# Before the **Federal Communications Commission** Washington, DC 20554

In the Matter of	
Intelsat License LLC	File No. SAT-RPL-
Application for Authority to Launch and Operate Intelsat 21, a Replacement Satellite, at 58.0° W.L.	

# APPLICATION FOR AUTHORITY TO LAUNCH AND OPERATE INTELSAT 21, A REPLACEMENT SATELLITE, AT 58.0° W.L.

Intelsat License LLC ("Intelsat"), pursuant to Section 25.114 of the Federal Communications Commission's ("FCC" or "Commission") rules, hereby applies to launch and operate a replacement C/Ku-band satellite, to be known as Intelsat 21, at the 58.0° W.L. orbital location. Intelsat 21 is scheduled for launch on a Sea Launch vehicle early in the third quarter of 2012 and will replace the Intelsat 9 satellite (call sign S2380), which is currently operating at 58.0° W.L. Intelsat 21 will operate on a non-common carrier basis.<sup>3</sup>

<sup>&</sup>lt;sup>1</sup> 47 C.F.R. § 25.114.

<sup>&</sup>lt;sup>2</sup> Saa Pan Am Sat Lia

<sup>&</sup>lt;sup>2</sup> See PanAmSat Licensee Corp. Application for Authority to Launch and Operate a Replacement C/Ku Hybrid Fixed Satellite Service Space Station at 58° W.L., Order and Authorization, 15 FCC Rcd 11747 (Sat. & Radiocomm. Div., Int'l Bur. 2000); PanAmSat Licensee Corp. Application for Authority to Use Extended Ku-Band Frequencies for Domestic Service, Order and Authorization, 20 FCC Rcd 14642 (Int'l Bur. 2005).

<sup>&</sup>lt;sup>3</sup> Section 310(b) is not applicable to this license because Intelsat 21, like all other satellites licensed to Intelsat, will operate on a non-common carrier basis. *See Applications of The News Corp. Ltd. and The DIRECTV Group, Inc. (Transferors) and Constellation, LLC, Carlyle PanAmSat I, LLC, Carlyle PanAmSat II, LLC, PEP PAS, LLC and PEOP PAS, LLC (Transferees) for Authority to Transfer Control of PanAmSat Licensee Corp.*, Public Notice, 19 FCC Rcd 15,424, 15,425 (n.5) (Int'l Bur. 2004).

As demonstrated below, Intelsat is legally and technically qualified to launch and operate its proposed replacement satellite. Moreover, grant of this application will serve the public interest by ensuring continuity of service to customers at the 58.0° W.L. orbital location. In accordance with the Commission's requirements,<sup>4</sup> this application has been filed electronically as an attachment to FCC Form 312 and Schedule S.

## I. <u>INTELSAT IS QUALIFIED TO HOLD THE REPLACEMENT</u> AUTHORIZATION REQUESTED HEREIN

#### A. <u>Legal Qualifications</u>

Intelsat is legally qualified to hold the replacement space station authorization requested in this application. The information provided in the attached Form 312 demonstrates Intelsat's compliance with the Commission's basic legal qualifications. In addition, Intelsat already holds multiple Commission satellite licenses, and its "legal qualifications are a matter of record" before the Commission.<sup>5</sup>

#### **B.** Technical Qualifications

In the attached Form 312, Schedule S, and Engineering Statement, Intelsat demonstrates that it is technically qualified to hold the authorization requested herein. Specifically, Intelsat provides the information currently required by Section 25.114 of the Commission's rules. <sup>6</sup> In

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licenses.").

<sup>&</sup>lt;sup>4</sup> 47 C.F.R. § 25.114(c).

<sup>&</sup>lt;sup>5</sup> See Constellation, LLC, Carlyle PanAmSat I, LLC, Carlyle PanAmSat II, LLC, PEP PAS, LLC, and PEOP PAS, LLC, Transferors and Intelsat Holdings, Ltd., Transferee, Consolidated Application for Authority to Transfer Control of PanAmSat Licensee Corp. and PanAmSat H-2 Licensee Corp., Memorandum Opinion and Order, 21 FCC Rcd 7368, 7381 (¶ 23) (2006) ("The Commission previously has determined that PanAmSat and Intelsat are qualified to hold

<sup>&</sup>lt;sup>6</sup> 47 C.F.R. § 25.114.

addition, the Engineering Statement provides information on Intelsat's compliance with the Commission's orbital debris mitigation rules.<sup>7</sup>

## C. Waiver Requests

Intelsat requests waiver of the following technical rules:

- (1) Section 25.210(i)(1), which specifies cross polarization isolation requirements within the primary coverage area;
- (2) Section 25.210(a)(3), which requires all space stations in the FSS for domestic service in the 3700-4200 MHz and 5925-6425 MHz bands to be capable of switching polarization sense upon ground command;
- (3) Section 25.202(g), which requires that TT&C functions for U.S. domestic satellites be conducted at either or both edges of the allocated bands; and
- (4) Footnote 2 of Section 25.202 (a)(1) and Footnote NG104 of the U.S. Table of Allocations, which limit the use of the 11450-11700 MHz band by the nonfederal fixed satellite service in the geostationary orbit to international systems only.

Under Section 1.3 of the Commission's rules, the Commission has authority to waive its rules "for good cause shown." Good cause exists if "special circumstances warrant a deviation from the general rule and such deviation will serve the public interest" better than adherence to the general rule. In determining whether waiver is appropriate, the Commission should "take into account considerations of hardship, equity, or more effective implementation of overall policy." As shown below, there is good cause for each of the requested technical waivers.

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<sup>&</sup>lt;sup>7</sup> Mitigation of Orbital Debris, Second Report and Order, 19 FCC Rcd 11,567 (2004).

<sup>&</sup>lt;sup>8</sup> 47 C.F.R. § 1.3; WAIT Radio v. FCC, 418 F.2d 1153, 1159 (D.C. Cir. 1969).

<sup>&</sup>lt;sup>9</sup> Northeast Cellular Telephone Co. v. FCC, 897 F.2d 1164, 1166 (D.C. Cir. 1990).

<sup>&</sup>lt;sup>10</sup> WAIT Radio, 418 F.2d at 1159.

#### 1. Request for Waiver of Section 25.210(i)(1)

Intelsat requests waiver of Section 25.210(i)(1) of the Commission's rules. Section 25.210(i)(1) requires that satellite antennas in the Fixed-Satellite Service be designed to provide a cross-polarization isolation such that the ratio of the on-axis co-polar gain to the on-axis cross-polar gain of the antenna in the assigned frequency band will be at least 30 dB within its primary coverage area. As explained more fully on pages 6 and 7 and Exhibit 5D of the attached Engineering Statement, the 30 dB requirement is not met with regard to the Intelsat 21 West Hemi, vertically polarized receive beam, which has a cross-polarization isolation of at least 27 dB in a very limited portion of the coverage area.

Good cause exists to waive the cross-polarization isolation requirement of Section 25.210(i)(1) because a failure to meet the requirement does not adversely affect any other operator. The FCC previously has acknowledged that non-compliance results only in self-interference and granted waivers to other operators in similar situations. In this case, the minimum level of isolation of the non-compliant Intelsat 21 beam within the primary coverage area is 27 dB. This level was the best that the satellite manufacturer could achieve without causing excessive degradation in the co-polarized gain of the beam and/or in the size of its

<sup>&</sup>lt;sup>11</sup> See 47 C.F.R. § 25.210(i)(1).

<sup>&</sup>lt;sup>12</sup> See AMC-15 Ku-Band Circular Polarization Amendment, File Nos. SAT-LOA-20030219-00013 and SAT-AMD-20030422-00069, Attachment Terms and Conditions of Authorization (¶ 5) (Aug. 18, 2004).

<sup>&</sup>lt;sup>13</sup> See, e.g., Applications of INTELSAT LLC; For Authority to Operator, and to Further Construct, Launch, and Operate C-band and Ku-band Satellites that Form a Global Communications System in Geostationary Orbit, 15 FCC Rcd 15,460, 15,503 (¶ 109) (2000); New Skies Satellites N.V.; Petition for Declaratory Ruling, Order, 17 FCC Rcd 10,369, 10,376-377 (¶ 19) (2002); Star One S.A. Petition for Declaratory Ruling to Add the Star One C1 Satellite at 65° W.L. to the Permitted Space Station List, Order, 19 FCC Rcd 16,334, 16,339 (¶ 12) (2004).

coverage area. Intelsat has taken this level of isolation into account in its planned operations. Moreover, Commission precedent supports a grant of Intelsat's requested waiver of Section 25.210(i)(1) for Intelsat 21.<sup>14</sup>

# 2. Request for Waiver of Section 25.210(a)(3)

Intelsat also requests waiver of Section 25.210(a)(3), which requires all space stations in the Fixed-Satellite Service used for domestic service in the 3700-4200 MHz and 5925-6425 MHz bands to be capable of switching polarization sense upon ground command. The Intelsat 21 C-band beam polarizations are fixed and cannot be changed.

Good cause exists to waive this requirement because there is no risk of harmful interference. The co-frequency C-band satellites within plus/minus six degrees of Intelsat 21 at 58.0° W.L. are Intelsat 707 at 53° W.L., Intelsat 805 at 55.5° W.L., Galaxy 11 at 55.5° W.L., and Amazonas-1 and Amazonas-2 at 61.0° W.L. With respect to the first three satellites, Intelsat will coordinate the operations of Intelsat 21 internally. With respect to the Amazonas-1 and Amazonas-2 satellites, Intelsat will operate Intelsat 21 in accordance with the terms of its existing coordination agreements with Hispamar Satelites, S.A., the operator of those satellites. Accordingly, there is no risk of harmful interference. In addition, Commission precedent supports a grant of Intelsat's requested waiver of Section 25.210(a)(3) for the Intelsat 21 satellite. Satellite.

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<sup>&</sup>lt;sup>14</sup> See Application to Launch and Operate Intelsat 17, a Replacement Satellite, at 66.0 E.L., IBFS File No. SAT-LOA-20100726-00167 (stamp grant Nov. 17, 2010; re-issued stamp grant with further conditions Dec. 17, 2010).

<sup>&</sup>lt;sup>15</sup> See 47 C.F.R. § 25.210(a)(3).

<sup>&</sup>lt;sup>16</sup> See Policy Branch Information: Actions Taken, Report No. SAT-00637, DA 09-2162, File No. SAT-RPL-20090123-00007 (Oct. 2, 2009) (Public Notice) (granting Intelsat a waiver of Section 25.210(a)(3) for the Intelsat 14 satellite).

# 3. Request for Waiver of Section 25.202(g)

Intelsat also requests waiver of Section 25.202(g), which requires that TT&C functions for U.S. domestic satellites be conducted at either or both edges of the allocated bands. The Intelsat 21 command frequencies are outside of the 14000-14500 MHz portion of the satellite's Ku-band payload. Specifically, the Intelsat 21 command frequencies are located at 13750.5 MHz and 13994.5 MHz.

Good cause exists to waive this requirement. As described more fully in the Engineering Statement, because Intelsat 21 will be operating at the nominal 58.0° W.L. location with Intelsat 16 at 58.1° W.L. and, for a period of time, with Intelsat 9 at 58.0° W.L., Intelsat could not utilize a frequency segment in the 14000-14500 MHz band for command that would satisfy the company's technical requirements for safe TT&C operation. Moreover, waiver is warranted here because Intelsat is already utilizing the 13750-14000 MHz band at this nominal location on Intelsat 16.18 Accordingly, Intelsat's use of the 13750.5 MHz and 13994.5 MHz frequencies for command of Intelsat 21 does not adversely affect any other operator.

<sup>&</sup>lt;sup>17</sup> See 47 C.F.R. § 25.202(g).

<sup>&</sup>lt;sup>18</sup> See Policy Branch Information; Actions Taken, Report No. SAT-00610, File No. SAT-LOA-20080416-00085 (June 5, 2009) (Public Notice).

# 4. Request for Waiver of Footnote 2 of Section 25.202(a)(1) and Footnote NG104 of the U.S. Table of Allocations

Intelsat also requests waiver of footnote 2 to Section 25.202(a)(1) and footnote NG104 of the U.S. Table of Allocations, which restrict the use of the 11450-11700 MHz band by the non-federal Fixed-Satellite Service ("FSS") in the geostationary orbit to international systems only. <sup>19</sup> The 11450-11700 MHz band is used by the Intelsat mobility beam, which covers eastern South America, Europe, western Africa and a small portion of the northeast United States.

Good cause exists to waive the international only requirements for the 11450-11700 MHz frequency band. The purpose of NG104 and footnote 2 of Section 25.202(a)(1) is to limit the number of the FSS earth stations with which the co-primary Fixed Service would need to coordinate. Intelsat will provide services in the 11450-11700 MHz frequency band only on a non-interference/non-protected basis, and therefore will not need to coordinate with Fixed Service stations. Additionally, the Commission previously granted a waiver of NG104 and footnote 2 of Section 25.202(a)(1) to the Intelsat 9 (formerly PAS 9/ PAS 23) satellite that Intelsat 21 seeks to replace at the 58.0° W.L. 11

<sup>&</sup>lt;sup>19</sup> See 47 C.F.R. §§ 25.202(a)(1), fn. 2 and 2.106, fn. NG104.

<sup>&</sup>lt;sup>20</sup> See Satellite Services, 26 RR 2d 1257, 1263-65 (1973),. See also EchoStar KuX Corporation Application for Authority to Construct, Launch and Operate a Geostationary Satellite Using the Extended Ku-band Frequencies in the Fixed-Satellite Service at the 83° W.L. Orbital Location, Order and Authorization, DA 04-3162, 9 (Int'l Bur., Sept. 30, 2004) ("EchoStar 83° Waiver").

<sup>&</sup>lt;sup>21</sup> See PanAmSat Licensee Corp. Application for Authority to Use Extended Ku-Band Frequencies for Domestic Service, Order and Authorization, 20 FCC Rcd 14642 (Int'l Bur. 2005).

Moreover, grant of this waiver is consistent with the Commission's precedent. A waiver of the Table of Allocations is generally granted "when there is little potential interference into any service authorized under the Table of Frequency allocations and when the nonconforming operator accepts any interference from authorized services." The International Bureau has found that waiving NG104 and footnote 2 of Section 25.202(a)(1) would not undermine the purpose of the rules if the party seeking a waiver: (1) will be utilizing earth stations that are receive-only in these bands and thus "not capable of causing interference into FS stations" operating in the bands. Intelsat satisfies these criteria. The earth stations operating in the 11450-11700 MHz band on Intelsat 21 will not transmit in these bands and Intelsat agrees to accept any level of interference into those earth stations from Fixed Service stations in the band. Accordingly, the earth stations operating in these bands pose no interference concerns with respect to co-frequency Fixed Service stations.

Intelsat also agrees to abide by the customer notification requirements that the International Bureau has previously imposed when granting waivers of NG104 and footnote 2 of Section 25202(a)(1).<sup>24</sup> Intelsat will inform its customers in writing, including any customers receiving end-user services from resellers accessing capacity on Intelsat 21, of the potential for interference from Fixed Service operations in the 11450-11700 MHz band.

<sup>&</sup>lt;sup>22</sup> See The Boeing Company, Order and Authorization, 16 FCC Rcd 22645, 22651 (Int'l Bur. & OET 2001); Application of Fugro-Chance, Inc. for Blanket Authority to Construct and Operate a Private Network of Receive-Only Mobile Earth Stations, Order and Authorization, 10 FCC Rcd 2860 (Int'l Bur. 1995) (authorizing MSS in the C-band); see also Application of Motorola Satellite Communications, Inc. for Modification of License, Order and Authorization, 11 FCC Rcd 13952-13956 (Int'l Bur. 1996) (authorizing service to fixed terminals in bands allocated the mobile satellite service).

<sup>&</sup>lt;sup>23</sup> EchoStar 83° Waiver, ¶ 13.

<sup>&</sup>lt;sup>24</sup> See, e.g., Intelsat North America Request for Waiver, File No. SAT-MOD-20050610-00122, 3 (stamp grant with conditions Sept. 30, 2005); EchoStar 83° Waiver, ¶ 13.

#### D. Operational Frequencies

The following chart shows the FSS frequencies that will be used by the Intelsat 21 satellite at 58.0° W.L., as well as the FSS frequencies that are currently used by the Intelsat 9 satellite at 58.0° W.L. and the Intelsat 16 satellite at 58.1° W.L. <sup>25</sup>

Frequency Band (MHz)	Intelsat 9	Intelsat 21	Intelsat 16
5925 – 6425	✓	<b>✓</b>	
3700 – 4200	✓	✓	
13750 – 14000			✓
14000 – 14500	✓	✓	✓
11450 – 11700	✓	✓	
11700 –12200	✓	✓	✓

The frequencies on Intelsat 21 are identical to those on Intelsat 9.

# II. GRANT OF THIS APPLICATION WILL SERVE THE PUBLIC INTEREST

The Commission recognizes a "replacement expectancy" in orbital locations in order to protect the large investments made by satellite operators. The agency has stated,

[G]iven the huge costs of building and operating satellite space stations, there should be some assurance that operators will be able to continue to serve their customers. The Commission has therefore stated that, when the orbit location remains available for a U.S. satellite with the technical characteristics of the proposed replacement satellite, it will generally authorize the replacement satellite at the same location. <sup>26</sup>

 $<sup>^{25}</sup>$  See Policy Branch Information; Actions Taken, Report No. SAT-00610, File No. SAT-LOA-20080416-00085 (June 5, 2009) (Public Notice).

<sup>&</sup>lt;sup>26</sup> Columbia Communications Corporation Authorization to Launch and Operate a Geostationary C-band Replacement Satellite in the Fixed-Satellite Service at 37.5° W.L., Memorandum Opinion and Order, 16 FCC Rcd 20176, ¶ 7 (2001) (citing Assignment of Orbital Locations to Space Stations in Domestic Fixed-Satellite Service, Memorandum Opinion and Order, 3 FCC

In this case, Intelsat holds a replacement expectancy for the nominal 58.0° W.L. orbital location. As demonstrated in the attached Engineering Statement and FCC Form 312, Schedule S, Intelsat 21 is technically consistent with the Intelsat 9 satellite currently operating at the 58.0° W.L. location.

In addition, grant of this application will serve the public interest by ensuring continuity of service to consumers from the nominal 58.0° W.L. orbital location. Intelsat stands ready to deploy a replacement satellite to the 58.0° W.L. orbital location before Intelsat 9 reaches the end of its useful life or is relocated and has made concrete steps toward constructing Intelsat 21. Indeed, the Commission has stated that granting replacement applications ensures that service will be provided to consumers as efficiently as possible because the current licensee will be familiar with the service requirements and, given its experience, should be able to deploy a replacement satellite in the shortest possible time. <sup>27</sup>

#### III. ITU COST RECOVERY

FCC Rcd 13775, ¶ 6 (Int'l Bur. 1995)).

Intelsat is aware that processing fees are currently charged by the ITU for satellite filings, and that Commission applicants are responsible for any and all fees charged by the ITU.<sup>28</sup> Intelsat is aware of and unconditionally accepts this requirement and responsibility to pay any

Rcd 6972, n.31 (1988) and GE American Communications, Inc., Order and Authorization, 10

 $<sup>^{27}</sup>$  See Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2GHz Band, the L-Band, and the 1.6/2.4 GHz Bands, Report and Order and Notice of Proposed Rulemaking, 18 FCC Rcd 1962, ¶ 83 (2003) ("Repairing or even replacing a malfunctioning satellite, for all its complexity, requires less time than designing and constructing a new system. Even in the worst case where a satellite is destroyed, a licensee can ordinarily replace a lost satellite with a ground spare at the next available launch window, or procure a technically identical satellite in an expedient manner since it would have already completed the complex design process.").

<sup>&</sup>lt;sup>28</sup> See Implementation of ITU Cost Recovery Charges for Satellite Network Filings, Public Notice, DA 01-2435 (Oct. 19, 2001).

ITU cost recovery fees associated with the ITU filings that the Commission makes on behalf of Intelsat for the satellite proposed in this Application, as well as any ITU filings associated with any satellite system for which Intelsat may request authorization at a later date.

# IV. <u>11450-11700 MHZ FREQUENCY BAND</u>

Intelsat understands that operations in the 11450-11700 MHz frequency band are subject to certain limitations and obligations, which Intelsat accepts and will fulfill. Specifically, for operations in the 11450-11700 MHz frequency band, Intelsat accepts the following condition:

Intelsat's use of the 11450-11700 MHz band (space-to-Earth) is subject to footnote US211 to the United States Table of Frequency Allocations, 47 C.F.R. § 2.106, US211, which urges applicants for airborne or space station assignments to take all practicable steps to protect radio astronomy observations in the adjacent bands from harmful interference, consistent with footnote US74.

#### V. <u>CONCLUSION</u>

Based on the foregoing, Intelsat respectfully requests that the Commission grant this replacement satellite application.

Respectfully submitted,

/s/ Susan H. Crandall

Susan H. Crandall Assistant General Counsel Intelsat Corporation

Jennifer D. Hindin Colleen King WILEY REIN LLP 1776 K Street, N.W. Washington, DC 20006

March 26, 2012

#### Exhibit A

#### FCC Form 312, Response to Question 34: Foreign Ownership

The Commission previously approved foreign ownership in Intelsat License LLC ("Intelsat"), in the *Intelsat-Serafina Order*. In December 2009, the Commission also approved the *pro forma* changes in Intelsat's foreign ownership. There have been no other material changes to Intelsat's foreign ownership since the date of the *Intelsat-Serafina Order*.

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Intelsat Holdings, Ltd. and Serafina Holdings Limited, Consolidated Application for Consent to Transfer of Control of Holders of Title II and Title III Authorizations, Memorandum Opinion and Order, 22 FCC Rcd 22,151 (2007).

See Intelsat North America LLC, Intelsat LLC, PanAmSat Licensee Corp., PanAmSat H-2 Licensee Corp., and Intelsat New Dawn Company, Ltd., Applications for Pro Forma Transfer of Control, File Nos. SAT-T/C-20091125-00128, SAT-T/C-20091125-00124, SAT-T/C-20091125-00127, SAT-T/C-20091125-00125, SAT-T/C-20091125-01505, SES-T/C-20091125-01502, SES-T/C-20091125-01504 and SES-T/C-20091125-01503 (granted Dec. 3, 2009).

#### Exhibit B

#### FCC Form 312, Response to Question 36: Cancelled Authorizations

Intelsat License LLC ("Intelsat") has never had an FCC license "revoked." However, on June 26, 2000, the International Bureau "cancelled" two Ka-band satellite authorizations issued to a former Intelsat entity, PanAmSat Licensee Corp. ("PanAmSat"), based on the Bureau's finding that PanAmSat had not satisfied applicable construction milestones. In that same order, the Bureau denied related applications to modify the cancelled authorizations. PanAmSat filed an application for review of the Bureau's decision, which the Commission denied, and subsequently filed an appeal with the United States Court of Appeals for the District of Columbia Circuit, which was dismissed in January 2003 at PanAmSat's request. Notwithstanding the fact that the Bureau's action does not seem to be the kind of revocation action contemplated by question 36, Intelsat is herein making note of the decision in the interest of absolute candor and out of an abundance of caution. In any event, the Bureau's action with respect to PanAmSat does not reflect on Intelsat's basic qualifications, which are well-established and a matter of public record.

All licenses previously held by PanAmSat Licensee Corp. have been assigned to Intelsat License LLC. *See* IBFS File Nos. SAT-ASG-20101203-00252 (granted Dec. 23, 2010), SES-

ASG-20101203-0150 (granted Dec. 20, 2010), and SES-ASG-20101206-01502 (granted Dec. 20, 2010).

20, 2010).

<sup>&</sup>lt;sup>4</sup> See PanAmSat Licensee Corp., Memorandum Opinion and Order, 15 FCC Rcd 18720 (IB 2000).

#### **Exhibit C**

# FCC Form 312, Response to Question 40: Officers, Directors, and Ten Percent or Greater Shareholders

The officers and directors/managers of Intelsat License LLC are as follows:

Officers:

Michael McDonnell, Chairman Flavien Bachabi, Deputy Chairman Phillip Spector, Secretary Simon Van De Weg, Director, Finance

Board of Managers:

Michael McDonnell Flavien Bachabi Phillip Spector

The address of all Intelsat License LLC officers and members of the Board of Managers is:

4 rue Albert Borschette L-1246 Luxembourg

Intelsat License LLC is a Delaware limited liability company that is wholly owned by Intelsat License Holdings LLC, also a Delaware limited liability company. Intelsat License Holdings LLC is wholly owned by Intelsat Subsidiary Holding Company S.A., a Luxembourg company. Intelsat Subsidiary Holding Company S.A. is wholly owned by Intelsat Phoenix Holdings S.A., a Luxembourg company. Intelsat Phoenix Holdings S.A. is wholly owned by Intelsat Intermediate Holding Company S.A. is wholly owned by Intelsat Jackson Holdings S.A., a Luxembourg company. Intelsat Jackson Holdings S.A. is wholly owned by Intelsat (Luxembourg) S.A., a Luxembourg company. Intelsat S.A. is wholly owned by Intelsat Holdings S.A., a Luxembourg company. Intelsat S.A. is wholly owned by Intelsat Holdings S.A., a Luxembourg company. Intelsat Global Subsidiary S.A. is wholly owned by Intelsat Global Subsidiary S.A., a Luxembourg company. Intelsat Global Subsidiary S.A. is wholly owned by Intelsat Global S.A., a Luxembourg company ("Intelsat Global Subsidiary S.A. is wholly owned by Intelsat Global S.A., a Luxembourg company ("Intelsat Global Subsidiary S.A. is wholly owned by Intelsat Global S.A., a Luxembourg company ("Intelsat Global", formerly "Serafina Holdings Limited"). Each of these entities may be contacted at the following address: 4 rue Albert Borschette, L-1246 Luxembourg.

Intelsat Global's ownership was approved by the Commission in the *Intelsat-Serafina Order*, has not changed materially and is incorporated by reference. *See Intelsat Holdings, Ltd. and Serafina Holdings Limited, Consolidated Application for Consent to Transfer of Control of Holders of Title II and Title III Authorizations*, Memorandum Opinion and Order, 22 FCC Rcd 22,151 (2007) ("*Intelsat-Serafina Order*").