

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

In the Matter of

Intelsat License LLC

Application to Modify Authorization for  
Intelsat 805 (S2404)

File No. SAT-MOD- \_\_\_\_\_

**APPLICATION OF INTELSAT LICENSE LLC**  
**TO MODIFY AUTHORIZATION FOR INTELSAT 805**

Intelsat License LLC (“Intelsat”), pursuant to Section 25.117 of the rules of the Federal Communications Commission (“Commission” or “FCC”), 47 C.F.R. § 25.117, hereby seeks to modify the authorization for the Intelsat 805 satellite (Call Sign S2404). Specifically, this modification application seeks authority to relocate Intelsat 805 to, and operate the satellite at, 169.0° E.L. In addition, this modification application seeks to extend the license term for Intelsat 805, and extend all previously granted waivers, through December 31, 2019.

In accordance with the requirements of the Commission’s rules,<sup>1</sup> this application has been filed electronically as an attachment to FCC Form 312. Intelsat provides the technical information relating to the proposed modification on Schedule S and in narrative form, as contained in the attached Engineering Statement, pursuant to Section 25.114 of the Commission’s rules.<sup>2</sup>

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<sup>1</sup> 47 C.F.R. § 25.117(c).

<sup>2</sup> *Id.* § 25.114.

**I. PROPOSED MODIFICATIONS**

**A. Relocation to 169.0° E.L.**

Intelsat requests authority to relocate Intelsat 805 to, and operate the satellite at, 169.0° E.L. Intelsat 805 is currently operating at 55.5° W.L.<sup>3</sup> Intelsat has filed a Special Temporary Authority (“STA”) request for 180 days,<sup>4</sup> commencing December 1, 2015, to drift Intelsat 805 to, and operate the satellite at, 169.0° E.L.

During the drift of Intelsat 805, Intelsat will utilize only the satellite’s TT&C frequencies and will follow industry practices for coordinating TT&C transmission during the relocation process. Intelsat 805’s specific TT&C frequencies are as follows:

Uplink:	Downlink:
6173.7 MHz	3947.5 MHz
6176.3 MHz	3948.0 MHz
	3950.0 MHz
	3952.0 MHz
	3952.5 MHz
	12501.0 MHz

Intelsat 805 will be co-located with Intelsat 8 (Call Sign 2460)<sup>5</sup> at the nominal 169.0° E.L. location. Intelsat 8 is currently operating at 169.0° E.L., and is expected to be relocated slightly, pending receipt of FCC approval, after some of its traffic has transitioned to Intelsat 805. The specific communications frequencies are as follows:

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<sup>3</sup> See *In the Matter of Intelsat LLC, Application to Modify Authorization for Intelsat 805 to Allow the Provision of Fixed-Satellite Service Between Non-U.S. Points in the 12.7-12.75 GHz Frequency Band*, Order and Authorization, 19 FCC Rcd 2775 (2004) (“Intelsat 805 Modification Order”).

<sup>4</sup> See Application of Intelsat License LLC for Special Temporary Authority, Call Sign S2404, File No. SAT-STA-20151002-00068 (filed Oct. 2, 2015).

<sup>5</sup> See *Policy Branch Information; Actions Taken*, Public Notice, Report No. SAT-00987, File No. SAT-MOD-30130830-00110 (Dec. 20, 2013).

Frequency Band	Intelsat 805	Intelsat 8
3400-3700 MHz	X	
3700-4200 MHz	X	X
5850-5925 MHz	X	
5925-6425 MHz	X	X
6425-6650 MHz	X	
12250-12500 MHz		X
12500-12750 MHz	X	X
13997-14000 MHz		X <sup>6</sup>
14000-14250 MHz	X	X
14250-14500 MHz		X

Intelsat 805 will operate on all of the same frequencies as Intelsat 8, except for the 12250-12500 MHz, 13997-14000 MHz, and 14250-14500 MHz bands. In addition, Intelsat 805 will operate in the 3400-3700 MHz, 5850-5925 MHz, and 6425-6650 MHz bands, which are not currently used by Intelsat 8 at 169.0° E.L.

**B. Extension of License Term**

Intelsat seeks to extend the license term for the Intelsat 805 satellite for approximately three and a half years through December 31, 2019. The Intelsat 805 satellite was launched in 1998.<sup>7</sup> The license term for Intelsat 805 will expire on July 18, 2016.<sup>8</sup> That expiration date is well before the expected end of service life of the satellite, which was most recently estimated to be December 2019.

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<sup>6</sup> Included for the purpose of authorizing Intelsat 8’s use of the 13998.0 MHz command link.

<sup>7</sup> Intelsat 805 Modification Order at ¶ 2.

<sup>8</sup> See *Applications of Intelsat LLC for Authority to Operate and Further Construct, Launch, and Operate C-Band and Ku-Band Satellites that Form a Global Communications System in Geostationary Orbit*, Memorandum Opinion and Order and Authorization, 15 FCC Rcd 15460, 15518 (2000), recon. denied, 15 FCC Rcd 25234(2000) (“Intelsat Licensing Order”) (granting a 10 year license term commencing on the date of privatization); *Space Station Licensing Rules and Policies*, First Report and Order, 18 FCC Rcd 10760, 10860 (2003) (extending license terms an additional five years).

## II. PUBLIC INTEREST SHOWING

Grant of this modification application to relocate and extend the license term of Intelsat 805 is in the public interest because it will allow Intelsat to provide additional capacity at 169.0° E.L. and continue providing service well beyond the current license term's July 18, 2016 expiration date.

Grant of this relocation request and Intelsat's prior STA request will not result in increased risk of harmful interference. As noted above, Intelsat will operate only the above listed TT&C frequencies during the drift, and will coordinate its TT&C transmissions with operators of satellites in the drift path. Should any interference occur during the drift, Intelsat will take all reasonable steps to eliminate such interference. Intelsat will operate Intelsat's communications payload and TT&C frequencies at 169.0° E.L. in conformance with existing coordination agreements and the FCC's rules governing operations vis-à-vis adjacent locations.

Grant of the license term extension request will serve the public interest by enabling customers to continue receiving service from an operational satellite with at least two and a half years of useful life remaining. There are no single points of failure on Intelsat 805 that would result in an inability to de-orbit the satellite. Additionally, the satellite's TT&C functions are operating nominally. Moreover, as explained in the Engineering Statement, Intelsat expects to dispose of Intelsat 805 by moving it to a planned minimum altitude of 150 kilometers above the geostationary arc, and has reserved 15.97 kilograms of fuel for this purpose.<sup>9</sup> Extending the license term will promote the continued efficient use of orbital resources and is consistent with past decisions by the Commission to extend satellite license terms.<sup>10</sup>

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<sup>9</sup> See Engineering Statement at 7.

<sup>10</sup> See, e.g., *Policy Branch Information; Actions Taken*, Public Notice, Report No. SAT-00905, DA 12-1680, File No. SAT-MOD-20120629-00109 (Oct. 19, 2012) (extending license

### **III. REQUEST FOR TECHNICAL WAIVERS**

Intelsat requests that the waivers previously granted for Intelsat 805<sup>11</sup> for Sections 25.202(a)(1),<sup>12</sup> 25.202(g), 25.210(a)(3), 25.210(i)(1), and 25.210(f)<sup>13</sup> be extended to Intelsat 805 at 169.0° E.L and to Intelsat 805's extended license term. To the extent necessary, Intelsat also requests a waiver of Sections 25.202(a)(1) and 2.106, which allocates 12500-12700 MHz to Fixed Service ("FS") and Broadcast Satellite Service ("BSS"), and 12700-12750 MHz to FS, Mobile Service ("MS") and Fixed Satellite Service ("FSS") (Earth-to-space) in International Telecommunication Union ("ITU") Region 2. Finally, Intelsat requests a waiver of Sections 25.283(c) and 25.114(d)(14)(ii), which require Intelsat to discharge all propellant remaining in the Intelsat 805 satellite upon de-orbiting.

Under Section 1.3 of the Commission's rules, the Commission has authority to waive its rules "for good cause shown."<sup>14</sup> 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

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terms of an SES satellite for an additional five years); *Policy Branch Information; Actions Taken*, Public Notice, Report No. SAT-00664, DA 10-236, File No. SAT-MOD-20091119-00123 (Feb. 5, 2010) (extending license term of Sirius XM satellites for an additional seven years).

<sup>11</sup> See Intelsat Licensing Order at 15529 (Appendix C).

<sup>12</sup> The existing waiver of Section 25.202(a)(1) applies only to C-bands frequencies on Intelsat 805.

<sup>13</sup> Intelsat 805 previously obtained a waiver of Section 25.210(g)(1), which required full frequency reuse. *Supra* n. 11. This requirement is now included in Section 25.210(f).

<sup>14</sup> 47 C.F.R. § 1.3; *WAIT Radio v. FCC*, 418 F.2d 1153, 1159 (D.C. Cir. 1969).

the general rule.<sup>15</sup> In determining whether waiver is appropriate, the Commission should “take into account considerations of hardship, equity, or more effective implementation of overall policy.”<sup>16</sup> As shown below, there is good cause for each of the requested technical waivers.

**A. Sections 25.202(a)(1) and 2.106**

Good cause exists to waive Sections 25.202(a)(1) and 2.106 for Intelsat 805’s Ku-band payload for the 12500-12750 MHz frequency band. The purpose of Sections 25.202(a)(1) and 2.106 is to harmonize the use of spectrum and thereby reduce harmful interference to allocated services within ITU Region 2. At 169.0° E.L., Intelsat 805’s Ku-band coverage will be solely in Region 3, where 12500-12750 MHz is allocated to the FSS in the space-to-Earth direction. As such, Intelsat 805’s FSS downlink use of the 12500-12750 MHz band at 169.0° E.L conforms to the International Table of Frequency Allocations. The proposed use therefore will not cause harmful interference to FS, BSS, or FSS in ITU Region 2.

Moreover, Intelsat 805’s operations in the 12500-12750 MHz frequency band will not impact other space stations. According to the ITU Region 2 BSS Plan, which allocates the 12200-12700 MHz band to BSS, no BSS assignment can be located further west than 175.2° W.L.<sup>17</sup> As a result, there would be at least 15.8° of orbital separation between Intelsat 805 at 169.0° E.L. and the nearest BSS network that could provide service to any portion of ITU Region 2. With this large orbital separation, there would be no risk of harmful interference to BSS networks from the operation of Intelsat 805 in the 12500-12700 MHz frequency band.

Given these particular facts, the additional waiver sought herein is plainly appropriate.

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<sup>15</sup> *Northeast Cellular Telephone Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990).

<sup>16</sup> *WAIT Radio*, 418 F.2d at 1159.

<sup>17</sup> International Telecommunication Union, Radio Regulations, Appendix 30, Annex 7 (2012).

**B. Sections 25.283(c) and 25.114(d)(14)(ii)**

Intelsat also requests a waiver of the fuel venting requirement in Sections 25.283(c) and 25.114(d)(14)(ii). Waiver is appropriate in this case because grant would not undermine the purpose of the rule, which is to reduce the risk of accidental explosion. Intelsat 805 has two helium tanks with a volume of 68.63 liters each. The estimated mass and pressure of residual helium in each tank will be 414.0 grams and 3639.74222 kPa (527.9 psia) at 17.3 degrees C, respectively, at end-of-life. This minimal amount of residual helium will not cause the pressure in the tanks to exceed burst pressure, even in a worst case end-of-life temperature scenario.

Grant of this waiver is also supported on hardship grounds. The tanks on the Intelsat 805 satellite were permanently sealed off following the completion of launch transfer orbit via a pyro valve, and consequently cannot be vented at the satellite's end-of-life. Intelsat 805 is currently in orbit and a design change cannot be accomplished at this time. Waiver in these circumstances is further supported by the fact the Intelsat 805 satellite was licensed prior to adoption of the rule requiring discharge of remaining fuel at end of life.<sup>18</sup> Finally, grant of waiver of Sections 25.283(c) and 25.114(d)(14)(ii) is consistent with waivers previously granted by the FCC.<sup>19</sup>

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<sup>18</sup> See Intelsat Licensing Order at 15529 (Appendix C). The Commission's orbital debris mitigation rule requiring discharge of all propellant, Section 25.283(c), was adopted in an order released June 21, 2004 that became effective October 12, 2004. *Mitigation of Orbital Debris*, Second Report and Order, 19 FCC Rcd 11567 (2004); *Mitigation of Orbital Debris*, 69 Fed. Reg. 54581-54589 (Sept. 9, 2004).

<sup>19</sup> See Amendment to Modification Application to Relocate Intelsat 801 to and Operate at 29.5 W.L., File Nos. SAT-MOD-20100208-00024, SAT-AMD-20100316-00050, and SAT-AMD-20100920-00196 (stamp grant Sept. 23, 2010); see also See PanAmSat Licensee Corp. Amendment to Application for Modification of Authority to Launch and Operate, SAT-AMD-20070716-00102 (filed July 16, 2007) (stamp grant with conditions Oct. 4, 2007) (granting partial waiver of Section 25.283(c) to Intelsat 11 (call sign S2237) on hardship grounds).

#### **IV. REQUEST FOR GRANT WITHOUT MILESTONES OR A BOND**

As noted above, Intelsat 8 is currently operating at 169.0° E.L.<sup>20</sup> Intelsat 805 will operate on all of the same frequencies the Intelsat 8 satellite operates on except for 3400-3700 MHz, 5850-5925 MHz, and 6425-6650 MHz, which are not utilized by Intelsat 8 at 169.0° E.L. Nevertheless, the Commission should grant this application without imposing milestones<sup>21</sup> or a bond.<sup>22</sup> Because Intelsat 805 already is in-orbit and operating, all milestones for this satellite have been satisfied and Intelsat is not required to post a bond.<sup>23</sup> Indeed, the Commission has granted similar applications for in-orbit satellites without imposing milestones or a bond.<sup>24</sup>

#### **V. 3400-3600 MHZ, 3600-3650 MHZ, 3650-3700 MHZ, 5850-5925 MHZ FREQUENCY BANDS**

Intelsat understands that operations in the 3400-3600 MHz, 3600-3650 MHz, 3650-3700 MHz, and 5850-5925 MHz frequency bands are subject to certain limitations and obligations,

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<sup>20</sup> Intelsat 8 is operating in the following communications frequencies: 3700-4200 MHz, 5925-6425 MHz, 12250-12750 MHz, and 14000-14500 MHz.

<sup>21</sup> 47 C.F.R. § 25.164(a).

<sup>22</sup> *Id.* § 25.165.

<sup>23</sup> *See Loral Skynet Network Services, Inc.*, 21 FCC Rcd 14365 (Int'l Bur. 2006) (“Because Telstar 18 is in-orbit and operating, Loral is not required to post a bond.”).

<sup>24</sup> *See* Application of PanAmSat Licensee Corp. to Modify Authorization for Galaxy 11, File No. SAT-MOD-20080225-00051 (stamp grant July 22, 2008); PanAmSat Licensee Corp., Application to Modify Authorization to Relocate Intelsat 5 to 169.0° E.L., File No. SAT-MOD-20080725-00150 (stamp grant Oct. 17, 2008). To the extent necessary, Intelsat requests waiver of Sections 25.164(a) and 25.165 of the rules, 47 C.F.R. §§ 25.164(a) and 25.165, for any possible milestone or bond associated with the operation of Intelsat 805 in the 3400-6700 MHz, 5850-5925 MHz, and 6425-6650 MHz bands at 169.0° E.L. In this case, there is no risk of warehousing because the Intelsat 805 satellite is already in-orbit and will be able to provide service from the 169.0° E.L. location in a much more timely manner than the five years that would be allowed to an applicant intending to construct, launch, and operate a new satellite at this location.



which Intelsat accepts and will fulfill. Specifically, for operations in the 3400-3600 MHz frequency band, Intelsat accepts the following conditions:

- Intelsat shall not permit any earth station in the United States and its possessions to operate with the Intelsat 805 space station in the 3400-3600 MHz band.
- Intelsat shall inform its customers and operators using the 3400-3600 MHz band of the potential for interference from U.S. Government operations worldwide.

For operations in the 3600-3650 MHz frequency band, Intelsat accepts the following condition:

- Intelsat's use of the 3600-3650 MHz (space-to-Earth) band is subject to footnote US245 of the United States Table of Frequency Allocations, 47 C.F.R. § 2.106, US245, which states that the 3600-3650 MHz use of the non-Federal fixed-satellite service is limited to international inter-continental systems and is subject to case-by-case electromagnetic compatibility analysis.

For operations in the 3650-3700 MHz frequency band, Intelsat accepts the following condition:

- Intelsat's use of the 3650-3700 MHz (space-to-Earth) band is subject to footnote NG185 of the United States Table of Frequency Allocations, 47 C.F.R. § 2.106 NG185, which states that the 3650-3700 MHz use of the non-Federal fixed-satellite service is limited to international inter-continental systems.

For operations in the 5850-5925 MHz frequency band, Intelsat accepts the following condition:

- Intelsat's use of the 5850-5925 MHz band (Earth-to-space) is subject to footnote US245 of the United States Table of Frequency Allocations, 47 C.F.R. § 2.106, US245, which states that the 5850-5925 MHz use of the non-Federal fixed-satellite service is limited to international inter-continental systems and is subject to case-by-case electromagnetic compatibility analysis. Intelsat shall not claim protection from radiolocation transmitting stations operating in accordance with footnote G2.

**VI. CONCLUSION**

For the reasons set forth above, Intelsat respectfully requests that the Commission grant this modification application.

Intelsat License LLC

By: /s/ Susan H. Crandall

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October 20, 2015

**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*.<sup>1</sup> In December 2009 and October 2011, the Commission also approved *pro forma* changes in Intelsat’s foreign ownership.<sup>2</sup> There have been no other material changes to Intelsat’s foreign ownership since the date of the *Intelsat-Serafina Order*.

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<sup>1</sup> *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).

<sup>2</sup> *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-20091125-00126, SES-T/C-20091125-01505, SES-T/C-20091125-01502, SES-T/C-20091125-01506, SES-T/C-20091125-01504 and SES-T/C-20091125-01503 (granted Dec. 3, 2009); *Intelsat Application for Pro Forma Transfer of Control*, File Nos. SAT-T/C-20110810-00160, SAT-T/C-20110811-00161, SES-T/C-20110811-00948, SES-T/C-20110812-00963 (granted Oct. 13, 2011), and 0004825139 (granted Oct. 19, 2011).

**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”),<sup>1</sup> based on the Bureau’s finding that PanAmSat had not satisfied applicable construction milestones.<sup>2</sup> 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.

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<sup>1</sup> 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).

<sup>2</sup> *See PanAmSat Licensee Corp.*, Memorandum Opinion and Order, 15 FCC Rcd 18720 (IB 2000).

**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  
Franz Russ, Deputy Chairman  
Michelle Bryan, Secretary  
Mirjana Hervy, Director, Finance

Board of Managers:

Michael McDonnell  
Franz Russ  
Michelle Bryan

The business 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 Jackson Holdings S.A., a Luxembourg company. Intelsat Jackson Holdings S.A. is wholly owned by Intelsat (Luxembourg) S.A., a Luxembourg company. Intelsat (Luxembourg) S.A. is wholly owned by Intelsat Investments S.A., a Luxembourg company. Intelsat Investments S.A. is wholly owned by Intelsat Holdings S.A., a Luxembourg company. Intelsat Holdings S.A. is wholly owned by Intelsat Investment Holdings S.à r.l., a Luxembourg company. Intelsat Investment Holdings S.à r.l. is wholly owned by Intelsat S.A., a Luxembourg company. Each of these entities may be contacted at the following address: 4 rue Albert Borschette, L-1246 Luxembourg.

Intelsat S.A.'s ownership was approved by the Commission as part of the *Intelsat-Serafina Order* and the recent Intelsat Pro Forma 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*”); *Intelsat Application for Pro Forma Transfer of Control*, File Nos. SAT-T/C-20110810-00160, SAT-T/C-20110811-00161, SES-T/C-20110811-00948, SES-T/C-20110812-00963 (granted Oct. 13, 2011), and 0004825139 (granted Oct. 19, 2011) (“*Intelsat Pro Forma*”). On May 16, 2012, the International Bureau granted an application to transfer control of Intelsat pursuant to a public offering of newly issued voting shares by Intelsat, subsequent voting share sales by current shareholders and possible private placements of newly issued voting shares. *In the Matter of Intelsat Global Holdings, S.A., Applications to Transfer Control of Intelsat Licenses and Authorizations from BC Partners Holdings Limited to Public Ownership*, Order, DA 12-768 (rel. May 16, 2012). This change of control has not yet been fully consummated.