolink also requests authority to use the 17.8-18.3 GHz frequency band for downlink transmissions outside of the United States.<sup>24</sup> As with the companion uplink spectrum at 27.85-28.35 GHz, the 17.8-18.3 GHz band is allocated internationally for FSS. These additional downlink frequencies were also addressed in the *Reconsideration of Ka-Band FSS Rules Order*.<sup>25</sup> We will therefore authorize Astrolink's operations in these bands in accordance with the conditions specified in this Order as well as the *Reconsideration of Ka-Band FSS Rules Order*.

12. Astrolink also proposes to operate downlinks in the 17.8-18.3 GHz and 18.8-19.3 GHz bands for domestic use. In the 17.8-18.3 GHz band, Astrolink proposes to operate on a co-primary basis with U.S.-licensed terrestrial fixed services.<sup>26</sup> This spectrum is allocated domestically exclusively for

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<sup>22</sup> See *Astrolink Modification Application* at p. 9; see also Letter from John J. Wengryniuk, Executive Director, Regulatory Affairs, Astrolink to Magalie Roman Salas, Secretary, Federal Communications Commission (dated July 12, 2001).

<sup>23</sup> *Memorandum Opinion and Order, 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*, FCC 01-172 (rel. May 25, 2001) ("*Reconsideration of Ka-Band FSS Rules Order*"). In this Order, the Commission issued a clarifying statement that stated that U.S. licensed Ka-band FSS licensees may use the frequency bands 17.7-18.8 GHz and 27.5-28.6 GHz to communicate with earth stations in foreign countries, subject to coordination with foreign administrations and certain U.S.-licensed operators as well as subject to the laws of the foreign countries in which these earth stations are located.

<sup>24</sup> See *Astrolink Modification Application* at p. 9; see also Letter from John J. Wengryniuk, Executive Director, Regulatory Affairs, Astrolink to Magalie Roman Salas, Secretary, Federal Communications Commission (dated July 12, 2001).

<sup>25</sup> *Memorandum Opinion and Order, 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*, FCC 01-172 (rel. May 25, 2001) ("*Reconsideration of Ka-Band FSS Rules Order*").

<sup>26</sup> *Astrolink Modification Application* at p. 10.

terrestrial fixed service operations.<sup>27</sup> We therefore deny Astrolink's request for domestic use of this spectrum.

13. In its modification application, Astrolink also proposes to use additional downlink spectrum for use inside and outside of the United States in the 18.8-19.3 GHz frequency band. The 18.8-19.3 GHz frequency band is currently allocated domestically for NGSO FSS use systems<sup>28</sup> but is allocated internationally to FSS, on a primary basis. As noted above, Astrolink has not demonstrated that it can operate its GSO FSS system on a non-harmful interference basis to NGSO FSS in these bands. As is the case for the uplink bands, Astrolink's request to use spectrum in the 18.8-19.3 GHz frequency bands for both domestic use and use outside of the United States is also dismissed without prejudice to refiling. In any future filing, Astrolink must also demonstrate that a waiver of the Table of Frequency Allocations is warranted.

14. In addition, Astrolink must coordinate with U.S. Government systems in accordance with footnote US334 to the Table of Frequency Allocations.<sup>29</sup> 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.<sup>30</sup> Astrolink 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.<sup>31</sup>

## 2. Tracking, Telemetry and Command

15. 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.<sup>32</sup> Astrolink proposes to conduct its TT&C operations during transfer-orbit maneuvers and on-orbit in extended C-band frequencies. Specifically, Astrolink proposes to conduct its command functions in the 6425-6525 MHz band and its telemetry functions in the 3650-3700 MHz band.<sup>33</sup> All of these

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<sup>27</sup> *18 GHz Band Report and Order*, 15 FCC Rcd at 13445-46, ¶¶ 31-33. Prior to the *18 GHz Band Report and Order* this segment of the 18 GHz band was designated for shared co-primary use between GSO FSS and terrestrial fixed service operations. *Id.* at ¶ 31.

<sup>28</sup> *Id.* at 13454-56, ¶¶ 50-52. Prior to the *18 GHz Band Report and Order* this segment of the 18 GHz band was designated for co-primary use by NGSO FSS and terrestrial fixed service operations, and for secondary use by GSO FSS. *Id.* at 13435 ¶ 10.

<sup>29</sup> See 47 C.F.R. § 2.106 US334.

<sup>30</sup> 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<sup>2</sup>) 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).

<sup>31</sup> 47 C.F.R Section 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.

<sup>32</sup> 47 C.F.R § 25.202(g).

<sup>33</sup> Specifically, command and tracking operations would take place at 6425.5 and 6427.5 MHz and telemetry will be received at 3650.5 and 3699.5 MHz. *Astrolink Modification Application* at p.15. 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

(continued....)

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 of the Commission's rules.<sup>34</sup> 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.<sup>35</sup> Although Astrolink has provided a showing seeking to demonstrate that a waiver of Section 25.202(g) for TT&C operations outside its service band is warranted,<sup>36</sup> that showing only addressed potential coordination concerns with respect to other U.S. licensees, and does not fully address the underlying purpose of the rule. Thus, we deny Astrolink's request. In its amended application, Astrolink states its intention to request specific TT&C frequencies for the remaining satellites in its system when deployment orders and other operational issues have been resolved.<sup>37</sup> We expect that Astrolink will make the requisite technical showing for the 175.25° E.L. orbital location and for any additional co-located satellite in its system, in the event it wishes to continue pursuing the use of extended C-band frequencies for those satellites.

## B. License Conditions

### 1. International Coordination.

16. In general, we will follow the applicable advance-publication, coordination, and notification procedures as set forth in the ITU Radio Regulations in coordinating Astrolink's satellites with other affected administrations. We will also require that Astrolink provide the Commission with the international coordination information required by our rules.<sup>38</sup> The orbit locations 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.

## IV. CONCLUSION

17. Accordingly, upon review, we modify Astrolink's Ka-band system license to include additional uplink and downlink frequencies for its satellites assigned to the 97° W.L., 21.5° W.L., 2° E.L., 130° E.L, and 175.25° E.L. orbital locations for international use. These actions provide Astrolink with the opportunity to implement a variety of advanced broadband communication services to businesses and consumers around the world.

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"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. Astrolink 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.

<sup>34</sup> 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").

<sup>35</sup> *Id.* at ¶¶ 129-130.

<sup>36</sup> See *Astrolink Modification Application*, Exhibit D-1.

<sup>37</sup> See *Amendment to Astrolink Modification Application*, File Nos. SAT-AMD-20000801-00116 (filed August 8, 2001).

<sup>38</sup> See 47 C.F.R. § 25.111(b).

**V. ORDERING CLAUSES**

18. IT IS ORDERED that the Application for Modification filed by Astrolink, International LLC, File Nos. 35-SAT-MP/ML-98; IBFS No. SAT-MOD-19971222-00200 IS GRANTED IN PART and DISMISSED IN part, as discussed above.

19. IT IS FURTHER ORDERED that Astrolink International, LLC is authorized to transmit in the 17.8-18.3 GHz frequency bands to earth stations in foreign countries, and receive transmissions from such earth stations in the 27.85-28.35 GHz frequency bands, in accordance with the technical specifications set forth in its application and the pertinent provisions of Part 25 of the Commissions rules.

20. IT IS FURTHER ORDERED that when requesting international coordination of proposed use of frequencies in the 17.8-18.3 GHz band for downlinks to earth stations in foreign countries, Astrolink International, LLC shall certify in an affidavit filed with the Satellite and Radiocommunication Division of the Commission's International Bureau, that it has coordinated the proposed operation with other licensees with authority from the Commission for non-U.S. geostationary or non-geostationary satellite operation in that band. When requesting international coordination of proposed use of frequencies in the 27.5-28.35 GHz band for links with earth stations in foreign countries, Astrolink International, LLC shall certify that it has coordinated the proposed operation with other licensees with authority from the Commission for non-U.S. geostationary satellite operation in that band. The filing shall include certification of service on the licensees with whom such coordination is required.

21. IT IS FURTHER ORDERED that Astrolink International, LLC is obliged to comply with the applicable laws, regulations, rules, and licensing procedures in those countries it proposes to serve.

22. IT IS FURTHER ORDERED that Astrolink International, 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 ¶ 90.

23. IT IS FURTHER ORDERED that Astrolink International, LLC 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.

24. IT IS FURTHER ORDERED that Astrolink International, 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 Union Radio Regulations. We also remind Astrolink International, LLC 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). Further Astrolink International, LLC must operate its satellites in accordance with any international coordination agreements already in existence.

25. IT IS FURTHER ORDERED that Astrolink International, 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.

26. 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